Queensland Competition Authority

Final Report: Volume I

Industry Assistance in Queensland

July 2015

Level 27, 145 Ann Street, Brisbane Q 4000
GPO Box 2257, Brisbane Q 4001
Tel (07) 3222 0555
www.qca.org.au

We wish to acknowledge the contribution of the following staff to this report:

Dan Barclay, Kristy Bogaards, Richard Creagh, Tom Cunningham, Wei Fang Lim, Santhi Wicks and Sid Shanks

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OVERVIEW

The Queensland Government provides more than $5 billion per year in assistance to industry, which equates to over $1000 per annum for every Queenslander. In 2014, the Queensland Government asked the Queensland Competition Authority (QCA) to:

- investigate and report on Queensland Government industry assistance measures
- assess the effectiveness of the measures
- evaluate the contribution of the measures to Queensland's economic performance and productivity.

What is industry assistance?

This inquiry's terms of reference define industry assistance as:

> *any measures implemented and/or funded by the Queensland Government, directly or indirectly, that are intended to assist any industry in the State of Queensland as determined by the Authority as part of its investigation.*

Industry assistance generally involves a transfer of benefits (for example, financial resources) to a recipient business and the assistance will usually be selective (that is, some businesses, industries or types of businesses receive the assistance while others do not).[1]

Industry assistance includes grants to businesses, subsidised access to assets and services, programs supporting specific industries, tax concessions and regulatory restrictions on competition that benefit some businesses. It is provided through a wide array of measures, such as research and development programs, electricity and water subsidies, film and major event attraction incentives and environmental programs.

Why evaluate industry assistance?

In 2013, the Queensland Government found that it was not possible to identify or quantify industry assistance in Queensland, or evaluate its objectives, effectiveness or value for money. While well-designed assistance can potentially provide a net benefit to the Queensland community, poorly designed assistance comes at a significant cost to other industries, taxpayers and consumers. The aim of this inquiry is to provide the necessary information and analysis to the Queensland Government to identify:

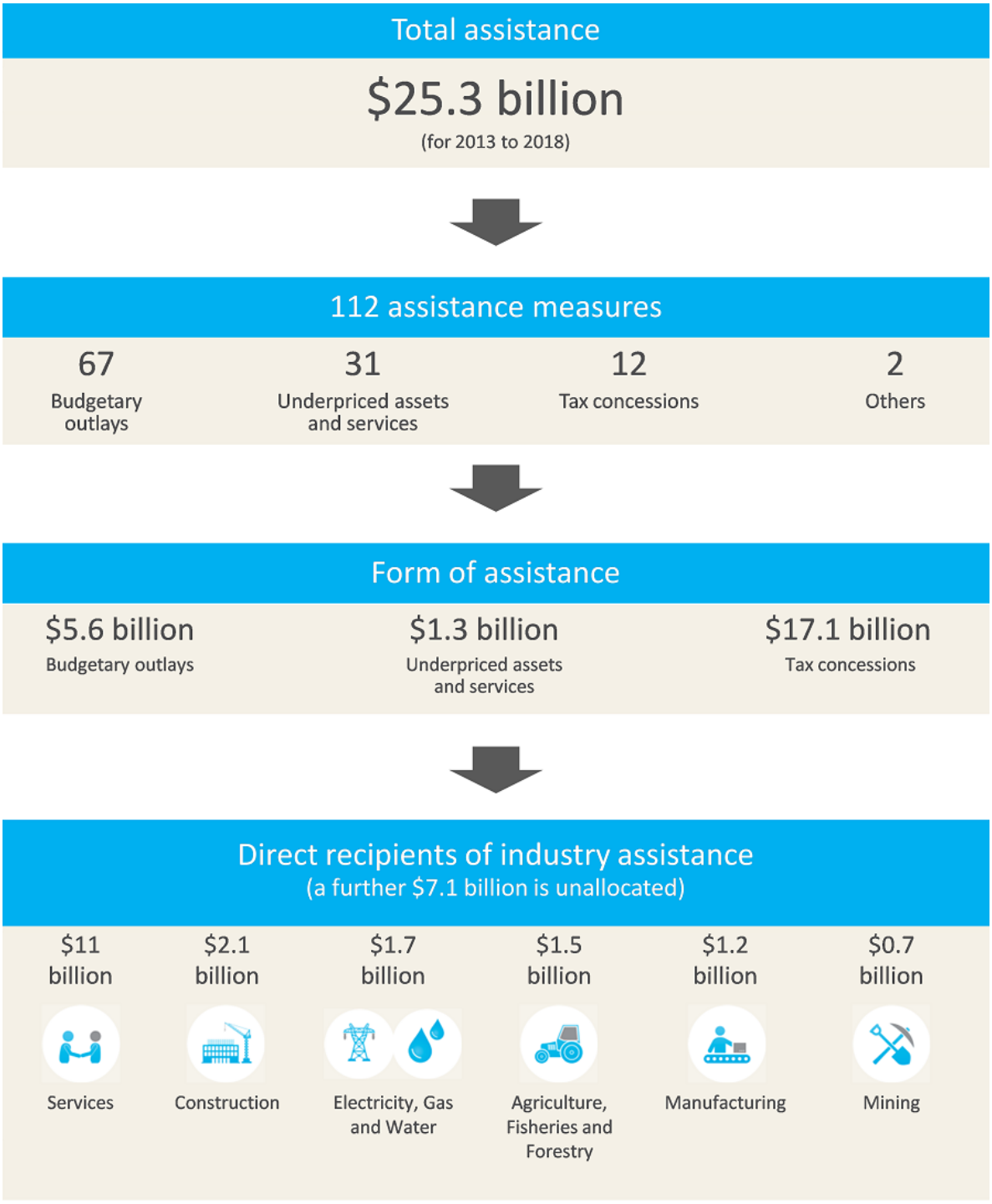
- assistance measures that do not provide benefits which outweigh the costs
- policies that might be reformed so that they either cost less to achieve the same objectives or can achieve more with the same level of funding
- policies that should be retained because they provide significant benefits to the community.

[1]Assistance to community or not-for-profit businesses and transfers to households are considered out of the scope of the inquiry, although many programs and policies in this field can still have a significant industry assistance component.

Industry assistance in Queensland

The QCA has identified 112 measures providing $25.3 billion in assistance from 2013 to 2018, including $5.6 billion in budget outlays, $17.1 billion in tax concessions and $1.3 billion in underpriced assets and services.

The industry assistance estimates should be viewed as approximate indicators of the magnitude of assistance provided in Queensland. Measurement and data deficiencies mean that the level of assistance may be overestimated for some programs and underestimated in others. In addition, the estimates do not include the assistance provided through a range of policies, including regulatory restrictions on competition, recently announced measures or confidential agreements between the Queensland Government and individual firms.



The main recipients of industry assistance from 2013–18 are the:

- services sector ($11 billion, primarily for small businesses, private health insurers, transport, education and training and tourism)
- construction sector ($2.1 billion)
- electricity, gas and water sector ($1.7 billion)
- agriculture, fisheries and forestry sector ($1.5 billion)
- manufacturing sector ($1.2 billion)
- mining sector ($700 million).

A further $7.1 billion in assistance could not be allocated to a specific industry.

Does industry assistance yield a net payoff for the Queensland community?

The rationale to provide industry assistance is strongest where there is a significant policy problem that could be corrected through government action. Where markets function well they promote efficiency by allocating resources to their highest valued uses. In those cases, government intervention to alter consumption or production (through industry assistance) will generally lead to a net loss for society. Industry assistance is more likely to be beneficial where markets fail to allocate resources efficiently — for example, where polluters do not fully bear the costs of environmental pollution.

But even then, assistance must be implemented through measures that meet their goal without giving rise to costs that exceed the benefits. For industry assistance to have a net benefit, the assistance must shift resources in the economy to higher value uses. The benefits must be sufficient to outweigh the costs of achieving this shift, such as compliance burdens, the distortions from raising taxes to pay for the assistance, and any unintended inefficiencies.

The evaluation of industry assistance measures in Queensland has been severely constrained by the widespread absence of supporting evidence or monitoring (save for a few commendable exceptions). Many programs have no (or poorly specified) objectives, making it difficult to judge their success or failure. Further, few are monitored or evaluated beyond meeting certain process requirements — only 16 of the 112 measures have been formally evaluated since introduction. Even less assistance is publicly reported. As a result, there is limited transparency in the provision of significant amounts of public resources to the private sector, particularly for highly selective assistance measures.

The evidence that is available suggests that, although a number of industry assistance measures are beneficial, many others are ineffective and result in a range of costs, including resource allocation distortions, lower productivity, lower household incomes and harmful environmental impacts.

Some industry assistance measures fail both the rationale and net benefit tests

A significant portion of industry assistance in Queensland is directed towards supporting certain businesses or sectors over others, rather than towards correcting market failures. In a number of cases, the primary objective is to directly increase the profitability of private sector businesses. This assistance is unlikely to lead to a higher level of economic activity than would otherwise occur. Much is captured by private firms with limited or no positive effect on the welfare of Queenslanders as a whole.

While measuring the aggregate impact of all forms of industry assistance was not possible, an assessment of the impact of budget-funded industry assistance suggests that it comes at a net cost to the Queensland community. Economy-wide modelling indicates that the removal of budget-funded industry assistance would increase gross state product by $590 million in the short run and by $1.1 billion in the long run (in 2010–11 dollars).

Improving industry assistance through policy design, monitoring and transparency

Careful design and analysis can help improve the likelihood that industry assistance will have a positive overall impact. This report sets out a range of principles that underpin a performance assessment framework to guide the review of existing measures as well as the development of new industry assistance proposals.

Central to the principles is that government should provide industry assistance only when it can:

- address a policy problem of sufficient size and scope to warrant government assistance
- induce socially valuable change that would not occur without assistance, and this can be done in a way that avoids unintended consequences such as higher prices or large transfers overseas
- be provided in a transparent manner.

To be successful, the assessment framework must be supported by appropriate institutional arrangements and a commitment from the government and policymakers to an evidence-based approach to industry assistance.

What role should industry policy play?

The findings from this inquiry suggest that selective industry assistance is generally not a successful policy to generate economic growth — it is only suitable to address a specific set of policy problems and, as such, should be reserved for those circumstances. There is general agreement, even within assisted sectors of the economy, that businesses not government assistance, drive productivity and economic growth.

Notwithstanding this, state governments still have a significant role to play in facilitating economic growth. Stakeholders to this inquiry cited economic factors, such as the relatively high cost of doing business in Australia, as overshadowing concerns over government-provided industry assistance. This suggests state governments are best placed to help the efficiency of all businesses by creating a sound policy environment. This includes providing the right taxation, labour market and utility sector frameworks, best practice regulation, appropriate infrastructure and efficient public services.

Focusing industry policy in this way means: (1) it is likely to be less distortionary than selective industry assistance, (2) it addresses the main concerns of business (the relatively high cost of doing business in Australia), and (3) it is likely to have the greatest impact on Queensland's economic growth.

Recommendations

6.1 The Queensland Government should consider the following principles for the design and provision of industry assistance:

(a) The Government should provide industry assistance only where there is a sound rationale for government intervention (for example, where there is a genuine market failure of sufficient size and scope that could best be addressed by the Queensland Government).

(b) Policymakers should assess whether industry assistance is likely to:

(i) induce socially valuable change that would otherwise have not occurred

(ii) provide the right incentives and avoid unintended consequences

(iii) have benefits that outweigh the costs, and if so, whether it maximises the net benefit to the Queensland community.

(c) Policymakers should consider all feasible alternatives, including whether different types of industry assistance and non-assistance measures, could better address the problem.

(d) Where industry assistance is appropriate:

(i) it should be provided by the level of government (Australian, State or Local) that can best target the policy problem

(ii) the costs and benefits of providing assistance should be transparent. The amount of assistance, as well as the evidence base that underpins the government's decision to provide it, should be publicly available

(iii) monitoring and evaluation should be built in from commencement. Assistance should be evaluated at regular intervals to assess and identify opportunities for improvement and foster policy learning.

(e) Social and equity objectives are normally best achieved using policy instruments other than industry assistance. Where adjustment assistance to industry is provided it should be strictly time-bound, facilitate rather than impede change, and be subject to review.

Industry-specific assistance — Agriculture

7.1 The Queensland Government should:

(a) remove drought assistance provided through input or transaction based subsidies, with appropriate transitional arrangements

(b) abolish the Drought Carry-on Finance and Recovery Scheme.

7.2 The Queensland Government should ensure that any drought support provided by the Queensland Government is consistent with the National Drought Policy and:

(a) encourages farmers to improve self-reliance and resilience to climate variability

(b) avoids distortionary impacts among farm businesses, and between farm and non-farm businesses

(c) complements Australian Government programs so that the joint implementation of these measures results in effective policy

(d) ensures that farm and rural households can access welfare support payments that are commensurate with assistance afforded to all Australians.

7.3 The Queensland Government should abolish the Primary Industry Productivity Enhancement Scheme.

7.4 The Queensland Government should abolish the Hendra Virus Personal Protective Equipment Rebate Scheme.

Industry-specific assistance — Tourism and major events

8.1 The Queensland Government should:

(a) decide whether to fund major events based on a comprehensive published cost–benefit analysis and support major events only if the estimated net social benefit of an event is positive

(b) explore opportunities for a 'user pays' system for destination marketing in collaboration with the tourism industry

(c) work with the Australian, state and territory governments to:

(i) increase cooperation, efficiency and impact of the $700 million expenditure of tourism agencies across Australia

(ii) commit to a cross-jurisdictional agreement between all state and territory governments to end unnecessary bidding wars.

Industry-specific assistance — Construction and resources

9.1 The Queensland Government should:

(a) incorporate the Productivity Commission's best practice guidelines into the project selection criteria for the Priority Development Infrastructure Co-investment Program.

(b) as a priority, publish its project selection analysis and set specific and time-related objectives to determine whether the Priority Development Infrastructure Co-investment Program is achieving its objective.

9.2 The Queensland Government should seek a review of the first home owner grant scheme through the Council of Australian Governments.

(a) Where the grant scheme cannot be shown to be delivering a net benefit to society, the measure should cease.

(b) If closing the grant scheme is not possible in the short term, the Queensland Government should investigate additional opportunities to better target the grant to those in need.

9.3 The Queensland Government should set a range of specific and measurable targets which allow decision-makers to assess whether initiatives included in the Future Resources Program (including the Collaborative Drilling Initiative) are achieving their objectives.

9.4 The Queensland Government should consider whether the regulatory framework for resources is achieving the desired policy outcomes at minimum cost.

9.5 The Department of Natural Resources and Mines should evaluate the development tenure framework with a view to:

(a) identifying the aims of providing area discounts for Mineral Development Licences

(b) reviewing the pricing structure to ensure it effectively achieves those aims and limits distortions.

Industry-specific assistance — Services

10.1 The Queensland Government should, as part of the broader state and Council of Australian Government reviews of vocational education and training (VET), review the effectiveness and efficiency of the targeted VET subsidies. Particular consideration should be given to whether the subsidies appropriately reflect the public/private split of benefits from education, provide the right incentives to providers and students and avoid over- or underprovision of VET services.

10.2 The Queensland Government should not subsidise stadium infrastructure and services for major sporting and entertainment events.

10.3 The Queensland Government should not provide assistance to the racing industry beyond its commitments in the funding agreement. Any future assistance or regulatory arrangements should be subject to a public interest or regulatory impact assessment.

10.4 The Queensland Government should:

(a) cease providing attraction incentives for major film productions that deliver benefits largely appropriated by international production companies

(b) focus assistance for film and television production on activities that deliver net cultural benefits to the state

(c) ensure that any incentives, where government chooses to provide them, are provided transparently.

10.5 The Queensland Government should:

(a) continue to regularly monitor market conditions on regulated air routes and remove regulation where the expected benefits outweigh the costs of doing so

(b) to the extent not considered in the recent review, investigate options for improving the cost-effectiveness of the contracted air services scheme through potential optimisation of hubs and setting service requirements that are the minimum necessary to achieve objectives

(c) as a priority, publish the findings and analysis underpinning the 2013 review of long-distance passenger services.

Tax concessions

11.1 Legislation which underpins tax concessions should clearly state the objectives of the concessions, and include sunset or similar clauses with continuance of the tax concession subject to government consideration of an independent evaluation of the concession.

11.2 Queensland could obtain significant benefits from the reform of tax concessions. The Queensland Government should consider how best to progress reforms, including through the national tax reform White Paper process or a Queensland state tax review.

Network infrastructure

12.1 The Queensland Government should ensure that future solar policy:

(a) effectively and efficiently targets environmental pollution

(b) avoids selective or excessive subsidies, which are borne by electricity customers.

12.2 The Queensland Government should review the Uniform Tariff Policy with a view to:

(a) clearly specifying the Uniform Tariff Policy's objective

(b) removing direct electricity subsidies to Queensland businesses

(c) ensuring that where the Government decides electricity prices should be subsidised for residential consumers, the subsidy should be provided in a form that is the most effective (i.e. targets those in need), efficient (i.e. avoids price distortion) and transparent (i.e. costs are known to the public).

12.3 The Queensland Government should conduct a broad policy inquiry into the transport sector. This inquiry should consider the significant assistance provided to various transport modes and some freight customers, with a view to identifying efficiency improvements.

12.4 As part of a broader policy inquiry into the transport sector (see Recommendation 12.3), the Queensland Government should consider how best to encourage efficient rail freight pricing. This includes considering the removal of highly selective freight subsidies.

12.5 The Queensland Government should set efficient irrigation water prices. Where the Government subsidises water prices for irrigators:

(a) the objective for providing assistance to any irrigation schemes should be clearly explained

(b) the full level of assistance should be made transparent (i.e. calculate the upper bound revenue requirement and associated prices for each water supply scheme to measure total assistance provided to industry).

12.6 The Queensland Government should consider narrowing the scope of the Rural Water Use Efficiency – Irrigation Futures (RWUE–IF) to focus on providing information for irrigators.

General business and SME programs

14.1 The Queensland Government should:

(a) target export development assistance towards significant spillover benefits or information problems

(b) systematically monitor whether Trade and Investment Queensland's programs address those market failures and result in outcomes different to those in the absence of its programs

(c) consider the scope for reducing overlap between Austrade and other state-based export development entities.

14.2 The Department of Environment and Heritage Protection should set specific, measurable and time-related objectives for the ecoBiz program to assist in gauging the program's effectiveness.

14.3 The ecoBiz program should focus on the information and transaction cost aspects of the advisory service to avoid unnecessarily crowding out private sector providers.

14.4 The Queensland Government should investigate the distortions created by the premium cap for workers' compensation premiums.

14.5 The Queensland Government should not duplicate services adequately provided by the private sector to small businesses. The Small Business Week and Mentoring for Growth programs should cease.

Procurement

15.1 The Queensland Government should strengthen the value for money principle in procurement:

(a) Public sector procurement decisions should be guided by a single objective — achieving value for money in procurement.

(b) Broader economic, social and environmental objectives should be addressed through other policy instruments.

(c) The Government should resist pressures for explicit preference margins to be applied to local content, and should consider the removal of the present preference margin applying to information and communication technology procurement in respect of small and medium-sized enterprises.

15.2 The Queensland Government should continue to improve procurement processes with the objective of simplifying processes.

Regulatory restrictions on competition

16.1 The Queensland Government should renew its commitment to a targeted legislation review program, focusing on restrictions on competition where:

(a) they impose material distortions or costs on the Queensland community

(b) reform is likely to produce a significant net benefit to the community

(c) circumstances have changed significantly since the regulation was introduced or last reviewed (e.g. due to technology or demographics).

16.2 Regulation should not restrict competition unless it can be demonstrated that:

(a) the benefits of the restriction to the community as a whole outweigh the costs

(b) the objectives of the legislation can only be achieved by restricting competition.

Other restrictions on competition should be reviewed as part of regular review processes in accordance with the Competition Principles Agreement.

The way forward

17.1 The Queensland Government should establish a framework for the assessment, monitoring and evaluation of industry assistance. This should include:

(a) further detailed reviews of existing industry assistance by an independent body. The industry assistance catalogue should also be periodically updated

(b) a formal requirement for agencies to evaluate all new proposals for industry assistance using the performance assessment framework. The agency evaluation should be assessed by an independent body or central agency. Both the evaluation and assessment should be submitted to the Government for decision

(c) all evaluations should be published to improve the transparency and accountability for providing industry assistance.

THE ROLE OF THE QCA – TASK, TIMING AND CONTACTS

The Queensland Competition Authority (QCA) is an independent statutory authority established to promote competition as the basis for enhancing efficiency and growth in the Queensland economy.

The QCA's primary role is to ensure that monopoly businesses operating in Queensland, particularly in the provision of key infrastructure, do not abuse their market power through unfair pricing or restrictive access arrangements.

Task, timing and contacts

The Queensland Government asked the QCA to investigate the effectiveness of Queensland Government industry assistance measures and their contribution to the state's economic performance and productivity.

Further background information on the inquiry, including a copy of the Terms of Reference provided by the Queensland Government, can be found on the inquiry's homepage at http://www.qca.org.au/Productivity/Productivity-Projects/Industry-Assistance.

Key dates

Receipt of Terms of Reference:	31 March 2014
Release of Issues Paper:	11 April 2014
Issues Paper submissions due date:	30 May 2014
Interim Report for the Government:	29 August 2014
Draft Catalogue of Industry Assistance:	26 September 2014
Release of Draft Report:	5 June 2015
Draft Report submissions due date:	3 July 2015
Final Report for the Government:	31 July 2015

Contact

Queensland Competition Authority

Level 27, 145 Ann Street
GPO Box 2257
Brisbane QLD 4001
T: (07) 3222 0555
Fax: (07) 3222 0599
www.qca.org.au

1 INTRODUCTION

Governments provide assistance to industry for a range of different reasons and through a wide array of measures.

The Queensland Government asked the Queensland Competition Authority (QCA) to investigate the effectiveness of Queensland Government industry assistance measures and their contribution to the state's economic performance and productivity.

This report catalogues industry assistance provided by the Queensland Government, evaluates the existing stock of assistance measures and identifies opportunities to improve policy outcomes.

1.1 What was the QCA asked to do?

In 2014, the Queensland Government asked the QCA to:

- investigate and report on Queensland Government industry assistance measures
- assess the effectiveness of the measures
- evaluate the contribution of the measures to Queensland's economic performance and productivity.

Specifically, we were asked to:

- identify the current assistance measures in place, including each measure's objectives, administration, performance assessment and funding arrangements
- develop an appropriate performance assessment framework to evaluate assistance measures, including their cost effectiveness and their contribution to Queensland's economic performance and productivity
- evaluate existing assistance measures and propose options for reform of existing assistance measures that would increase their effectiveness
- develop an appropriate monitoring and performance evaluation process that the Queensland Government could adopt to monitor and evaluate the performance of assistance measures.

The full terms of reference for this inquiry are provided at Appendix A.

1.2 Why review industry assistance?

Well-designed assistance to industry can potentially address a number of policy issues and provide a benefit to the Queensland community. Equally however, poorly designed assistance comes at a significant cost to other industries, taxpayers and consumers. Evaluating industry assistance is important to:

- assess the impact of assistance – policies that provide assistance to industry will have objectives which are intended to improve the welfare of the community. However, a policy may not be effective, or it may have unintended consequences which may partially or fully offset the intended benefits of the policy

- support decision making – evaluating industry assistance can help governments make more informed policy decisions that will lead to an improved allocation of the community's scarce resources
- improve future design of programs – transparent and rigorous evaluation of existing assistance can help improve the design, implementation and administration of future programs
- demonstrate appropriate stewardship and responsible use of taxpayer-funded resources.

In 2012, the Queensland Commission of Audit (QCoA) examined industry assistance provided by the Queensland Government and found that it was difficult to:

- identify the industry assistance measures in place
- accurately measure the cost to government of industry assistance
- determine the overall costs and benefits of industry assistance in Queensland.

Submissions to this inquiry have highlighted the significant impact of industry assistance and the need to get the policy settings 'right'. Stakeholders expressed varied views. For instance, the Property Council (sub. 7, p. 1) noted the opportunity costs of ineffective assistance:

> *The Property Council expects that some industry assistance programs may be outdated or poorly designed and therefore provide little benefit to the community. Redirecting funding away from ineffective initiatives could enable a greater level of investment in projects that provide greater community or economic value or into reducing taxation to improve Queensland's interstate competitiveness. (Property Council sub. 7, p. 1)*

The Medical Technology Association of Australia (sub. 3, p. 3) emphasised the importance of industry assistance to its sector:

> *Australia has many of the right attributes to grow a strong domestic industry; a significant health and medical research capability, quality health system, highly skilled manufacturing workforce, stable financial system and access to the growing middle class markets of Asia. What's missing is attention from government policy makers enabling the private sector more scope to develop business opportunities.*

In contrast, others highlighted the potential distortions arising from industry assistance:

> *We see governments' role in industry policy as encouraging and supporting the transformation of industry through policies aimed at encouraging business innovation and measures to boost productivity that are available across the economy. … This minimises the likelihood of market distortions that can arise from sectoral support measures or from Government 'picking winners' (either in terms of sectors or in terms of stages in a particular supply chain). (Australian Industry Group sub. 6, p. 1)*
>
> *Probably of most importance when evaluating industry assistance is recognising that where competition is effective, it generally provides the best means of delivering the goods and services that consumers demand at prices that reflect efficient costs. Governments which choose to restrict consumers ability to choose among rival suppliers and alternatives terms and conditions should demonstrate why this is necessary in the public interest. (Origin Energy sub. 4, pp. 2–3)*

Asciano submitted that the Queensland Government should focus on longer-term industry assistance measures that improve economic outcomes and/or address areas of market failure, rather than focus on shorter-term measures driven by the electoral cycle (Asciano sub. 2, p. 4).

1.3 What is industry assistance?

The terms of reference for this inquiry define industry assistance as:

> *...any measures implemented and/or funded by the Queensland Government, directly or indirectly, that are intended to assist any industry in the State of Queensland as determined by the Authority as part of its investigation.*

This definition is similar to the definition of industry assistance contained in the *Productivity Commission Act 1998*, and used by the Australian Productivity Commission in its work on measuring the industry assistance provided by the Australian Government.[2]

At a very general level, industry assistance could be defined as any government action providing a benefit to business. However, this definition could capture the general business of government — such as providing a stable political framework, legal institutions and social infrastructure. These are all things that assist industry by creating an environment that allows existing activities to effectively compete with their rivals (both interstate and overseas). But, the frameworks, policies and programs a government implements to create a good climate for business activity generally are not the sorts of measures that are normally regarded to be industry assistance.

For purposes of this inquiry industry assistance policies will generally be defined to include a transfer of benefits (e.g. financial resources) to a recipient business and the assistance will usually be selective (i.e. some businesses, industries or types of businesses receive the assistance while others do not).

The types of measures that can reasonably be considered to be industry assistance include:

- budgetary measures
  - direct expenditure (e.g. grants, subsidies, credit and loans)
  - tax concessions (e.g. exemptions, deductions, rebates, preferential tax rates and deferred tax)
  - contingent liabilities (e.g. debt guarantees)
  - funding to organisations delivering services to industry
- government purchasing preferences and local content requirements
- subsidised public infrastructure and services including underpricing of services from government-owned assets (e.g. water pipelines and dams)
- restrictions on competition that benefit some businesses.

Assistance provided to community and not-for-profit businesses are considered beyond the scope of this inquiry, with the exception of any circumstances where assistance is provided to for-profit businesses via community or not-for-profit businesses. This is consistent with established practices of industry assistance measurement at the Australian Productivity Commission, which generally excludes government programs affecting service industries where community and not-for-profit entities are active (e.g. health, education and community services).

[2] The *Productivity Commission Act 1998* defines government assistance to industry as, '… any act that, directly or indirectly: (a) assists a person to carry on a business or activity, or confers a pecuniary benefit on; or (b) results in a pecuniary benefit accruing to, a person in respect of carrying on a business or activity'.

Transfers of benefits to households are also beyond the scope of this inquiry, with the exception of transfers that are tied to the purchase of specific products or services that are not considered part of the general welfare system.

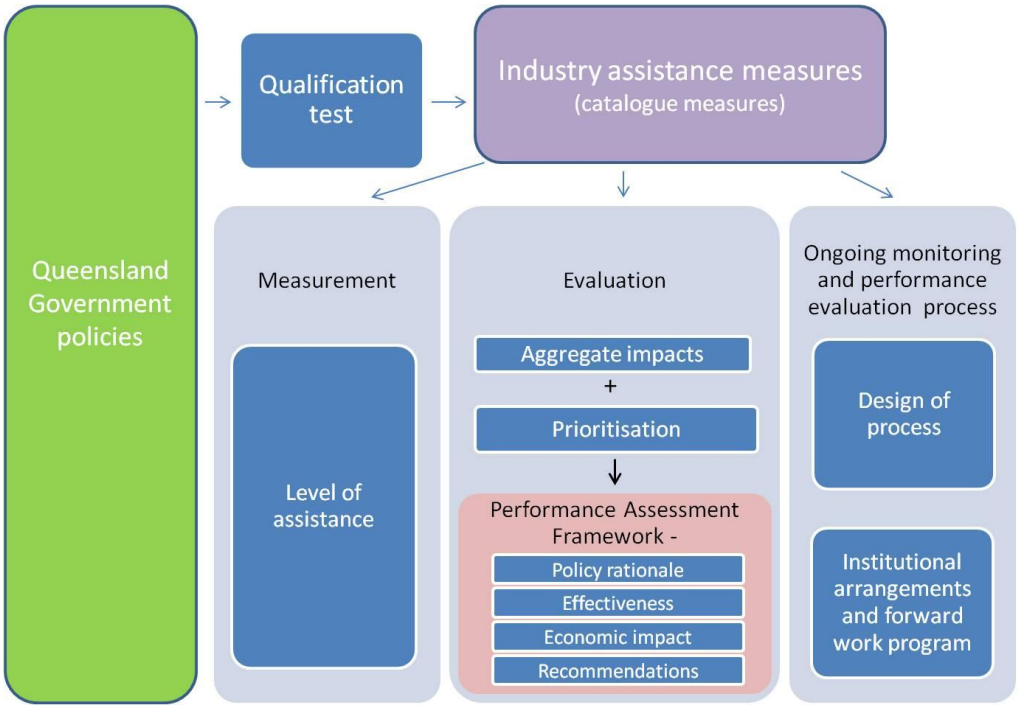
1.4 The QCA's approach

The QCA's approach to this inquiry consists of four core components:

- a catalogue of industry assistance measures, identifying the objectives, administration, performance assessment and funding of each assistance measure
- a performance assessment framework to evaluate whether assistance is effective and efficient
- an evaluation of existing industry assistance measures, through an assessment of both the aggregate impact of assistance and the performance of some individual measures
- a framework for ongoing monitoring and evaluation of industry assistance measures.

Figure 1.1 illustrates our key tasks in conducting this inquiry.

Figure 1.1 Overview of the QCA's tasks for this inquiry



1.4.1 Catalogue of Industry Assistance Measures

The Catalogue of Industry Assistance Measures (Appendix C) lists 112 industry assistance measures, identifies their objectives, and records whether they have been monitored and evaluated. The catalogue also lists 153 pieces of legislation containing regulatory restrictions on competition, provides a measure of the regulatory burden imposed, and notes whether the legislation has been reviewed since 2005.

It was not possible to catalogue all instances of industry assistance or quantify the level of assistance provided by each of the measures. While the level of assistance can usually be measured for budgetary outlays and tax concessions, it can be difficult to measure the cost to

government of other forms of assistance. This can be due to a lack of data or difficulties in accessing existing data (e.g. where commercial-in-confidence contracts are established).

The catalogue was compiled based on information collected from Queensland Government Departments through information request processes conducted in May–June and November–December 2014.

1.4.2 Performance assessment framework

A performance assessment framework was established in our Interim Report (QCA 2014a). This framework guides the assessments throughout this report for evaluating the:

- policy rationale/s of the measures
- effectiveness of the measures
- economic impacts of the measures.

The performance assessment framework is summarised in Chapter 4.

1.4.3 Evaluation of industry assistance measures

The QCA has drawn on a range of methodologies and evidence sources to evaluate industry assistance, including:

- an assessment of the aggregate impact of budget-funded industry assistance through economy-wide modelling
- an evaluation of industry assistance measures using the performance assessment framework, compromising a mix of broad assessments of the various forms of assistance and an appraisal of a number of selected measures.

With more than 100 measures, and the general paucity of data and evidence on their performance, it was not feasible to examine every assistance measure in a way that would provide robust evidence to inform decision makers. As a result, the QCA has attempted to concentrate on those assistance measures that have the greatest significance, either in terms of the cost to government or economic impact.

The overarching principle guiding the QCA's analysis is that industry assistance should maximise the net benefit to the Queensland community. This requires an assessment beyond the impact of industry assistance on individual groups or interests to consider the wider costs and benefits on the community, incorporating financial, environmental and social impacts.

1.4.4 Ongoing monitoring and evaluation process

The terms of reference also asked the QCA to recommend a permanent monitoring and performance evaluation process that could be adopted by the Queensland Government. The recommended monitoring and performance evaluation process and institutional arrangements to support it are set out in Chapter 17.

The recommended process incorporates many of the elements of the performance assessment framework used in this inquiry. The process considers linkages with existing Queensland Government budgetary and other policy processes, policy appraisal and evaluation requirements, and institutions.

1.5 Conduct of this inquiry

Given the broad subject matter of the inquiry the QCA has sought to provide all interested stakeholders with a range of opportunities to contribute.

An Issues Paper and Draft Catalogue of Industry Assistance Measures were released for consultation in April and September 2014 respectively, and the Interim Report on the Performance Assessment Framework was sent to the Government on 28 August 2014 and published on our website.

On 5 June 2015, we released a Draft Report to provide stakeholders with an opportunity to comment on the QCA's preliminary findings and recommendations. This Final Report consolidates the findings of our inquiry.

The QCA has engaged extensively with stakeholders through meetings with all 16 government departments that administer industry assistance measures, peak representative bodies and private sector stakeholders. We have also held workshops for government departments and consulted with a significant number of government bodies and statutory authorities such as the Office of the Chief Scientist, Tourism and Events Queensland, Office of Commonwealth Games and the Australian Productivity Commission. We have received 44 public submissions, which we have considered in preparing this report and, where appropriate, have referred to in our discussion and analysis.

A list of submissions and consultations is provided at Appendix B. We would like to thank all organisations and individuals who have contributed to this inquiry.

1.6 Structure of this report

The structure of Volume I of this report is as follows:

- Chapter 2 discusses trends in industry assistance.
- Chapter 3 discusses the role of government in providing industry assistance, including when assistance should, and should not, be provided and the implications of government intervention.
- Chapter 4 sets out our performance assessment framework, as introduced in our Interim Report.
- Chapter 5 provides a general overview of industry assistance measures provided by the Queensland Government.
- Chapter 6 presents our high-level findings and overall assessment of the current stock of industry assistance measures, including the economic impacts of these measures based on computable general equilibrium modelling results.
- Chapters 7 to 16 present our evaluation of assistance measures by form of assistance, and by recipient industries.
- Chapter 17 sets out recommended next steps, including matters deserving further review, as well as a proposed framework for the ongoing monitoring and evaluation of industry assistance.

Volume II of this report contains the Catalogue of Industry Assistance Measures and a number of appendices providing more detailed information on matters raised in the report.

2 TRENDS IN INDUSTRY POLICY AND ASSISTANCE

Key points

- Governments have long implemented industry policies (and assistance), with approaches varying across governments and over time.
- For the greater part of the 20th century, the Australian Government adopted what could be best categorised as a 'protection all round' approach to industry policy. High tariffs provided targeted industries with protection from import competition.
- A range of domestic economic reforms and the opening of the Australian economy to greater levels of international competition, including a substantial phased reduction of tariffs, have occurred since the mid-1970s.
- Overall, industry assistance is substantially less now than prior to the 1970s. However, as assistance through tariffs and domestic pricing schemes has been phased down, the significance of other assistance mechanisms — such as budgetary outlays, tax concessions, restrictions on competition, government purchasing arrangements and guarantees — has increased.
- Assistance is now more focused on fostering research, development and innovation, as well as other areas regarded as exhibiting market failures, such as programs to target environmental problems.
- Historically, the Queensland Government has provided industry assistance to the agricultural and resource sectors to support the development of these industries throughout the state.
- The Queensland Government has also used industry assistance to attract major investments and events to the state.
- In recent years, Queensland governments have implemented various assistance measures as part of broader industry policies and plans, including the 'Smart State' and 'Four Pillar Economy' strategies.
- Information on how Queensland Government assistance has changed over time is limited. However, estimates suggest that budgetary assistance has increased by around 70 per cent since 1994–95.

2.1 Background

Industry assistance has been used by governments for hundreds of years. Records show that during the reign of Henry VII (1457–1509) industry policies were used to support the textile industry, including tariffs and duties to hinder exports of unprocessed wool, fiscal incentives for the creation of new wool-processing firms and programs to attract specialised craftsmen and business people from abroad (Reinert 2007).

Despite various incarnations and local variations, the ways in which governments develop and implement industry assistance policies can be characterised into four general approaches:

- *the interventionist approach* — a targeted approach to industry policy which results in the direct selection of industries or firms that would benefit from government assistance

(Warwick 2013). Tariffs and production subsidies, as well as other forms of assistance, are implemented to stimulate certain sectors of the economy

- *the market driven (or laissez-faire) approach* — considers that there is no need for an 'active' industry policy. Instead, the approach view markets, rather than government, to be best placed to select industries and firms so as to promote the efficient allocation of resources. The key role of government is to ensure the best possible environment for business when regulating product, labour and capital markets
- *the market failure (or neo-classical) approach* — considers that there is a role for government intervention when markets are characterised by some distortions or because they are incomplete (Pack & Saggi 2006). For instance, the presence of knowledge spillovers may warrant government intervention to better allocate resources (further discussed in Chapter 3)
- *the systems approach* – considers that government action is needed to support and co-ordinate market and non-market players to harness innovation opportunities. For instance, where improved information sharing or coordination of decision-making can improve industry performance.

In practice, governments have tended to choose a combination of approaches, which have varied across governments and over time.

2.2 Industry assistance in Australia

2.2.1 Industry protection policies

Following federation in 1901, the Australian Government introduced an array of trade protection policies aimed to assist local industry. Trade protection policies were supplemented by the creation of statutory government monopolies to provide utility and other services.

By the 1950s, Australia's tariffs on imports were high and disparate. Trade protection policies afforded local producers protection from competition, which enabled them to increase the prices of their goods on the Australian market, as well as potentially increasing the volume of their sales (PC 2000b).

Until the 1970s, the costs of such policies were masked by the strong performance of Australia's agricultural and mining industries. However, the high costs of trade barriers were becoming increasingly apparent.

First, tariffs result in higher input costs for other (non-targeted) local businesses, reducing their competitiveness, as well as imposing higher prices for consumers, who then have less money to spend on other goods and services (PC 2014c). Trade-restrictive policies allow targeted industries to obtain higher returns directing resources, such as employment and investment, into the protected industry, when they could potentially yield more wealth if utilised elsewhere in the economy (Plunkett *et al.* 1992). As such, industry assistance generally hinders the development of existing and new industries that are not assisted by tariffs.

By limiting the development of non-protected industries, tariffs reduce a country's opportunities to exploit its comparative advantages in production. The higher the tariffs and the larger the disparities in levels of assistance, the greater the potential for resources to be misallocated and diverted to less productive activities, raising the welfare costs of assistance (PC 2003c).

Second, tariffs distort a firm's operational incentives. For instance, a firm's expectations of the availability of government support may influence the attention paid to improving business operations and the firm's incentives to be innovative and productive.

Third, government intervention can encourage rent-seeking behaviour[3], which may lead to economic gains for a particular industry without providing benefits back to the economy as a whole (Freedman & Stonecash 1997).

The result of these policies was stark. While at the turn of the 20th century Australia had the highest per capita income in the world, driven by abundant natural resources and robust institutions, by 1950 Australia had fallen to fifth. During the 1970s and 1980s Australia slid to 24th in terms of per capita income (World Bank 2014). While external developments, such as the oil price shocks in the 1970s contributed to the deterioration, there was a broad-based recognition that trade barriers, inefficient infrastructure, excessive regulation and inflexible capital and labour markets were responsible for much of the economic malaise. There was also recognition that continuing to sustain a protectionist regime would not produce a strong and independent manufacturing sector (Freedman & Stonecash 1997).

2.2.2 Opening up the Australian economy

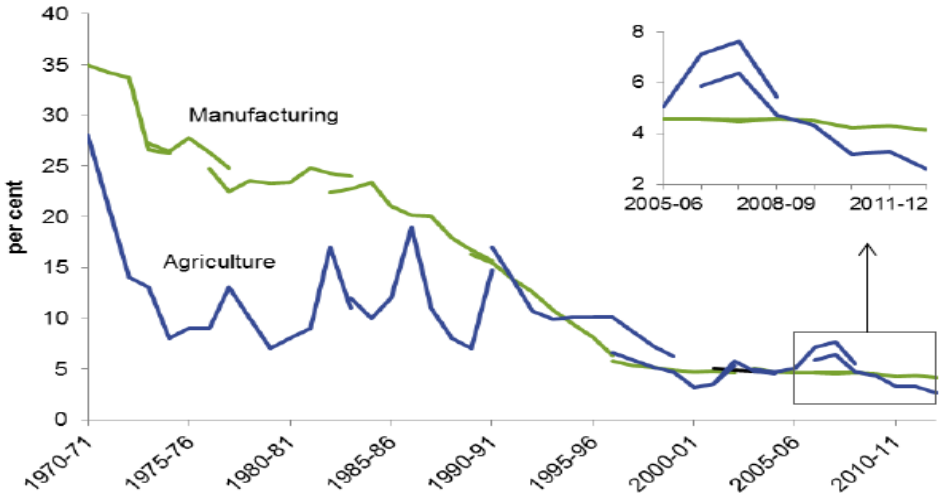
Since the early 1970s, there has been a substantial phased reduction of tariffs in Australia. Tariff levels have been reduced, through both a series of across-the-board reductions and specific industry and commodity reductions. Declining tariffs have resulted in significant reductions in the effective rate of assistance[4] provided to import-competing industries.

The manufacturing sector, for example, was previously the most highly assisted industry in the Australian economy (Plunkett *et al.* 1992). The estimated effective rate of assistance for manufacturing was around 35 per cent in 1970–71 and has since gradually declined to around five per cent, as illustrated in the figure below.

[3] Rent-seeking behaviour refers to activities undertaken to increase an individual's wealth without generating benefits for society as a whole.

[4] The effective rate of assistance measures the net subsidy equivalent of combined assistance to a particular industry in proportion to that industry's unassisted net output (value added). It provides an indication of the extent to which assistance to an industry enables it to attract and hold economic resources relative to other sectors (PC 2014c, p. 70).

Figure 2.1 Effective rates of Australian Government assistance to manufacturing and agriculture



Source: PC (2014c, p.76).

This decline in assistance is largely due to tariff reductions (Box 2.1).

Box 2.1 Reduction in assistance provided to manufacturing in Australia since the 1970s

Since the 1970s various government decisions have affected the level of assistance provided to the manufacturing sector. Some of these include:

- a 25 per cent across-the-board tariff reduction in July 1973
- the introduction of quota assistance in 1974 and its incorporation into sectoral assistance policies
- widespread tariff reductions, introduced in January 1977, following the devaluation of the Australian dollar and multilateral trade negotiations
- the increased use of export incentives and bounties as forms of assistance during 1977–78
- the abolition, from the late 1980s, of tariff quotas
- the program of phased reductions in nominal tariff rates for most imports (excluding the passenger motor vehicle, and textile, clothing and footwear sectors) announced in the May 1988 Economic Statement
- the continuation of the general tariff reduction program announced in March 1991 (general tariffs were to be phased down to 5 per cent, tariffs on passenger motor vehicles per cent to 15 per cent (from 35 per cent) and tariffs on textiles, clothing and footwear to a maximum rate of 25 per cent).

Recent reductions in assistance have been associated mainly with cuts in tariff assistance to the textile, clothing and footwear, and passenger motor vehicle industries.

Sources: IC (1995a); PC (2000b); and PC (2014c).

Domestic economic reforms and the opening of the Australian economy to greater levels of international competition have also been ongoing policy themes (see Box 2.2).

Box 2.2 Economic reform in Australia

Australia's program of economic reform from the 1980s has included extensive policy changes in the following areas.

Capital markets — the Australian dollar was floated in March 1983, foreign exchange controls and capital rationing (through interest rate controls) were removed progressively from the early 1980s and foreign-owned banks were allowed to compete — initially for corporate customers and then, in the 1990s, to act as deposit-taking institutions.

Trade reforms — reductions in tariff assistance (that began in 1973) and the abolition of quantitative import controls — mainly in the automotive, whitegoods, and textile, clothing and footwear industries — gathered pace from the mid-1980s.

Infrastructure services — partial deregulation and restructuring of airlines, coastal shipping, telecommunications and ports occurred from the late 1980s. Across-the-board commercialisation, corporatisation and privatisation initiatives for government business enterprises were progressively implemented from around the same time.

Government services — competitive tendering and contracting out, performance-based funding and user charges were introduced in the late 1980s and extended in scope during the 1990s; administrative reforms (for example, financial management and program budgeting) were introduced to human service provision in health, education and community services in the early 1990s.

Labour market policies — the Prices and Incomes Accord operated from 1983 to 1996. Award restructuring and simplification, and the shift from centralised wage fixing to enterprise bargaining, began in the late 1980s.

Macroeconomic policy — inflation targeting was introduced in 1993. From the mid-1980s fiscal policy targeted higher national saving (and a lower current account deficit) and, from the mid-1990s, concentrated on reducing government debt, primarily financed through asset sales (privatisation).

Taxation reform — capital gains tax and the dividend imputation system were introduced in 1985 and 1987 respectively. The company tax rate has been lowered progressively from the late 1980s. A broad-based consumption tax (Goods and Services Tax) was implemented in 2000, replacing the narrow wholesale sales tax system and a range of state-based duties. Income tax rates were lowered at the same time.

National competition policy – in 1995, wide ranging reforms to essential services (including energy and water), government-owned businesses and anti-competitive regulation commenced through a coordinated national program.

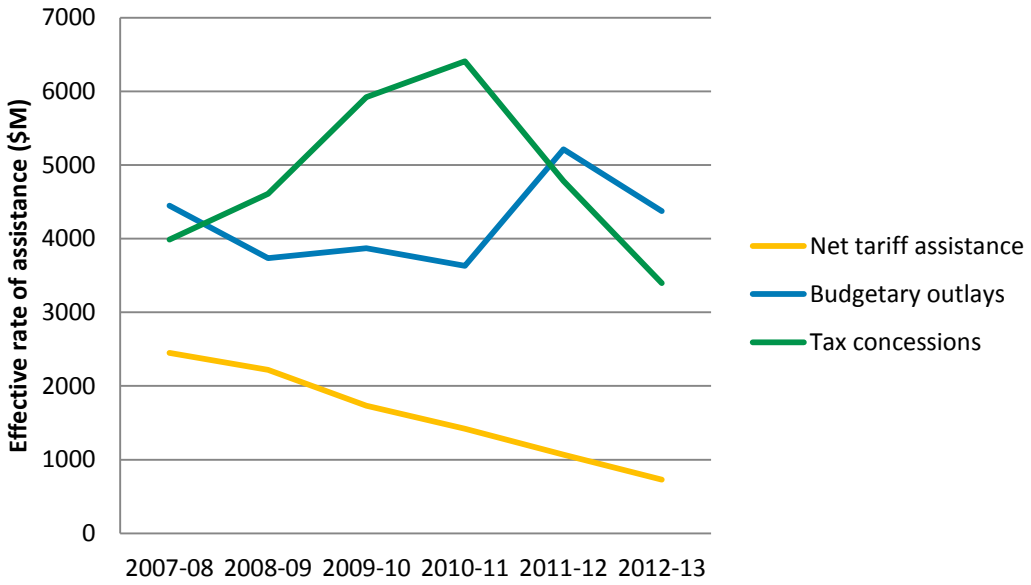
Source: PC (2005a).

2.2.3 A change in the way governments provide assistance

While most of the high protection barriers for specific industries have been reduced or removed, moderate tariffs remain for a number of key industries (Parliament Library 2010). For instance, the levels and dispersion of tariffs protecting the textiles, clothing and footwear, and passenger motor vehicle industries have been reduced substantially; however, these industries continue to receive the highest measured effective rates of assistance due to tariff assistance on its outputs (PC 2014c).

Accompanying the decline in trade protection, there has been a shift in policy focus away from selective industry assistance. Industry policy has increasingly focused on providing the best environment for business to operate. However, while there has been a shift away from trade protection policies, budgetary assistance and tax concessions to industry have become more common (PC 2014c). The level of assistance provided by budgetary outlays and tax concessions now far outweigh the assistance provided to industry through tariffs (Figure 2.2).

Figure 2.2 Level of Australian Government assistance provided through budgetary outlays, tax concessions and tariffs



Source: PC (2014c).

More recently, assistance has been focused on fostering research and development, innovation and technological change (see Section 2.2.4), as well as on specific areas regarded as exhibiting market failures, such as activities with environmental impacts. For example, total business innovation program funding has more than doubled in nominal terms since 1996–97 (PC 2014c). Innovation support programs accounted for 38 per cent of total Australian Government budgetary assistance to all industries in 2012–13 (PC 2014c). Examples of government environmental programs are those related to carbon emissions reduction, renewable energy and energy conservation.

Assistance is also provided to industry through measures such as marketing arrangements and restrictions on competition, government purchasing arrangements, and guarantees. The level of assistance provided by these interventions is generally less transparent than the level of assistance provided through budgetary outlays and tariffs. Marketing arrangements and restrictions on competition generally provide indirect assistance to industry, making the impacts on industry more difficult to measure.

2.2.4 A shift in emphasis to innovation policy

From the 1980s, governments began to shift emphasis from traditional industry assistance toward improving a country's innovative performance, with an emphasis on the development of national innovation systems. Innovation involves the creation and adoption of a new or significantly improved good or service, or a new organisational approach in business practices, workplace organisations or external relations (Department of Industry 2014).

Internationally, there is considerable focus on boosting innovation performance through:

- coordinating business, universities and research organisations in the innovation system
- ensuring intellectual property arrangements and other regulations facilitate collaboration and commercialisation of ideas
- promoting tax and research funding mechanisms to provide appropriate incentives to innovate
- supporting human capital development and management capabilities.

Most OECD countries have a broad suite of innovation policies, which include funding mechanisms for building innovation capability at the enterprise level. For example, the European Union promotes innovation by:

- funding Horizon 2020, an EUR 80 billion program for research and innovation from 2014–2020
- leveraging public procurement and public sector activities to support innovation
- promoting 'smart specialisation' for small and medium enterprises in global markets and value chains
- improving regulatory conditions for innovation with measures for entrepreneurship, access to finance, clusters, intellectual property and standards.

Innovation has become a prominent feature of industry policy in most advanced economies, with the objective of achieving competitive advantage in key enabling technologies and capabilities. As well as direct support for research and technology development, there has been an increasing emphasis on building enterprise 'absorptive capacity'. For example, the United States and United Kingdom have established small business innovation research programs that seek to improve private sector commercialisation of innovations derived from R&D funding. In the United States, federal agencies with R&D budgets that exceed $100 million must allocate 2.8 per cent of their R&D budget for awards to small business (US Government 2015). In the United Kingdom, the program is available to government departments to assist them in solving 'tough' public sector challenges, but there is no set level of expenditure (Technology Strategy Board 2015).

A similar change of focus for industry policy has occurred in Australia:

> *We have known for several generations that innovation pre-eminently determines our prosperity. Yet innovation only began its prominence as a focus for Australian policy making in the 1980s. In addition to comprehensive policies to wean Australian industry off ad hoc production subsidies and trade protection, the Australian Government developed a range of policies to assist research and development and improve connections between researchers and business. These policies included the 150 percent R&D Tax Concession, Rural Research and Development Corporations and Cooperative Research Centres. (Cutler 2008, p. vii)*

The heightened focus on innovation policy and performance can be seen in many Australian and state government reports and policy initiatives, including the annual report series *Australian Innovation System Report* (Office of the Chief Economist 2014); the former Australian Government's *Powering Ideas innovation* agenda (Australian Government 2009) including the framework of principles for innovation policies agreed between Australian governments; the present Australian Government's *Industry Innovation and Competitiveness Agenda* (Australian Government 2014b) with its Entrepreneurs Infrastructure Program and five Industry Growth

Centres; and, in Queensland, the recently announced *Advance Queensland* initiatives (see chapter 13).

Notwithstanding this, the vast bulk of Queensland industry assistance measures identified as part of this inquiry do not relate to innovation policies.

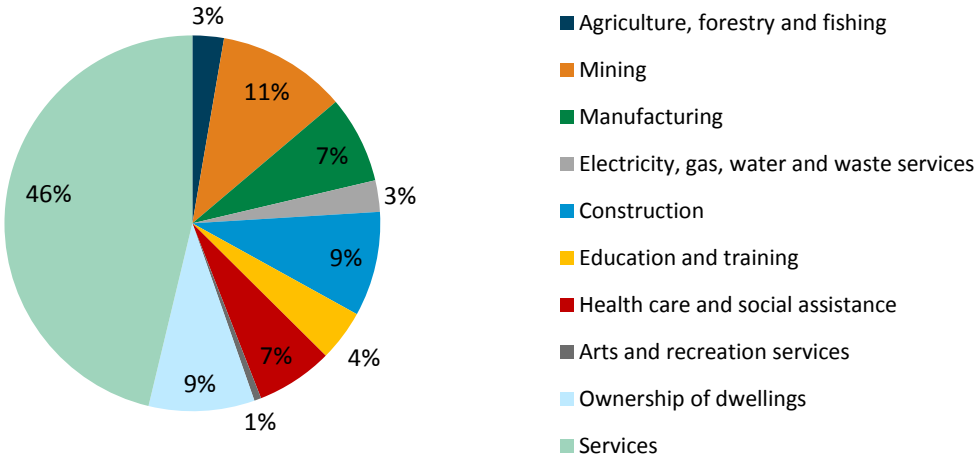
2.3 Queensland industry

Queensland has the third largest state economy in Australia, accounting for 18.9 per cent of the country's gross domestic product and 20.1 per cent of the nation's population (ABS 2014a and Queensland Government 2015a). Over the past two decades, Queensland's economy has recorded strong economic growth which has generally exceeded the national average. Queensland's economic growth averaged 4.4 per cent between 1985–86 and 2011–12, while the average growth rate for the rest of Australia was 3.1 per cent (QCoA 2013).

The services, mining, construction and manufacturing industries all provide a significant proportion of industry output for the economy (Figure 2.3). International and interstate tourism also contributes to Queensland's economy.[5]

Queensland has an extensive services industry, which contributes the greatest proportion of output. The services industry comprises many smaller sectors, including: wholesale and retail trade; accommodation and food services; finance and insurance services; transport; telecommunications; real estate services; professional, scientific and technical services; administrative and supportive services; and public administration and safety.

Figure 2.3 Queensland economic output by industry (2011)



Source: QCoA (2013).

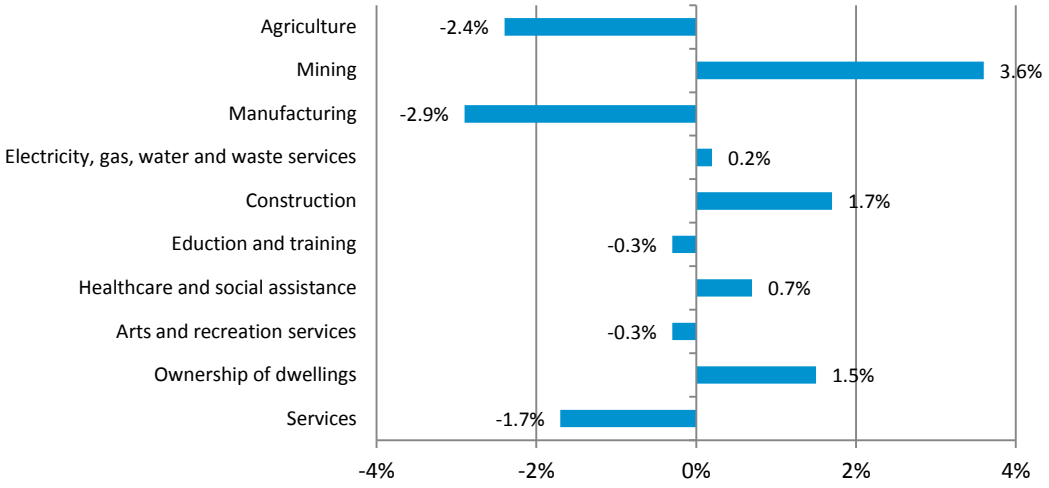
The majority of economic activity is generated from south east Queensland (Brisbane, Gold Coast and Sunshine Coast), with over 60 per cent of Queensland's output coming from this region in 2010–11 (QCoA 2013).

[5] Although tourism is not identified as a separate industry in the standard industry classification (ANZSIC) used by the Australian Bureau of Statistics (ABS), the ABS estimates tourism activity in the Tourism Satellite Accounts. Tourism is considered to be a bundle of goods and services produced by many industries (consumed by tourists for a specific purpose).

From 2001–02 to 2011–12, the combination of high commodity prices and a strong Australian dollar significantly affected Queensland industry.

- Mining investment (capital expenditure) in Queensland increased to $25.7 billion, some 14 times higher than in 2001–02.
- Construction grew strongly, driven by growth in engineering construction to facilitate the expansion of the mining industry.
- The agriculture, forestry and fishing industry's contribution to economic growth has been in decline. This continues a long-term trend with the agriculture, forestry and fishing industry share declining from 6.4 per cent in 1989–90 to 2.7 per cent in 2011–12 (QCoA 2013).
- The tourism industry, which faced declining international competitiveness as a result of the high dollar[6], became a smaller proportion of the Queensland economy, declining from 3.9 per cent of Queensland gross value added to 3.7 per cent from 2006–07 to 2012–13 (TRA 2014).

Figure 2.4 Change in industry share of Queensland's output (2001–02 to 2011–12)



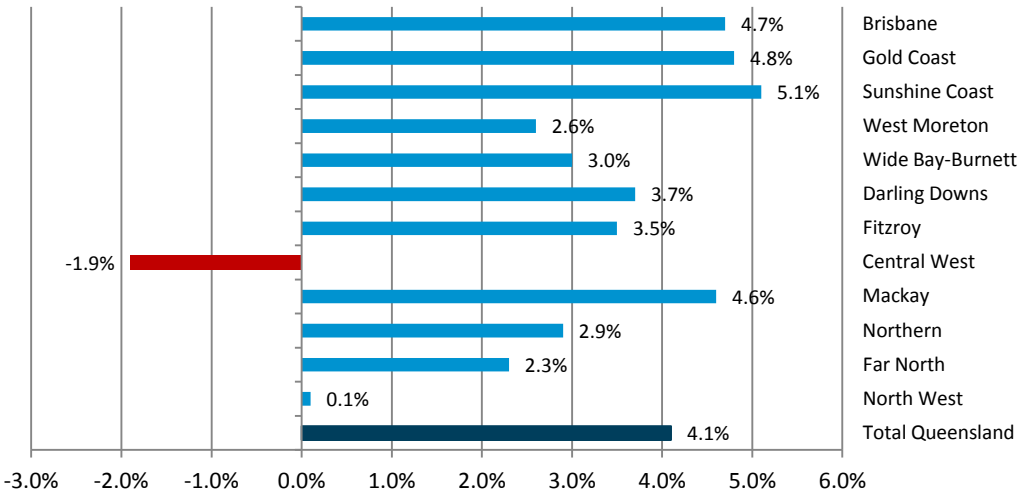
Source: QCoA (2013).

Recent industry performance has resulted in some regional adjustment as more resources were diverted to those industries experiencing higher returns, both in terms of higher wages and returns to capital (QCoA 2013).

For instance, a number of regional economies have benefitted from the mining boom — Mackay and Fitzroy (where mining accounted for 52 per cent and 33 per cent of regional output respectively in 2010–11) recorded average annual growth in excess of 3.5 per cent over the 10 years to 2010–11 (Figure 2.5). However, regions dependent upon agricultural activity have not experienced the same level of growth as the mining regions.

[6] Travel to Queensland by foreigners became more expensive relative to tourist destinations overseas and the purchasing power of Australians travelling overseas rose.

Figure 2.5 Average annual growth in gross regional product (2000–01 to 2010–11)



Source: QCoA(2013).

Recent falls in commodity prices and the value of the Australian dollar are likely to have implications for the composition of industry in Queensland, as the economy restructures and directs resources to higher returns.

2.4 Industry assistance in Queensland

2.4.1 History of assistance in Queensland

Although the Australian Government was the major source of industry assistance last century, the Queensland Government also provided assistance to support industry development. In addition to budgetary assistance, the Queensland Government provided benefits to local producers through restrictions on competition, local industry participation policies, subsidised public services and infrastructure.

State assistance has generally been more firm- and project-specific than national assistance, with much assistance being directed toward particular businesses seeking assistance.

Historically, the agriculture industry was the main focus of industry policy and assistance in Queensland. The provision of assistance to the agricultural sector dates back to 1887 — with the establishment of the Department of Agriculture — to encourage the development of agriculture throughout the state (Box 2.3). As agriculture became established across Queensland, agricultural assistance increasingly focused on industry marketing boards and the regulation of domestic prices for some agricultural commodities.

As the Australian economy became more open to trade, many domestic price supports for agricultural commodities were removed by the Queensland Government. Agricultural assistance was redirected toward research and development and addressing environmental externalities and biosecurity risks.

In the 1960s, a resources boom shifted the Queensland Government's industry assistance focus to the mining industry. This largely consisted of regulatory arrangements and budgetary outlays designed to attract and facilitate resource investment in Queensland. In exchange for certain commitments, the government provided investors with a range of concessions such as changes or exemptions to planning laws, tax and fee concessions and funding for infrastructure.

Box 2.3 History of assistance to the sugar industry in Queensland

The Queensland Government has supported the sugar industry through various policies complemented by Australian Government assistance.

- The Department of Agriculture was established in 1887 to encourage the infant cropping industries to produce certain food crops.
- In the 1890s, the Department of Agriculture assisted the sugar industry and conducted expeditions to Papua New Guinea to collect sugarcane types suitable for cultivation in Queensland.
- The Bureau of Sugar Experiment Stations was established in 1901.
- The Queensland Government enacted the *Sugar Acquisition Act 1915* to regulate domestic prices for sugar. Domestic sugar prices were fixed and acquisition and marketing powers were established in Queensland.
- In 1923, the Sugar Board was established to manage the acquisition and marketing of sugar in Queensland. The Queensland Government acquired all raw sugar produced in Queensland through the Sugar Board and agreed to purchase all raw sugar produced in New South Wales. The Sugar Board also agreed to make sugar available for domestic use at an administered price. In return, the Australian Government agreed to underpin the domestic price by placing an embargo on imports of sugar, golden syrup and treacle.
- In 1937, strict production controls were implemented for the sugar industry. A system of land assignment was used to control the level and location of sugar cane production. Growers were required to deliver cane to designated mills, and mills were required to accept all cane grown on assigned land in their mill area.
- In the 1950s, an Export Sugar Rebate Scheme was introduced as part of the Commonwealth-Queensland Sugar Agreement. The rebate applied to sugar used by exporters of certain products containing sugar when the administered domestic price of sugar exceeded the world sugar price.
- In 1986, a joint Commonwealth/Queensland Adjustment package was applied for three years with total funding of $100 million.
- In 1989, the embargo on imports of sugar was abolished and the Australian Government provided assistance in the form of tariffs on imports of raw and refined sugar.
- The Queensland Sugar Corporation (QSC) was formed in 1991 (as a result of the *Sugar Industry Act 1991*), absorbing the marketing and some administrative functions of the Sugar Board. The QSC was replaced by the Queensland Sugar Limited (QSL) in 2000.
- In 2000, a Federal Sugar Industry Assistance Package of up to $83 million was provided for cane growers.
- In 2002, a joint Commonwealth Queensland Sugar Industry Reform Program provided $150 million in assistance. In 2004, the Sugar Industry Reform Program introduced a range of measures with up to $444 million in funding.
- The Queensland sugar industry was deregulated in 2006, with the removal of statutory restrictions on sugar marketing. This was accompanied by adjustment assistance, including the leasing of port land at concessional rates.

Source: IC (1992b); DAFF (2014d); Australian Government the Treasury (2015a).

For example, the government provided technical and financial assistance to facilitate oil exploration and to attract further investment by private enterprises. This helped lead to the discovery of the Moonie oil field in 1961, which became Australia's first commercial oil field.

A number of Agreement Acts[7] that were introduced in the 1960s (and are still in place today) to facilitate specific investments in Queensland's resource sector include:

- Alcan Queensland Pty. Limited Agreement Act 1965
- Amoco Australia Pty. Limited Agreement Act 1961
- Ampol Refineries Limited Agreement Act 1964
- Central Queensland Coal Associates Agreement Act 1968.

The Queensland Government has frequently used selective industry assistance to attract major investments and events. It established Events Queensland in 1989 to attract major events to Queensland (this role is now undertaken by Tourism and Events Queensland). This has often involved competitive bidding wars between states and territories to attract industry and events to their respective jurisdictions (further discussed in Chapter 8).

Queensland has also provided assistance for industry to attract various sporting events to the state such as the Commonwealth Games in Brisbane in 1982. This is the largest major sporting event held in Queensland to date. The Gold Coast won the bid to host the Commonwealth Games in 2018, for which the Government committed various forms of assistance to support the event.

Considerable assistance has also been provided through investment attraction, whereby state governments have identified particular industries in which they consider they have, or would like to have, a comparative advantage and implement programs to target these specific industries (IC 1996c). Industry attraction packages, which are discrete and selective in nature, are also frequently associated with a lack of disclosure to the public. Previous examples of industry attraction packages in Queensland include:

- In 1999, the Queensland Government gave Virgin Blue a largely undisclosed incentive package to locate its headquarters in Brisbane. This investment attraction package included tax concessions worth several million dollars, training for Virgin Blue staff, marketing support and a contribution to relocation and set up costs.[8]
- From 1999–2008, IBM received three grants totalling just under $5 million through the (since closed) Queensland Investment Incentive Scheme.
- In 2001, the Queensland and Australian governments provided a support package for the construction of the Comalco Alumina Refinery in Gladstone. The Queensland Government provided $150 million in assistance through the provision of state-owned port facilities, road and rail infrastructure associated with the Comalco Alumina Refinery (Queensland Government 2003).

[7] Agreement Acts are negotiated agreements between the Queensland Government and resource companies, which have legislative effect and override any inconsistent provisions under Queensland legislation.

[8] In May 2015, Virgin Australia announced that it had agreed to relocate around 35 employees from Brisbane to Sydney for the stand-alone Velocity Frequent Flyer business. As part of the Jobs Action Plan, Virgin will receive a $5000 payroll tax rebate for each new job it creates or brings into New South Wales.

- In 2003–04, the Queensland Government gave $4 million to Capral Aluminium Limited to establish an aluminium extrusion plant, $600,000 to Alliance Airlines to establish a regional aviation service and $435,000 to Poolrite Equipment Limited to relocate plant to Brisbane.
- In 2014, the Queensland Government provided an undisclosed attraction package to secure a deal with Walt Disney Studios to film *Pirates of the Caribbean 5* on the Gold Coast and in Port Douglas.
- In 2014, the Queensland Government committed $320,000 in training funding assistance to help set up a state-of-the-art call centre in Townsville (Queensland Government 2014a).

The Queensland Government has also implemented various assistance measures as part of broader industry policies and plans.

In 2005, the Queensland Government released the 'Smart State' strategy. This strategy focused on 'providing economic fundamentals' with key investments in innovation, human capital and research and development (Queensland Government 2003). As part of this initiative, the Government invested strongly in education and training reforms and research and development infrastructure to broaden and diversify Queensland's industry base (Queensland Government 2008a). The Smart State initiative emphasised the Government's focus on industry policies that fostered technological progress, innovation and research and development.

Like innovation, environmental programs also became a focus for industry policy. In 2008, the Government released the Toward Q2: Tomorrow's Queensland Plan which emphasised the implementation of innovation and green programs. This plan included the specific target to cut Queensland's carbon footprint by one third by 2020.

In 2012, the Queensland Government stated its renewed focus on developing Queensland's 'four pillar' industries — tourism, agriculture, resources and construction. The four pillar industries directly contribute at least one quarter of the state's economic output, although this contribution is a far higher in some regional economies (Queensland Government 2014b). A number of industry plans were released to support this strategy, including Queensland's Agriculture Strategy and Destination Q — The 20-Year Plan for Queensland Tourism. These plans included industry specific targets, such as doubling agricultural production by 2040 and doubling overnight visitor expenditure by 2020.

Although the Queensland Government continues to assist specific projects and industries, there has been a change in focus toward providing broader, industry-wide assistance. This change in approach has seen the Queensland Government become more focused on providing a better business environment for industry:

> *The Queensland Government is committed to providing certainty for businesses and investors, reducing the cost of doing business and creating the right conditions for industry to flourish. (Queensland Government 2014b)*

2.4.2 Estimates of industry assistance in Queensland

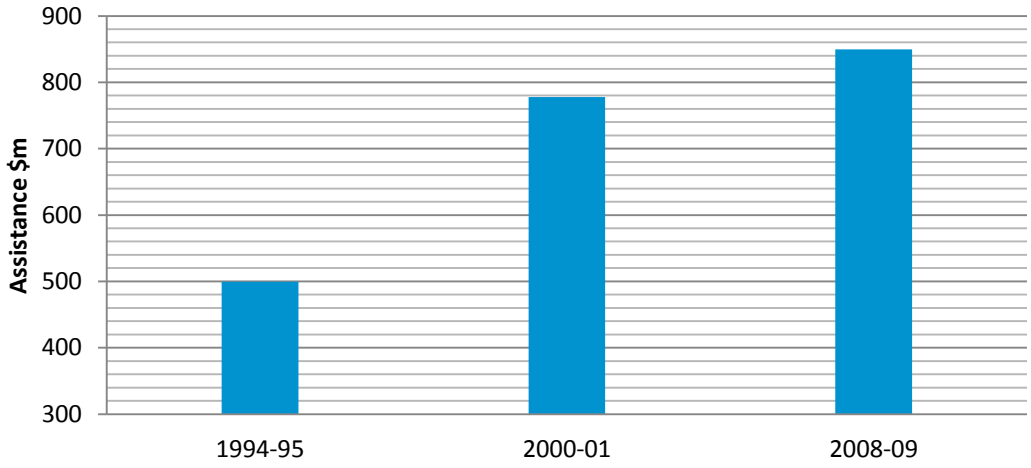
As part of this inquiry, the QCA sought to identify the level of industry assistance provided by the Queensland Government from 2013–14 to 2017–18 (see Chapter 5 and Appendix C). However, there is very limited information available on how the level of industry assistance provided by the Queensland Government has changed over time.

The Productivity Commission estimated the amount of assistance provided by state and territory governments in 1996, 2002 and 2011 (IC 1996c; PC 2002b; PC 2011d). These estimates for state government assistance should be viewed as approximate indicators of the orders of magnitude involved rather than precise estimates due to deficiencies in data sources. They do

not measure all forms of assistance, such as the underpricing of government-owned natural resources and infrastructure.

The Productivity Commission's estimates suggest that budgetary assistance provided by the Queensland Government increased by around 70 per cent between 1994–95 and 2008–09 (Figure 2.6).

Figure 2.6 Budgetary assistance provided by the Queensland Government

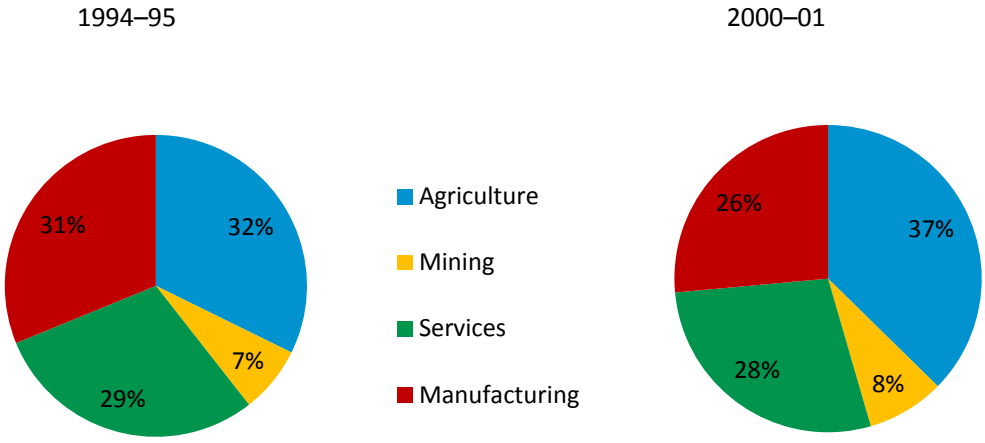


Note: Budgetary assistance is provided in 2008–09 prices.

Sources: IC (1996c); PC (2002b); PC (2011d); and ABS (2014b).

The Productivity Commission found that a large proportion of Queensland Government budgetary assistance was directed towards the agriculture and manufacturing sectors (see Figure 2.7). The services sector also received a large proportion of assistance reflecting the significance and size of the sector within the Queensland economy. However, mining generally does not receive as much state assistance as the other three sectors, which is largely due to the immobile nature of the resources.

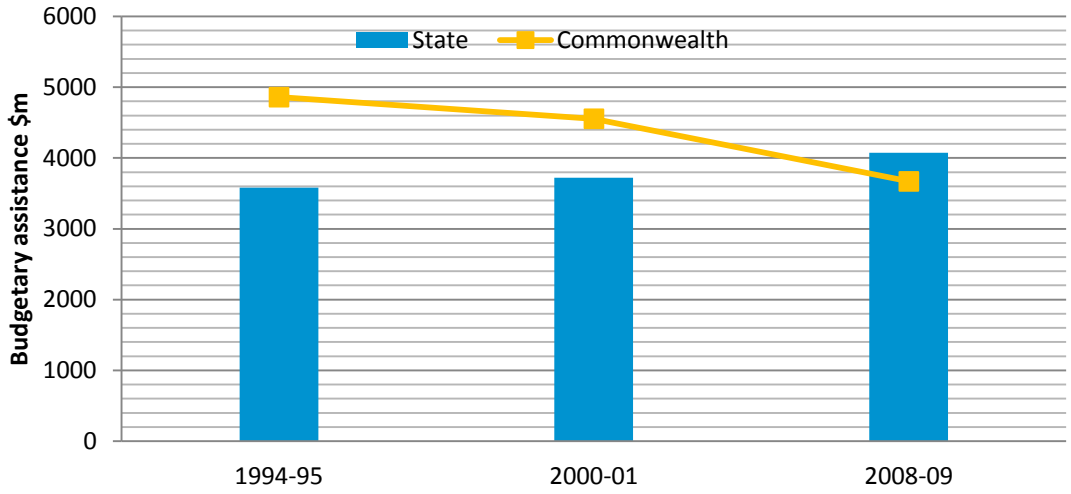
Figure 2.7 Queensland Government assistance by sector (1994–95 and 2000–01)



Sources: IC (1996c); and PC (2002b).

Estimates by the Productivity Commission suggest that while Australian Government budgetary assistance has been declining since the 1990s, industry assistance provided by the state and territory governments has increased (Figure 2.8).

Figure 2.8 Budget assistance provided by Australian and state governments



Note: This figure does not include other forms of industry assistance, such as assistance from tariffs. Budgetary assistance is provided in 2008-09 prices.

Source: IC (1996c); PC (2002b); PC (2011d); and ABS (2014b).

Although the estimates for state government industry assistance can only be viewed as indicative, they suggest that the level of budgetary assistance provided by the Queensland Government has risen significantly over the last two decades.

3 INDUSTRY ASSISTANCE: THE ROLE OF GOVERNMENT

Key points

- State governments can play a critical role in facilitating economic growth by providing the right taxation, labour market and utility sector frameworks, best practice regulation, appropriate infrastructure and efficient public services.
- However, the case for providing selective industry assistance is often weak. Industry assistance is generally only suitable to address a narrow set of problems (primarily where markets have failed to allocate resources efficiently). Providing assistance outside of these circumstances will most likely lead to a net loss for society.
- Industry assistance is more likely to be efficient when it targets market failures, for example, where positive spillovers lead to the underprovision of research and development, or where information problems prevent socially beneficial transactions from occurring.
- Even where there is a sound rationale for industry assistance, it must also be implemented through measures that meet objectives without giving rise to costs that exceed benefits.
- Using industry assistance as a broad based policy tool to increase economic growth and employment is unlikely to be effective. Although *increasing* economic activity generally enhances welfare, it does not follow that governments *subsidising* economic activity will also be beneficial.
- Adjustment assistance can potentially play a valuable role in facilitating change and easing the impact of adjustment costs. However, it needs to be justified, well targeted and facilitate rather than impede change.
- Equity objectives are more effectively and efficiently addressed through the general welfare system rather than through industry assistance, as this can directly target those in need without unduly introducing inefficiencies in the market.

If, when and how governments should provide assistance to industry are central issues for this inquiry. The starting point for such an assessment is to determine whether there is a policy problem that is amenable to government action, and whether such action could reasonably be expected to result in an overall gain to the community. This chapter outlines the main rationales for government to assist industry. It does not seek to be exhaustive, but seeks to discuss the merits of the main rationales for intervention.

The key rationales (see Section 3.2) focus on addressing the adverse effects from the failure of markets to function efficiently. Industry assistance measures based on this set of rationales have the greatest scope to deliver a net benefit for the Queensland economy. Other commonly cited rationales, and their various merits, are discussed in Section 3.3.

3.1 Basis for governments to provide industry assistance

Governments provide industry assistance for a wide range of reasons, for example, to raise the standard of living of its citizens, increase employment, investment or productivity, and improve health, safety or environmental outcomes. Whatever the mix of goals, the prerequisite for achieving them is the existence of a policy problem that can be resolved through government action.

The aim of all government policy and regulation is to improve the welfare of the community. Economists evaluate welfare using the concept of economic efficiency. An economically efficient outcome is attained when individuals in society maximise their utility, given the resources available in the economy (PC 2013b).[9] Achieving overall economic efficiency requires satisfaction of productive, allocative and dynamic efficiency (Box 3.1).

Box 3.1 Components of economic efficiency

Economic efficiency is about maximising the aggregate or collective wellbeing of the members of the community. There are three aspects of economic efficiency.

Productive efficiency is achieved when output is produced at minimum cost. This occurs where no more output can be produced given the resources available; that is, the economy is on its production possibility frontier.

Allocative efficiency is about ensuring that the community gets the greatest return (or utility) from its scarce resources. A country's resources can be used in many different ways. The best or 'most efficient' allocation of resources uses them in the way that contributes most to community wellbeing.

Dynamic efficiency refers to the allocation of resources over time, including allocations designed to improve economic efficiency and to generate more resources. This can mean finding better products and better ways of producing goods and services. It can arise from innovation (producing more with less) and from growth in resources such as capital and labour. Improvements in dynamic efficiency bring growth in living standards over time.

Source: PC (2013b).

Ideally, competitive markets will allocate resources to outputs most valued by people, thereby maximising economic efficiency. However, the necessary conditions that must be satisfied if markets are to achieve this result are strict and market failures may occur for a number of reasons:

- Lack of effective competition: where there is a natural monopoly, or when the market has a small number of firms that are able to restrict output and maintain prices above optimal levels.
- Externalities and spillovers: when the act of producing or consuming a good imposes costs or benefits onto others such that the private benefits or costs of an activity do not reflect the full social benefits or costs.
- Public goods: goods and/or services where consumption is non-rivalrous (i.e. consumption by one person does not affect the amount available to others) and non-excludable (i.e. people cannot be prevented from consuming the good). Producers and consumers cannot capture the full benefits of provision and payments for provision cannot be enforced. As a result, public goods are likely to be under-provided by the private sector.
- Free rider problem: occurs when goods and/or services exhibit positive externality or public good characteristics (non-excludability). Producers and consumers face a reduced incentive

[9] This is called achieving 'Pareto efficiency'. With this allocation of resources no one can be made better off without making someone else worse off, nor could the winners from a reallocation compensate the losers (Kaldor's extension of Pareto efficiency) (PC 2013b).

to provide such goods and an incentive to free ride on their provision by others. Consequently, such goods are likely to be underprovided by the private sector.

- Imperfect or asymmetric information: where one party possesses more information about the transaction than the other, or where institutional or cost barriers prevent parties to a transaction from obtaining relevant information about the characteristics of a transaction (most notably risks) and/or each other.

Regardless of the nature or extent of market failures, government intervention is appropriate only if the benefits of intervention are likely to outweigh the costs (see Chapter 4 and QCA 2014a). That is, the existence of market failure provides a necessary but not sufficient condition for government intervention. Government intervention is unlikely to be a perfect substitute for market competition — it may fail to achieve intended results, have unintended consequences and carries administration and other program costs (Box 3.2). It may also divert industry away from productive endeavours towards competing for government assistance (commonly called 'rent-seeking').

Box 3.2 Governments can fail too

Wool reserve price scheme

In response to rapidly declining wool prices in the late 1960s and early 1970s, the then Australian Government introduced a reserve price scheme for wool to protect wool growers from market fluctuations. Under the scheme, the Australian Wool Corporation (AWC) set minimum prices for different categories of wool and then used grower funds to buy wool that did not reach the prescribed price, aiming to hold it until the market improved.

Initially, the scheme appeared to 'work' and prices stabilised from 1974 to 1987. But by the late 1980s, market conditions had changed. The floor price had been set too high, and as a result, the AWC had amassed a stockpile of 4.75 million bales of wool, with an associated debt of $2.6 billion. The scheme failed because its key requirement — knowledge of how the long-run, market-clearing price related to observed prices — was unavailable to the scheme's administrators, who also faced systematic incentives to overestimate the price.

In 1991, the reserve price scheme was scrapped. For a short time, wool growers were paid a government subsidy to kill their sheep. It took over 10 years to sell the last bale from the wool stockpile.

Interstate bidding wars

In 2001, the Queensland Government provided incentives for Berri Fruit Juice to relocate some of its manufacturing operations from New South Wales and South Australia to Queensland. Earlier, the South Australian Government had similarly provided incentives to Berri to retain manufacturing operations in its State, after the company had been persuaded to shift its headquarters to Victoria. Berri no longer operates in either South Australia or Queensland. Berri closed its manufacturing operations in South Australia in 2010. In 2013, Berri's parent company, Lion Co., announced it would be closing its juice manufacturing site in Queensland and transferring its production to New South Wales due to lower costs.

Ethanol Production Grants Program

The Australian Government's Ethanol Production Grants Program was introduced in 2002 to encourage the production and use of ethanol. The program provided a fuel excise rebate to domestic ethanol producers of 38.5 c/L, effectively making it excise free. In 2014, the Bureau of Resources and Energy Economics found that the:

- program distorts the allocation of resources within and across the agricultural and fuel sectors in the economy
- costs to taxpayers are significant. The key economic and environmental benefits of ethanol production (regional employment and greenhouse gas abatement) are relatively modest but come at a high to very high cost
- subsidy appears to be largely captured by the production and supply chain rather than consumers. There is no evidence to suggest that the program assists in increasing competition or putting downward pressure on retail fuel prices.

The program was abolished in the 2014–15 Budget, but replaced with an excise tax concession that will gradually decline by 12.5 c/L over the next five years. The concession will then be 26 c/L.

Source: Banks (2002); BREE (2014); Lion Co (2013); and PC (2010c).

3.2 Market failure and industry assistance

The most common rationales for providing industry assistance focus on three of the market failures discussed above, namely to correct externalities (or spillovers), the free rider problem and imperfect/asymmetric information.[10]

3.2.1 Externalities and spillovers

Spillovers occur where the actions of one entity lead to benefits (or costs) that are not reflected in price changes and some of which accrue to others.[11] For instance, although an R&D project may provide private returns to an entity that pays for it, other parties may also accrue benefits from that investment. As individuals will only consider the private benefits or costs they face, and not those accruing to third parties, there may not be a sufficient incentive for private investment in R&D projects that would make society better off. Conversely, significant spillovers may result in overprovision of an activity where costs are imposed on others e.g. pollution.

While the existence of spillovers is a well-recognised rationale for government intervention, it should not be regarded uncritically as the basis to subsidise a particular activity. For instance, firms engaging in R&D activities may be able to capture spillovers through intellectual property laws or market mechanisms (e.g. inter-firm networks). Even projects with large spillovers still proceed without assistance where the private return is sufficient to justify the investment.

As such, the strongest case for government support for research and development (R&D) is for basic scientific research that is normally carried out in universities and public laboratories. The case for supporting commercially-orientated R&D is less clear cut as it may simply subsidise R&D that would have occurred anyway:

> *CCIQ believes there is a sound policy basis for assistance measures directed at scientific research and innovation as they offer widespread application and would not have otherwise occurred (e.g. Tropical Health and Medicine research). However, CCIQ questions the policy rationale for industry-specific research assistance and assistance aimed at commercialisation of research and innovation that concentrates benefits to a particular industry or group of businesses. (CCIQ sub. 10, pp. 8–9)*

Aside from R&D activities, spillovers are commonly cited as the rationale for a range of industry assistance (see Box 3.3 on cluster, agglomeration and network effects). For instance, many environmental programs aim to address negative externalities of pollution, overuse of energy, water and other resources. Some of these programs are provided through industry assistance in the form of subsidies, tax concessions and regulatory restrictions on competition.

In summary, externalities or spillovers may provide a rationale for governments to intervene through industry assistance, but only where:

- it would change the private firm's decision (e.g. about whether to proceed with R&D, or reduce greenhouse gas emissions)

[10] Governments do provide industry assistance to address the other market failures. For instance, restrictions on competition are sometimes introduced to address potential misuse of market power (lack of effective competition).

[11] It is important to distinguish between spillovers and the normal effect that business decisions have on other firms and consumers. For instance, while a pharmaceutical company may bring a life-saving product to market, where society has 'paid' for that product through market prices, it is generally not considered a spillover. Similarly, business decisions to establish or shut down an enterprise will affect others, but it does not produce spillovers when it is the result of normal market operations.

- firms cannot internalise spillovers through legislative provisions or market-based actions.

Box 3.3 Cluster, agglomeration and network effects?

In the last two decades, governments have increasingly focused industry policy on facilitating cluster, agglomeration or network effects. Concentration (or 'clusters') of industrial activities may increase beneficial linkages between firms, by allowing firms to gain access to:

- information and know-how through increased sharing of staff, who are generally more likely to change employers if that does not require relocation
- lower coordination and cooperation costs among co-locating firms
- lower input costs due to economies of scale for input providers, coupled with lower transportation and communication costs.

Network effects occur where there is a change in benefit, or surplus, that a consumer or agent derives from a good when the number of agents consuming the same kind of good changes. Industries likely to exhibit network effects include telecommunications, credit card networks, computer hardware and software.

The theory is that firms will not take into account gains to other firms and will underinvest or invest in the wrong location. As such there can be a role for government to address these 'coordination failures'.

There is no doubt that individual firms can reap significant gains from such effects, with the most famous example being the micro-electronics cluster in Silicon Valley, and there may be some spillovers associated with it. However, the key question for government is the extent to which there is a genuine role for governments to facilitate or create such clusters through industry assistance. This is particularly important given that governments are likely to have considerable difficulties discerning which industries would benefit from clusters and, as such, there is a significant risk that they will allocate scarce resources to projects with no net benefits.

Views on cluster policy vary, with some arguing governments should merely create an environment that facilitates the creation of clusters, while some argue governments should try and identify potential clusters and support their growth. There seems to be agreement though that clusters cannot be designed from scratch and must be built instead on the basis of existing activities.

Source: WTO (2006, p. 85); and PC (2003a, p. 4.90).

3.2.2 Free rider problem

A free rider problem may exist due to positive externalities or public good characteristics (non-excludability) of certain goods and/or services.

An example would be biosecurity measures. A free rider problem may occur when farmers who undertake biosecurity operations, which aim to prevent or eradicate pest and disease outbreaks, are unable to exclude other non-contributing farmers in the area benefiting from these operations. As a result, farmers would face a reduced incentive to finance biosecurity measures and an incentive to free ride on the biosecurity efforts of other farmers.

3.2.3 Imperfect information and information asymmetries

When one party to a transaction cannot observe all the relevant characteristics of the other party (or the quality of the goods and services they provide), then this may result in:

- adverse selection — where a party cannot distinguish between categories of goods or outcomes which have different risks and so they make a choice based on the average value. For example, if an insurance company cannot distinguish good from bad risks, it will charge both a premium based on the average risk of the pool. The result is bad risks get cheaper insurance, and good risks more expensive insurance (Veljanovski 2010)
- moral hazard — where a party modifies their behaviour after a transaction to exploit an informational advantage. For example, the bank deposit guarantees provided by governments during the global financial crisis may actually encourage risky lending because financial institutions know they will always be 'bailed out'.

Many industry assistance programs are created to address information problems. For instance, a range of programs attempt to overcome capital market imperfections that may impede or prevent commercially viable transactions from occurring.[12] Other programs provide information to enable international firms to base their locational decisions on accurate assessments of the Australian market.

3.3 Other suggested rationales for providing assistance

3.3.1 Economic growth and employment

Promoting economic growth is, not surprisingly, an important objective of governments. It is a means to improve employment opportunities and raise living standards of its citizens. There is almost universal agreement that governments play a vital role in facilitating economic growth by establishing appropriate frameworks through robust economic and legal institutions (including secure property rights, rule of law and core public services). There is also substantial evidence that a government's role in providing these frameworks or 'fundamentals' is its most effective tool to facilitate growth (Acemoglu & Robinson 2012). For instance, Kasper (1996) concluded that governments have a significant role in providing:

- efficient infrastructure such as roads, ports and waste management and operating these in an efficient low-cost way (directly or by private supply)
- simple, stable and transparent institutional rules to facilitate interactions and lower the transaction costs of doing business, by establishing user-friendly laws and regulations and enforcing them convincingly and consistently
- macroeconomic stability.

However, there is far less consensus on governments' ability to increase economic growth by providing industry assistance. While there is considerable evidence to indicate which factors drive productivity and economic growth (e.g. physical and human capital improvements, technological progress and innovation), it does not automatically follow that targeting these factors through industry assistance can have a positive impact.

[12] Acquiring and assessing complete information is not necessarily efficient. Information costs must be considered when deciding whether to enter a transaction.

In Australia, trade barriers, such as tariffs and quotas were historically promoted as a means to support Australian industry by reducing imports and thereby facilitating economic growth.

The significant costs of trade barriers are now well recognised. As a result, there has been a shift to 'new' forms of industry assistance, notably direct budget assistance, under the same rationale of promoting economic growth. For example, in the 1980s strategic trade theory was popularised following the impressive growth performance of the East Asian 'Tigers'. The theory proposed that governments could shift income from foreign to Australian-owned firms by providing export subsidies (Box 3.4). More recently, governments have attempted to stimulate economic growth using regional innovation funds to provide industry assistance.

Box 3.4 Strategic trade theory and economic growth

In the 1980s, strategic trade theory was popularised following the impressive growth performance of the East Asian 'Tigers'. The theory suggests that governments using trade policy instruments, particularly subsidies, can shift profits from foreign to domestically owned firms, thereby raising national economic welfare at the expense of other countries (see for example, Spencer & Brander 1983 and Krugman 1984).

However, this outcome is possible only under a restrictive set of assumptions: a specific market structure exists (oligopolistic market) and other countries do not retaliate and impose their own subsidies. To be successful, governments would require complex understanding of industry to correctly select projects and the level of support and as such, it carries a high risk of policy failure (Krugman & Obstfeld 2009). A notable historical example in Japan in the late 1950s was the Japanese Government's decision to pursue 'strategic trade' outcomes through subsidising industries such as petroleum and petrochemicals, while at the same time hindering Sony's transistor technology venture because it was 'unpromising' (IC 1990, p. 57).

This is borne out of the empirical evidence which has found it is unlikely that these export subsidies play a significant role in economic growth:

> *the available evidence — in the form of both econometric analyses and general observations — suggests that there is not a convincing link between governments targeting a particular industry and the performance of that industry. There were successes but there were also failures, and there were successes in spite of intervention.*
>
> *Overall, the evidence points to strategic interventions being unimportant in explaining success compared with a number of other factors — such as social commitment to achieve economic success, an effective role for the government in ensuring that the basics of markets were in place and in particular that special interest pleas were generally resisted, technological 'catchup', vigorous competition in product markets and a highly flexible and competitive labour force. (IC 1990, p. 63)*

While industry assistance may increase production in the assisted industry, where the economy is at, or close to, full employment, it is unlikely to increase employment or aggregate income. This is because increasing production in the recipient industry will draw labour and resources away from other activities, leading to lower production in those sectors. Even where there is less than full employment, an artificial shift in resources to the assisted industry will come at a cost to other sectors in the economy:

> *That trade barriers do nothing for overall employment in our economy (other than reducing workers' wages) is well illustrated by the steadily rising share of Australia's population in work since the advent of trade liberalisation in the mid-1980s, and their rising real incomes. … Industry assistance directed at job creation can, at best, influence the pattern of employment. But it only achieves this by helping some workers at the expense of others. (Banks 2011, p. 8)*

Similarly, it is often argued that industry assistance boosts economic activity and has flow-on or multiplier effects across the economy. However, such claims tend to overlook the opportunity costs of the resources used (that is, the alternative activities that could have used those resources):

> *Just as the spending created in and by the recipient firm has multiplier effects, so too does the spending that is displaced from other firms and industries. Looked at another way, while public funds devoted to a project will have multiplier effects, those public funds would also have had multiplier effects if spent on other purposes, or left in the hands of taxpayers to be spent on the things that they value. (Banks 2002, pp. 8–9)*

In short, for industry assistance to increase overall economic activity (and generate a net benefit for the community), the assistance must efficiently target market failures that are impeding socially beneficial transactions from occurring. Otherwise, using industry assistance to generate economic activity *per se* can, at best, simply shift economic activity among industries and, more problematically, where it shifts resources away from more highly valued uses, it will reduce aggregate income.

3.3.2 Regional economic growth and employment

As a subset of the broader economic growth rationale, industry assistance is also provided with the aim of increasing economic growth in specific regional areas (often called regional development policies or programs).

Queensland is the second largest Australian state in area, spanning over 1.7 million square kilometres, with a relatively high proportion of its population located outside of its capital city and dispersed across rural and regional Queensland (CCIQ 2010, p. 5).

The Australian and Queensland Governments have a number of policies aimed at supporting regional communities and targeting regional development. They typically have two main goals — greater equity and economic growth. Equity objectives are normally targeted through the welfare system and concessions, as well as improving government service delivery and infrastructure (e.g. roads, health and education). The Organisation for Economic Co-operation and Development (OECD 2010a, pp. 11–12) found that, across its member countries, regional economic development was traditionally targeted through selective industry assistance, but is now increasingly focused on providing the right environment for business investment, rather than providing direct assistance.

As is the case for economic development more broadly, selective assistance for a particular region that does not target market failure is most likely to redistribute activity around Queensland, rather than add to growth. Moreover, patterns of economic growth, and the contraction of some regions and the expansion of others, generally reflect changes in the relative competitiveness and comparative advantage of the various regions:

> *Growth is primarily driven by economic factors governments don't control. … Regional development programs attempting to increase growth in lagging regions that do not have these necessary growth drivers are ultimately wasteful attempts to push economic water uphill…. [Such programs] should be clearly recognised as subsidies to be justified on equity or social grounds, rather than hoping that they will generate self-sustaining economic growth (Daley & Lancy 2011, p. 42)*

Queensland's regions have changed substantially since early settlement, through the rise of agricultural and pastoral activity, the 1800s gold rushes, the many subsequent agricultural and mining 'booms' and the growth in tourism. It would have been misguided for governments to attempt to 'lock in' an industry structure and resources at any given point in time, because in

the long term, the movement of resources to higher valued uses improves the welfare of the community as a whole.[13]

3.3.3 Adjustment assistance

As an economy changes new activities emerge and grow while other activities may decline or even cease altogether. Such change can bring significant disruption and cost, which may be acute for those communities that rely almost solely on a particular industry (Box 3.5). In such cases, governments may need to support communities through structural adjustment.

Governments provide industry assistance to facilitate industry and community adjustment where the change has been brought about by government action — such as a reduction in tariffs or deregulation, whereby some of the gains generated from trade liberalisation are redistributed to those adversely affected. But it is also provided in response to market and environmental change (such as technological advances, a shift in consumer preferences or change in resource endowments). An example of the former is the assistance to dairy farmers following deregulation of the dairy industry in 2000. Drought assistance is an example of the latter.

Box 3.5 Some adjustment costs associated with firm closures

The process of adjustment that follows a firm closure takes time and involves adjustment costs. For example, following a firm closure, employees do not usually find new jobs immediately. Indeed, some employees may not even return to the workforce and firm-specific capital may become permanently idle. Such unemployment or underemployment of resources detracts from national output — at least to the extent that it is not offset by a consequent uptake of spare capacity elsewhere.

Firms will also incur some specific exit costs associated with site clearance, the payment of redundancy entitlements etc. In seeking new jobs, displaced employees will incur various 'search costs' and expenses associated with relocating or acquiring new skills necessary to secure alternative employment. They will also suffer an earnings loss while unemployed and possibly in their new jobs.

Employees who are displaced for prolonged periods of time can suffer from skill deterioration, loss of confidence and stress. These sorts of effects can in turn have significant ramifications for families and the community more generally. For example, a study on the impact of a downturn in manufacturing on people in the New South Wales Hunter region, found that many unemployed people experienced deterioration in their health and personal relationships, lower levels of wellbeing and a loss of self-esteem and sense of belonging to the community.

Most of the costs associated with a firm's closure are incurred regardless of the firm's location. However, the impact of firm's closure may be more acute where the firm is located in a regional area with few alternative uses for capital or opportunities for employment.

Source: Davis-Meehan (2001); and PC (2002a).

[13] Some regional communities may willingly 'tax themselves' to retain activities that they think will sustain the region or its character. This is a legitimate preference for that regional community to make, even where it reduces the income of the region. However, it is important that communities have transparent information on the costs and benefits of pursing such a preference to make informed choices. Moreover, inefficiencies will arise where a region does not tax itself but requires others to fund its preferences (IC 1996c, p. 37).

In some circumstances, adjustment assistance is justified on efficiency grounds. For example, where labour and product markets do not function well, assistance can reduce the costs associated with adjustment and can increase efficiency (Francois, Jansen and Peters 2011, p. 19). However, adjustment assistance is usually provided on the grounds of equity or fairness, particularly to support local communities following the closure or downturn of major employing industries.

Where there is a compelling case for adjustment assistance, the design of assistance should consider the following:

- Adjustment assistance should facilitate, rather than impede, industry adjustment to market conditions. For example, production subsidies provided around the world to the automotive industry and agricultural sectors have undermined increased self-reliance and delayed adjustment to changing market conditions.
- The rationale for assistance is generally stronger for workers than for business, as most workers cannot readily diversify risk and are relatively poorly informed about such risks when making employment decisions (Aho and Bayard 1984, p. 158). In addition, assistance provided directly to workers rather than business is less likely to impede efficiency enhancing industry change.
- Assistance is normally better provided through general welfare and employment programs rather than selective support:
  - Selective support should only be warranted where adjustment costs are significant and systematically different to those experienced by other industries, firms or workers adjusting to change.
  - Where assistance is justified on equity grounds, it is normally more effectively and efficiently provided through the general welfare system, as this can directly target those in need without unduly introducing inefficiencies in the market.

3.3.4 Interstate rivalry

Governments clearly have a role in promoting economic development and employment in their state by establishing the right framework conditions for business to operate. This can manifest itself in competition between the states, known as 'competitive federalism', which can provide a range of benefits. It can incentivise or discipline governments to provide an efficient public service and infrastructure, effective and least cost regulation as well as competitive tax rates.

However, interstate bidding wars to attract investment and major events are probably the main exception. Such activities are unlikely to provide long-term benefits to a state.

Queensland could engage in such activities and could conceivably 'win' at the expense of other states. But these potential gains would be at a significant cost to Queensland taxpayers.[14] There is also no guarantee that a project will deliver expected economic gains, or remain in the jurisdiction once the inducements cease. The empirical evidence from overseas tends to suggest that at best, the losses tend to cancel out the wins (Box 3.6).

[14] Interstate bidding wars do not provide benefits to the wider Australian community. If a business has already decided to undertake an activity or to locate in Australia, and state assistance is offered to 'tip the balance' in favour of locating in a particular state, there is no overall benefit to the Australian community — it simply shuffles resources around the states.

Research shows that firms tend to base locational decisions on the rate of return they can achieve on an investment. The location decision is largely driven by general economic factors based on a range of cost drivers, as well as social and political factors (e.g. transport, energy and labour costs, infrastructure, workforce skills and social and political stability). Government assistance plays an insignificant role, if any, in a firm's location decisions (Jensen 2014).

Box 3.6 Interstate rivalry: Can state assistance improve economic performance?

In the United States, there has been an active debate on whether state-based assistance significantly influences the location of economic development and whether it provides an economic benefit to a state.

Rasmussen and Ledebur (1986) found that state investment attraction does not increase economic growth and generally subsidises jobs that would have located in the state in any event:

> *There is a recognition that current efforts occasionally alter the location decision of an enterprise among adjacent jurisdictions but no evidence that they have any net impact on employment. Survey and analytical research suggests that the myriad of tax exemptions and tax credits included in development programs have little impact on the location decisions of firms. Thus it can be argued that most of the expenditures for "economic development" are virtually worthless as instruments of net job creation and economic stimulation of the national economy. (p. 152)*

Netzer (1991) examined the effect of state incentives on resource allocation and efficiency, concluding:

> *Economic development incentives are, for the most part, neither very good nor very bad from the standpoint of efficient resource allocation in the economy. With all the imperfections, the offering of incentives does not represent a fall from grace, but neither does competition in this form operate in ways that truly parallel the efficiency creating operations of private competitive markets. Given the low cost-effectiveness of most instruments, there is little national impact, only a waste of local resources in most instances. (pp. 239–40)*

Markusen and Neese (2007) were less definitive in their review of the literature, citing mixed evidence on the impact and welfare implications of assistance. Anderson and Wassmer (1995) were more sanguine about the effectiveness of incentives:

> *More recent studies have shown that in a given region, for certain types of cities, local fiscal incentives can exert beneficial additive effects. However, if communities offer economic inducement to business just because other municipalities are offering corresponding incentives, the influence of inducements is lessened. Communities may then feel compelled to offer a new round of greater inducements. (pp. 739–40)*

On balance, research from the United States suggests that selective industry assistance is generally not an effective tool for increasing economic growth. There are some cases where there can be gains to individual states from providing specific assistance. However, any gains are generally small and are quickly eroded by further competition between states. Also, the risks for governments are large and the effects for the states as a group are negative.

Source: IC (1996c, pp. 55-56); and Markusen and Neese (2007, p. 26).

Despite this evidence and a broader recognition of the negative impacts of interstate bidding wars, state governments may face a 'prisoners' dilemma' — i.e. if they cease to provide inducements, and other states continue to, then the non-bidding state will 'lose' investment (Auditor-General Victoria 2002, p. 27). As such, there is an incentive for all states to continue to provide inducements but all are worse off than if no-one offered any inducements.

Recognising this, in 2003 all states (excluding Queensland) and the Australian Capital Territory signed an Interstate Investment Co-operation Agreement, whereby they agreed to work together to eliminate unnecessary bidding wars and to restrict the use of financial incentives in seeking investments and major events. In 2006, these states, along with the Northern Territory, decided to extend the agreement for a further five years. The agreement lapsed in 2011.

3.3.5 Systems failure

Many industry assistance measures are associated with R&D activities, innovation, science and technology policy. The rationale for these policies is often based on the market failure framework, but increasingly the rationale for intervention is based on a 'systems failure' (Dodgson *et al*. 2011).

Systems theory recognises that innovation is supported by a number of market and non-market institutions (e.g. socio-economic, political and cultural systems) that play a central role in innovation outcomes. Systems failure occurs when problems arise that hinder the operational capability of the 'national innovation system'. Proponents of systems theory argue that governments should intervene where a systems failure has impeded the capability or development of the innovation system (Box 3.7).

Box 3.7 The National Innovation System and System Failures

The national innovation systems approach stresses that the flows of technology and information among people, enterprises and institutions are key to the innovative process. Innovation and technology development are the result of a complex set of relationships among actors in the system, which include enterprises, universities and government research institutes. For policy makers, an understanding of the national innovation system can help identify leverage points for enhancing innovative performance and overall competitiveness. It can assist in pinpointing mismatches within the system, both among institutions and in relation to government policies, which can thwart technology development and innovation. Policies which seek to improve networking among the actors and institutions in the system and which aim to enhance the innovative capacity of firms, particularly their ability to identify and absorb technologies, are most valuable in this context.

Various system failures can impede the operation of the innovation system.

Capabilities: These failures result from the difference between the capabilities of real firms and those assumed in the idealised economic model, so that firms lack needed skills, resources, ability to learn, absorptive and analytic capacity or otherwise to capture innovation opportunities.

Network: Networks are fragmented and/or broad; communication and cooperation within networks are poor. Networks may be locked in to technological regimes, markets or products by their history and capabilities and find themselves unable to transition into new technologies or businesses.

Institutional: Institutions (whether in the sense of ‘organisations’ or ‘rules and conventions’) operate in ways that can impede innovation. Rules and regulation may not be conducive to innovation and technological development. Government policy may have the same effect.

Infrastructural: Insufficient human and capital investment in infrastructures critical to innovation performance by the state.

Sources: OECD (1997) and the UK Department for Business, Innovation and Skills (2014).

The systems approach is designed to overcome coordination problems (some of which were discussed in Box 3.3). As such, there is a general view that systems failure is wider — but does not displace — the market failure rationale (Warwick 2013). Still, some argue that systems failure is simply a subset of the market failure framework and should be classified as coordination failures (Rassenfosse *et al.* 2011, pp. 8–9). Others suggest that national innovation system literature can provide useful perspectives on the design of interventions once the decision to intervene has been taken based on the market failure framework.

Outside of the theoretical debate, the more important question is whether systems failure and national innovation system theories are a sound basis for government intervention to provide industry assistance. While there is some consensus on a role for government to facilitate the innovation system and assist in resolving coordination problems where appropriate, this does not necessarily translate to an activist role for government through the provision of industry assistance. A prudent assessment of the policy problem, and potential costs and benefits of government action is particularly important, given the scope for government failure.

A wide array of policy instruments is available to promote innovation, including new institutional frameworks, regulation, economic incentive and tax policy. The key difference between traditional industry assistance and innovation policy is that the latter focuses on institutional and enterprise capability building, with a focus on facilitating the uptake and commercialisation of innovation.

Industry assistance is increasingly used as part of a broad suite of measures to promote technological change and innovation, including collaborative arrangements between business and research and education institutions. However, using industry assistance to promote innovation is not without its challenges. One of the key challenges is to design measures which encourage innovation and 'add value' to the economy and society that would not have otherwise occurred without intervention. Furthermore, such measures would need to generate positive spillovers through business transformation, technology diffusion and global market access that are large enough to exceed the costs of the assistance. These costs include the resources needed for developing, implementing and monitoring innovation policies, distortions in investment or labour decisions resulting from public financing and the resources that might be wasted through businesses seeking public funds for privately profitable activities.

3.3.6 Alleviating cost and competition pressures

Australia is a relatively high cost place to live and do business. Businesses generally point to high wages, expensive land, occupancy and housing, rising utility costs, a small market and high international and domestic transport costs due to large distances. Purchasing power parity analysis shows that general price levels, expressed in Australian currency terms, are 20 per cent higher here than in relevant comparator countries (QCA 2014a, p. 58).

Industry assistance is often proposed as a means to mitigate these high costs. A number of submissions to this inquiry also argued that with the large-scale reduction in tariff and other trade barriers and significant program of deregulation over the last four decades, Australian industry receives a comparatively low rate of assistance compared to most other countries and so assistance must be retained for them to remain internationally competitive. For example, the QFF said:

> *... assistance programs and overall costs of production must be considered holistically. The relatively few assistance measures that Queensland farmers receive and the small quantum of assistance bears comparison with the rest of the world, given many of our commodities are internationally traded and Queensland farmers must be internationally competitive. (QFF sub. 1, p. 5)*

A number of other stakeholders indicated that industry assistance is required to 'offset' market distortions or programs created by governments. For example, Canegrowers Isis Ltd (sub. 5, p. 1) claims that the electricity subsidy growers receive is justified to offset other government initiatives in the (since repealed) carbon tax and solar photovoltaic (PV) bonus.

While recognising these important policy issues, providing assistance to offset high costs, assistance provided in other countries, or other government regulatory/policy distortions is unlikely to provide an overall benefit. As discussed above, assistance provided in the absence of a market failure is likely to result in a net welfare loss for the Queensland community. Although the assistance would provide a direct benefit to exporters disadvantaged by foreign subsidies, it is likely to be outweighed by the cost of the assistance.

Similarly, countering one regulatory or tax distortion with another is unlikely to be optimal. In this case, the most efficient option would be for governments to review and reconfigure policy, regulatory and tax arrangements such that they are efficient, rather than trying to counter one distortionary arrangement with another. As noted by the Australian Industry Group (AIG sub. 6, p. 2), there is significant scope for governments to directly reform policy, regulatory and tax arrangements to reduce costs to business:

> *In the past, Queensland was seen as a low cost place to do business in Australia. But the resources boom, the work of other states in reducing the cost burden for industry, and the effects of globalisation, have seriously affected Queensland's advantages. However this challenge is not insurmountable and can be met head on through further measures to reduce regulation and other costs to doing business.*

3.3.7 Infant industry

One of the most enduring arguments for industry assistance and trade protection is the infant industry argument. In Australia, it has historically been used to support trade protection for the manufacturing industry (particularly for motor vehicles, whitegoods and textile, clothing and footwear). More recent variations have been used to promote assistance for 'new' industries in biotechnology and information technology sectors.

The basic argument rests on the notion that a country may have a comparative advantage in a particular industry but that this cannot be realised without initial government assistance. Production costs for a newly established industry in a country may be initially higher than established foreign competitors due to their greater experience, know-how or economies of scale associated with a more mature industry. Over time, domestic producers can achieve cost reductions and attain production efficiency through learning by doing. However, due to the initial absence of experience and scale, if the domestic industry is not protected (or assisted) it will never establish and achieve the cost advantages associated with large production runs (see Pack & Saggi 2006, p. 4).

While such arguments are superficially attractive, the real test is whether they can actually bear fruit — and the evidence in Australia is that it occurs infrequently, if ever. It is not an argument based on addressing a particular market failure. Rather, it is based on the notion that governments have a better long-term vision than industry. This notion is therefore, problematic for a number of reasons, including:

- if an industry became viable after an initial establishment period and could communicate this to the market, then the industry should be able to obtain long-term finance to fund its activities[15]
- it is challenging for governments to obtain the necessary information to identify if a domestic industry will have a comparative advantage and be viable after an initial period of assistance.
- even if there is an in-principle case for assistance, the assistance needs to be temporary and time-bound to be efficient. Australian experience with subsidies and tariffs has shown that withdrawing support once provided is extremely difficult (Box 3.8).

[15] A counterargument is that financial markets may be imperfect and fail to finance viable projects. Even if such imperfections exist, the starting point in assessing an appropriate policy response would be to correct financial market failures rather than provide assistance (see Baldwin 1969, Cordon 1984).

Box 3.8 The ageing infant: A concise history of automotive assistance in Australia

1907: Tariffs on imported vehicle bodies and components were introduced to assist the development of local assembly and manufacturing capacity.

1916: Australian Government imposes a ban on import of foreign-made car bodies.

1918: Import ban is lifted, tariffs on bodies and panels doubled (tariffs on unassembled chassis lowered to encourage local assembly and production of cars).

1929 - 1932: Australian Government doubles tariffs.

1936: Tariffs on imported engines, chassis and bodies increased. A bounty is paid for each engine produced locally to provide incentives to build an Australian car.

1945: Australian Government agrees to provide assistance to General Motors if it can build a car with 90% Australian content.

1952-62: Import licensing on new cars.

1964: Menzies local content plan. Large manufacturers required to maintain 95% local content.

1966: Tariffs raised from 35% to 45%.

1973: Australian Government cuts all tariffs by 25%. Vehicle tariff falls to 34%.

1974 -75: Tariffs on imported cars return to 45%. Quotas imposed on automotive imports.

1978: Australian Government increases tariffs on imported cars from 58% to 75%.

1981: Australian Government announces the Export Facilitation Scheme, whereby vehicle and component producers could earn credits for their exports to offset duty on their imports. Effective assistance to the vehicle and parts sector rises from 71% to 110%.

1984: Button Car Plan sets out a staged removal of assistance, with import quotas and tariffs to be gradually reduced over 15 years.

1991: Continued phased tariff reduction announced.

2001: Automotive Competitiveness and Investment Scheme commences. Tariff and non-tariff assistance exceeds $1 billion per annum.

2002: Australian Government decides to reduce tariffs to 10% in 2005 and 5% in 2010.

2008: Australian Government launches A New Car Plan for a Greener Future, providing $6.2 billion in assistance to the automotive industry until 2021. Additional budgetary assistance is provided to the industry through various capital subsidies in the form of co-investment grants provided by the Australian, Victorian and South Australian governments.

2013–14: The Productivity Commission estimates that about $30 billion in net combined assistance (2011–12 dollars) was provided to the industry between 1997 and 2012. It concludes the rationale for specific assistance to the automotive sector is weak and assistance should be removed. The three remaining car manufacturers in Australia, Ford, General Motors Holden and Toyota announce that they will cease manufacturing in Australia by 2017.

Source: Haas (2013); PC (2010d); and PC (2014a).

3.3.8 Other common reasons put forward to support industry assistance

High 'value' of exports

Industry assistance is sometimes justified on the basis that income from a certain activity, such as exports, is inherently 'worth' more than income from other forms of economic activity, and as such, governments should provide assistance to expand export activity. Although this argument may have had relevance when Australia had high trade barriers, it does not appear to be relevant today. A dollar generated from export earnings has no greater value than a dollar generated from domestic sources (PC 2000a). As a result, providing assistance to exports in the absence of market failure will generally shift domestic resources away from more profitable activities, potentially drive down the price of exports (benefiting foreign buyers) and reduce the state's aggregate income.

Demonstration effects

Assistance is sometimes provided by state governments to high-profile, large projects to act as a 'demonstration' and inform international firms that the state is business friendly. For this strategy to be effective, the project must be successful (which is not a given, see Box 3.9), and attract further economic activity without assistance. Arguably, governments could be more effective pursuing general measures to create an attractive business environment.

Box 3.9 Assistance to Australian Magnesium Corporation

In 2001, the Australian Magnesium Corporation (AMC) planned to establish the world's largest magnesium smelter near Rockhampton in central Queensland. The project aimed to commercialise the light metal for use in the motor industry, but had difficulty raising capital from the private sector given uncertainty about the viability of the technology.

To assist the $1.3 billion project, the Queensland Government provided up to $354 million in assistance. In addition, the Commonwealth Government agreed to support AMC by providing a loan guarantee of up to $100 million and a $50 million contribution through the Commonwealth Scientific and Industrial Research Organisation (CSIRO) to assist with commercialising the technology. As the project commenced construction, the then Premier of Queensland said:

> *With these major commitments from the state government and the federal government we should see the birth of a new industry for Queensland which will generate $4.5 billion of investment over the next 15 years and create new jobs for 7000 Queenslanders and training opportunities. The economic returns to the state will be massive. That is why my government has made this substantial commitment. It is an investment in Queensland — an investment for the long-term benefit of all Queenslanders. (Beattie, P. cited in Queensland Parliament 2001)*

The Federal Industry Minister Nick Minchin echoed these sentiments when he argued in 2001 that the risks to taxpayers were minute:

> *The magnesium industry is one in which Australia has the potential to be a world leader. AMC Stanwell Magnesium Project will be a catalyst for making this happen. This is a massive project of great national importance. (Minchin, N. in 2001 as cited in Queensland Parliament 2003)*

However, construction costs on the project soon escalated. Work on the project ceased in June 2003 due to significant project cost overruns. The Commonwealth Government was required to fulfil its loan guarantee obligation and pay $90 million to the ANZ Bank. The Queensland Audit Office reported that the Queensland Government lost $70 million in taxpayer funds.

Source: National Commission of Audit (2014, p. 117); QAO (2004); and Queensland Parliament (2001; 2003).

Intangible benefits

Industry assistance, particularly for major events, could provide a range of intangible benefits. For instance, it is sometimes claimed that citizens gain 'psychic income' or a feel-good effect from staging international events such as the 2000 Olympics in Sydney or Expo 88 in Brisbane.

Similarly, society may experience intangible benefits from investing in research and development or funding the arts. These intangible benefits include things such as national prestige, cultivating the image view of a cultured or successful society and protecting or enhancing our local identity. While these benefits are hard to measure, they should not be dismissed. However, they do need to be carefully assessed against the costs of providing them.

4 PERFORMANCE ASSESSMENT FRAMEWORK

Key points

- The terms of reference for this inquiry asked the QCA to develop an appropriate performance assessment framework to evaluate industry assistance provided by the Queensland Government. The QCA presented this assessment framework in its interim report (QCA 2014a).
- The framework essentially consists of three main elements, namely to assess whether:
  - there is a case for government action (is there evidence of a significant, ongoing policy problem and sound reasons to expect that government action can address it?)
  - the assistance is effective (did the assistance achieve what it was supposed to achieve?)
  - the assistance provides a net benefit to Queensland.
- The purpose of the assessment framework is to enable a systematic review of the impact of industry assistance. The application of the framework should provide government decision-makers with sufficient evidence on the performance of industry assistance measures, and the costs and benefits of alternative policy options, to improve policy outcomes for the Queensland community.

The terms of reference for this inquiry asked the QCA to develop an appropriate performance assessment framework to evaluate industry assistance provided by the Queensland Government. The QCA presented this assessment framework in its interim report *Industry Assistance: Performance Assessment Framework* (QCA 2014a). This chapter provides an overview of the framework.[16]

The main aim of the performance assessment framework is to apply a systematic process to critically assess whether an industry assistance measure does or will provide an overall benefit to the Queensland community. The key steps in the performance assessment framework are outlined in Box 4.1. The framework essentially consists of three main elements, namely to assess whether:

- there is a case for government action (e.g. is there a market failure that could be addressed through government intervention?)
- the assistance is effective (has the assistance achieved what it is supposed to achieve?)
- the assistance provides a net benefit to Queensland.

Applying a robust assessment framework should help provide the necessary information and analysis to the Queensland Government to identify assistance measures that:

- do not provide benefits to outweigh the costs

[16] Readers can refer to QCA (2014a) *Industry Assistance: Performance Assessment Framework* for a full explanation of the performance assessment framework and supporting detail.

- might be reformed so that they either cost less to achieve the same objectives or can achieve more with the same level of funding
- should be retained because they provide significant benefits to the community.

In an ideal environment, the application of the performance assessment framework would be supported by rich performance information, data and evidence. However, as discussed in Chapter 6, for most industry assistance measures, little, if any, monitoring and evaluation has been undertaken. In such cases, the assessment framework should be applied by drawing on the best evidence available.

Box 4.1 Overview of the Performance Assessment Framework

Step one: Is there a case for government action?

- Is there a market failure?
- What is the size and scope of the market failure? Is the market failure likely to be significant and enduring?
- What is the likelihood the market failure can be corrected through government action?

Step two: Is it effective?

- What are the objectives of the assistance? Are they clearly defined and focused on 'ends' not 'means'?
- What is the existing evidence on the assistance measure's performance?
- Does the assistance achieve its objective/s?
- Has the assistance induced activity beyond what would have occurred without it ('additionality')?
- Is it cost effective?
- Are there ways to improve the measure's cost effectiveness?

Step three: Does it deliver a net benefit to the Queensland community?

- What are the costs and benefits of the assistance?
- Do the benefits of the assistance outweigh the costs?
- Are there distributional ('equity') impacts?

Step four: Could alternatives deliver a greater net benefit to the Queensland community?

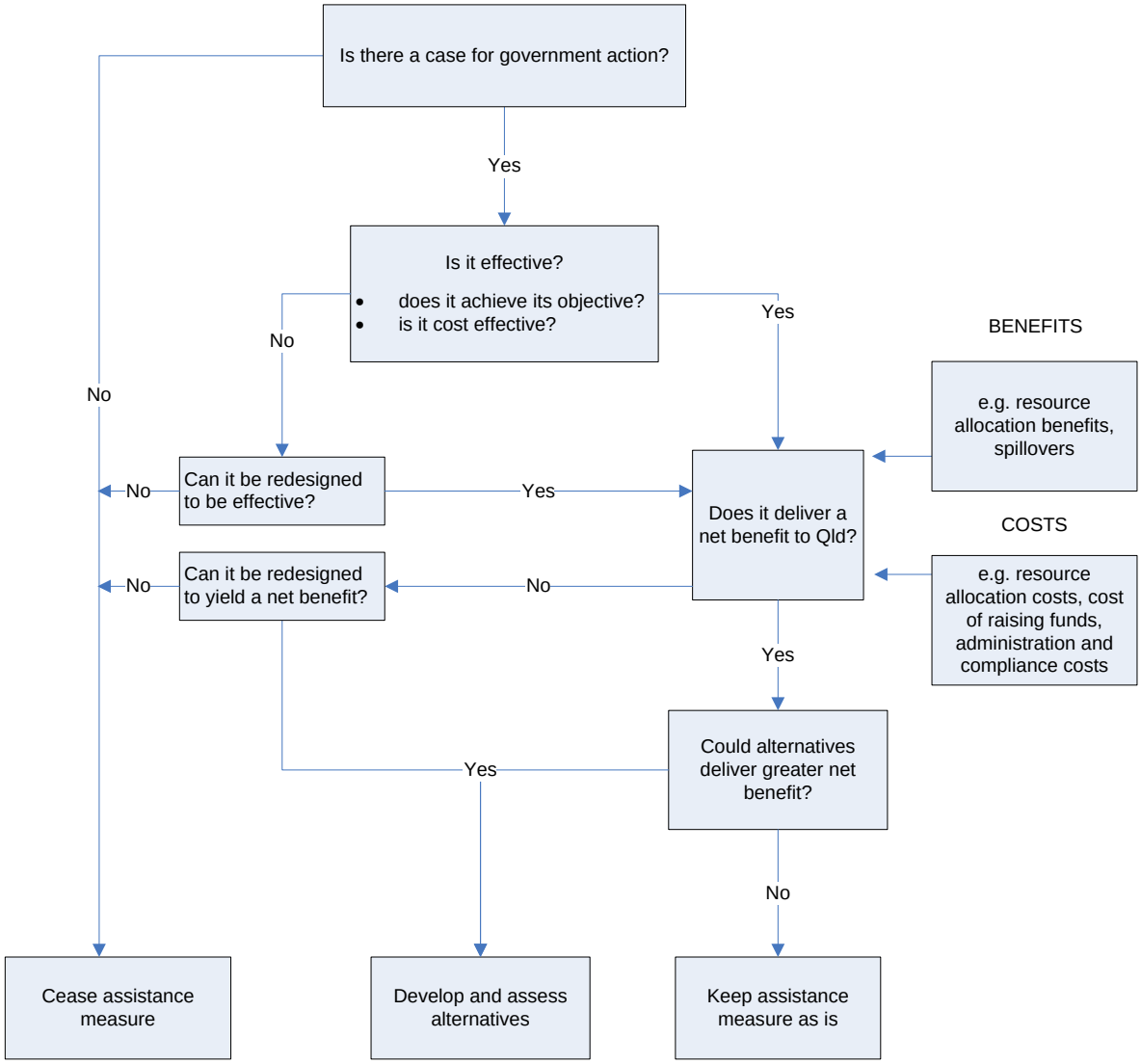
- Are there feasible alternatives to the assistance (including no action where appropriate)?
- What are the costs and benefits of the alternatives?

Step five: What is the best option?

- Retain assistance in current form or expand where it maximises net benefit.
- Modify or fine-tune assistance to better meet objectives.
- Limit or cease assistance where ineffective or where it does not provide a net benefit to the community.

Figure 4.1 sets out a decision tree to follow in applying the performance assessment framework. In general, each step of the evaluation will proceed only where the assistance measure has passed the previous step (e.g. if the assistance measure is not based on a sound rationale for government intervention, the outcome would be a net loss for the Queensland community, so no further evaluation is required).

Figure 4.1 Stylised schematic of the performance assessment framework



4.1 Step one: Is there a case for government action?

A central principle underlying the operation of modern economies is that relatively unencumbered markets generally present the best way to allocate scarce resources. When markets function well, prices coordinate the interactions of consumers and firms, providing signals to facilitate the production of goods and services that people value. Prices ration supply amongst consumers, according to willingness to pay, and indicate the opportunity cost of resources used in the production of goods and services. In such cases, government intervention through industry assistance to alter production and consumption will lead to a net loss for society.

However, markets do not always function well and can fail to allocate resources in a way that produces the best outcome for society. Key recognised market failures[17] include:

- lack of effective competition — for example, where a small number of firms are able to restrict output and maintain prices above optimal levels
- externalities or spillovers — where the private benefits or costs of an activity do not reflect the full social benefits or costs
- public goods — where consumption is non-rivalrous (i.e. consumption by one person does not affect the amount available to others) and non-excludable (i.e. people cannot be prevented from consuming the good)
- imperfect or asymmetric information — institutional or cost barriers can prevent parties to a transaction from obtaining relevant information about the characteristics of a transaction (most notably risks) and/or each other.

Government intervention may be warranted in the presence of market failures. However, establishing that there is a market failure does not, in itself, establish the case for government intervention. First, private individuals and organisations themselves may find solutions to market failures, such as sourcing information to overcome information imbalances. Second, the test of whether governments should intervene is not the existence of market failures, but whether the benefits of intervention will exceed the costs. Government action may produce benefits that are outweighed by the costs, or be ineffective, inefficient and bring unintended consequences. This is commonly referred to as 'government failure'.

Consequently, understanding the size and scope of the market failure is fundamental to determining the right policy response.

- Where the market failure is not significant, or unlikely to be enduring, the cost of government intervention is likely to outweigh the benefits. Intervention may introduce distortions of its own, fail to achieve the intended results and also carries administration and compliance costs.
- Understanding the type, size and scope of the market failure will help determine whether the market failure could conceivably be addressed through government invention. For example, financial markets may fail to correctly assess risk and result in restricted access to finance for certain parts of industry. However, governments may be no better, and may be less capable of assessing risks and allocating credit compared with the private sector.

Governments also undertake actions to achieve social equity. They play an important role in redistributing income and redressing disadvantage in the community. However, in general, equity objectives, and income redistribution more broadly, are better achieved through the welfare system rather than industry assistance, as this can directly target those in need without unduly introducing inefficiencies in the market.

4.2 Step two: Is it effective?

Governments normally provide assistance to change something. Determining the effectiveness of an industry assistance measure requires an assessment of whether the outputs of that assistance have achieved the desired outcomes (i.e. has the assistance measure achieved what it is intended to achieve?).

[17] Refer to Chapter 3 for further information on market failures and the role of government.

It is also important to look at cost effectiveness — a measure of the extent to which the cost of resources used to produce a specified outcome has been minimised. An assistance measure is cost effective if it has the lowest cost of producing the same or very similar effects, relative to other policy options.

The starting point in assessing effectiveness is to identify the objectives of the assistance. Objectives need to be clear, concise, accountable, measurable and outcome-focused. Importantly, objectives should not confuse the desired final outcome with the means of obtaining it. For example, a government's objective may be to reduce carbon emissions. This objective differs from proposals 'to provide incentives to install solar panels' or 'to mandate a renewable energy production target', which may be two of the many means of attaining the objective.

Assessing whether an assistance measure actually resulted in the changes it was intended to achieve poses challenges, because it is often difficult to separate the impact of assistance from the multitude of other factors that may contribute to outcomes. Key issues to consider are whether the assistance measure:

- had a causal relationship with the outcome it sought to induce (i.e. the outcome can be attributed to the assistance measure)
- induced impacts over and above what would have materialised in its absence (i.e. the assistance measure has 'additionality').

To determine whether the assistance measure had any incremental impacts (and indeed a causal relationship with its intended outcomes), it is necessary to compare an appropriate base case or counterfactual (i.e. the world without the proposed change) with the world having the assistance.

In cases where few factors influence outcomes, it may be sufficient to rely on a 'before and after' assessment where the counterfactual is assumed to be a continuation of what was observed before the intervention. However, industry assistance typically targets outcomes that are influenced by a range of market factors and associated policy and regulatory settings. In these cases, it is important to establish a credible counterfactual to measure the impact of assistance to estimate what would have prevailed had the assistance measure not been introduced.

4.3 Step three: Does it deliver a net benefit to the Queensland community?

The primary question to answer in assessing an industry assistance policy or program is Does the assistance yield a net payoff to the Queensland community? Where the gains (benefits) resulting from the assistance exceed the losses (costs), then the Queensland community will be better off (i.e. there is a net benefit from having the assistance measure).

Assessing the net benefit of industry assistance requires all costs and benefits to be considered, drawing on information from the effectiveness assessment as well as costs and benefits borne in other parts of the economy and community.

Benefits of industry assistance may include:

- additional employment and investment that would not have occurred without assistance
- spillover benefits from knowledge and technological diffusion
- improved ecological and environmental outcomes (e.g. through reduced carbon emissions or improved energy and water efficiency).

Costs of industry assistance may include:

- program administration and compliance costs as well as the costs of taxation
- harmful environmental outcomes through the inefficient use of land, fuel and water resources
- increased costs on business as those firms receiving assistance may bid up the price of scarce resources (e.g. skilled labour)
- increased costs on consumers from higher prices, or reduced range and quality, of goods and services.

Ideally, a cost–benefit analysis would identify all costs and benefits, and compare them using a common measure (usually dollars). However, some costs and benefits are easier to value than others. For example, a market valuation may be used to estimate the magnitude of additional employment and investment, while other costs and benefits, such as those relating to the environment, are more difficult to value. These should be qualitatively assessed drawing on quantification where possible (Queensland Government 2014e, pp. 29–32).

The cost–benefit framework takes a whole-of-society perspective. It attempts to identify policy actions that maximise the wellbeing of the community as a whole, incorporating all costs and benefits regardless of where they occur ('a dollar is a dollar' assumption). As such, it can sometimes obscure distributional or 'equity' implications of policy actions. In such cases, an evaluation should include information on the groups likely to gain and on those likely to lose as a result of assistance, and the nature and size of the gains and losses. In this way, government decisions on distributional or equity issues can be transparently informed about likely distributional implications and the costs of government action aimed at benefiting individuals or groups in the community.

The assessment of costs and benefits should focus on the state of Queensland. However, where policies and programs have broader impacts, or target national policy problems, a national assessment framework may be more appropriate. This may be particularly important for investment-attraction policies that seek to transfer investment between states without changing aggregate investment and employment in Australia (IC 1996c).

4.4 Step four: Could alternatives deliver a greater net benefit to the Queensland community?

There is rarely only one option available for governments to achieve their objectives. An evaluation should consider other feasible policy instruments to ensure that the recommended option is the one that generates the greatest net benefit to the community (Queensland Government 2014e, p. 27).

Feasible policy instruments may include: alternative forms of assistance that may be less distortionary; market-based instruments; reform of the broader tax, financial and regulatory framework; and no action. The analysis should identify feasible policy responses and consider the costs and benefits of each option, as well as use sensitivity testing to account for uncertainty and risk.

4.5 Step five: What is the best option?

Drawing on the assessment of effectiveness, net benefit and alternative options, the evaluation should identify the option that maximises the net benefit to the community. In doing so, it should make clear recommendations on what should happen to the existing measure — for

example, retain in current form, retain but modify to improve outcomes, initiate further review, abolish and replace with alternative measure, or simply abolish.

5 ASSISTANCE PROVIDED TO QUEENSLAND INDUSTRY

Key points

- The Queensland Government provides more than $5 billion per year in direct and indirect assistance to industry. Assistance includes grants to businesses, subsidised access to assets and services, programs supporting specific industries and tax concessions.
- The industry assistance catalogue identifies 112 measures that provide $25.3 billion from 2013 to 2018, including $17.1 billion in tax concessions, $5.6 billion in budget-funded measures and $1.3 billion in underpriced assets and services.
- The main recipients of assistance in Queensland from 2013–18 are the:
  - services sector ($11 billion, primarily for small businesses, private health insurers, transport, education and training and tourism)
  - construction sector ($2.1 billion)
  - electricity, gas and water sector ($1.7 billion)
  - agriculture, fisheries and forestry sector ($1.5 billion)
  - manufacturing sector ($1.2 billion)
  - mining sector ($700 million).

  A further $7.1 billion in assistance could not be allocated to a specific industry.
- The main industry assistance measures are:
  - payroll tax concessions primarily for small business ($7.9 billion), land tax concessions ($5.5 billion) and duty exemptions for private health insurers ($1.94 billion)
  - transport and electricity subsidies ($2.8 billion) primarily benefiting the agriculture sector
  - education and training measures providing $1.65 billion in assistance, including $982 million in tax concessions to support apprenticeships and training
  - the Great Start Grant providing $506 million in assistance to the construction sector
  - agriculture programs providing $536 million for drought assistance, subsidised loans, biosecurity measures, and research and development.
- The Australian and local governments also provide assistance to Queensland industry, estimated at approximately $1.6 billion and $102 million per annum respectively.
- The estimates of industry assistance should be viewed as indicative only. Due to data limitations, the level of assistance may be overestimated for some measures and underestimated in others. Moreover, the estimates do not include the assistance provided through a range of measures including confidential agreements.

5.1 Assistance provided by the Queensland Government

The Queensland Government provides industry assistance through a wide array of measures. A catalogue of these measures is provided in Appendix C.

The Catalogue of Industry Assistance identifies each measure and records: the level of assistance provided; the administration expenses to distribute assistance; the sector(s) that receive assistance; the measure's objective and whether it is monitored or evaluated. It also identifies 153 pieces of legislation that contain regulatory restrictions on competition.

The catalogue was compiled using information provided to the QCA from Queensland Government departments, and is supported by supplementary materials such as: Budget Papers; Departments' Service Delivery Statements and Annual Reports; the Queensland Commission of Audit report; and data on payments (grants) to third parties coordinated by Queensland Treasury.

The quantum of assistance presented in the catalogue should be viewed as indicative, rather than a precise value of assistance. Measurement and data limitations (Box 5.1) mean that the level of assistance may be overestimated for some measures and underestimated in others.

Box 5.1 Challenges in measuring industry assistance in Queensland

Identifying, measuring and allocating assistance to specific industries poses a range of data and information challenges.

Industry assistance measures lie on a broad spectrum. More traditional assistance that directly targets business through budgetary outlays is easier to identify and measure than indirect measures that provide assistance to achieve social or environmental objectives.

Determining what qualifies as industry assistance raises demarcation issues. For instance, assistance to commercial film makers is captured but programs targeting not-for-profit cultural activities are not, drought assistance to primary producers is captured but disaster relief is not.

Quantifying assistance, particularly where it is provided through underpriced assets or services, is difficult. For example, the level of assistance provided through commercial access to National Parks and State Forests is recorded as the cost incurred by the Queensland Government to provide access, rather than the benefit of the access to the mining, agricultural and tourism industries.

Some submissions to this inquiry questioned the definition and measurement of assistance. The Queensland Farmers' Federation (QFF) and AgForce felt some agricultural measures should be excluded:

> *... including biosecurity responses and recovery as solely direct industry assistance is not accepted given the broader societal benefits that flow from keeping our state free from pests, weeds and diseases. (AgForce sub. 43, p. 6)*

Consistent with standard practice, assistance has been measured based on the 'initial recipient' test, rather than alternatives such as the objectives or effects-based test proposed above. Although downstream benefits and costs are useful to evaluate assistance, they are not practical for determining what is industry assistance (see Appendix C for further discussion of industry assistance measurement).

In order to capture the full suite of assistance provided by the Queensland Government, the catalogue may overestimate assistance provided by some measures. But assistance from a range of other measures is not included, such as confidential investment attraction agreements, the economic rents flowing to certain sectors due to regulatory restrictions on competition, and measures that have been announced in 2015–16 Budget.

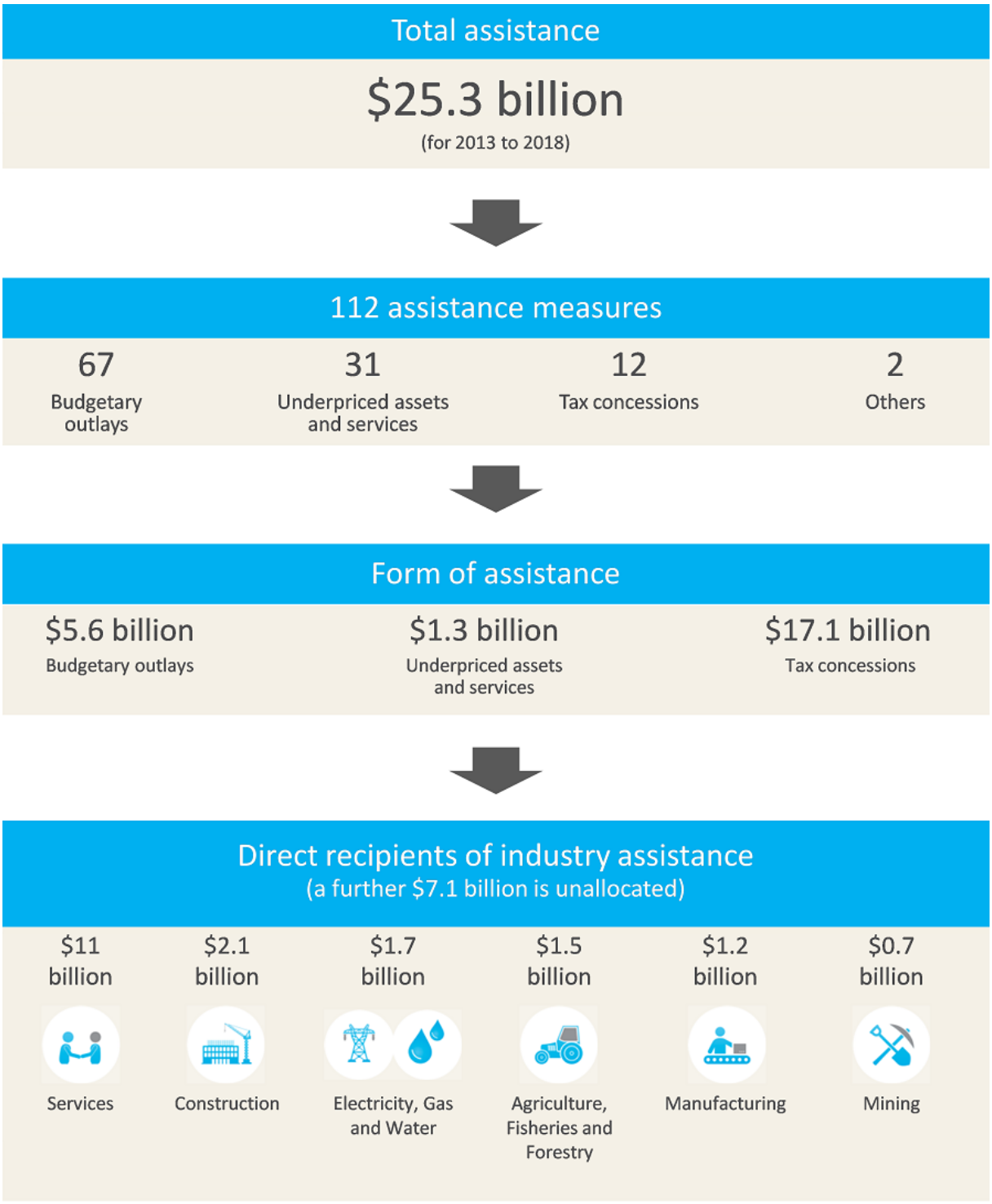
For most measures, the catalogue allocates assistance to specific sectors based on the initial recipient of assistance rather than the ultimate beneficiaries, which may be the recipient, other businesses and sometimes consumers. For example, electricity price subsidies provided through the Uniform Tariff Policy are allocated to the electricity sector even though they flow directly to electricity businesses customers.

To consistently identify and measure industry assistance, the QCA established a qualification test and measurement framework (see Appendix C). In doing so, we have attempted to maintain consistency with the rules and methods used by the Productivity Commission to measure assistance provided by the Australian Government.

5.1.1 How much assistance does the Queensland Government provide?

The Queensland Government provided $5.12 billion in assistance to Queensland industries in 2013–14. Assistance is estimated to increase to $5.54 billion in 2014–15, with a total expected value of $25.3 billion from 2013–14 to 2017–18 (in 2013–14 dollars). The largest share of assistance is provided through tax concessions at approximately $17.1 billion from 2013–14 to 2017–18. A further $5.6 billion is provided in budget-funded measures and $1.3 billion in underpriced assets and services.

Queensland Government Industry Assistance



Source: QCA estimates.

5.1.2 Who receives industry assistance?

The main recipients of industry assistance from 2013–14 to 2017–18 (in 2013–14 dollars) are the:

- services sector ($11 billion primarily for small businesses, private health care insurers, transport, education and training and tourism)
- construction sector ($2.1 billion)
- electricity, gas and water sector ($1.7 billion)
- agriculture, fisheries and forestry sector ($1.5 billion)
- manufacturing sector ($1.2 billion)
- mining sector ($700 million).

A further $7.1 billion is classified as unallocated (see Figure 5.1).

Payroll tax concessions to the services ($5.4 billion), manufacturing ($946 million) and construction ($946 million) sectors make up a significant portion of assistance.

Transport and electricity subsidies that primarily benefit the agriculture sector provide $1.37 billion and $1.42 billion in industry assistance respectively. These subsidies reduce the cost of agricultural freight and the cost of electricity to remote and regional business customers. The agriculture sector also receives $536 million in direct assistance for drought, subsidised loans, biosecurity, irrigation programs, research and development, and support for industry and market development.

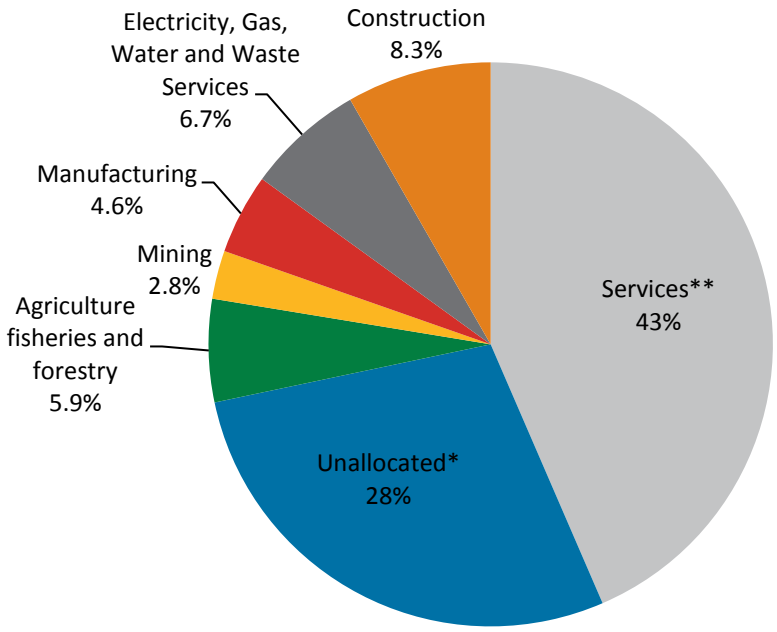
The Solar Bonus Scheme is costing $1.3 billion from 2013 to 2018. This measure provides a subsidy to eligible electricity customers (including some business customers) for the generation of electricity from eligible solar photovoltaic (PV) systems. Queensland's solar panel industry is likely to capture some of this assistance.

Education and training measures provide $1.65 billion in industry assistance through the services sector. This includes $410 million through the User Choice–Apprentice and Trainee Training Subsidy and $982 million in payroll tax concessions.

The allocation of industry assistance by policy domain[18] shows that from 2013–14 to 2017–18 the largest amount of assistance is provided to labour and skills ($11.5 billion) and land ($6.8 billion) (in 2013–14 dollars). The products and capital markets also receive significant proportions of industry assistance (see Figure 5.2).

[18] A policy domain is a typology for describing whether an industry assistance measure operates mainly through product markets, factor input markets, technology, or systems and institutions. A policy domain is how or through what levers the policy seeks to change something.

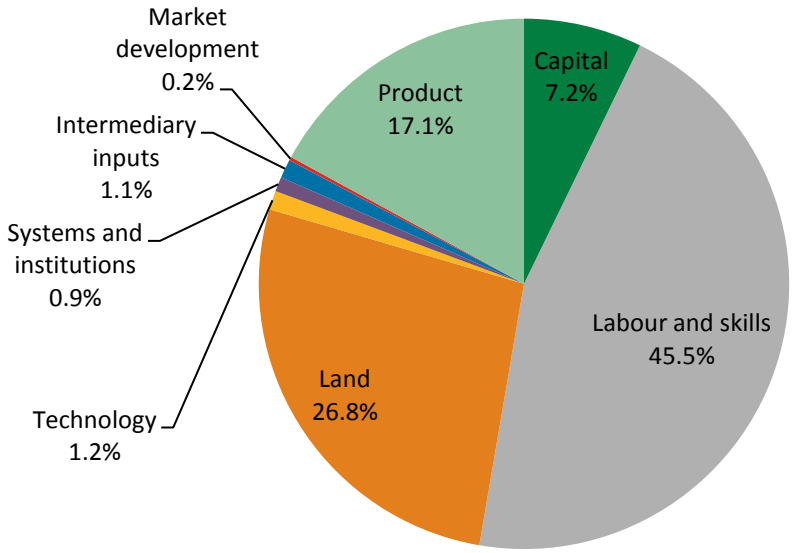
Figure 5.1 Assistance provided by sector (2013–14 to 2017–18)



*Note: * Where industry assistance, or a proportion of the assistance, cannot be reasonably allocated to an industry sector then it is assigned to 'Unallocated'. Estimated in 2013–14 dollars. ** Assistance to the services sector comprises primarily of: tax concessions (mainly provided to small business and health insurance); transport; education and training; tourism; R&D and agriculture services.*

Source: QCA estimates.

Figure 5.2 Assistance provided by policy domain[1] (2013–14 to 2017–18)



Note: Estimated in 2013–14 dollars.

Source: QCA estimates.

5.1.3 Budgetary outlays

The Queensland Government provided $1.3 billion in industry assistance through budget-funded measures in 2013–14. Assistance is estimated to increase to $1.66 billion in 2014–15, with a total expected value of $5.6 billion from 2013–14 to 2017–18 (in 2013–14 dollars).

The main recipients of budget-funded industry assistance from 2013 to 2018 are: the services sector ($2.56 billion primarily for transport, education and training and R&D); the electricity, gas and water sector ($1.43 billion); the construction sector ($732 million); the agriculture, fisheries and forestry sector ($386 million); and the tourism sector ($329 million) (see Figure 5.3).

Overall, more than half of all budget assistance is targeted towards the agricultural sector, including $386 million in direct assistance for drought, R&D, improvements in the Great Barrier Reef, forestry and biosecurity. Agriculture is also a major beneficiary of subsidies provided to:

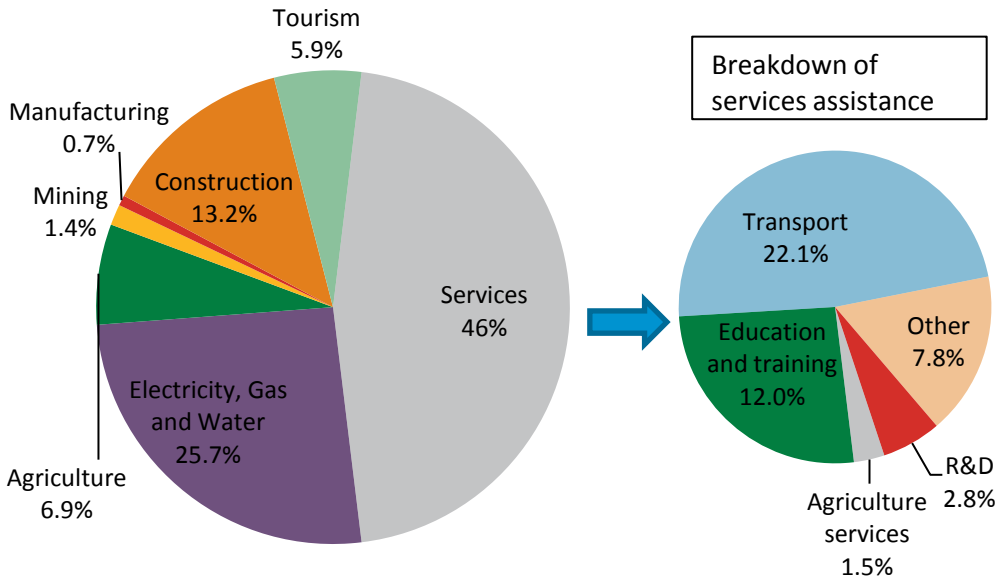
- the rail sector for the transport of agricultural freight through Rail Network and Infrastructure Financing ($1.1 billion) and the Regional Freight and Livestock Transport Services Contracts ($270 million)
- the electricity sector to reduce the cost of electricity to remote and regional business customers through the uniform tariff policy ($1.42 billion).

The construction sector receives the second largest amount of budgetary outlays (approximately $732 million). These funds assist the construction sector through: subsidies to first home buyers; concessions to land developers; incentives for developers increasing the supply of accommodation to low- or moderate-income households (at a discounted rate); and infrastructure investment. The Great Start Grant provides the largest amount of assistance to the construction sector ($506 million) through subsidies for first home buyers.

More than $600 million is allocated to the education and vocational training sector. These measures fund subsidies to entry level training for Queensland apprentices and trainees and students that undertake vocation education and training courses (Certificate III, IV and above). The User Choice—Apprentice and Trainee Training Subsidy provides the largest proportion of this assistance ($410 million).

The tourism sector receives $329 million in budget-funded measures. These funds support the Queensland tourism and events sector by providing inducements for major events ($119 million) and destination marketing ($117.6 million). Other programs provide subsidies to international airlines to increase air services to Queensland.

Figure 5.3 Budgetary outlays by industry sector (2013–14 to 2017–18)



Source: QCA estimates.

5.1.4 Tax concessions

The largest share of industry assistance is provided through tax concessions. The Queensland Government provided $3.18 billion in industry assistance through tax concessions in 2013–14. Assistance is estimated to increase to $3.28 billion in 2014–15 and will continue to increase annually by four per cent until 2017–18.

Total tax concessions amount to $17.1 billion from 2013–14 to 2017–18 (in 2013–14 dollars). The majority of this assistance is provided by the following measures:

- payroll tax
  - – exemption threshold and deduction scheme ($7.89 billion)
  - – exempt employees ($0.98 billion)
- land tax
  - – liability thresholds ($2.87 billion)
  - – land tax – graduated land tax scale ($2.61 billion)
- private health insurance concession ($1.94 billion).

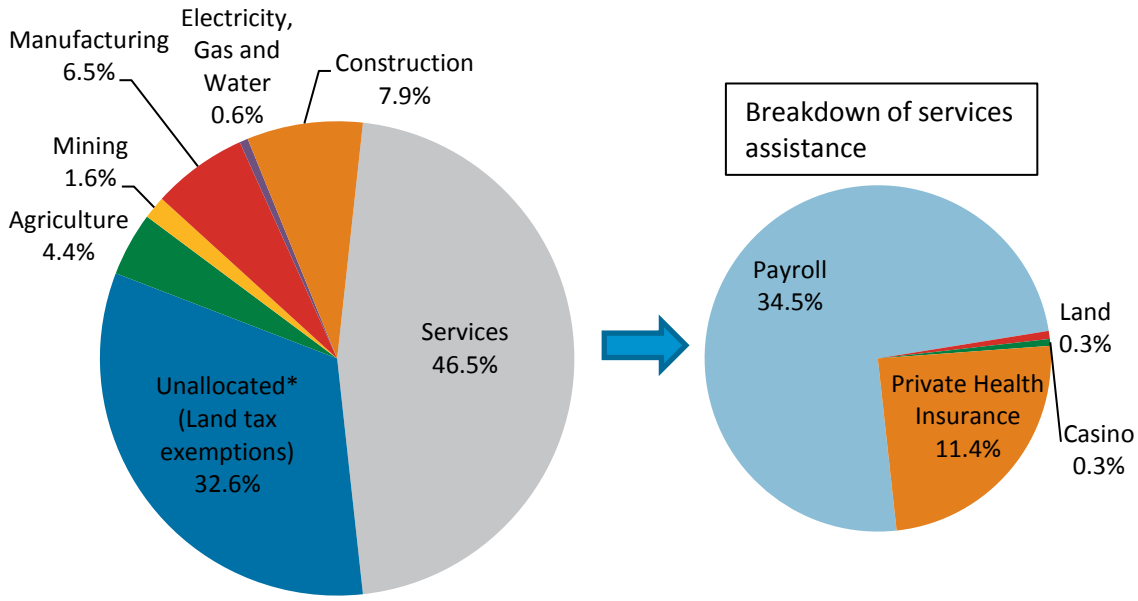
The primary recipients of tax concessions are small businesses, private health insurers and the services sector (for subsidies to train apprentices and trainees).

Small businesses are a major beneficiary of tax concessions for payroll tax ($7.89 billion) and land tax ($5.48 billion) (Figure 5.4). These concessions reduce the amount of tax that a small business is liable to pay.

Private health insurers receive the second largest share of tax concessions ($1.94 billion). Private health care insurance is exempt from stamp duties that apply to other insurance products.

Approximately $982 million in payroll tax concessions are provided on wages for apprentices and trainees. The main recipients of this assistance include the services sector ($540 million), the construction sector ($206 million) and the manufacturing sector ($167 million).

Figure 5.4 Tax concessions by industry sector (2013–14 to 2017–18)



*Note: * Where industry assistance, or a proportion of the assistance, cannot be reasonably allocated to an industry sector then it is assigned to 'Unallocated'. Estimated in 2013–14 dollars.*

Source: QCA estimates.

5.1.5 Underpricing of government-owned assets and services

The Queensland Government provides a range of services to business at below full cost, including electricity, water, rail and port services. Queensland industries received $391 million in assistance (in 2013–14) from underpricing government assets and services. This assistance is estimated to be a similar amount ($330 million) in 2014–15. The total expected value is $1.3 billion from 2013–14 to 2017–18 (in 2013–14 dollars).

The main recipients of industry assistance from underpriced assets and services from 2013–14 to 2017–18 include: the mining sector ($355 million); the agriculture, fisheries and forestry sector ($357 million) and commercial businesses that use parks and state forests ($207 million, mainly benefiting the mining, agriculture and tourism sectors) (Figure 5.5).

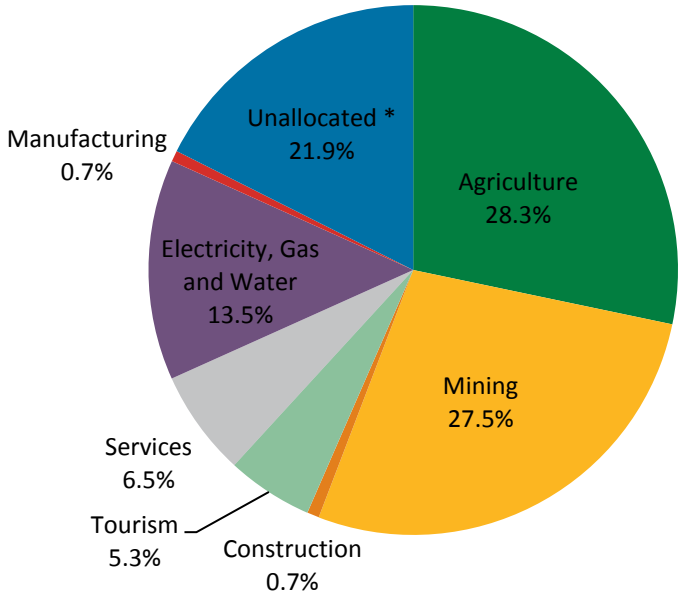
The mining sector receives almost a third of the industry assistance provided through underpriced assets and services. This assistance is primarily provided to subsidise the cost of land leases and port charges for the Port of Gladstone that are set below commercial rates ($245 million).

The agriculture, fisheries and forestry sector receives assistance for a range of activities including: research and development (R&D); biosecurity response and recovery programs; industry and market development; concessional rates for port land leases; programs to improve water quality in the Great Barrier Reef and water licence fees waivers following droughts and

floods events. This assistance is primarily provided by the Agriculture Research, Development and Extension measure ($114 million) and the Biosecurity Response and Recovery measure ($104 million).

Queensland Parks and Wildlife Services provide and manage commercial access to parks and state forests. Commercial access costs the government $207 million to provide and is generally underpriced. The main recipients of this assistance include: the mining sector (for mineral and gas exploration and extraction); the agricultural sector (for grazing and beekeeping); tourism (access to iconic sites) and infrastructure (for example power transmission corridors, water distribution pipelines and telecommunications towers).

Figure 5.5 Underpricing of assets and services by industry sector (2013–14 to 2017–18)



*Note: * Where industry assistance, or a proportion of the assistance, cannot be reasonably allocated to an industry sector then it is assigned to 'Unallocated'; Estimated in 2013–14 dollars.*

Source: QCA estimates.

5.1.6 Regulatory restrictions

The catalogue identifies 153 pieces of legislation that contain regulatory restrictions on competition. Some of these restrictions provide substantial assistance to industry by limiting competition, for example through the provision of an exclusive licence; other regulatory regulations impose an overall cost on industry.

A list of these restrictions is provided in the catalogue of assistance measures. The catalogue specifies the primary legislation, a description of each regulation, the regulatory requirements count and whether the regulation has been reviewed since 2005.

5.2 Assistance provided by the Australian and local governments

In addition to the assistance provided by the Queensland Government, Queensland industry also receives assistance from the Australian and local governments. The Productivity Commission (2014c) estimated that the Australian Government provided $15.6 billion (in gross combined assistance) across Australian industry in 2012–13. Gross combined assistance is a sum of the estimated levels of assistance to industry from output tariff assistance, budgetary

outlays and tax concessions. Including the cost of tariffs on Australian industries, the net combined assistance is $8,502 billion in 2012–13.

Queensland's share of this assistance is approximately $1.6 billion in 2012–13, or 20 per cent of total assistance (see Table 5.1). Australian Government assistance to Queensland industries is provided through tariffs, budgetary outlays and tax concessions. Most of this assistance was provided to the manufacturing sector, though agriculture also received a significant amount.

Table 5.1 Australian Government industry assistance allocated to Queensland (2012–13, $ million[19])

Industry sectors	*Assistance category*		*Gross combined assistance*	*Input tariff assistance (input penalty)*	*Net combined assistance*
	Output tariff assistance	*Budgetary assistance (outlays + tax concessions)*			
Primary industries	55.9	254.0	309.9	–18.9	291.0
Mining	0.2	114.3	114.5	–45.4	69.1
Manufacturing	1453.8	232.2	1686.0	–397.6	1288.4
Services	0	619.1	619.1	–894	–275
Unallocated	0	204.5	204.5	0	204.5
Totals	**1509.9**	**1424.00**	**2933.90**	**–1355.80**	**1578**

Source: PC (2014c).

Local governments in Queensland also provide a range of industry assistance including the development of infrastructure, planning and development concessions, access and use of council land, council rates reductions and the waiving of charges. Although there are no recent estimates of local government assistance, it is likely to be significant. A 1996 survey conducted by the Industry Commission estimated the amount of Queensland local government assistance to industries at $62.2 million (in 1994-95 dollars) comprising: $22.9 million in administrative costs; $15.7 million in revenue forgone; $13.1 million in facilitation; and $10.5 million in subsidies (IC 1996c, pp. 583). This would be equivalent to $101.8 million in 2014–15.

5.3 Conclusion

The Queensland Government provides over $5 billion per year in assistance to Queensland industries. Whilst tax concessions form a substantial part of the assistance, budget-funded measures total more than a billion per annum. These programs mainly target transport, education and training, construction, agriculture and tourism.

Queensland Government assistance is supplemented by around $1.6 billion from the Australian Government and a range of measures provided by local governments.

Subsequent chapters assess whether the assistance provided by the Queensland Government is effective in meeting its objectives and providing an overall benefit for the Queensland community.

[19] The amount of Australian Government assistance allocated to Queensland industries is estimated by: omitting all measures that do not apply to Queensland and including 100 per cent of the measures clearly targeted to Queensland. Other assistance is allocated based on state shares in national industry value added.

6 OVERALL ASSESSMENT

Key points

- Some industry assistance measures are likely to be beneficial, particularly broad based measures that target market failures. However, a significant proportion of industry assistance has little or no positive impact, and the most selective assistance is harmful and reduces economic activity.
- Overall, it is likely that industry assistance comes at a net cost to the Queensland economy. Removing budget-funded assistance alone could increase gross state product by $1.1 billion and increase employment by 8700 jobs.
- There is very little transparency and evaluation of industry assistance in Queensland. Transparency and evaluation are essential to make informed decisions about the allocation of limited resources and to demonstrate appropriate stewardship of taxpayer funds. There is scope to improve industry assistance measures through strengthened policy design and assessment.
- Rather than providing selective industry assistance, the focus of industry policy should be to create the best environment for all businesses through the right taxation, labour market and utility sector frameworks, best practice regulation, appropriate infrastructure and efficient public services.

6.1 Does industry assistance yield a net payoff for the Queensland community?

A fundamental question for this inquiry is whether industry assistance provides a net payoff to the Queensland community. There is a sound rationale for some industry assistance measures, such as the positive spillovers generated by research and development (R&D) or addressing the negative impacts of pollution. There is also a role for government to provide certain types of information that may be underprovided by the market in order to facilitate its efficient operation (Box 6.1).

However, even where there is a basis for government action, assistance needs to be designed in a way that objectives are met without giving rise to costs that exceed the benefits. Some assistance measures have very high delivery costs. While the cost of administering industry assistance measures averaged around 10 per cent for those budget-funded programs that record program administration costs, for a handful of programs, administration costs account for 50 per cent of total program cost, meaning for every dollar of assistance, a dollar is spent administering the program. For a small number of programs, the cost of establishing and administering the program was higher than the amount of assistance provided.

Box 6.1 Potentially beneficial industry assistance

- When firms research and develop new ideas, often their efforts can be used or adapted by others at relatively low cost. Where an innovator does not expect to capture the full benefits of their research and development activities, the private returns may be too low for the research to be undertaken. In the right circumstances, industry assistance which encourages these research and development activities with significant spillover benefits may improve community outcomes.
- It can also be beneficial where it addresses activities with 'public good' characteristics. In the case of early-stage resource exploration in underexplored areas, most of the benefits generated may be external to the explorer, resulting in lesser exploration than would be socially optimal. The external benefits generated from gathering this knowledge may justify government assistance for the activity.
- For similar reasons, education and training may be underprovided if left to the market. As an employee's skills and training are often not firm-specific, employers will tend to under-invest in these general skills since outside firms may be able to 'free-ride' by poaching these employees.
- Information problems may prevent firms from adopting technologies or processes that may otherwise be economically efficient. Industry assistance which addresses these information barriers can assist firms to make decisions which are both in their interests and the interests of the wider community.

There is evidence that some assistance pays for activity that would have occurred anyway, diverts resources from higher value uses and incurs significant costs associated with unintended and perverse outcomes:

- Providing concessional loans to specific sectors can encourage recipients to make inefficient investment decisions and take on higher debt levels than their risk preferences would otherwise allow. Concessional loans can also crowd out private sector providers that are unable to match the concessional rates.
- Securing major events through taxpayer funding expands Queensland's events sector at the cost of other industries both within the state and across Australia. The resulting economic activity from major events is often substantially overestimated and once the costs to the community of securing and staging the event are accounted for the overall impact may be negative.
- Assisting businesses through electricity, water and transport subsidies distorts price signals, resulting in an inefficient allocation of the community's scarce resources, over- or underconsumption of these services and potentially harmful environmental impacts.
- Offering tax concessions to specific industries erodes the tax base, reduces tax efficiency and alters who benefits and who bears the burden of the tax. Often, the tax burden is shifted from businesses to households and labour through higher prices, or lower wages.
- Policy settings which favour specific sectors or businesses, such as local content requirements, can reduce value for money and result in higher costs for taxpayers.

In many cases, there is no rationale for governments to provide assistance. A significant portion of industry assistance provided by the Queensland Government is not directed at improving efficiency, but aimed at supporting certain businesses or sectors over others. Given that the

objective of many of these measures is to increase private profitability of particular businesses, it is highly likely that these programs transfer taxpayer resources to private businesses with either a limited or negative effect on the welfare of Queenslanders as a whole.

6.2 Aggregate impact of industry assistance on the Queensland economy

The large number of diverse industry assistance measures meant that it was not possible to estimate the impact of all existing assistance measures on the Queensland economy. Nevertheless, the QCA has examined the impact of budget-funded assistance (around one quarter of measured assistance).

The impact of discontinuing budget-funded industry assistance measures on the economy was modelled using a computable general equilibrium (CGE) model (Box 6.2).

Box 6.2 Economy-wide modelling of industry assistance

A CGE model is a model of an economy that is used to assess impacts of policy options on an industry-by-industry basis. It specifies transaction values and the nature of demand and supply to model the impact that a change in one sector of the economy will have on other sectors. In doing so, it reflects the impacts that industry policies may have on other parts of the economy.

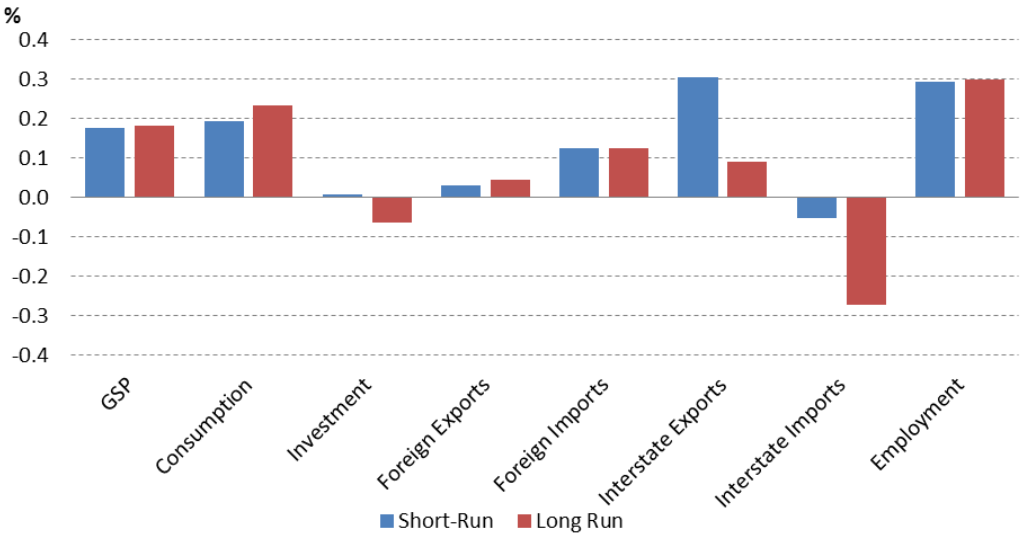
Modelling was undertaken using a Queensland focused Computable General Equilibrium (CGE) model based on the MMRF model developed by the Centre of Policy Studies at Victoria University (Adams *et al.* 2011). The model was used to estimate the difference between a main scenario (where measures are discontinued) against a base case scenario (where the measures continue). The key assumptions under the main scenario include:

- budgetary savings resulting from the discontinuation of assistance measures are returned to industries through reduced payroll tax rates, such that there is no net impact on the Government's budget
- labour is perfectly mobile between jurisdictions within Australia in the long run.

The modelling suggests that the Queensland economy does not benefit from budget-funded industry assistance. While there are beneficial effects of some assistance — particularly those that target market failures — the overall effect is negative. Discontinuing the assistance is expected to cause goods and services produced in Queensland to become more cost/price competitive relative to foreign or interstate produced goods and services. As a result, more goods and services are produced domestically with additional labour drawn from the rest of Australia to enable higher production.

The cessation of assistance is estimated to increase gross state product (GSP) by $590 million in the short run and $1.1 billion in the long run. Similarly, employment in Queensland is estimated to increase by 7000 in the short run and 8700 in the long run.

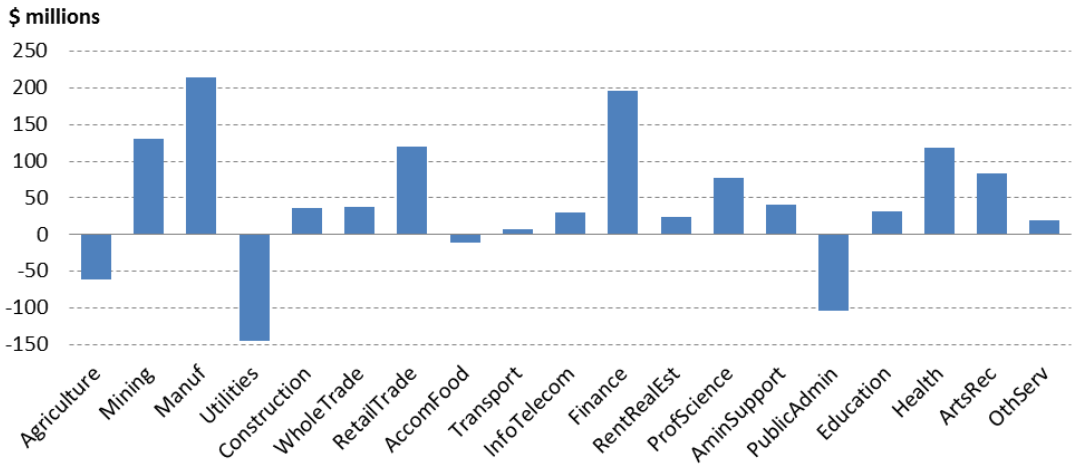
Figure 6.1 Macroeconomic impacts of discontinuing budget funded assistance (per cent change)



Source: CGE modelling results.

Almost all industries benefit from ending assistance. Industries that benefit the most are those that receive less assistance relative to their payroll tax costs, particularly the manufacturing and finance industries. Industries negatively affected are those that receive more assistance relative to their payroll tax costs, which include utilities and agricultural industries. This suggests that assistance to one industry is essentially paid for by other industries and consumers.

Figure 6.2 Inter-industry impacts of discontinuing budget funded assistance ($ millions value added, long run)



Source: CGE modelling results.

Discontinuing assistance has a small positive impact on Queenslanders' welfare (as measured by per capita household consumption). The stronger economy attracts additional workers to Queensland, thereby expanding the population and somewhat diluting the strong increase in consumption on a per capita basis. Per capita household consumption is estimated to increase yearly by $74 and $96 per household in the short and long run respectively. For more detail see Appendix D.

6.3 Transparency is generally poor

The provision of industry assistance lacks both transparency and any formal reporting requirement. Efforts to identify and measure what assistance is provided and for what purpose during this inquiry were hampered by lack of information that is acute for the most selective forms of assistance. The Catalogue of Industry Assistance does not include details on the confidential agreements successive Queensland governments have negotiated with private business to attract particular investments. While anecdotal evidence suggests that the number of such agreements has fallen in the last decade, the number is still likely to be significant. Of particular concern were reports from some parts of industry that assistance programs were essentially viewed as a 'baseline' for negotiating additional confidential agreements with the government.

Transparency is necessary because it provides scrutiny of the assumptions and methods used to support assistance proposals, opportunities to test competing claims and ultimately a basis for the Queensland community to judge the success or failure of industry assistance. It can also lead to improvements in assistance design and implementation over time.

Transparency and accountability are particularly important where the costs of policy action are dispersed across a large group of taxpayers or consumers, but the benefits accrue to a small few. Arguably, the transfer of significant amounts of public resources to private sector businesses should meet the highest standards of public stewardship, transparency and accountability.

Transparent policy development processes can help reduce the likelihood of policy failure. A lack of transparency, including a lack of consultation, appear to be a contributor to reported problems with agreements between the Queensland Government and individual firms (see for example, the Carmichael coal mine project discussed in Box 6.3).

A common argument against transparency is that it would reveal the government's willingness to pay for investment attraction, thereby affecting the State's negotiating position and escalating the cost of subsequent agreements. Where governments are contracting for the supply of goods and services it may be advantageous to limit pricing information. However, the agreements in question essentially pay for inducements, not for goods and services. In such an environment, there are arguably more advantages in public disclosure compared to the benefits of non-disclosure:

> *When private businesses are receiving tax-payers' money, the presumption should be that tax-payers are entitled to know the details. Otherwise, as the Victorian Auditor General has commented: the [lack] of information on public expenditure undermines public confidence in the integrity of the process and creates suspicion of corruption and waste. Indeed, if there is widespread public support for the provision of assistance to industry, then this can only be enhanced by the provision of reliable information. (Banks 2002, p. 13)*

Box 6.3 Carmichael coal mine project

In October 2010, Adani Mining Pty Ltd lodged an Initial Advice Statement for the development of the Carmichael coal mine and rail project in the Galilee Basin with the Queensland Government. The project comprises open-cut and underground coal mines with an anticipated yield of 60 million tonnes per annum and a 189-kilometre rail line connecting the project to the existing Goonyella and Newlands rail system. The rail system connects the mine to the coal terminals at Port of Hay Point and the Port of Abbot Point. The Carmichael mine is one of a series of proposed mines for the Galilee Basin.

Federal and state environmental approvals were obtained by July 2014, subject to a range of environmental conditions.

In November 2014, the Queensland Government signed a series of agreements with Adani, including an infrastructure investment agreement and a statement of intent. The Queensland Government announced that it was, '...prepared to take a short-term, financial stake in the rail, port or other infrastructure needed to open up [the Galilee Basin] to create the jobs Queenslanders need'. The Australian newspaper reported that the deals involved a public contribution from the Queensland Government of $455 million to fund short-term equity stakes in rail, port, airport, water and electricity infrastructure servicing the basin's proposed coalmines.

Based on documents obtained by the ABC, the news agency reported that the draft agreements had been signed without consultation with Queensland Treasury and the Department of Premier and Cabinet, and that Treasury held significant concerns about the lack of consultation and project risks to taxpayers.

Sources: Seeney (2015); ABC News (2015); The Australian (2015); and DSD at http://www.statedevelopment.qld.gov.au/assessments-and-approvals/carmichael-coal-mine-and-rail-project.html.

The Queensland Auditor-General has consistently found that the need for industry assistance agreements to remain confidential is questionable (QAO 2001, 2004, 2012), as did the Queensland's Legislative Assembly Public Accounts Committee (2002):

- *Information should be publicly available unless there is a justifiable commercial or legal reason for it not to be.*
- *Contracts that include commercial-in-confidence provisions should be publicly identified together with a specification of which provisions have been withheld from public scrutiny.*
- *The party requesting commercial-in-confidence should be identified, should justify that position and demonstrate how its commercial interests may be harmed by disclosure.*
- *Taxpayers should not have to rely on provisions in the Freedom of Information Act to access information for the purpose of scrutinising government financial management.*

Similar findings have been made by parliamentary committees and Auditors-General in New South Wales (2001), Western Australia (1996), South Australia (2000), Tasmania (2000) and the Australian Capital Territory (2002).[20]

[20] Public Accounts Committee, Parliament of New South Wales (2001), Public Accounts and Expenditure Review Committee, Parliament of Western Australia (1996), Economic and Finance Committee, Parliament of South Australia (2000), Tasmanian Audit Office (2000), ACT Auditor-General's Office (2002)

In any event, it is questionable whether secrecy reduces the of cost of investment attraction, particularly given the rapid expansion of these agreements under less transparent arrangements in the past and the ongoing interstate bidding wars for major events. An undisclosed investment attraction fund may actually encourage speculation that 'backroom deals' are being negotiated (justified or not) and may encourage rent-seeking behaviour.

6.4 Robust evaluation is hampered by limited monitoring and assessment

Governments need to know the impact of industry assistance to ensure it is delivering a net benefit for Queensland, and, if not, how to make it work better, or whether resources could best be deployed elsewhere.

The ability to evaluate the effectiveness and efficiency of those industry assistance measures that could be identified and measured is severely constrained by the lack of monitoring and assessment undertaken by agencies. While certain areas of government have put considerable effort into monitoring and assessing assistance provided to industry, this is the exception rather than the rule. Many measures have no or poorly specified objectives and are not monitored beyond process requirements, such as the number of applications processed, or more problematically, beyond the target that all the funding allocation be exhausted.

Low levels of monitoring and evaluation are partly due to the fact that, like much policy evaluation, the impacts of industry assistance are often complex and difficult to measure. However, there is also evidence of limited application and poor process. Evaluation should be a central concern when proposing an assistance measure, rather than a secondary consideration.

The paucity of data and evidence available on most industry assistance measures meant that it was not possible for the QCA to apply the performance assessment framework to many individual measures in a robust and rigorous way. The assessments on specific assistance measures presented in the following chapters are based on the best available evidence.

6.5 When and how should governments provide industry assistance?

There is no unequivocally 'right' answer of when and how to provide industry assistance. It most likely to be beneficial when it:

- targets a market failure of significant size and scope, that can be realistically and reasonably ameliorated through policy instruments available to governments
- sets the right incentives and minimises distortions and unintended consequences.

As such, selective industry assistance is a suitable policy tool to address only a narrow range of problems, and given it can be welfare reducing, it should be used judiciously. It is generally not a successful policy instrument for generating economic growth.

Careful design and analysis of industry assistance can improve the likelihood that it will have a positive overall impact. Some key considerations for the design and provision of industry assistance are outlined below. They draw on the principles underpinning the performance assessment framework, general policy design rules and the evidence presented to this inquiry.

Principles to improve industry assistance

(1) The Government should provide industry assistance only where there is a sound rationale for government intervention (for example, where there is a genuine market failure of sufficient size and scope that could best be addressed by the Queensland Government).

(2) Policymakers should assess whether industry assistance is likely to:

  (a) induce socially valuable change that would otherwise have not occurred (that is, are firms being funded for activity that would have occurred anyway?)

  (b) provide the right incentives and avoid unintended consequences such as strategic behaviour by firms, large transfers overseas, adverse interactions with other policies and impeding beneficial structural change

  (c) have benefits that outweigh the costs, and if so, whether it maximises the net benefit to Queensland community.

(3) Policymakers should consider all feasible alternatives, including taking no action and whether different types of industry assistance or non-assistance measures could better address the problem.

(4) Where industry assistance is appropriate:

  (a) it should be provided by the level of government (Australian, State or Local) that can best target the policy problem to prevent duplication and interstate bidding wars that shuffle resources between jurisdictions

  (b) the costs and benefits of providing assistance should be transparent. The amount of assistance, as well as the evidence base that underpins the government decision to provide it, should be publicly available

  (c) monitoring and evaluation should be built in from commencement, including establishing specific and measurable objectives and an appropriate data collection strategy to facilitate meaningful assessment. Assistance should be evaluated at regular intervals to assess and identify opportunities for improvement and foster policy learning.

(5) Social and equity objectives are normally best achieved using policy instruments other than industry assistance. Where adjustment assistance to industry is provided it should be strictly time-bound, facilitate rather than impede change, and be subject to review.

6.6 What role for industry policy?

There is generally broad agreement, even within assisted sectors of the economy, that businesses, not government assistance, drive productivity and economic growth. However, this does not mean that state governments have no role in facilitating economic growth.

Stakeholders to this inquiry cited that other economic factors, such as the relatively high cost of doing business in Australia, overshadowed any concerns over industry assistance measures. This suggests that state governments are best placed to help the efficiency of all businesses by creating a sound environment. This includes providing the right taxation, labour market and utility sector frameworks, best practice regulation, appropriate infrastructure and efficient public services.

Industry generally supported this view:

> *Ai Group does not advocate or support government industry policies "to pick winners". Rather, Ai Group strongly believes industry, and indeed individual businesses, must be driving and directing change within their own businesses. It is imperative that the policy settings in Queensland are right so that businesses can be well-managed, competitive, and innovative, globally engaged and equipped with a skilled workforce in order to make sustainable and competitive contributions to the growth, balance and resilience of the Australian economy. Queensland industry needs efficient internal transport infrastructure, well-functioning energy markets and access to finance. Industry needs taxation, workplace relations and regulatory arrangements that achieve domestic policy objectives as efficiently as possible. (Ai Group sub. 6, pp. 1-2)*
>
> *The best support government can provide is improving the general business environment by driving down costs and removing barriers to growth, which would reduce the need for industry assistance and allow Queensland businesses to compete within Australia and globally. (CCIQ sub. 13, p. 2)*

The advantage of focusing industry policy in this way is that it is likely to:

- be less distortionary than selective industry assistance
- address the main concerns of business (the relatively high cost of doing business in Australia)
- have the biggest impact on Queensland economic growth.

Recommendation

6.1 The Queensland Government should consider the following principles for the design and provision of industry assistance:

(a) The Government should provide industry assistance only where there is a sound rationale for government intervention (for example, where there is a genuine market failure of sufficient size and scope that could best be addressed by the Queensland Government).

(b) Policymakers should assess whether industry assistance is likely to:

(i) induce socially valuable change that would otherwise have not occurred

(ii) provide the right incentives and avoid unintended consequences

(iii) have benefits that outweigh the costs, and if so, whether it maximises the net benefit to the Queensland community.

(c) Policymakers should consider all feasible alternatives, including whether different types of industry assistance and non-assistance measures, could better address the problem.

(d) Where industry assistance is appropriate:

(i) it should be provided by the level of government (Australian, State or Local) that can best target the policy problem

(ii) the costs and benefits of providing assistance should be transparent. The amount of assistance, as well as the evidence base that underpins the government's decision to provide it, should be publicly available

(iii) monitoring and evaluation should be built in from commencement. Assistance should be evaluated at regular intervals to assess and identify opportunities for improvement and foster policy learning.

(e) Social and equity objectives are normally best achieved using policy instruments other than industry assistance. Where adjustment assistance to industry is provided it should be strictly time-bound, facilitate rather than impede change, and be subject to review.

7 INDUSTRY-SPECIFIC ASSISTANCE: AGRICULTURE

Key points

- The agriculture, fisheries and forestry sector is forecast to receive $1.5 billion in assistance from 2013 to 2018. It also benefits from other assistance measures such as transport and electricity subsidies.
- Most drought assistance programs do not provide appropriate incentives to improve primary producers' resilience to drought. Input subsidy programs are likely to be distortionary and inequitable.
- There is no rationale to provide concessional loans to primary producers. The agricultural sector has sufficient access to credit and does not appear to have unique characteristics that would justify a subsidy to primary producers.
- The Queensland Government's regulation and funding of biosecurity should reflect the mix of public and private benefits from these activities. The Hendra Personal Protective Equipment (PPE) Rebate provides an unnecessary subsidy that does not directly target problems related to low awareness of the disease.
- The Queensland Government also provides assistance to improve land management practices in reef catchments and reduce primary producers' impacts on the Great Barrier Reef. While these programs may be an appropriate tool to target pollution since its sources are varied and dispersed, program design, implementation and monitoring pose considerable challenges.

7.1 Level of assistance

Overall, the agriculture, fisheries and forestry sector receives $1.5 billion in assistance from 27 programs. Direct assistance to Queensland's agriculture sector is primarily provided to fund:

- biosecurity arrangements ($152 million)
- drought assistance ($65 million)
- assistance to protect the Great Barrier Reef ($32 million)
- subsidised loans ($37 million)
- industry and market development ($55 million).

Table 7.1 lists the main agricultural measures.

The agriculture sector also receives assistance through:

- a range of tax concessions ($744 million) (see Chapter 11)
- regional livestock freight subsidies ($270 million), concessions for port land leases ($54 million) and irrigation assistance ($39.6 million) (see Chapter 12)
- R&D programs ($120 million) (see Chapter 13).

Table 7.1 Agriculture, fisheries and forestry assistance measures

Measure	*Level of assistance 2013–14 to 2017–18 millions*
Biosecurity arrangements	
Biosecurity Response and Recovery	148.9
Bovine Johne's Disease (BJD) Assistance Scheme and Supplementary Payments Scheme*	3.4
Hendra Virus Personal Protective Equipment Rebate Scheme	0.08
	152.4
Drought assistance	
Drought Relief Assistance Scheme: Freight Subsidies and Emergency Water Infrastructure Rebate	61.1
Water Fee Relief	3.7
Drought Relief from Electricity Charges Scheme**	0.15
Drought Carry-on Finance and Recovery Scheme	0
	65
Assistance to protect the Great Barrier Reef	
Great Barrier Reef Best Management Practice Program for Sugarcane Industry***	12.4
Great Barrier Reef (GBR) Best Management Practice (BMP) Program for Grazing***	10
Reef Water Quality Protection Plan - program support	10
Reef Trust Grazing Project– 'Saving our Soils'	0
	32.4
Subsidised loans	
Primary Industry Productivity Enhancement Scheme (PIPES): First Start and Sustainability Loans	**37.4**
Other measures	
Buy back of fishing authorities	6.6
Compensation to fishers	0
Pricing of Native Forest Log Timber	4.3
Queensland Forest and Timber Industry Plan - chain of custody certification support	0.08
Rural Leasehold Land Rentals	68.2
Agricultural Land Audit	1.1
Industry Development and Market Development	54.9
	135.2
Total	**422.33**

*Notes: * DAFF plans to end this program in 2015. ** The level of assistance is for south east Queensland only. For regional Queensland, Ergon Energy grants a fixed charge waiver to eligible accounts and recovers these costs through government CSO payments. *** Level of assistance includes grants provided to industry and extension activities provided by DAF officers.*

Support for the agricultural, fisheries and forestry sector is provided through a wide array of measures including price subsidies, adjustment assistance, environmental programs and underpricing of natural resources. For example, the Queensland Government compensates fishers for their loss of fishing rights and buys back fishing rights, ostensibly to improve the sustainability of Australia's fish stocks, but it often has a secondary objective of supporting the industry (DAF Information Return) (Box 7.1).

Assistance is also provided through the sale of hardwood sawlogs from Queensland state-owned forests in south east Queensland and the Western Hardwood Region. Hardwood sawlogs from these regions are sold through long-term contracts where the price of sawlogs is likely set below the market price of logs from privately owned native forests. Hardwood sawmillers purchasing these sawlogs benefit from the underpricing at a cost to the Queensland community. Outside of these areas, sawlogs are sold by the Department of Agriculture and Fisheries (DAF) through a competitive tender process (DAF Information Return).

DAF also undertakes more general industry and market development activities across the sector such as R&D, extension services, technical services, strategic planning, and supply chain networking opportunities. Some of these activities could be considered general government activities, but others may constitute industry assistance where they provide business services to the agricultural sector.

In addition, the agriculture, fisheries and forestry sector may be the ultimate beneficiary of assistance provided for:

- small businesses for payroll tax concessions ($7.9 billion) and land tax concessions ($5.5 billion) (see Chapter 10)
- the rail sector through the Rail Network and Infrastructure Financing ($1.1 billion from 2013-18) (see Chapter 12)
- the electricity sector to reduce the cost of electricity to remote and regional customers ($1.42 billion) (see Chapter 12)
- access to parks and state forests ($207 million) (see Chapter 14).

Box 7.1 Buyback and compensation programs for natural resource management

Buyback Schemes

In the past two decades, the Australian and Queensland governments have implemented a range of buyback programs to reduce the wild catch from Australian fisheries. For example:

- The Great Barrier Reef Marine Park Fishery Buyback (2004) paid 122 fishery businesses an average of $270 000 ($33 million in total). The average amount paid to 16 onshore fisheries-related businesses was about $444,000 ($7 million in total) (PC 2012b).
- The Queensland East Coast Net Fishing Buyback (2012–2014) provided $9 million to purchase 74 commercial licence fishing packages. Total net fishing effort fell by 8 per cent over the period of the buyback (DAF 2015b).

Buyback schemes can include the purchase of vessels, licences or access and gear with the aim of reducing the total fishing effort in a fishery (Squires 2010).

Some of the impacts of a buyback mechanism can be:

- In the short run, fishers that remain in the market may have fewer vessels to compete with and an opportunity to increase profits. The pressure on the natural resource is reduced, assuming that the buyback has reduced fishing effort in the fishery.
- In the long run, a reduction in the number of competitors and the opportunity of positive profits can lead to an increase in fishing effort through the adoption of new technology and investments. The extent to which this occurs will depend on regulations that restrict the total allowable catch and the effectiveness of compliance and enforcement measures.
- Inefficient fishers or fishers with unused licences are more likely to enter a buyback process, as they can obtain a higher price for a licence or vessel through the buyback. The removal of these individuals will not necessarily reduce the total fishing effort. Under a tender process efficient fishers are less likely to participate in buyback, as the value of their licence is inflated by their capacity to catch fish (Squires 2010).

Other challenges in using buybacks can include: low take-up rates, appropriate buy-back design, and fairness considerations. Buybacks provide highly selective assistance to individual firms; therefore, if they are not designed appropriately, they can raise a range of fairness concerns. For example, a comparison of recipients under successive Tasmanian forestry exit programs found eight forestry businesses that received $3.8 million in transformation assistance in 2007 were later awarded $6.4 million in exit grants in 2011 (PC 2012b).

Industry compensation for changes to fishery rights

In Queensland, compensation for the loss or reduction in fishing entitlements (as prescribed by a licence or authority) is legislated by the Fisheries Act 1994. This Act prescribes when, how much, and the time period in which compensation is payable, and the responsibilities of the state and property rights holders. To date, these provisions have not been invoked.

Policy changes that remove or reduce property rights can result in grounds for compensation; however, the case is not always clear cut. There is a generally accepted principle that governments should compensate where they reduce or remove physical property rights. However, property rights that are largely or solely generated by government policy regulation are generally assessed on a case-by-case basis. For example, under the Australia Constitution, landowners have the right to 'just compensation' for the loss of land, but a change in zoning or land use regulations will not require compensation to owners for the loss of capital values (PC 2001).

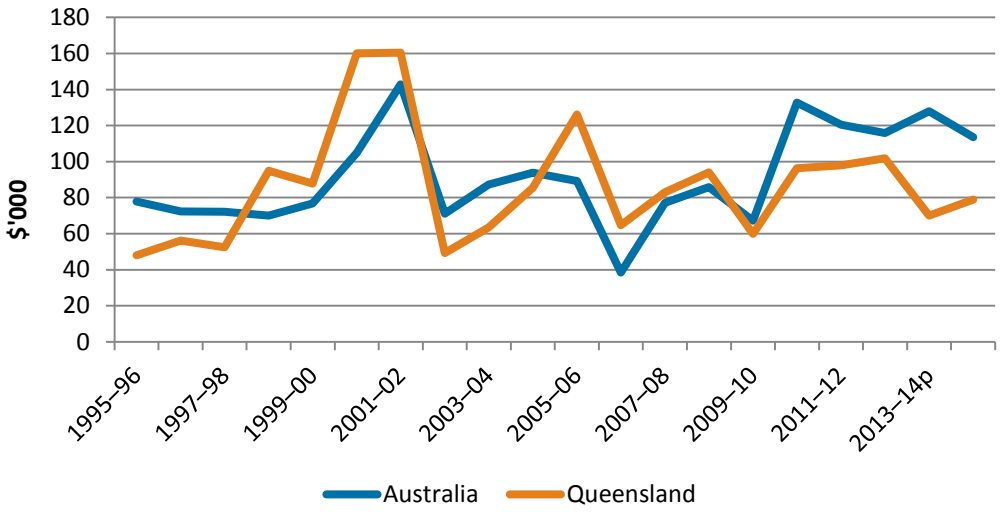
7.2 Agriculture in Queensland

In 2012–13, the value of agricultural production in Queensland was $10 billion (approximately 21 per cent of Australia's agricultural production by value). The sector employed two per cent of Queensland's workforce (52,600 people) and accounted for 21 per cent of Australian farm businesses (27,000 entities), consisting primarily of beef cattle (48 per cent) and sugarcane (11 per cent) farms.

The cattle sector generated $3.5 billion (or 34 per cent) of the value of agricultural production in 2012–13, followed by the fruit and nut, sugarcane and vegetable industries which contributed $1 billion each. Major fruit and vegetable crops in Queensland include bananas ($457 million), avocadoes ($112 million) and mandarins ($78 million). Cotton accounted for $677 million or 7 per cent of the value of agricultural production (ABARES 2015).

The average farm income (receipts minus cash costs)[21] of broadacre farms[22] in Queensland was $102,000 in 2012-13, 12 per cent below that of similar farms across Australia (see Figure 7.1). In the past two years the gap has widened as a result of drought conditions, and Queensland farm incomes have declined to $74,000 per annum.

Figure 7.1 Average farm income for Australian and Queensland broadacre farms, 1995–96 to 2014–15



Note: p is a preliminary estimate.

Source: ABARES (2015).

7.3 Drought assistance

Drought assistance programs provided to Queensland farmers include:

- **Drought Relief Assistance Scheme: Freight Subsidies** — up to 50 per cent of freight costs, for transporting fodder, water and livestock during a drought event and subsidies for

[21] Farm income is the difference between total cash receipts and total cash costs.

[22] Broadacre farms generate the majority of their receipts from grains, grains–livestock, sheep, beef and sheep–beef production.

livestock returning from agistment[23] up to two years after a drought event. This is the largest drought assistance measure.

- **Drought Relief Assistance Scheme: Emergency Water Infrastructure Rebates** — up to 50 per cent for the cost of water infrastructure is provided to farmers in drought declared areas that have run out or are about to run out of water for stock.

These measures will provide $61.1 million in industry assistance from 2013–14 to 2014–15.

- **Drought Relief from Electricity Charges Scheme** — reimbursements to farmers or irrigators for the fixed component of their electricity accounts. This assistance is provided in drought declared areas when a producer cannot pump water for farming or irrigation purposes due to restricted water supply. It is estimated at $150,000 from 2014–15 to 2015–16.
- **Water Fee Relief** — waiver of annual water licence fees for landholders, irrigators, primary producers and businesses impacted by floods and drought. Assistance is forecast to be $3.74 million from 2013 to 2018.

The total amount of assistance is $65 million from 2013–14 to 2017–18. In the 2015–16 budget, the Queensland Government announced additional funding for drought assistance that amounts to $30 million in 2015–16 and a further $6 million from 2016–17 to 2018–19.

The Drought Carry-on Finance and Recovery Scheme provides loans at concessional interest rates during and following a drought event. This measure is inactive and no new loans have been approved in the last five years. DAF has advised that there are 86 outstanding loans and administration costs for existing loans are minor.

DAF (sub. 27, p. 5) noted that the drought assistance measures identified as part of this inquiry exist within a broad program of interlinked policies and activities:

> *The Queensland Government, not to mention other jurisdictions, industry organisations, natural resource management bodies, private sector providers etc, implement a range of programs which improve the environmental and economic resilience of the private sector. ... Examples of programs that increase landholder's resilience, including to episodes of drought, are Best Management Practice programs, information resources on sustainable stocking rates and financial counselling services. State investment in road infrastructure, changing varieties and breeds, the introduction of new technologies and modernisation of vegetation management policies are some of the other factors that have been, and continue to be, effective in improving the resilience of the agricultural sector to drought.*

Drought response and preparedness in Australia is delineated by the Intergovernmental Agreement on National Drought Program Reform (IANDPR). The agreement between the Australian, state and territory governments is underpinned by the *1992 National Drought Policy* (Department of Agriculture 2015c).

The objectives of the agreement are to:

- *assist farm families and primary producers to adapt to and prepare for the impacts of increased climate variability*
- *encourage farm families and primary producers to adopt self-reliant approaches to manage their business risks*
- *ensure that farm families in hardship have access to a household support payment that recognises the special circumstances of farmers*

[23] Where livestock are moved from drought-affected properties to drought-free areas where they can access alternate pasture or feed.

- *ensure that appropriate social support services are accessible to farm families*
- *provide a framework for jurisdictions' responses to needs during periods of drought. (Department of Agriculture 2015c)*

A list of the Australian Government drought assistance measures is provided in Box 7.2.

Box 7.2 Australian Government drought assistance programs

Measure	Description
Ongoing assistance	
Farm Household Allowance (FHA)	The FHA provides eligible farmers experiencing financial hardship with assistance and support to improve their long-term financial situation. The measure consists of a fortnightly allowance (equivalent to the Newstart Allowance), a Health Care Card and adjustment advice that includes a Farm Financial Assessment. The FHA is only available to a recipient for up to 3 years.
Farm Finance Concessional Loans Scheme	The scheme provides loans for up to 50 per cent of a farms eligible debt. Loans can be for debt restructuring and productivity enhancement.
Farm Management Deposits (FMD)	FMDs allow farmers to set aside pre-tax income from primary production and build-up cash reserves. The income is tax deductible in the year that it was deposited but is taxable when withdrawn.
Taxation measures	The Australian Taxation Office can provide people affected by drought and natural disasters with additional time to pay tax debts or arrange for tax debts to be paid in instalments without interest charges. In some cases individuals may be released from these payments.
Rural Financial Counselling Service (RFCS)	The RFCS Program provides grants to state and regional organisations to provide financial counselling to primary producers, fishers and small rural businesses.
In-drought assistance	
Drought Concessional Loan Scheme	The scheme provides loans for up to 50 per cent of a farm businesses debt. Loans can be for the restructure of existing eligible debt (including Farm Finance Concession Loans), for new debt related to operating expenses or drought recovery and preparedness activities.
Water Infrastructure Rebates	The provision of financial assistance for the installation and upkeep of water-related infrastructure in 2014–15.
Social and community support	This measure provides free support services including one-on-one counselling, family support services and programs to identify individuals that may need assistance. This measure also provides Drought Coordinators to support programs.
Pest management in drought affected areas	The Australian Government provided $3.5 million to the Queensland Government for the implementation of controls to manage pests and feral animals.

Source: Department of Agriculture (2015c).

7.3.1 Is there a rationale for government assistance?

Drought is a natural part of the Australian climate. It is a reoccurring but unpredictable event that varies in length and magnitude of impacts. Lindesay (2005) and the Australian Bureau of Statistics (ABS 2009) report that Queensland experienced significant drought events in 1902–04, 1914–15, 1918–20, 1939–45, 1963–68, 1972–73, 1980–83, 1991–95 and 2002–09:

> *Since the early 1990s, drought has formally been recognised as a natural characteristic of Australia's variable and changing climate. Successful management of climate risk is recognised as a definitive characteristic of farming excellence (Hennessy et al. 2008).*

While the impacts of drought can be wide-ranging, they predominately affect agriculture and the environment. As noted by AgForce, from 1974—2004, agriculture registered the highest volatility in year-to-year output growth of all ANZSIC industry divisions — with an index of volatility more than two and a half times greater than average for all industries (PC in AgForce sub. 43, p. 3).

Drought can substantially reduce farm production and income and result in severe financial hardship for farm households, with flow-on impacts on family relationships, mental health and community stability and cohesion. In 2015, the Queensland Government declared 80 per cent of Queensland to be in drought.

However, drought, in itself does not justify governments providing industry assistance to farm businesses. Most farmers are self-sufficient and resilient to drought events:

> *In 2007-08, 23 per cent of Australia's 143 000 farms received drought assistance, totalling over $1 billion, with some on income support continuously since 2002.*
>
> *In drought declared areas, most farmers manage without assistance. From 2002-03 to 2007-08, on average, about 70 per cent of dairy and broadacre farms in drought areas received no drought assistance. (PC 2009)*

Moreover, much of the agricultural sector has improved its ability to manage in periods of drought through decisions to:

- diversify the source of household income from on-farm net cash income, off-farm employment and financial investments (specifically in liquid assets)
- diversify farm income sources through production activities and/or through the use of land in different parts of the state or country that may not be simultaneously affected by drought
- improve a farm's capacity to respond during a drought event (e.g. improved water use efficiency or irrigation systems)
- adjust farm practices with the onset of a drought event (PC 2009; OECD 2009; Lock *et al.* 2012).

A 2013 AgForce survey reports on the extent of farm improvements in drought affected shires:

> *.....over 250 members in 30 drought affected shires showed that over 90% had made efforts to prepare for drought following the last event, including improving water resources (65%), managing/reducing grazing pressure (39%), native vegetation regeneration (15%) and more proactive management/planning (16%). (AgForce sub. 43, p. 4)*

Overall, climate variability is a business risk and as such there are limited efficiency grounds for governments to provide industry assistance. That said, there may be market failures associated with absence of drought insurance markets. Other industries normally have access to insurance markets to manage risk. However, private insurance providers may not provide drought insurance because there is a limited risk pooling opportunities (that is, because all farmers go

into drought at the same time, drought insurance is not offered because premiums would be too high).

Some drought programs are aimed at offsetting the 'missing market' for drought insurance. For example, the Commonwealth Farm Management Deposits Scheme (and its predecessors) aims to increase farmers' pre-tax income savings (during periods of high income) to assist them during periods of low income (such as drought events).[24]

Even so, the strong expectation that governments will provide drought assistance, in effect means that taxpayers absorb some of the cost of drought risk, and limit any potential private provision of such products. As noted by the Queensland Government (2008b):

> *Surveys relating to government support during drought have indicated that there is an expectation among primary producers and the community that some form of government intervention will automatically occur in drought*
>
> *… while certainly not the only reason, the fact that the government is prepared to take on an element of the climate risk by providing drought assistance measures may crowd out this potential [insurance] market.*

7.3.2 Are drought programs effective?

The objective of the drought assistance programs are to provide direct financial assistance or input subsidies (for the cost of electricity, water, fodder, the transport of livestock and operating expenses) to support farmers during, and in recovery from, drought. Programs are focused mostly on the provision of financial assistance to farmers. None of the programs aim to improve drought preparedness, with the exception of the water infrastructure program.

Multiple reviews of national drought policy have found that industry assistance programs for farm businesses during drought do not increase drought preparedness or facilitate socially valuable structural adjustment for marginal farming land. Due to the information asymmetries facing government, assistance is often provided to those businesses that did not prepare for drought and those with higher net asset values (Box 7.3).

Box 7.3 Drought policy reviews

Review	***Key Recommendations/Findings***
1997 — Drought Policy Task Force *Review of the National Drought Policy*	• Transaction-based subsidies and interest rate subsidies be phased out • Improve farm financial and land resource planning via education and training programs • Encourage farmers to build cash reserves during good seasons to prepare for downturns • Research and development on the effects of prolonged drought • Introduce a Farm Family Re-Start Scheme, targeted at farmers unable to access payments from other sources

[24] Such schemes are generally considered a more efficient means of managing drought compared to other types of assistance. Farmers use FMDs as an alternative to drought insurance to manage income variation, however, these schemes have been criticised because they may not be used for self-insurance against drought but to reduce or defer tax. During the 2002–2009 drought, FMD holdings for Queensland farms increased from $297 million to $631 million (a 100 percent increase in holdings). With the onset of the 2012 drought event, holdings grew more modestly from $643 million to $707 million in 2015 (a 10 per cent increase).

Box 7.3 Drought policy reviews	
	• Counselling services be managed by state governments and provided at an early stage of drought • Amend and combine Income Equalisation Deposits (IED)[25] and Farm Management Bonds (FMB)[26]
1997 — McColl *et al. Mid-term review of the 1992 Rural Adjustment Scheme (RAS 92)*	• Remove interest rate subsidies and grants to farm businesses for productivity improvement or Exceptional Circumstance (EC) support • Replace RAS 92 with an improved scheme addressing the issues of management skills, farmer re-establishment, and savings and welfare • Introduce FarmBIS and the Farm Re-establishment Scheme • Introduce a single instrument combining IEDs and FMBs • Higher priority should be accorded to research on climate change, climate variability and climate prediction
2004 — Drought Review Panel *Consultations on National Drought Policy*	• Most stakeholders would support a shift in government focus towards drought preparedness measures at the expense of business support • EC Relief Payments were valued highly and regarded as being necessary during drought • Stakeholders were less in favour of business support (EC Interest Rate Subsidy and fodder/transport subsidies) — overall, stakeholders thought such assistance encouraged debt and supported the less prepared • Transaction-based fodder and freight subsidies seen to have a detrimental effect on farmers in other states (most stakeholders considered these subsidies should cease) • EC process as a whole seen as too demanding, complex and confusing • Off-farm income and assets limits for accessing EC assistance seen as restrictive • Criticism by stakeholders about perceived differences in administration of ECIRS between states • Farm Management Deposits and FarmBis schemes strongly supported • Rural Financial Counselling service regarded highly
2006 — Agriculture and Food Policy Reference Group *Creating our Future*	• Phasing out of interest and other transaction-based subsidies by the end of 2010 • Maintain Farm Management Deposits
2009 — Productivity Commission Inquiry *Government Drought Support*	• Most farmers are sufficiently self-reliant to manage climate variability • The National Drought Policy's drought assistance programs do not help farmers improve self-reliance, preparedness and climate change management. Much assistance encourages poor management practices and does not facilitate valuable structural adjustment in the sector • Exceptional circumstances subsidies and relief payments should be terminated

Source: PC (2009).

The input or transaction subsidies provided by the Queensland Government have similarly been found to come at a net cost with a range of unintended impacts. For example, the Queensland Government (2008b) concluded:

> *Transaction based subsidies alter behaviour by:*

[25] A scheme that allows farmers to deposit pre-tax income for use in later years.
[26] Allows farmers, with non-farm income of up to $50,000 per annum, to use the IED scheme

- *encouraging producers to maintain higher stocking levels during drought (potentially causing environmental degradation)*
- *encouraging the maintenance of stock through agistment whereas it may have been better to dispose of the stock*
- *encouraging producers … to purchase fodder during drought rather than building fodder storages*
- *increasing the demand for fodder which work to the detriment of other purchases of fodder e.g. pigs and poultry that don't get DRAS but must compete for the same fodder thus raising fodder costs*
- *leading to unintended perverse natural resource management outcomes (e.g. soil erosion may be worsened if destocking is delayed due to access to transaction based subsidies)*
- *discouraging producers from diversifying into activities that are not supported by DRAS in times of drought. (Queensland Government 2008b, pp.14–15)*

Likewise, a Department of Primary Industries and Energy study identified perverse outcomes:

> *Input subsidies would often be of most benefit to those least in need, that is, those on higher incomes or operating larger farm enterprises. They also tended to distort the input mix used by farmers through their encouragement of decisions based on assistance rather than commercial or production criteria. (Wonder 1995, p. 4)*
>
> *There was evidence that much of the fodder subsidy support was appropriated by the transport and feed sectors through higher prices paid by livestock producers, to the detriment of farmers not in receipt of the subsidy. (Wonder 1995, p. 9)*

In 1992, the Queensland Government committed to phase out transaction based subsidies by 2002 under the National Drought Policy, but decided to not fulfil the commitment due to drought conditions at that time.

Assistance programs that reduce the cost of transportation for livestock, fodder and water or irrigation infrastructure may incentivise farmers to structure business to maximise the provision of government assistance, rather than invest in improving self-sufficiency. Input subsidies also increase the overall demand for a good, its price and the price of substitutes, which adversely affect those farmers not receiving assistance and non-farm businesses.

Input subsidies can also distort decisions on when and how much of a farming property is destocked (Queensland Government 2015a; MLA 2014). The objective of subsidies to transport feed and water for livestock is to assist farmers to maintain the condition of their core breeding stock during drought events. However, these subsidies may be used for all livestock and result in overstocking for extended periods, with increased grazing pressure causing permanent damage of native vegetation and soil erosion impacts (McKeon 2004).

In response to the Draft Report, both the Queensland Farmers' Federation (sub. 19) and AgForce (sub. 43) were opposed to any changes to drought assistance in the short term, but recognised the need to reform drought assistance:

> *With 80% of the State currently drought declared, it is an inopportune time to consider major changes to the Queensland Government's drought assistance initiatives. ...drought assistance measures will be necessary until satisfactory progress is achieved in a permanent national drought assistance scheme, with a focus on preparedness. QFF continues to support a repositioning of relief and recovery assistance measures to improved emphasis on mitigation i.e. measures taken in advance to reduce impacts. (QFF sub. 19, p. 4)*
>
> *AgForce is not opposed to a reform of drought support and supports a policy framework that encourages risk management, 'preparedness' for drought and building of industry resilience. In*

> *light of this, a revisiting of the structuring of DRAS and the assistance it delivers for future events could be valuable, including considering access for the cropping sector. (AgForce sub. 43, p. 3)*

In summary, primary producers are virtually unique in the receipt of ongoing assistance to manage market and climate risks. The large majority of businesses in Queensland do not receive additional subsidies in response to changes in market conditions, even where the changes are substantial and largely unexpected.

Notwithstanding this, Queensland farmers and rural communities can experience substantial financial hardship and social stress during periods of long drought. In such cases, there may be a role for governments to provide welfare support for farming households commensurate with the safety net arrangements available for other Australian households. However, this provides grounds for welfare support for farm households, rather than assistance for farm businesses.

Recommendations

7.1 The Queensland Government should:

- **(a) remove drought assistance provided through input or transaction based subsidies, with appropriate transitional arrangements**
- **(b) abolish the Drought Carry-on Finance and Recovery Scheme.**

7.2 The Queensland Government should ensure that any drought support provided by the Queensland Government is consistent with the National Drought Policy and:

- **(a) encourages farmers to improve self-reliance and resilience to climate variability**
- **(b) avoids distortionary impacts among farm businesses, and between farm and non-farm businesses**
- **(c) complements Australian Government programs so that the joint implementation of these measures results in effective policy**
- **(d) ensures that farm and rural households can access welfare support payments that are commensurate with assistance afforded to all Australians.**

7.4 Subsidised loans

The Queensland Government, through the Queensland Rural Adjustment Authority (QRAA), provides the Primary Industry Productivity Enhancement Scheme (PIPES) which offers loans at concessional rates to primary producers[27] to improve their productivity and sustainability. The Scheme provides loans through two distinct categories, First Start Loans and Sustainability Loans:

- First Start Loans are provided at concessional rates of interest to assist new entrants into primary production to establish a viable enterprise in the first years of operation.
- Sustainability Loans provide loans at concessional rates of interest to assist existing primary producers to implement systems and management practices that enhance productivity, sustainability and long-term viability.

[27] Primary producers, for the purposes of the Scheme includes those enterprises involved in agricultural, apicultural, aquacultural, commercial wild-catch fishing, forestry, grazing and horticultural industries.

DAF advised that PIPES 'is a transitional loan scheme, whereby recipients receive a concessional interest rate until such time as their business is viable at commercial rates and they move to a commercial lender' (DAF sub. 27, p. 2).

The level of assistance provided by the Scheme, as measured by the interest rate subsidy is $37.42 million over five years.

7.4.1 Is there a rationale for the measure?

DAF provides a number of rationales to support the Scheme:

> *...with a variable climate, drought conditions, market prices, and rising input costs Queensland farm businesses are struggling to meet demands and are experiencing significant pressure to manage change and maintain productive and sustainable enterprises. (DAF Information Return)*

The scheme provides:

> *...targeted financial means for producers to obtain information and introduce practices that reduce environmental impacts*

In addition, according to DAF, the scheme aims:

> *...to help the agricultural sector to overcome significant structural issues associated with an ageing industry. Renewal within the industry is important for modernisation and associated improvements in productivity and environmental outcomes, and smooth succession planning and transfer is important for knowledge transfer and to maintain economic output in regional areas. (DAF sub. 27, p. 3).*

However, there is no evidence that Queensland primary producers have sufficiently unique characteristics that would justify access to subsidised financial capital over any other Queensland business. Similarly, there is no evidence that primary producers' access to capital differed in any significant way from that faced by other small businesses (PC 2009).

Producers access to capital aside, Agforce considered First Start loans are a valuable form of assistance for new entrants 'particularly when the Queensland Government applies an economically inefficient transfer duty on intergenerational farm transfers involving a financial consideration.'

Furthermore, noting the relatively low turnover in the agricultural workforce, Agforce submitted that 'temporary financial instruments may well deliver broader societal benefits in facilitating this structural adjustment and the entry of a new generation in a manner that reduces the risk of enterprise failure' (Agforce sub. 43, pp. 5–6).

Finally, Agforce stated that 'given [Sustainability Loans] go towards assisting farmers dealing with environmental impacts, often with significant capital cost and long term payback periods, they address the risk of under-investment in environmental sustainability' (Agforce sub. 43, p. 6).

However, if other market failures or barriers exist, such as transfer duties or negative environmental externalities, they would best be addressed directly rather than providing interest rate subsidies to particular farmers. The Best Management Practice workshops provided by the Department of Environment and Heritage Protection (DEHP) as part of the Reef Water Quality Plan (see Section 7.5 of this chapter) are an example of assistance measures more closely targeting externalities.

Box 7.4 Governments as bankers

Governments sometimes use financial instruments or risk expenditures such as concessional loans or guarantees to redirect resources to desirable activities or sectors. In the presence of market failures, financial instruments can assist governments to improve society's welfare. A good example is the Australian Government's Higher Education Loan Programme.

However, government provision of credit subsidies or guarantees may not always provide the best outcome for society. Au-Yeung *et al*. (2006) considers that risk expenditures are often an indirect and less efficient method for achieving a government objective when compared to a direct budget outlay. For example, cash outlays to in-need farm households during a drought directly target their low income and longer term viability while, zero interest loans tied to farm production provide an income benefit but also encourage increased indebtedness, inefficiently biasing farm production.

Experience with concessional loans and subsidies in other jurisdictions reach similar conclusions. Evaluating a number of credit subsidy programs in the United States, Bosworth, Carron and Rhyne (1987) found that supplying direct credit subsidies to firms to undertake activities with perceived public benefits were often ineffective. The programs frequently provided loans to borrowers who would have been able to get loans in the private market, and often, the loans were used to finance activities not targeted by the policy. Gale (1991) estimates that high program costs and the infra-marginal nature of United States credit programs created government costs in excess of 50 cents per dollar of targeted lending.

In Korea, Dailami and Kim (1991) found that credit subsidies were largely ineffective at stimulating investment in productive investment assets, but lead to increased holdings of real estate and speculative assets. Buttari (1995) considers that the mixed success of direct credit programs in East Asian countries in the post-war period were largely a result of fundamental economic conditions, macroeconomic stability and accumulation of human capital, rather than the influence of credit programs.

7.4.2 Is the Primary Industry Productivity Enhancement Scheme effective?

The scheme's objectives include to:

- encourage young or emerging farmers into agriculture and support succession planning
- assist Queensland producers to increase productivity and long-term viability, manage and mitigate the effects of climate and market risks
- implement appropriate resource management and environmental practices.

As the objectives listed above do not provide a performance target which is specific, measurable and time-related, it is difficult to judge the measure's success. The Queensland Farmers' Federation submitted that outcomes can:

> *...be difficult to quantify into a formulaic assessment tool. Environmental benefits, enhanced productive capacity and greater industry resilience are benefits of industry assistance that are considerably harder to measure, yet equally valuable. (QFF sub. 19, p. 5)*

The QRAA does monitor loans data (see Table 7.2). Based on the data provided, the take-up of the program exceeds its loan establishment target with non-performing loans well below the arrears management target.

Table 7.2 PIPES performance indicators — 2013–14

Loan establishment target	*Loan establishment actual*	*Loan maintenance*	*Arrears management target*	*Arrears management actual*
$60 million per annum	$74 million	1600 loans (as at October 2014)	3 per cent of loans	0.46 per cent

Source: DAF Information Return; DAF (sub. 27, p. 3).

In addition to the loans data, QRAA surveys stakeholders to assess awareness and satisfaction with the scheme. According to QRAA, on average 86 per cent of clients (approved and declined) are satisfied or very satisfied with QRAA's services and although there has been a significant increase in application volumes over the past two financial years, satisfaction levels have remained stable. While the take-up of loans and client satisfaction is high, it is likely that similar results could be expected were concessional loans offered to other industry sectors.

QRAA incurs significant operational costs associated with its lending activities, which most likely reflect the prudent risk management and due diligence required to administer a financial lending program. Notwithstanding this, the expenses incurred as a proportion of industry assistance are very high (see Table 7.3).

However, DAF advised that the scheme:

> *...has an associated revenue stream, which more than offsets the costs of program delivery (including credit losses), in this case in the form of loan repayments and interest. As above, the cost to the State is...the opportunity cost of the State's initial investment in the Scheme. (DAF sub. 27, p. 2)*

Concessional government loans are often advocated on the basis that they are 'costless' assistance. But advocating for concessional loans on the grounds that governments can absorb sub-commercial returns assumes they are both costless and riskless. Extending this logic suggests that government should bear all the risk and finance all lending in the economy. The well-known costs associated with state-owned banks, including lower economic growth and financial market distortions (La Porta *et al.* 2002) and several high-profile Australian banking collapses, including the State Bank of South Australia and the State Bank of Victoria, should warn against such an approach.

Moreover, even where PIPES does not impose costs in an accounting sense, it does not mean it is costless to the Queensland community. PIPES still involves an opportunity cost — the benefits forgone by taxpayers from having their funds used by PIPES, compared to other public sector programs or through lower taxation.

Table 7.3 Costs of providing assistance through PIPES

Cost	*2013–14 (est. actual) $M*	*2014–15 (budget) $M*	*2015–16 (forward est.) $M*	*2016–17 (forward est.) $M*	*2017–18 (forward est.) $M*
Value of new PIPES lending	79	60	60	60	60
Value of concession provided to the sector	12.78	6.16	6.16	6.16	6.16
Proportionate estimate of employee costs associated with PIPES	5.97	4.72	4.76	4.87	4.98
Operational costs and proportion of corporate overheads	1.95	2.05	2.32	2.32	2.26
Expenses as a proportion of industry assistance provided	62%	110%	115%	117%	118%

Source: DAF Information Return.

Given that applicants for PIPES must demonstrate sound prospects for commercial viability and the ability to service the loan in the long term, it is likely that some producers would have obtained a loan at market rates in the absence of the program. Therefore, it is highly probable that most of the benefits of this program entirely accrue to the producers receiving the assistance and the cost is borne by the taxpayer.

Aside from the difficulties above, the scheme may have some distortionary impacts on the lending market. As the private sector also provides loans to primary producers, the scheme may crowd out private sector providers that are unable to match the concessional rates.

DAF advised that the distortionary impact is likely to be minor:

> *...the Scheme is designed not to compete with the commercial lending sector, but to complement it...*

and that the:

> *...2011 Rural Debt Survey reported that the total Scheme's loan book, at the end of 2010-11, accounted for just 1.22 per cent of the total primary producer debt. (DAF sub. 27, p. 2)*

DAF also noted that the scheme is not broadly available to primary producers and:

> *Since January 2011, 19 per cent of declined applications were declined because applicants were considered too strong and not in need of concessional loan assistance. (DAF sub. 27, p. 2)*

Nonetheless, a review of the Scheme in 2010 found that it may impact the lending market, particularly at the smaller end of the spectrum:

> *...commercial sources of finance are available to fund the same activities as PIPES and, in respect to first property purchase financial institutions, are more flexible and accept third party collateral for loans. The committee acknowledges that some larger financial institutions did not regard PIPES as competition, that smaller institutions did regard PIPES as competition and that most representatives would regard PIPES as direct competition if program loan limits were raised to $1 million. (DEEDI 2010, p. 12)*

In addition, providing loans to primary producers at concessional rates could encourage farms to take on higher debt levels than would otherwise be the case. Specifically:

> *The Commission does not support offering concessional finance to a group of borrowers to induce them to borrow at a higher level than their own risk preferences would allow. A greater sensitivity to a loss of the farm due to the high non-monetary value placed on farming is rational and does not provide an efficiency case for measures to encourage farmers to take on more debt. (PC 2009, p. 204)*

Overall, while agricultural stakeholders (Agforce, DAF and the Queensland Farmers' Federation[28]) supported PIPES as a low-cost, less distortionary agricultural assistance measure, it remains unclear why primary producers should receive selective assistance in the absence of evidence that primary producers face significant constraints in accessing capital when compared to other Queensland businesses. In the absence of market failures, providing assistance which impedes the efficient allocation of risk and the structural adjustment of a sector is likely to benefit the recipients of the concessional loans, at the cost to the community.

Recommendation

7.3 The Queensland Government should abolish the Primary Industry Productivity Enhancement Scheme.

7.5 Biosecurity arrangements

DAF administers a range of programs that prepare for, prevent, manage and eradicate biosecurity threats. From 2013–18, the Queensland Government is forecast to provide $152 million in industry assistance for biosecurity arrangements. Assistance is provided as follows:

- **Biosecurity Response and Recovery**
  - Biosecurity Queensland for a range of services to manage existing and emerging pests, diseases and weeds. The cost of assistance is budgeted at approximately $64.4 million per annum in 2013–14 and 2014–15.
  - National Cost Sharing Emergency Agreements to implement response plans for exotic and emerging pests and diseases. It is estimated that $20 million in assistance will be provided from 2013 to 2018.
- **Bovine Johne's Disease (BJD) Assistance Scheme and Supplementary Payments Scheme** – compensates farmers affected by BJD, for the slaughter of infected animals and quarantine mandates that last more than two months. The total cost of assistance is estimated at $3.4 million from 2013–14 to 2014–15.
- **Hendra Virus Personal Protective Equipment Rebate Scheme** – reimburses veterinarians for the cost of protective equipment used to test for the Hendra virus. Assistance will amount to $76,000 from 2013–14 to 2014–15.

Australian, state and local governments share responsibility for the development of regulations and programs to monitor, control or eradicate biosecurity threats within Australia. Australian Government responsibilities focus on pre-border and border components of the biosecurity system, with several post-border exceptions such as the National Bee Pest Surveillance Program and the Northern Australia Quarantine Strategy. State governments are primarily responsible for biosecurity risks within their jurisdictions, but also participate in national programs for exotic

[28] Agforce (sub. 43, p. 6); DAF (sub. 27, pp. 2–4) and QFF (sub. 19 p. 5)

(or non-endemic) pests and diseases. Local governments are primarily responsible for the management of domesticated and feral animals, weeds and wildlife (Beale *et al.* 2008).

7.5.1 Biosecurity Queensland

Biosecurity Queensland is responsible for the Queensland Government's development and implementation of programs and regulations that minimise the biosecurity risks and impacts on the Queensland economy, community and environment. The Department's objectives are to:

> *...mitigate the risks and impacts of animal and plant pests, diseases and weeds to the economy, the environment, social amenity or human health by leading the Government's efforts in prevention of, response to and recovery from biosecurity threats. This service area also maintains market and consumer confidence by ensuring the welfare of animals and reducing the risk of agricultural chemical contamination. (DAFF 2014a, p. 8)*

The range of services provided includes:

- surveillance programs and the preparation of emergency responses for exotic and emerging pests and diseases (e.g. exercises undertaken for Foot and Mouth Disease)
- eradication and/or management of established (endemic) pests, diseases and weeds
- scientific support (including diagnostics and research stations)
- actions to maintain continued market access and product integrity for Queensland products
- development and administration of biosecurity regulations (DAF Information Return; DAFF 2014a, p. 4; and DAF 2012).

7.5.2 BJD assistance and compensation payments

The most recent BJD outbreaks in Queensland occurred in 2012 and 2013. To control and/or eradicate this outbreak, infected animals were destroyed and the movement of animals from infected farms restricted. In 2015, 16 farmers remain under restrictions (DAF 2014) and it is estimated that $3.4 million will be provided in compensation to industry from 2013–14 to 2014–15.

The management of BJD across Australia is coordinated by Australia's National BJD Strategic Plan 2012–2020. The plan is funded by the beef and dairy industries and is coordinated by Australian livestock industries (Cattle Council of Australia, Meat and Livestock Australia, Australian Dairy Farmers and Dairy Australia), Animals Health Australia, governments and the veterinary profession (Animal Health Committee). The objective of this plan and programs implemented under this plan is to:

- *help minimise the contamination of farms and farm products*
- *support the protection of non-infected herds while minimising disruption to trade*
- *help reduce the social, economic and trade impact of BJD at herd, regional and national levels. (AHA 2012; and AHC 2012)*

7.5.3 National Cost Sharing Emergency Agreements

A National Cost Sharing Emergency Agreement is an intergovernmental agreement that commits affected parties to a shared responsibility for responding to exotic and emerging animal plant pests and diseases. A list of the current agreements to which the Queensland Government contributes is provided in Box 7.5.

Box 7.5 Queensland Government contributions to National Cost Sharing Agreements (2013-14 to 2017-18, $'000)

- Four Tropical Weeds ($5025)
- Electric Ants ($405)
- Red Imported Fire Ants (South East Queensland) ($7413)
- Red Imported Fire Ants (Yarwun) ($388)
- Exotic Fruit Fly Strategy (Torres Strait) ($225)
- Banana Freckle ($4140)
- Avian Influenza (Young NSW) ($761)
- Red Witchweed ($1285)[1]
- Cucumber Green Mottle Mosaic Virus ($79).[2]

Notes: 1. A national agreement for red witchweed will be finalised shortly, as this pest is not covered by existing deeds or response agreements. 2. This national response plan is being updated as it is agreed that eradication is no longer feasible.

Agreements outline a coordinated response plan that clarifies the responsibilities of each party and reduces the opportunity for parties to free ride. Additionally, the cost sharing requirements in these agreements increase the likelihood that the compensation costs or the costs of the response are shared by the beneficiaries.

Two of these agreements, the Banana Freckle Eradication Program and the High Pathogen Avian Influenza, are conducted under existing national biosecurity responses, the Emergency Plant Pest Response Deed and Emergency Animal Disease Response Agreement respectively (AHA 2012; and PHA 2015). These agreements must comply with the conditions of the national biosecurity responses. Each prescribes an appropriate response program (including planning and implementation activities), surveillance initiatives, community involvement and cost sharing arrangements (Table 7.4).

Table 7.4 Financial contributions for the Banana Freckle and Avian Influenza Response agreements

Contributors	***Value of contributions ($'000)***	
	Banana Freckle Eradication Program[1]	***High Pathogen Avian Influenza response agreement[2]***
National Partnership payment	498	2380
Industry contributions	997	1190
Total	1495	3570

Notes: 1 Industry contributions are provided by the Australian Banana Growers Council and Nursery and Garden Industry Australia; 2 Industry contributions are provided by the Chicken Meat Federation and the Australian Egg Cooperation Limited.

Source: COAG 2014.

The remaining agreements are coordinated by government, and response costs are shared by the Queensland Government, the Australian Government and select impacted jurisdictions, without industry contribution (COAG 2014). These agreements share the conditions of national biosecurity responses, but industries do not contribute financially to these programs. These

arrangements aim to recover the cost of a response where possible, however, for many of these agreements it is difficult or impossible to quantify the benefits attributed to each party from a response program.

7.5.4 What is the rationale for governments to regulate and fund biosecurity?

Pests and diseases can impose significant costs on both industry and the Queensland community (see Box 7.6). Similarly, the benefits of preventing or limiting the impact of pests and disease through biosecurity measures are both private and public in nature. As noted by AgForce:

> *Further, biosecurity responses benefit the whole community by reducing the risk of pest, weed and disease incursions for all individuals and address these risks wherever they occur, often on private property. (AgForce sub. 43, p.3)*

A farmer's decision to implement biosecurity controls will depend on the costs and benefits. If the private benefits of controls (increasing yields or reducing production costs) outweigh the control costs (the labour and material costs of control) then there is a private incentive to implement controls. However, farmers implementing controls cannot exclude farmers in surrounding areas from also benefiting.

Biosecurity is generally considered to be subject to market failures because of its public good characteristics (non-excludability): biosecurity benefits flow to all primary producers and the wider community. For example, consider a group of farmers that coordinate their control activities to manage a region's wild dog population. As a result of their coordinated efforts, the pest animal density is reduced and the livestock losses are minimised. An individual purchasing land in the region may choose to join the groups' control activities and share the costs, or free ride at no additional cost. Landowners that free ride obtain the same benefits as the group, at no cost. As a result, individual land owners may not have sufficient incentives to invest in adequate biosecurity controls.

Similarly, if a pest or disease outbreak occurs on a farm, farmers may not have sufficient incentives to locate the pest or disease quickly, confine it, and implement a control or eradication strategy (i.e. to prevent negative spillovers on neighbouring properties or the wider industry). In such cases, compensation may improve incentives to report potential outbreaks early and collaborate and comply with the response requirements, reducing the likely spread of the disease and the overall cost of an outbreak.

Box 7.6 Pests and diseases in Queensland

Fire ants are aggressive and can damage ecosystems (e.g. by destroying seeds, seedlings and fruit), kill newborn and young animals and cause blindness in animals (DAF 2013a). The value of ecosystems services lost is estimated at $43 billion over 30 years.

Hendra virus is a disease in horses that may be transferred to humans. The mortality rate for infected horses is 75 per cent and four of the seven humans that have contracted the disease have died (DAF 2011).

Siam weed is a tropical weed which damages: fruit crops, native vegetation and pasture; it is toxic to livestock; increases the occurrence of bushfire events (DAF 2013b); and can produce allergic reactions (skin irritations and asthma) for some people. The value of ecosystems services lost is estimated at $5 billion over the next 25 years.

The electric ant is a small ant (1.5 mm long) that primarily damages invertebrate populations and small vertebrates and competes with other ant species. It is estimated that the Queensland tourism industry will lose $3.9 million if the electric ant is not eradicated.

Varroa mites are parasites that cause the collapse of bee colonies, resulting in a significant reduction in the provision of pollination services and the production of honey. The mite is not in Australia but its arrival is inevitable. The Asian Honey Bee is the varroa mite's natural host and it is established in far north Queensland. It is estimated that the loss in pollination services will cost the horticulture industry $50 million per annum and $70 million for plant industries.

Wild dogs in Queensland can damage and kill livestock and native species, spread disease and threaten human safety. The cost of wild dogs on the Queensland grazing industry was estimated at $67 million in 2008–09.

Rabbits compete with native animals and livestock for pasture, destroy the landscape and increase soil erosion by preventing the regeneration of native vegetation. They cost Australia between $600 million and $1 billion annually.

Source: DAF Information Return.

Individual farmers may have insufficient incentives to provide biosecurity, but where the industry sector as a whole is the primary beneficiary, there may be a case to have industry collectives fund these activities. For example, industry levies are used for a range of agriculture commodities to provide marketing services, R&D, animals and plant health programs and residue testing. A list of levies for select industries is provided in Box 7.7. For instance, the Australian banana farmers use a mandatory levy to finance a range of activities including biosecurity programs and emergency responses for industry (Department of Agriculture 2015b). Even so, cost sharing arrangements may not always be effective or efficient.

Box 7.7 National mandatory agriculture levies

Commodity	*Use of levy*
Dairy Produce Levy (milk and milk products)	Marketing, R&D and animal health programs.
Grains (includes coarse grains, cotton, grain legumes, oilseeds, pasture seeds, rice and wheat)	R&D, plant health and residue testing and Wheat Exports Australia programs for the grains industry.
Horticulture (over 20 horticulture commodities)	Marketing, R&D, plant health, residue testing programs for the horticulture industry. Some also include plant and animal biosecurity programs and emergency responses for industry.
Livestock (over 11 livestock commodities)	Marketing, R&D, animal health and residue testing programs for the livestock industry.
Wine or Grapes	Marketing, R&D and plant health programs for the wine/grapes industry.
Other including egg promotion, farmed prawns, forest and wood products, forest growers, queen bees, sugar cane and wool	Marketing and/or research and development programs for each of the industries.

Source: Department of Agriculture (2015b).

In summary, the public/private split of costs and benefits is the primarily rationale for government intervention in biosecurity to ensure that a sufficient level of biosecurity services are provided. It also underpins the rationale for the cost sharing arrangements.

7.5.5 Are biosecurity measures effective?

Evaluating the effectiveness of biosecurity arrangements in Queensland would require a much broader assessment of the costs and benefits of biosecurity measures than just the industry assistance aspects of the regulatory and funding framework. This view was shared by QFF:

> *The Government's commitment to biosecurity prevention, preparedness and eradication measures does not have an exclusively agricultural focus. Reducing the threat of pests and diseases has benefits for the community as a whole, including reducing risks to human health and damage to the built and natural environment. (QFF sub. 19, p.3)*

DAF does complete a cost–benefit analysis to assess whether there will be a benefit from implementing some biosecurity measures, as well as specifying performance indicators for some measures. Notwithstanding this, some biosecurity measures, particularly those introduced in response to a pest or disease emergency, are not always well targeted or necessarily effective.

For example, the objective of the Hendra Personal Protective Equipment Rebate measure is to increase awareness and reduce the impacts of the disease; however it is questionable as to whether the current program targets this objective.

The Hendra Personal Protective Equipment Rebate measure was:

> *... developed in response to a demonstrated barrier in the private veterinary industry's understanding of the need to utilise appropriate Personal Protective Equipment (PPE) in potential Hendra virus cases, (which had given rise to a number of veterinarians contracting or being monitored for Hendra virus infection). (DAF Information Return)*

In practice this measure provides financial assistance only to veterinarians that are aware of the need to use appropriate PPE to test suspected cases of the Hendra virus. A subsidy does not increase veterinarians' awareness of the problem and is unlikely to significantly reduce the number of veterinarians contracting the disease. Presumably, an education program alone for both veterinarians and horse owners would achieve the objective without incurring the costs of assistance. In addition, given the small size of the program, it is highly likely that the cost of establishing and administering the program outweighs the actual assistance provided.

In 2012, Biosecurity Queensland completed an internal review of the scheme and will undertake a final review to determine if the scheme should close or continue operating until 23 March 2016 (DAFF sub. 27, p. 5).

Recommendation

7.4 The Queensland Government should abolish the Hendra Virus Personal Protective Equipment Rebate Scheme.

7.6 Assistance to protect the Great Barrier Reef

7.6.1 Who provides assistance to protect the Great Barrier Reef?

The Reef Water Quality Protection Plan is a program of coordinated projects and partnerships with a number of agencies, including DAF and DEHP, responsible for different projects. The Reef Plan includes a number of partnerships that are designed to improve the quality of water entering the Great Barrier Reef by improving land management practices in reef catchments.

The primary goal of the Reef Plan is to ensure that by 2020 the quality of water entering the reef from broad-scale land use has no detrimental impact on the health and resilience of the Great Barrier Reef. Activities include:

- **Best Management Practices (BMP) for Grazing** — the program provides funding to the Grazing BMP Partnership to develop and implement BMP for the grazing industry in the Fitzroy, Burdekin and Burnett Mary catchments. The program promotes grazing land management practices to improve the quality of water flowing into the Great Barrier Reef. The level of assistance provided by the BMP program is $10.03 million over four years.
- **Best Management Practices for Sugarcane** — a partnership between the Queensland Government and CaneGrowers. The program promotes sugarcane land management practices to improve the quality of water flowing into the Great Barrier Reef by providing seven modules through local facilitators. The level of assistance provided by the BMP program is $12.39 million over four years.
- **Reef Quality Protection Plan (Program Support)** — DAF delivers and provides technical and extension support for projects undertaken as part of the Reef Water Quality Protection Plan. The level of assistance provided by the program over five years is $10.01 million.
- **Reef Trust** — the project engages graziers to establish demonstration properties and sites to help prove, quantify and promote the socio-economic benefits of adopting best practices, while at the same time reducing sediment runoff. The Reef Trust grazing project is delivered on behalf of the Australian Government through a Funding Deed. Funding is provided by the Australian Government and administered by DEHP. No industry funding is provided by the Queensland Government for the Reef Trust project beyond administrative assistance ($0.2 million over four years).

7.6.2 Is there a rationale for providing assistance?

According to the *Scientific consensus statement on water quality in the Great Barrier Reef* (Brodie *et al*. 2013), there is overarching agreement "that key Great Barrier Reef ecosystems are showing declining trends in condition due to continuing poor water quality, cumulative impacts of climate change and increasing intensity of extreme events."

Furthermore, the consensus statement (Brodie *et al*. 2013, p. 1) advised that:

> *...the decline of marine water quality associated with terrestrial runoff from the adjacent catchments is a major cause of the current poor state of many of the key marine ecosystems of the Great Barrier Reef.*

And that:

> *...the main source of excess nutrients, fine sediments and pesticides from Great Barrier Reef catchments is diffuse source pollution from agriculture.*

Pollution, as a source of market failure, is a negative externality as its costs are borne by society rather than the polluter. Ideally, where the polluters can be identified and their impacts measured, the costs of pollution can be internalised (see Box 7.8) through measures such as a Pigouvian tax. However, where pollution is diffuse and individual polluter impacts unknown, it is difficult to remedy the externality with such instruments.

Box 7.8 The Polluter Pays Principle

The 'polluter-pays' principle suggests that the party which undertakes an activity that causes spillover environmental damage (negative externalities) should pay for that damage. This is justified on the basis that that the environment is a community asset and the party that damages that asset should pay compensation to the community.

Charging for environmental damage can promote the efficient use of environmental resources since environmental damage should arise only where the value of the output associated with the damage is greater than the value the community places on the environment that was damaged.

However, applying the 'polluter pays' principle is not always straightforward. Where environmental damage from an activity is severe or irreversible, it may not be acceptable to permit damage to proceed, regardless of the price. In these cases, marginal trade-offs between environment services or assets and other goods may not be acceptable. For that reason, for example, lead in petrol is simply banned, rather than priced.

In other cases, the polluter may be difficult to identify and third parties may be able to reduce environmental costs more cheaply. In such circumstances the government could impose costs on those best able to reduce the pollution, even if they are not the polluter. For example, business owners may be required to keep their street frontage free from litter.

Finally, it can sometimes be difficult to determine the 'just' allocation of rights to pollute between two parties. For example, when someone builds a house on land near an existing airport, should they then be entitled to compensation for the aircraft noise?

Source: Henry et al. (2010, p. 348).

While the 'polluter pays' principle should normally apply to environmental externalities, given the sources of pollution are diffuse and varied, a second best approach may be to target the imperfect information aspects of the market failure.

As such, Agforce submitted that:

> *A voluntary and holistic approach with clear measurable targets that are monitored and publicly reported is supported over a heavy handed, regulation-based approach'*

And that the program:

> *...offers the best opportunity for sustained practice change that will deliver towards achieving the health and resilience of the Great Barrier Reef that is sought by the Australian people (Agforce sub. 40, p. 7).*

The Department of Environment and Heritage Protection advised (DAF Information Return) that primary producers, notably sugarcane farmers and graziers, have limited information and understanding of their activities' impacts on water quality in the Great Barrier Reef lagoon. DAF advised that information-based initiatives included in the reef plan seek to:

> *Address market failures associated with imperfect information (namely gaps in knowledge of the environmental and economic efficacy of improved management practices, and about reef water quality more broadly) and asymmetric information (making information about the environmental and economic efficacy of improved practices available to industry). (DAF Information Return)*

The Scientific Consensus Statement (Brodie *et al.* 2013, p. 10) advised that:

> *Our knowledge of the effectiveness of specific management practices in terms of water quality benefits and economic outcomes has improved significantly since 2008 and improved the ability to prioritise management action. However, the costs and risks for landholders associated with changing management practices can prove significant barriers to adoption and are not well understood.*

The Productivity Commission (2003b) considered that 'because of the complexity, heterogeneity and dispersion of the diffuse sources, and the inability to monitor them, governments cannot prescribe land management practices that are both viable and cost-effective.' It therefore considered that 'targeting inputs or practices is the only practical option at present.'

7.6.3 Are the programs effective?

Given the diversity of producers that impact the GBR, it is unlikely that accurate measures of the effectiveness and cost effectiveness of assistance are readily obtainable.

The assistance is likely to be most effective where it targets information asymmetry but improvements are privately cost effective, fairly compatible with existing practice and easily observed and tested. For example, the Reef Plan noted that, for one producer, innovative technology for applying herbicide fertilizer nutrients resulted in 27 per cent reductions in herbicide application, saved some farmers approximately $10 to $12 per hectare on the cost of herbicide.

Similarly, research conducted by the CSIRO (Roebling *et al*. 2004) on the likely adoption of BMPs by agricultural producers in the Douglas Shire found:

> *...best management practices in sugarcane production (such as reduced tillage, legume fallow and reduced nitrogen application) are economically viable at the farm level and, therefore, likely to be adopted by sugarcane producers in the Douglas Shire with appropriate support in the form of information provision, extension and demonstration programs. However, improvements in water quality resulting from the adoption of these management practices are likely to be relatively small. The provision of incentives that lead to the adoption of management practices that are not economically viable at the farm level (like spoon-shaped cane drains) are likely to have far stronger positive effects on water quality. (Roebeling et al. 2004, p. 25)*

In addition, as producers' knowledge of best practice increases, the marginal benefits for continuing to provide this information through training modules is likely to diminish, particularly where there are private net benefits in implementing the BMPs. Furthermore, it is unlikely to be cost effective to obtain complete coverage of each industry.

The coverage of the Reef Plan's programs are also highly selective, with assistance provided to graziers and sugarcane growers to improve land management practices while horticulturalists, who are also monitored against the Reef Plan's targets, do not receive assistance. Those activities with relatively small but locally significant impacts on water quality, such as manufacturing, industry, mining, urban environments, waste treatment, ports and shipping, do not receive assistance to improve their practices.

While the specific costs and benefits of BMPs cannot be quantified, evidence suggests that if best management practices are adopted, water quality in the GBR lagoon would improve. Indeed, the Scientific Consensus Statement (Brodie *et al.* 2013) advises that improved land and agricultural management practices have been proven to reduce the runoff of suspended sediment, nutrients and pesticides at the paddock scale.

Windle and Rolfe (2011) estimate that the marginal public benefit of improving water quality by one per cent over 25 years (100,000 tonnes of sediment, 200 tonnes of nitrogen and 46 tonnes of phosphorus) is between $66.7 million and $102.4 million.

That said, to assess the effectiveness of the BMPs, the benefits of reduced excess nutrient, fine sediment and pesticide loads as a result of the measure would need to be identified and measured against the costs of providing the education. Accurate measurement is likely to be difficult in practice.

Beyond using scientific evidence to estimate the likely effects, the Queensland Government releases a Reef Report Card annually to track changes in the quality of water and participation in reef-related programs. The measure is one of the few industry assistance measures provided by the Queensland Government which assigns measurable targets, conducts ongoing monitoring and evaluation and reports results publicly. Across the GBR, between 2009 and 2013, the programs' results have been mixed. Adoption rates of BMPs amongst producers are well below their targets, besides for late dry season ground cover (Table 7.5).

Table 7.5 Proportion of producers who adopted improved practices from 2009–13

Region	***Grazing (Target: 50%)***	***Sugarcane (Target: 80%)***	***Horticulture (Target:80%)***	***Late dry season Groundcover (Target: 50%)***
Great Barrier Reef-wide	30%	49%	59%	84%
Cape York	48%	-	-	-
Wet Tropics	23%	45%	50%	94%
Burdekin	54%	55%	63%	82%
Mackay Whitsunday	69%	49%	66%	91%
Fitzroy	28%	39%	42%	84%
Burnett Mary	19%	55%	50%	92%

Source: Queensland Government 2014h.

In addition to the slow take-up of improved practices, the Reef Plan measures have also failed to meet their load reduction targets (see Table 7.6).

Table 7.6 Pollutant load reduction 2009–2013

Region	*Nitrogen (Target: 50% by 2013)*	*Sediment (Target: 20% by 2020)*	*Pesticides (Target: 50% by 2013)*
Great Barrier Reef-wide	10%	11%	28%
Cape York	6%	8%	-
Wet Tropics	8%	13%	26%
Burdekin	10%	16%	13%
Mackay Whitsunday	17%	9%	42%
Fitzroy	3%	4%	5%
Burnett Mary	15%	3%	28%

Source: Queensland Government 2014h.

However, while the Plan largely failed to achieve its targets, average loads entering the GBR have fallen significantly, indicating the immediate goal of halting and reversing the decline in the quality of water entering the GBR may have been met (Queensland Government 2014h). Furthermore, inshore seagrass showed signs of recovery in some regions and improved from the rating of very poor to poor.

In 2015, the Queensland Audit Office (QAO 2015) released a review of the Queensland Government's contribution to improving the water quality in the GBR and concluded that:

- significant changes to the Queensland Government's overall program and BMP are required:

  > *Improving agricultural land management practices in the sugarcane and grazing industries is a key strategy of the Reef Plan. Results indicate that the right balance has not been achieved between industry-led, voluntary approaches and regulatory enforcement. The limitations that result from the missing rigour in overall program design are evident in the lack of clear, appropriate incentives and disincentives in the design of these voluntary Best Management Practice (BMP) programs. (QAO 2015)*

- there is insufficient information to conclude that 'halting and reversing the decline in the quality of water entering the Great Barrier Reef has been met', as stated in the GBR Report Card.
- the conflicts between improving agriculture production and reducing the quality of water would be better managed by a single entity.
- it is unlikely that the current level of practice change will achieve the 2013 Reef Plan targets.

Overall, despite a prima facie case that programs like the Reef Plan may be an effective way to improve water quality in the GBR, its design, implementation and monitoring pose considerable challenges. While there may be scope to improve the design and monitoring of the Reef Plan, it is one of the few industry assistance measures where attempts are made to transparently monitor and evaluate the effectiveness of assistance. Future evaluation and refinements should benefit from these efforts.

8 INDUSTRY-SPECIFIC ASSISTANCE: TOURISM

Key points

- The Queensland Government is involved extensively with the tourism and major events sector. In addition to a range of industry plans and activities, the Government also provides eight direct industry assistance measures with an expected cost of $312 million over the period 2013–18.
- These measures consist entirely of budgetary outlays, with 44 per cent of the assistance dedicated to secure business or major events, 38 per cent for the purpose of destination marketing, and the remaining 18 per cent for direct financial support to tourism operators and organisations.
- Market failures may exist in the tourism market where, for example, 'free riding' may mean destination marketing campaigns or major events will be underprovided, or not provided at all, because private providers cannot capture sufficient benefits from doing so.
- However, the potential for these market failures does not necessarily justify government funding and support for all of these activities. It is highly likely that a significant proportion of the benefits derived from industry assistance will accrue to those in the tourism sector with minor benefits generated to non-tourism related taxpayers.
- Ideally, those who benefit from destination marketing should pay for those services (a 'user pays' system). However, there are some barriers to achieving this in practice.
- Flow-on economic activity resulting from major events is often substantially overestimated because evaluations either use an inappropriate analytical technique or apply an appropriate technique poorly.
- Expensive interstate bidding wars for major events by state governments are highly likely to be zero sum games. Major events, secured at significant taxpayer expense, primarily expand a state's tourism sector at the cost of other industries within the state and the rest of Australia.
- A cross-jurisdictional agreement between all state and territory governments should be explored to end unnecessary bidding wars.
- Decisions on whether to fund major events should be based on a comprehensive published cost–benefit analysis. The Queensland Government should support major events only if the estimated net social benefit of an event is positive for both the state and Australia as a whole.

8.1 Tourism sector

The tourism sector is made up of businesses from a range of different industries that provide goods and services to visitors, such as accommodation, transport and tours. Tourism is not defined as an industry in the usual sense as it is characterised by the consumption, rather than production, of goods and services. For the purpose of this report, the definition of the tourism sector follows the approach of the tourism satellite account (TSA) framework.[29] This is consistent with the methodology adopted by Tourism Research Australia (TRA) to measure and estimate the economic contribution of tourism at a state level in Australia (TRA 2014).

Under the TSA framework, the tourism sector comprises tourism characteristic industries and tourism connected industries. Tourism characteristic industries are defined as industries that would either cease to exist in their present form or be significantly affected if tourism were to cease.[30] Tourism connected industries are industries which produce a tourism connected product, where the products are consumed by tourists in volumes which are significant to the tourist and/or the producer.[31]

TRA estimated that the tourism sector contributed 7.9 per cent ($23 billion) to Queensland's gross state product and 10.3 per cent of employment, or 241,000 jobs, in 2012–13 (TRA 2014).

8.2 Industry assistance provided to tourism and major events

The Queensland Government is involved extensively with the tourism sector through tourism-specific policies and assistance. Since 2012, the Government has conducted a series of forums with the industry known as DestinationQ. These forums have resulted in successive partnership agreements between the government and industry (represented by the Queensland Tourism Industry Council). The aim of these agreements is to achieve Queensland's share of the national target to reach $30 billion in overnight visitor expenditure by 2020.

In conjunction with these industry policies and activities, the Queensland Government provides eight direct tourism and major events assistance measures with a total expected cost of $312 million for 2013–18.

These measures are provided for the purpose of:

- bidding, developing, coordinating, providing infrastructure for and promoting business and major events —$136.7 million
- destination marketing and promotion — $123.7 million
- direct financial support to tourism operators and organisations — $51.8 million (the support is often spent on either destination promotion or securing special events).

All measures are budgetary outlays provided through Tourism and Events Queensland (TEQ). As illustrated in Table 8.1, almost half of the assistance is dedicated to secure business or major events. Forty per cent of the assistance provided to the tourism sector is for the purpose of

[29] The TSA framework estimates the economic contribution of tourism within the system of national accounts (SNA). A satellite account allows for the identification and separation of activities of interest while maintaining the concept and structures of the SNA methodology.

[30] These industries include: 1) accommodation and ownership of dwellings, 2) cafes, restaurants and takeaway food services, 3) clubs, pubs, taverns and bars, 4) rail, taxi and other road transport, 5) air, water and other transport, 6) motor vehicle hiring, 7) travel agency and tour operator services, 8) cultural services, 9) casino and other gambling services, 10) other sports and recreational services.

[31] These industries include: 1) automotive fuel retailing, 2) other retail trade, 3) education and training.

destination marketing while the remaining 16 per cent is for direct financial support to tourism operators and organisations.

Table 8.1 Tourism and major events assistance measures

Purpose	*Share*	*Measure*	*Level of assistance ($ million, 2013–14 to 2017–18)*
Bidding, developing, coordinating, providing infrastructure for and promoting business and major events	44%	Major Events (excluding Commonwealth Games)	$119.2
		Business Events	$17.5
Destination marketing and promotion	40%	Tourism Industry Marketing	$107.8
		Destination and Experience Development	$9.8
		Attracting Aviation Investment Fund	$6.1
Direct financial support to tourism operators and regional tourism organisations	16%	Contestable Grants for Regional Marketing and Development Activity	$16.3
		Regional Development Program	$15.3
		Core Grant Funding to Regional Tourism Organisations	$20.2
Total	100%		$312.2

Source: Appendix C.

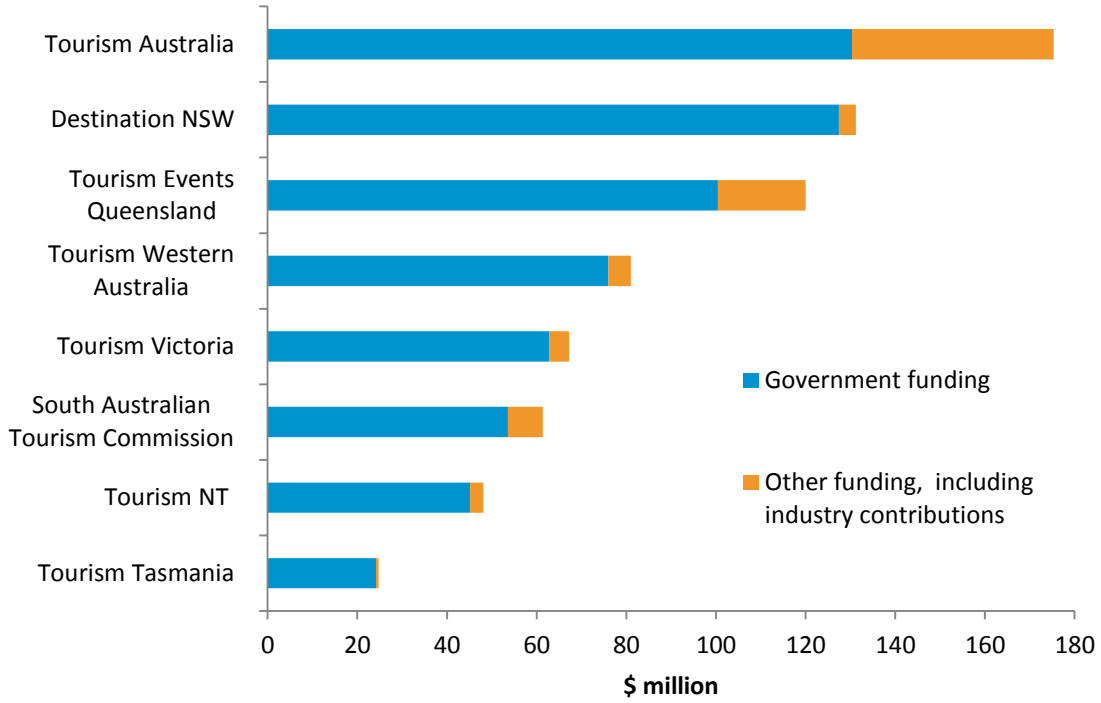
In addition to assistance targeted directly at the industry, the tourism industry also receives support through:

- payroll and casino tax concessions (see Chapter 11)
- underpricing of assets and services, such as electricity, water, access to national parks and railway services (see Chapter 12)
- funding for the Commonwealth Games ($1.972 billion) (QAO 2014a).

All other states and territories, as well the Australian Government, provide direct assistance to the tourism sector through tourism agencies. The total expenses of these agencies in 2013–14 were approximately $709 million, of which about $620 million (87 per cent) was sourced from government funding (Figure 8.1).

TEQ has the second highest expenditure among the states and territories with over $100 million funded by the Queensland Government in 2014. Only Destination New South Wales (NSW) and the national body, Tourism Australia, spent more than TEQ, with each receiving approximately $120 million and $140 million of government funding respectively.

Figure 8.1 Total expenses of Australia's tourism agencies (2013–14, $ million)



Notes: (a) Total expenses include employee benefits, payments to suppliers, grants and depreciations. (b) Data for Visit Canberra are not available. Government funding is composed of government appropriations and agencies operating surplus/deficit attributable to government. Other funding includes industry contributions, rent and interest. Industry contribution may not be included in the figures where they are provided directly to a marketing campaign.

Sources: PC (2015); Destination NSW (2014); SATC (2014); TEQ (2014); Tourism Australia (2014); Tourism NT (2014); Tourism Tasmania (2014); Tourism Victoria (2014); and Tourism Western Australia (2014).

Figure 8.1 only captures the lower bound of the total amount of government funding for destination marketing and major events as it does not include some major events not managed by tourism agencies (PC 2015). For example, instead of being managed by TEQ, the government-funded procurement for the 2018 Commonwealth Games is jointly managed (QAO 2014a) by:

- the Gold Coast 2018 Commonwealth Games Corporation
- the Office of Commonwealth Games Coordination within the Queensland Department of Tourism, Major Events, Small Business and the Commonwealth Games (DTESB)
- the Major Projects Office (Department of State Development) and Economic Development Queensland (Department of Infrastructure, Local Government and Planning).

Similarly, in Victoria the Formula 1 Australian Grand Prix is managed by the Australian Grand Prix Corporation (AGPC), a statutory authority established by the State of Victoria. In 2013–14, AGPC received approximately $60 million of funding from the Victorian Government (AGPC 2014).

In its 2015–16 Budget, the Queensland Government announced that it will:

- provide an additional $128.3 million to TEQ over four years
- increase the funding for the Attracting Aviation Investment Fund to $10 million over three years

- provide $40 million over four years to assist TEQ to develop and promote events (Queensland Government 2015d).

8.3 Government intervention in tourism

Two main arguments are put forward to justify industry assistance provided to the tourism sector:

- It creates flow-on economic activity, whereby assistance can induce additional tourism expenditure, increasing business activity within the tourism industry and stimulating economic activity in other sectors of the economy.
- It addresses a 'free rider' problem, whereby some tourism related activities such as major events and destination marketing may be underprovided by the private sector due to their positive externality and public-good characteristics.

Other potential market failures cited to support assistance to the tourism sector include:

- asymmetric information, where operators generally have more or better information on tourism products than potential customers
- a principal–agent problem, which may arise if destination marketing was conducted by an industry collective that is overly influenced by the largest operator in the region or a committee that is overseeing the marketing activities. It was asserted that government sponsored marketing will instead seek to deliver benefits for the state as a whole (DTESB Information Return).

The presence of market failures may create an in-principle rationale for some form of government intervention including industry assistance. However, as discussed in Chapter 3, an in-principle case is necessary but not sufficient to justify government involvement. The overriding test is whether such an intervention generates a net social benefit relative to no intervention. Furthermore, an in-principle case by itself does not offer any guidance on the appropriate level of support or the best allocation of government resources between competing demands. Nor does it determine how best to raise or spend the scarce resources made available for major events or destination marketing.

8.4 Major events

The lion's share of industry assistance (44 per cent, $136.7 million) provided to the tourism sector is dedicated to attracting, developing and promoting major events. TEQ classifies major events as either one-off or recurring sporting, lifestyle, entertainment, cultural or design events that have the potential to significantly attract visitors, contribute economically, foster community pride and enhance the profile of Queensland (TEQ n.d.).

The justification for using taxpayer funding to secure and promote major events often centres on:

- the flow-on economic activity generated by these events to the host region
- a free rider problem, which may be present as income generated by a major event is not only received by the event provider but also by other non-contributing businesses. This may reduce the incentive to host major events as it is difficult for the provider to capture sufficient benefits associated with an event.

8.4.1 Flow-on economic impacts

Major events tend to attract visitors from outside the host region and other countries and therefore generate tourism expenditure. Should industry assistance be effective in inducing additional major events, the additional tourism expenditure generated has the capacity to stimulate flow-on economic activity. Besides increasing business activity and employment within the tourism industry, increased tourism expenditure also creates indirect production-induced and consumption-induced impacts on the local economy. This is known as the multiplier effect.

The production-induced impacts arise when tourism operators, who make sales to visitors, purchase inputs from businesses in other sectors to facilitate sales. Consumption-induced impacts arise when owners of firms and employees in the tourism sector spend their increased (disposable) income on goods and services from other sectors of the economy. The combined impacts can create additional income and employment in the short term and generate investment in the longer term in other non-tourism sectors. The funds from the initial tourism expenditure will keep circulating and create flow on economic activity until they leave the local economy as leakages through household savings, taxes and imports (Jago & Dwyer 2006).

8.4.2 Overestimated benefits

Major events are often promoted as creating large additional income and jobs in the short run and increased visitation and tourism related investment in the longer term. For example, the 2000 Sydney Olympics Games was estimated to generate $6.3 billion in real gross domestic product (GDP) and 99,500 jobs (NSW Treasury 1997). Similarly, the Queensland Government expects the 2018 Gold Coast Commonwealth Games to inject $2 billion into the state's economy and generate up to 30,000 jobs (Queensland Government 2014f).

However, the flow-on economic activity resulting from major events is often substantially overestimated because the evaluations either use an inappropriate analytical technique or apply an appropriate technique poorly (see, for example Abelson 2011; PC 2015; and Dwyer, Forsyth & Spurr 2004).

Evaluations of major events have typically been restricted to economic impact assessment using input–output (I–O) techniques (Dwyer *et al*. 2004). I–O techniques generally overestimate the economic impacts and flow-on economic activity from major events, often by large margins (Box 8.1). This is because I–O analysis fails to capture the dynamics where the tourism industry often expands at the expense of other sectors in the economy. This failure stems from the inability of I–O techniques to model the key mechanisms that determine the nature and size of the economic impacts from increased tourism demand (Box 8.2).

Box 8.1 Misuse and limitations of I–O analysis

The use of I–O techniques and its multipliers often produce high estimates of economic impacts:

> *Using this methodology, tourism's output multiplier for 2011–12 is valued at 1.88, which means for every dollar tourism earns directly in the Australian economy, it value adds an additional 88 cents to other parts of the economy. At 1.88, tourism's multiplier is larger than Mining (1.62), Retail trade (1.74) and Education and training (1.44).*
>
> *When applying both multipliers, a one per cent increase of tourism direct consumption expenditure of $91 billion ($910 million or one per cent of total) in 2011–12, generated an output of $814 million (in nominal terms) outside tourism and increased employment of 2,871 persons outside tourism. (TRA 2013, p. 20)*

Output multipliers greatly inflate impacts as they effectively double-count the value of expansion of production as a result of increased tourism expenditure. This is because output multipliers are based on the total change in production of all industries rather than the increase in value added of all industries, due to changes in demand (WA Department of Treasury and Finance 2002).

More importantly, the analysis assumes that the average relationships between outputs, inputs, income and employment in the I–O tables apply to a marginal change. In this case, tourism's indirect contribution and multipliers are used to infer the impact of a marginal increase in tourism expenditure.

For the above to hold, a series of restrictive assumptions on the industry and economic structure are required. These assumptions include the availability of unlimited factors of production such as labour, capital or land in fixed prices as well as production processes which exhibit constant returns to scale with fixed input mix (Gretton 2013).

These assumptions often do not hold in practice (Dwyer et al. 2004). The key mechanisms which determine the nature and size of the economic impacts from increased tourism demand are discussed in Box 8.2.

Box 8.2 Key mechanisms determining the nature and size of economic impacts resulting from increased tourism demand

Factor supply constraints

When the tourism industry expands output to meet additional demand by employing additional labour, capital equipment and land, some or all of these factors are likely to be in limited supply. In the absence of productivity improvements to meet additional demand, price increases may be necessary to attract more factors into the tourism industry from other sectors, which in turn increases production costs and makes a destination less price competitive.

When the economy is at or near to full employment, the increased tourism demand will bid up the prices of scarce factors. If other industries employ the same factors, they will also face increasing price/cost pressures as a result of increased tourism demand. This is expected to particularly affect trade-exposed sectors, which have to compete on world prices and therefore cannot pass on the additional costs without losing market share. Any loss of market share by trade-exposed sectors reduces the net gain to Gross State Product (GSP) and employment due to additional tourism consumption.

Unless there is significant excess capacity in tourism-related industries, an expansion of the tourism sector is likely to bid up prices of factors and divert these factors from other sectors to tourism, resulting in reduced output in other trade-exposed industries. The likely primary effect of an increase in tourism demand is to alter the sectoral structure of the economy rather than to generate a substantial increase in aggregate economic activity.

Exchange rate regime

Australia has a flexible exchange rate regime, where the value of the Australian dollar (A$) is determined through the supply and demand for the A$ relative to other currencies. An increase in tourism demand from international inbound tourists will put upward pressure on the real value of A$ relative to other currencies resulting from a greater demand for A$. In the longer term, if the expansion of international tourism leads to an increase in infrastructure investment through foreign borrowing and foreign direct investment, it will further put upward pressure on the real value of the A$.

The appreciation of the A$ will lead to a reduction in exports in other tradeable industries and/or an increase in demand for imports at the expense of demand for products from domestic import competing industries. The most affected export sectors are agriculture, mining and manufacturing, which suffer a reduced competitiveness on the international market resulting from a real exchange rate appreciation.

Fiscal policy and government budget constraint

Fiscal policy also has an impact on the size and nature of the economic impact resulting from increased tourism consumption. Tourism development is often linked to public sector expenditure. In the absence of excess capacity, an increase in tourism demand will lead to further demand for utilities, transportation infrastructure, and other recreational infrastructure. These services and infrastructure are often provided by the government or in partnership with the private sector and financed fully or partially through tax revenue.

When a government builds or invests in additional infrastructure to support an increase in tourism demand, it must be financed. The manner in which the government finances its investment, whether through domestic/foreign borrowing, taxation or a combination, will influence the nature of the economic impact resulting from additional tourism demand.

Source: Dwyer et al. (2003).

More sophisticated economy-wide modelling (computable general equilibrium (CGE)[32]) is generally regarded as a better instrument to estimate economic impacts as it allows for the inclusion of mechanisms absent from I–O models (Blake 2005, Jago & Dwyer 2006, Dwyer, Forsyth & Spurr 2003, OESR 2004). For example, Dwyer, Forsyth and Spurr (2006) compared the results of I–O and CGE modelling to estimate the economic impacts of a hypothetical major event on the host state, (NSW), Australia as a whole and the rest of Australia. The expenditure data for this hypothetical event is based on the Qantas Australian Grand Prix 2000 (held in Melbourne) with $51.25 million assumed to be injected into the NSW economy.

While I–O modelling projects an increase in real GSP of $38.9 million for NSW, CGE modelling estimates a substantially smaller increase in real GSP of $19.4 million with a reduction of –$10.6 million for the rest of Australia. I–O modelling overestimates GSP gains by 101 per cent (Box 8.3).

Furthermore, I–O and CGE modelling project different inter-industry effects. I–O modelling projects an increase in output and employment in all industries except oil, natural gas and brown coal. In contrast, CGE modelling captures the displacement effect where an increase in output and employment in the tourism industry is at the cost of other trade-exposed sectors such as agricultural, mining and manufacturing industries within NSW and the rest of Australia (Dwyer *et al*. 2004).

Queensland Treasury also supports the use of CGE to estimate economic impacts from a whole-of-economy perspective. The Office of Economic and Statistical Research (OESR), a branch of Queensland Treasury, developed a CGE model for Tourism Queensland (OESR 2004).

[32] A CGE model is a model of an economy that is used to assess impacts of policy options on an industry-by-industry basis. It specifies transaction values and the nature of demand and supply to model the impact that a change in one sector of the economy will have on other sectors. In doing so, CGE models reflect the impacts that industry policies may have on other parts of the economy.

Box 8.3 Overestimated benefits of major events

Dwyer, Forsyth and Spurr (2006) compared the results of I–O and CGE modelling in estimating the economic impacts of a hypothetical special event on the host state, New South Wales (NSW), the rest of Australia (RoA) and Australia as a whole (AUS).

Table 8.2 Economic impacts of a large event held in NSW (expenditure = $51.25 million)

Macro variables	*Jurisdiction*					
	I–O modelling			*CGE*		
	NSW	*RoA*	*AUS*	*NSW*	*RoA*	*AUS*
Change in real output ($ millions)	112.0	8.1	120.1	56.7	-32.2	24.5
Change in real GSP or GDP ($ millions)	38.9	4.4	43.3	19.4	-10.6	8.8
Change in employment	521	71	592	318	-189	129
Output multiplier	2.2	0.16	2.3	1.2	-0.3	0.9
GSP or GDP multiplier (also known as value added multipliers)	0.8	0.09	0.8	0.4	-0.2	0.3
Employment multipliers (per $ millions)	10.2	1.4	11.6	6.2	-3.7	2.5

Source: Dwyer et al. (2006).

The findings indicate that:

- I–O techniques consistently overestimate the economic impacts of this event relative to CGE modelling. This is due to the inability of I–O techniques to capture the effects of factor supply constraints, exchange rate, fiscal policy and other constraints.
- The CGE modelling captures the displacement effect where the increases in real output/GSP and employment resulting from this event are at the cost of other industries in the RoA.

Although the comparison is based on one particular event, the results are indicative of the type of differences that would exist for other events. The above results reflect the particular industry structure of NSW and RoA. They also depend on the particular assumptions about labour and capital markets, exchange rate movements and fiscal policy. However, it is clear that the use of I–O techniques to estimate the effect of increased tourism demand would ignore the adverse output and employment impacts on other industries and therefore provide an incomplete and misleading picture of the impacts of additional tourism consumption.

However, even CGE modelling may not provide sufficient information to policy makers to decide whether an event warrants public support and funding. This is because it does not take into account the often substantial costs to taxpayers associated with bidding, developing and promoting major events. For example, in 1993, Victoria spent approximately $112 million to secure the rights and assets to host the Formula 1 Grand Prix (Downie 2006).

Furthermore, the estimated changes in real output or GSP are often not equivalent to net social benefits as they do not account for the costs of additional labour, land and capital that might be required to produce more tourism goods and services. The net social benefits resulting from an event are invariably much smaller than the value added of the additional output (Box 8.4) (Dwyer, Forsyth & Spurr 2004, Dwyer & Forsyth 2009).

Box 8.4 A broad consideration of costs and benefits

Two studies of the effects of the Formula 1 Grand Prix demonstrate how CGE and cost–benefit analysis (CBA) can produce conflicting results. The Victorian Auditor-General commissioned an independent study using CGE modelling to estimate the economic effects of the Grand Prix and another independent study using CBA for the same event.

The CGE study indicates that the event leads to a $62.4 million increase in GSP and generates 400 jobs, while the CBA study indicates that the benefits fall short of costs by $6.7 million. The CGE appears to suggest that the Grand Prix is a highly positive outcome while the CBA indicates that it is a poor investment (VAGO 2007).

Traditional CBA is predominantly, though not necessarily, a partial equilibrium as opposed to a general equilibrium technique such as CGE. In other words, CBA examines a section of an economy and assumes that the rest of the economy is unaffected. CGE on the other hand examines the economy as a whole which captures the inter-sectoral linkages and therefore the wider flow-on effects on prices of inputs/resources, income and output. Shadow pricing[33] is normally used in CBAs to correct the pricing distortion resulting from inter sectoral linkages.

However, a CBA considers not only the costs and benefits of economic impacts but also the wider social and environmental impacts of events. It captures the costs and benefits experienced by consumers and producers as well as those experienced by third parties who are not directly involved in, but affected by, an event. CGE only captures the economic impacts of market transactions between consumers and producers. It does not capture:

- the net benefit derived from a transaction as CGE does not consider the costs of additional resources required to facilitate increases in real output/GSP
- costs and benefits caused by non-marketable transactions such as externalities.

Dwyer and Forsyth (2009) concluded that neither technique is completely comprehensive and both have a role in the evaluation of an event. While a CBA addresses the extent of the net social benefit of an event, it cannot measure the level of economic activity generated and its wider flow-on effects. Findings of CGE modelling can complement a CBA by providing further information on the wider flow-on effects of an event on prices of inputs/resources, income and output.

Source: Dwyer & Forsyth (2009).

Economic impact assessments also fail to take into account the wider social and environmental impacts of these events. These impacts may include positive social and cultural benefits such as enhancing the image of a city or region and civic pride, or adverse environmental and social impacts such as pollution, traffic diversion and disruption to resident lifestyles.

For example, the Brisbane City Council estimated that Brisbane would benefit by approximately $100 million from the G20 Summit (Moore 2013). It is unclear whether this figure took into consideration the combined cost of $478 million incurred by the Australian and Queensland governments to host the G20 (University of Melbourne 2014). Also, it is likely that these benefits did not take into consideration the potential offsetting costs such as:

[33] Shadow pricing is a proxy value of a good, often used when prices do not reflect the actual value of a good or service, or no market value exists. It is often defined by what an individual must give up to gain an extra unit of the good or service.

- the reduction in business activity resulting from a lack of access to the Brisbane CBD as part of the G20 security arrangements
- the crowding out effects on tourism or local business activity. For example, visitors may have chosen not to visit Brisbane and instead visited another destination due to concerns regarding congestion and price increases resulting from the G20. Likewise, local residents may have left Brisbane during the staging of the G20 as a result of concerns regarding noise, congestion and access.

A full assessment of costs and benefits through a cost–benefit analysis can address this gap as it considers not only costs and benefits of economic impacts but also the wider social and environmental impacts of events. The costs to taxpayers associated with bidding, developing and promoting major events must also be taken into account.

Given the scope for the benefits of major events to be overstated and the need for public accountability for government spending, there is a strong case for making the evaluation of major events publicly available. A published evaluation would allow public scrutiny of the costs and benefits of an event as well as the methodologies and assumptions of these analyses, thereby increasing the confidence that government support for events has net benefits.

Hence, a government's decisions to fund these events should:

- consider the counterfactual when evaluating the case for government funding in securing major events. An event is likely to proceed without government support if an event provider can sufficiently capture, or charge for, a major event. If this is the case, government funding may simply crowd out private investment and result in unnecessary costs to taxpayers
- be based on a comprehensive assessment of the costs and benefits through a published cost–benefit analysis. To ensure an efficient allocation of resources, the government should bid for a major event only if the estimated net social benefit of an event is positive (the total benefit exceeds the total costs to the community as a whole).

In response to the draft report, the Queensland Tourism Industry Council (QTIC) highlighted some of the potential difficulties and perceived shortcoming in using cost–benefit analysis:

> *...positive outcomes of government funding into tourism, such as an increase in the number of regional jobs, an uplift in 'life skills' for young people, economic resilience and diversification for communities all contribute to economic and social benefits. Such benefits go beyond the tourism industry and cannot be measured accurately with a simple test of net social benefit. (QTIC sub.38, p. 3)*
>
> *Therefore, the recommendation by the QCA to focus on a narrow ROI, and specifically that the State Government should only fund major events subject to a cost-benefit analysis, needs to be reconsidered. Any decision should take into account the outcomes of comprehensive analysis and information to be produced by TEQ and other relevant information. (QTIC sub.38, p. 4)*

Similarly, DTESB noted that:

> *...providing evidence of a net social benefit is likely to be difficult to prove for a range of reasons... (DTESB sub.42, p. 8)*

The QCA acknowledges the potential difficulty in estimating the costs and benefits of tourism assistance. However, this is not a difficulty unique to tourism related analysis. Even where measurement is difficult, the best efforts should be made to identify costs and benefits and accurately measure them. This should be done ideally through a quantitative assessment of a major event, but where not possible, a qualitative evidence-based assessment. The burden of proof to demonstrate that taxpayer funded assistance to the tourism sector generates net social benefits should lie with its proponents.

Contrary to the view that cost-benefit analysis is narrow and incapable of capturing social and economic benefits beyond the tourism sector, it is the most holistic and comprehensive evaluation technique available to assess the overall impact of an event as:

- it considers not only the costs and benefits of economic impacts but also the wider social and environmental impacts of events
- it captures the costs and benefits experienced by consumers and producers as well as those experienced by third parties who are not directly involved in, but affected by, an event
- it can be complemented by further relevant information from other sources such as the wider flow-on economic effects of an event on prices of inputs/resources, income and output obtained through CGE modelling.

8.4.3 Interstate competition to secure major events

Governments often offer generous funding to attract major events and allocate substantial funding to build or upgrade facilities needed for these events. Several states in Australia, including Queensland, have also established event corporations with the purpose of bidding and winning events, facilitating their operations and sometimes subsidising these events.

In some cases, certain states have engaged in expensive bidding wars to secure major events. For example, in 1993, Victoria outbid South Australia and secured the rights to host the Formula 1 Grand Prix at a cost of approximately $112 million. This is despite the fact that South Australia had previously provided millions of dollars in assistance for infrastructure and other costs while hosting the Grand Prix (Downie 2006).

However, interstate bidding wars for major events are highly likely to be zero sum games. Major events, secured at significant taxpayer expense, primarily expand a state's tourism sector at the cost of other industries within the state and the rest of Australia.

When a government overbids and overinvests to secure the right for a major event to be hosted in its jurisdiction, it may largely dissipate any potential benefits from the event. Therefore, increased cooperation between state and territory governments in attracting major events may be beneficial for the community, especially if it reduces the likelihood of governments entering expensive bidding wars to secure major events.

The high costs of bidding wars have been previously recognised by most state and territory governments. In 2003, the Interstate Investment Cooperation Agreement was signed by all state and territory governments (except Queensland), whereby the governments agreed to end unnecessary bidding wars to attract investment, including major events. However, this agreement lapsed in 2011 (PC 2015).

Another cross-jurisdictional agreement between all state and territory governments is worthy of further consideration to increase cooperation and end costly bidding wars.

8.5 Destination marketing

The second largest share of industry assistance (40 per cent, $123.7 million) provided to the tourism sector is for the purpose of destination marketing. Destination marketing involves promoting a location such as a city, region or country to influence potential visitors' intention to travel, and their destination preference, to increase the number of visitors to a particular location. This is in contrast to product-specific tourism marketing which aims to promote a particular product or service such as a cruise or a holiday resort.

As with major events, the two main arguments used to justify this form of assistance are that it generates additional income and employment through flow-on economic activity and addresses a free rider problem.

The QTIC suggested that the significant economic contribution of tourism to the state's economy justifies the assistance provided to the sector:

> *Tourism is the state's second largest employer amongst Queensland's strongest industries, with the highest average number of employees involved in producing $1 million of Gross State Product ... An increase in employment opportunities and labour productivity adds further simultaneous to overall economic growth. (QTIC sub.38,p. 3)*
>
> *...in comparison to Queensland's other leading industries, all of which do require and benefit from industry assistance, the tourism industry is already largely self-sustainable. ... tourism (as the largest employer) will receive the least funding with industry assistance over a 5 year period amounting to only 1% of its annual GSP contribution to Queensland. (QTIC sub.38,p. 9)*

A substantial contribution to Queensland's economy is not relevant for determining whether taxpayers should subsidise an activity. Economic contribution (GSP and employment contribution) simply tracks the gross economic activity attributed to a particular sector. It does not examine whether industry assistance is effective in inducing additional economic activity in the tourism sector and therefore provides no indication whether assistance generates a net social benefit.

The presence of a free rider problem may create an in-principle rationale for some form of government intervention. A free rider problem may exist as tourism operators who fund marketing activity that promotes a region or event are unable to exclude other non-contributing businesses in the area benefiting from the marketing campaign. Tourism operators may face a reduced incentive to finance destination promotion and an incentive to free ride on the marketing efforts of other operators. Consequently, destination marketing may be underprovided which results in a sub-optimal level of this activity.

However, tourism operators may still have a sufficient incentive to provide destination marketing even if a free rider problem exists. This is particularly applicable to cases where the benefits of marketing provide a sufficient return to an individual firm. Such a business is likely to have an incentive to undertake destination promotion, even when some benefits also flow to other businesses. An example would be destination marketing in regions where the ownership of the tourism industry is highly concentrated, such as in some resort regions. In such cases, government funding of destination marketing may crowd out private provision, even when a free rider problem exists (PC 2015).

While individual tourism businesses may not have sufficient incentive to invest in an optimal amount of destination marketing, the benefits of the marketing primarily flow to the tourism sector as a whole, increasing the private profitability of tourism operators. As in the case of major events, if taxpayer-funded destination marketing is effective in inducing additional tourism expenditure, the benefits generated primarily accrue to the tourism sector and where there are factor constraints, these benefits are largely provided at the expense of other industries within the state and the rest of Australia.

Therefore, should industry assistance through destination marketing induce additional tourism expenditure, it is highly likely that:

- the flow-on economic activity is limited with minor benefits to non-tourism related taxpayers

- a significant proportion of the benefits derived from industry assistance will accrue to those in the tourism sector.

In general, industry assistance lowers the costs of tourism operators by externalising some of their expenses. An assisted industry is likely to invest and employ more resources than would otherwise be the case and could lead to an oversupply of tourism services at taxpayer expense.

This raises the question of whether it is efficient to require all taxpayers to subsidise activities for which there is little public gain as the main beneficiaries of industry assistance are established tourism businesses and their shareholders.

8.5.1 Is destination marketing effective?

Tourism demand is primarily affected by economic factors largely linked to the overall performance of the economy:

- Crouch, Shultz and Valerio (1992) estimated the impacts of income[34], relative price[35], air fares and marketing expenditure on the number of inbound tourists to Australia. The results suggested that marketing expenditure has the smallest impact in affecting inbound tourism demand relative to the other factors considered.
- Tourism Research Australia (2011) examined the factors affecting inbound tourism into Australia and found that the key determinants of this form of demand are income[36], exchange rate[37] and air capacity.[38]
- Yap (2010) investigated the factors affecting domestic tourism demand in Australia and suggested that domestic demand is mainly influenced by disposable income, domestic travel prices, consumer sentiment, household debt and working hours.

This indicates that even if destination marketing is effective, it plays a relatively small role in tourism demand.

Nevertheless, as in the case for product and service advertising more generally, there is a prima facie case that advertising can increase sales. A number of publicly available studies have estimated the effectiveness of international destination marketing undertaken by Tourism Australia (see, for example, Kulendran & Divisekara 2007; Kulendran & Dwyer 2008, 2009). One such study found that:

> *..... using a dynamic modelling approach and cost-effectiveness analysis..... the return (visitor expenditure) per dollar investment is 17:1 for Asia and 8:1, 36:1, 3:1 and 7:1 for Japan, New Zealand, the United Kingdom and the United States of America respectively. (Kulendran & Dwyer 2008, p. iv)*

In general, these studies have focused on indicators that are not equivalent to the net benefits to the community. Most of these studies either estimated the additional number of international tourists to Australia or additional international tourism expenditure induced by destination marketing.

[34] Income is defined as disposable personal income per capita (real) of tourists.
[35] Relative price is represented as the origin country/Australia exchange rate adjusted for inflation.
[36] Income is defined as per capita gross domestic product of the country where inbound tourists originated from (also known as source inbound market).
[37] Exchange rate is defined as the bilateral exchange rate between Australia and the source inbound market.
[38] Air capacity is defined as the direct air capacity and the source inbound market.

While the estimates of additional tourism expenditure provide some indication of the effects of destination marketing, the net social benefits of international tourism induced are typically significantly lower than visitor expenditure (Dwyer & Forsyth 1997). One reason is that visitor expenditure as an indicator does not account for the costs of resources required to produce tourism goods and services (Dwyer & Forsyth 1993). Dwyer and Forsyth (1993) estimated that the net benefit to Australia of additional visitor expenditure is about five per cent of that expenditure while Forsyth (2006) estimated it to be about six to seven per cent. Further studies should explicitly attempt to estimate the net social benefits of destination marketing undertaken and funded by the state and territory agencies.

There is limited evaluation of the effectiveness of destination marketing undertaken by state and territory tourism agencies (PC 2015). Stakeholders pointed out some of the difficulties in evaluating the effectiveness of destination marketing:

> *...data limitations faced in the tourism sector, together with other factors such as the lag between when marketing occurs and when a decision is made to travel, plays a major part in the difficulty of determining the ROI... (QTIC sub.38, p. 3)*
>
> *...Causality is difficult to show (i.e. that government funding of destination marketing or event promotion was the main reason a particular visitor came to Queensland).*
>
> - *Determining causality is a common social science problem, but exacerbated in tourism because of: lags between when marketing or promotions occur, and when a decision is made to travel; and destination marketing is not integrated into product, unlike the real-time, dialogue between marketing and product teams where marketing and product are integrated (e.g. supermarkets).*
> - *Data availability in tourism has significant lags, and is often highly aggregated. For example, the International Visitor Survey (IVS) and National Visitor Survey (NVS), which is currently the best available information for the industry, typically has a three month delay from the end of a quarter, and has limited reliability for many of our smaller and mid-sized destinations. (DTESB sub.42, p. 8)*

The performance indicators utilised by the Queensland Government to assess the effectiveness of assistance dedicated to destination marketing tend to focus on process rather than whether destination marketing produces a desirable outcome.

For example, one of the performance indicators for the Attracting Aviation Investment Fund (AAIF), which provides funding for joint destination marketing campaigns with airlines, is whether an application is assessed within nine working days. While a more prompt turnaround of applications may facilitate greater uptake of funding to airlines, it does not indicate whether the AAIF is successful in inducing additional visitor expenditure, which is the ultimate goal of the fund. The DTESB submitted that this performance indicator is scheduled to be discontinued in favour of other indicators such as return to investment (DTESB sub. 42, p. 9).

Likewise, the indicators used to assess the effectiveness of the Tourism Industry Marketing (TIM) include the Advertising Space Rates. Advertising Space Rates measure the cost of purchasing the equivalent amount of media space and/or time as advertising on a combination of different media such as print, broadcast and internet (iSentia 2013). Such a measure is used to evaluate publicity but it does not indicate whether marketing expenditure funded through TIM is effective in inducing additional tourism expenditure.

On the effectiveness of destination marketing, QTIC stated that:

> *...there is a clear correlation between State Tourism Organisations (STO) budget allocations and overnight visitor allocations. (QTIC sub.38,p. 7)*
>
> *...destination marketing has consistently been proven to be effective. (QTIC sub.38,p. 5)*

In its submission, QTIC compared the funding provided to State Tourism Organisations (STO) to overnight visitor expenditure in four Australian states separately over six years. Based on this comparison, it came to the conclusion that destination marketing is effective.

However, a correlation between funding to STOs and visitor expenditure may simply reflect the fact that states with higher tourism expenditure will tend to have larger funding allocated to STOs.

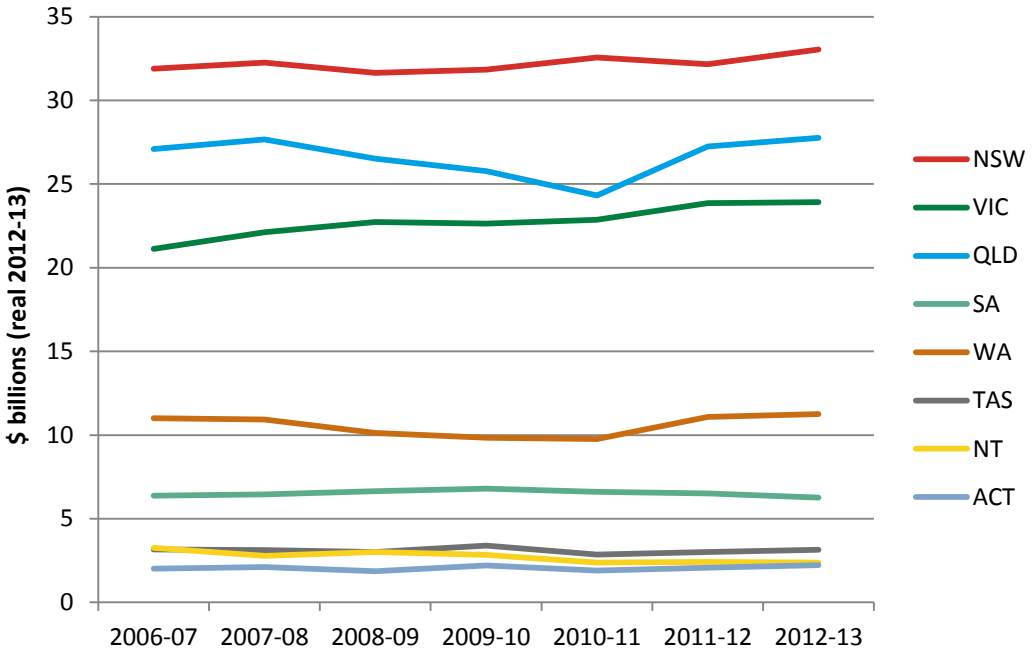
In the absence of a comprehensive evaluation, it is not possible to determine whether, or how effective, government-funded destination marketing is in inducing additional tourism expenditure in Queensland. However some general observations can be made.

Available evidence suggests that tourism expenditure (Figure 8.2) and its economic contribution (direct tourism gross value added[39]) to Queensland have been declining since 2007–08 before recovering from 2010–11 onwards.

While it could be the case that tourism expenditure in Queensland would have been lower without destination marketing, it is losing market share to other states and territories. For example, Queensland's share of national direct tourism gross value added (GVA) stemming from international tourism has been declining over time (Figure 8.3). On the other hand, Queensland's share stemming from interstate tourism has recovered partially in 2011–12 after a steady decline since 2007–08.

This is despite substantially higher marketing expenditure incurred by Tourism Queensland between 2007–08 and 2011–12 relative to other key states such as NSW and Victoria (Figure 8.4).

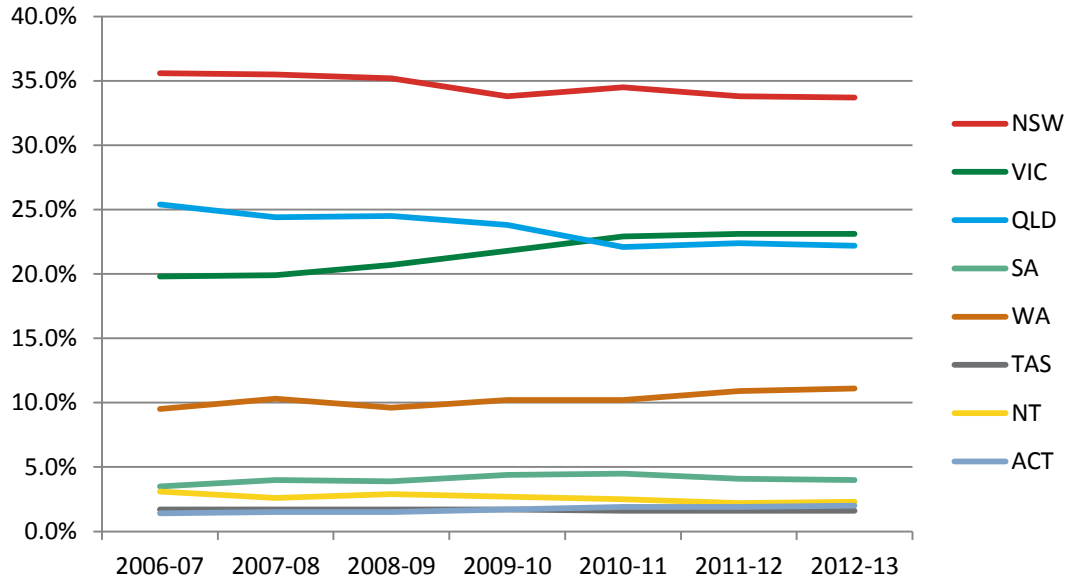
Figure 8.2 Tourism expenditure (purchasers' price) by state/territory



Source: TRA (2014)

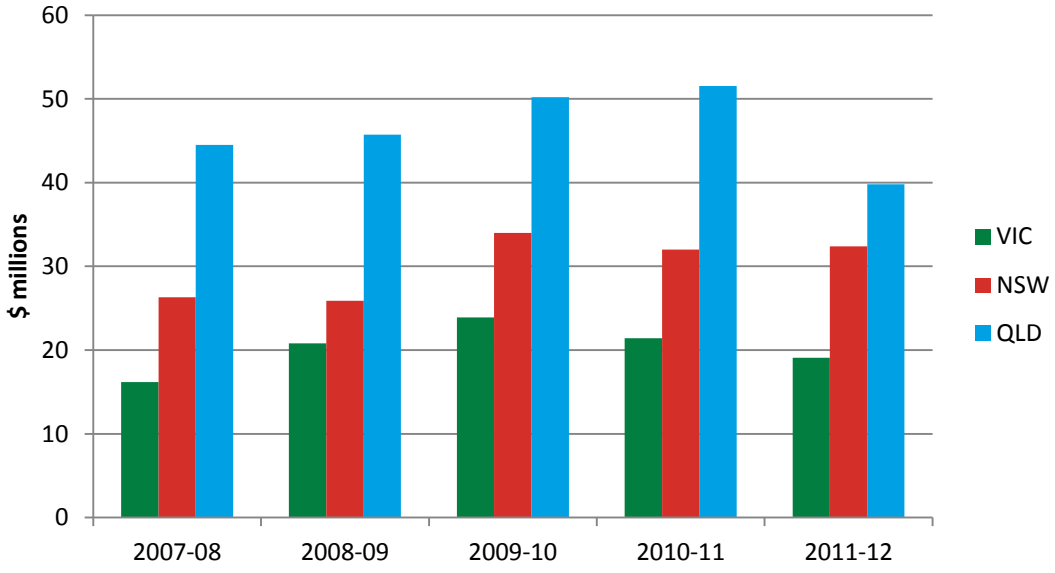
[39] Direct GVA measures the value added of production contributed by the tourism industry. GVA is considered the most accurate measure of the economic contribution of an industry as it captures the value added of output after deducting the costs of inputs in the production process. It includes the total labour income and capital revenue received by an industry as well as the net taxes on production the government receives.

Figure 8.3 State/territory share of the national direct GVA resulting from international tourism



Source: TRA (2014).

Figure 8.4 Tourism-related marketing expenditure by state



Note: Tourism-related marketing expenditure includes advertising and promotion expenses but not employee related expenses.

Sources: Destination NSW (2012); NSW Department of State and Regional Development (2008); NSW Department of State and Regional Development (2009); Industry and Investment NSW (2010); NSW Department of Trade and Investment, Regional Infrastructure and Services (2011); Tourism Victoria (2008, 2009, 2010, 2011, 2012); TEQ (2013) and Tourism Queensland (2012).

8.5.2 Destination marketing to support air routes

Industry assistance is also provided to airlines, aiming to encourage the growth or establishment of flight routes servicing particular destinations in Queensland. The AAIF provides financial support for joint marketing campaigns with airlines.

An airline's decision to operate a route is typically based on the commercial viability of the route. Commercial viability is often determined by a range of factors, including whether there is sufficient demand for the service, airport capacity and regulation. Industry assistance may be adequate to affect route decisions, leading to additional flights to and from a destination for a period of time. However, information asymmetries between airlines and the government means that taxpayer-funded assistance may be provided even where a route would be established or maintained without financial support (PC 2015).

8.5.3 Who should provide destination marketing?

In Queensland, destination marketing is traditionally provided through a government body funded largely through general revenue. As an alternative to the current model, the government could facilitate the provision of destination marketing through an industry body with input from its members.

A tourism industry body may be better placed than the government to engage and cooperate with the tourism operators on the design and targeting of destination marketing. Nonetheless, there may not be a consensus among tourism operators on how these services should be designed and targeted as these operators are likely to have different preferences.

Furthermore, considerable costs are likely to be involved with switching from the current model, such as costs associated with establishing a new industry body and the loss of expertise within existing tourism agency (PC 2015).

On balance, replacing the current model with industry provision of destination marketing in the short term is likely to have additional costs that may not be offset by the benefits. However, while there may be a case for some government coordination of these activities, it does not imply that taxpayer funds should finance these services.

8.5.4 How should destination marketing be funded?

Even where government-funded destination marketing is effective, as discussed above, it is highly likely that the benefits derived largely flow to tourism operators.

Shifting the cost burden of destination marketing to those who benefit from them (namely the tourism industry and tourists) may improve resource allocation, in line with the principle that those who benefit from the provision of a particular good or service should pay for it. This in turn encourages the beneficiaries to recognise and factor in the resource costs involved in the provision of goods and services. However, in practice, this principle must be weighed against the administrative and compliance costs involved in identifying and charging those benefiting from these services.

To effectively recover the costs of destination marketing from businesses, it is necessary to identify the businesses which supply goods and services to tourists and the extent these businesses benefit from the services provided. The tourism industry is hard to define in practice, consisting of a large number of varied businesses supplying products to both tourists and local residents. Cost recovery for these services can be administratively difficult and costly (PC 2015).

The PC (2015) identified a number of cost recovery approaches which may be relevant to Queensland:

- *accommodation taxes* — For instance, this type of tax is widely used in the United States and Europe, and both NSW and the Northern Territory had this form of tax until the GST came into operation on 1 July 2000.
- *local councils charging higher rates to those benefiting from increased tourism* — For example, the Gosford City Council in NSW levies a special rate on business properties and properties used for tourism and short-term holiday letting. The proceeds from the higher rates are used to fund special development works (Gosford City Council n.d.). The NSW Visitor Economy Taskforce (2012) argued that 'special rate variations' can be used to address the free rider problem in the provision of destination promotion.

Similarly, local governments in Queensland vary council rates:

> *Under the Local Government Act 2009, local governments are already empowered to do this – through differential rates. So far this has only been taken up by Gold Coast and Sunshine Coast Councils. Other councils fund tourism activities through general rates, with varying levels of commitment. The introduction of state matching contestable grants for regional tourism organisations (RTOs) to undertake destination-level activities has been successful in leveraging additional council funding. (DTESB sub. 42, p. 11)*

However, the above approaches suffer from the difficulties in identifying the extent to which businesses benefit from destination marketing and therefore:

- they may not be efficient to tax most business types given that few tourism related businesses serve only tourists. For example, a large proportion of the clientele of restaurants, cafes and retail businesses are local residents
- they may be inequitable given that it is only applicable to part of the tourism industry. For instance, accommodation accounted for only 28 per cent of the tourism industry (direct) gross value added in Queensland (TRA 2014).

On the topic of taxpayer funded destination marketing, QTIC submitted that:

> *The case for assistance is much broader and much more compelling. The funding (specifically for destination marketing) is vital for several reasons...*
>
> - *the tourism sector is fragmented across various industries and is largely made up of small to medium sized enterprises;*
> - *lack of scale produces marketing efficiencies;*
> - *the tourism product is linked to the destination... (QTIC sub. 38, p. 5)*
>
> *This means the investment in tourism demand stimulation for a destination is certain to be at sub-optimal levels, with no single sector and no single, small enterprise likely to be able to capture all or even a significant share of the benefits of destination marketing. Coordination is essential as is an marketing investment at a level that can stimulate demand for an optimal overall benefit. (QTIC sub. 38, p. 6)*

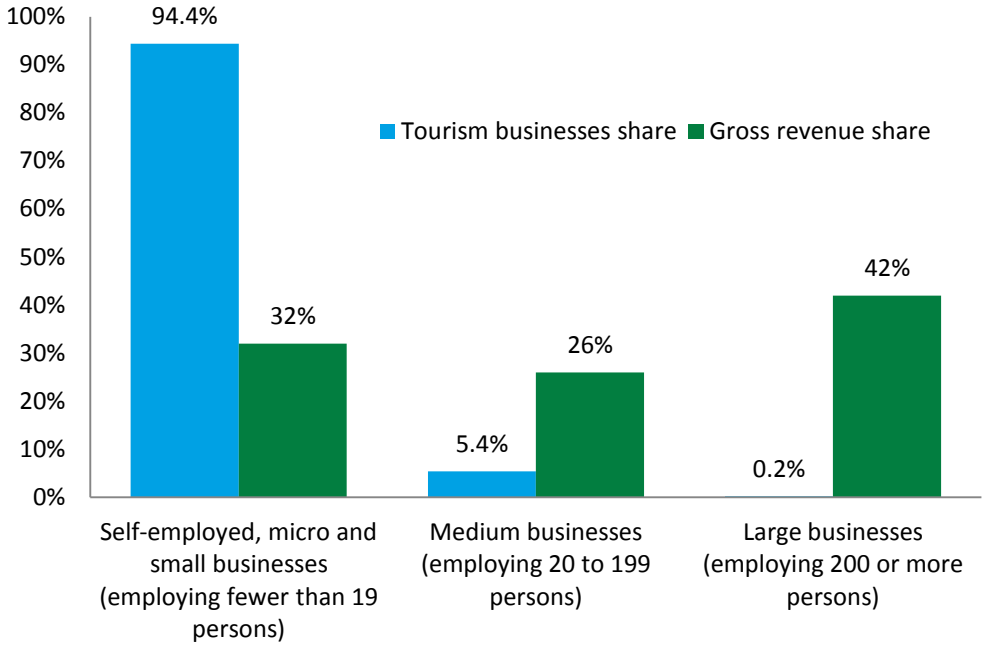
QTIC noted further that the Australian tourism sector is spread across five different industries and dominated by self-employed, micro and small businesses (95 per cent of businesses employed fewer than 19 people).

Similarly, the DTESB stated that:

> *...the issue of smaller operators (90 per cent of tourism operators are small businesses) frequently not having the capacity to make meaningful contributions to these sorts of services (and hence the market failure). (DTESB sub. 42, p. 6)*

The highly fragmented nature of the tourism sector may be a barrier to a cost- effective 'user pays' system. Even so, while self-employed, small and micro businesses are the largest by number, they only contributed 32 per cent of total tourism gross revenue. In contrast, the remaining five per cent of tourism businesses, which comprise of medium and large businesses, contributed 68 per cent of total tourism revenue, despite accounting for only 5.6 per cent of the share of tourism businesses (Figure 8.5).

Figure 8.5 Percentage share of gross revenue by business size (2009–13)



Source: TRA (2015).

This implies that the sector, in terms of revenue, is far more concentrated than the number of businesses suggests. Under such a structure, some businesses are likely to have an incentive to undertake destination promotion, even when some benefits also flow to other businesses. Moreover, this structure may also be amenable to a 'user pays' system.

Without further information, it is unknown whether the Queensland tourism sector has a similar market structure to that of the national sector. Further investigation will be necessary to determine whether and how an effective 'user pays' system can be implemented.

Recommendation

8.1 The Queensland Government should:

(a) decide whether to fund major events based on a comprehensive published cost–benefit analysis and support major events only if the estimated net social benefit of an event is positive

(b) explore opportunities for a 'user pays' system for destination marketing in collaboration with the tourism industry

(c) work with the Australian, state and territory governments to:

(i) increase cooperation, efficiency and impact of the $700 million expenditure of tourism agencies across Australia

(ii) commit to a cross-jurisdictional agreement between all state and territory governments to end unnecessary bidding wars.

9 INDUSTRY-SPECIFIC ASSISTANCE: CONSTRUCTION AND RESOURCES

Key points

Construction

- The Queensland Government funds five construction specific assistance measures, providing $754 million from 2013–18. The level of assistance provided by the Building and Construction Training Policy, which requires that 10 per cent of labour hours on certain projects be undertaken by apprentices or trainees, could not be quantified.
- Four of the five catalogued construction measures are monitored in some way by departments although none of the measures have been evaluated by departments.
- Some of the measures seek to address market failures associated with the provision of infrastructure. Equity and economic growth objectives are also used to justify some of the measures. No rationale was provided for a number of measures.
- Where possible, infrastructure should be funded through user-pays mechanisms available to local governments, given the efficiency of these funding mechanisms. Higher tiers of government should only seek to provide funding for infrastructure where all the benefits of the infrastructure cannot be captured by a local government area.
- Evaluation of the effectiveness of the measures is difficult since in most cases inputs, rather than outcomes, are monitored.

Resources

- The resources sector receives a comparatively smaller amount of direct assistance compared to other industries in Queensland. Three resources-specific assistance measures provide $123 million between 2013 and 2018.
- The assistance comprises $25 million (20 per cent) in budgetary outlays and $98 million (80 per cent) in underpricing of assets.
- Two of the three measures seek to assist industry by increasing the amount of geoscience information available on Queensland's resources.
- Geoscience information is commonly accepted to have public good characteristics, and this may provide a rationale for assistance. Providing assistance to obtain geoscience information may also be justified to increase the State's return on its assets.

9.1 Construction industry assistance

The level of assistance provided by the construction assistance measures from 2013–18 is $754 million. However, assistance through the Building and Construction Training Policy could not be quantified. The measures primarily provide assistance to either fund public infrastructure or seek to address housing affordability. Table 9.1 below summarises each construction-specific assistance measure.

Table 9.1 Summary of construction-specific assistance

Assistance measure	*Description*	*Level of assistance*
Great Start Grant	First home owners are eligible to receive a $15,000 grant when they buy or build a new home that is valued under $750,000.	$506.4 million over five years
National Rental Affordability Scheme	The scheme provides financial incentives to investors to build well-located dwellings and rent them to eligible low to moderate income households, at a below market rate.	$147.6 million over five years
Priority Development Infrastructure Co-investment Program	The program identifies "catalyst" infrastructure projects for co-investment by the state as well as state agencies, local authorities and/or industry.	$100 million over one year
Building and Construction Training Policy	The policy requires that a minimum of 10 per cent of the total labour hours on certain projects be undertaken by apprentices and/or trainees and through other workforce training.	Unable to be quantified
Springfield Land Corporation Loan Agreement	Springfield Land Corporation is obliged to pay the state a contribution for accelerating social infrastructure. The contribution amount outstanding is treated as a loan indexed at CPI, rather than at a higher market interest rate.	$313,000 over five years

9.2 Assistance to develop infrastructure

Governments may choose to provide public infrastructure to address a market failure, to achieve an equity objective or for cultural or historical reasons. Equity objectives are a common reason for governments, rather than the private sector, to fund some types of infrastructure. Markets may not provide equitable access to services (such as water, sewerage and roads) to groups that are less able to pay or areas that are more costly to supply (such as rural communities).

9.2.1 Who should pay for public infrastructure?

Broadly speaking, the party that should bear the cost of the infrastructure depends on whether the infrastructure wholly benefits those in a particular location or the wider community (PC 2011e). Therefore, it is efficient and equitable for developers to supply basic economic infrastructure such as local roads and drainage as the primary users are the local residents. The costs of:

> *...social infrastructure which satisfies an identifiable demand related to a particular development (such as a neighbourhood park) ... should be allocated to that development with upfront developer charges an appropriate financing mechanism... (PC 2011e, p. 215)*

However, where the benefits of infrastructure are more widely dispersed, the case for upfront developer charges becomes less clear:

> *...for social infrastructure where the services are dispersed more broadly accurate cost allocation is difficult if not impossible and should be funded with general revenue unless direct user charges*

> *(such as for an excludable service like a community swimming pool) are possible. (PC 2011e, p. 216)*

In the context of local governments, where the benefits of providing infrastructure are wholly internalised by the local government area, it is efficient for those infrastructure projects to be funded by local governments. In Queensland, local governments or authorities generally provide local infrastructure networks including roads, water, wastewater, stormwater, parks and land for community facilities.[40]

However, public infrastructure provided by one local government may generate significant positive externalities or spillovers for residents of neighbouring local government areas. Dollery *et al.* (2007, p. 14) state that:

> *In a highly mobile society, such as contemporary Australia, citizens frequently travel through numerous local government jurisdictions for both employment and recreational reasons and enjoy the facilities provided by local councils to which they make no financial contribution. Significant inter-jurisdictional externalities are thereby created.*

In general, where providing a good or service generates positive externalities, the level of those goods or services produced may be sub-optimal. Where a local government or developer only considers its private benefits and costs of providing infrastructure, rather than those incurred by neighbouring areas, the incentive to invest in infrastructure projects that improve society's welfare may be insufficient.

Even so, this does not automatically suggest that state governments should fund this infrastructure. Coase (1960) recognised that rational parties will achieve an efficient[41] outcome through voluntary bargaining provided that transaction costs are low and property rights are well-defined. Applying the Coase Theorem in this context would suggest that local governments could organise compensation or funding arrangements to internalise these positive externalities.

However, Inman and Rubinfeld (1997) consider that inter-jurisdictional bargains are unlikely to be effective. In practice, bargaining parties commonly disagree on the how the economic surplus generated from the bargaining is divided, miscalculate the chances that the other party will accept a compromise offer and, unless costs and benefits are common knowledge, each jurisdiction will seek a strategic advantage by concealing information.

To address bargaining failures, it may be necessary for a higher tier of government to 'internalise' these externalities (Dollery *et al.* 2007). Providing guidance on the allocation of these costs, Oates' (1972) correspondence principle outlines that each function of a federal system should be provided by the lowest level of government where there are no spillovers into adjacent jurisdictions. Therefore, local governments should provide the goods and services whose benefits are entirely captured by its jurisdiction while state and Commonwealth governments should provide those services whose benefits are spread across larger regions. This can either be through quantity controls, such as direct provision or outcomes regulation, or through price controls, such as subsidies or taxes (Inman & Rubinfeld 1997).

[40] However, where a local government is a participating local government of a water distributor-retailer, which provide water and waste-water services, the local government is only responsible for the provision of infrastructure for stormwater, parks and roads, with the distributor-retailer responsible for water and wastewater infrastructure provision.

[41] See Chapter 3 for further discussion of efficiency.

9.2.2 How should infrastructure be funded?

Local governments typically have a variety of mechanisms available to provide infrastructure. These include general taxation and rates, debt instruments, user charges, public private partnerships and developer contributions (DSDIP 2013).

Applying the correspondence principle, the appropriate funding mechanism depends on whether the benefits from the project are wholly internalised within a particular development, a local government area or whether they spill over into other local government areas.

Infrastructure charges — local governments usually impose infrastructure charges on new developments as part of their development assessment process. These charges apply when a subdivision or material change of use increases demand on trunk infrastructure networks, such as major stormwater pipes for an entire neighbourhood.

Contributions and conditions — a local government authority can also condition a development approval or water approval to supply essential infrastructure or provide land. These conditions provide a mechanism through which the impacts of unplanned or out-of-sequence development on existing and future infrastructure networks are managed.

Local government rating — representing approximately 37 per cent of local government revenue or about 45 per cent of own-source revenue on average, local government rates are generally the only form of taxation available to local governments (Henry *et al.* 2010).

Local government rates are a tax charged on the value of property, with most types of land included in the tax base and the tax rate varying according to the type of land. Rates are considered an appropriate tax base for local governments for a number of reasons:

- Efficiency — local government rates are considered a highly efficient form of taxation as the amount of land available is fixed and therefore resource allocation decisions are not affected by the rates. KPMG Econtech (2010) estimates local government rates to have a marginal excess burden of only two cents of welfare loss from each additional dollar of revenue raised.
- Administrative simplicity — the tax base (land) is not mobile and stays broadly the same in physical and usage terms from one year to the next.
- Equity — equity objectives commonly focus on benefit and ability to pay principles. The combination of user charges that reflect costs and land values may be correlated with wealth and ability to pay.

For further discussion on land taxes and the burden of taxation, see Chapter 11.

Debt instruments — Part 5 of the *Statutory Bodies Financial Arrangements Act 1982* permits local governments to borrow, with the Treasurer's approval, from Queensland Treasury Corporation (QTC) or other lenders.

Funding projects with positive externalities

Henry *et al.* (2010) notes that where governments seek to provide infrastructure projects which generate positive externalities, funding should be obtained from broad-based taxes on income, consumption or land given the economic efficiency of these taxes. Where funds for an infrastructure project are sourced from other sources of government revenue (outside of grants revenue), the project is likely to attract additional economic efficiency costs.

A significant proportion of Queensland's tax revenue is drawn from narrowly based transaction taxes or duties on payroll, land, insurance contracts, vehicle registration and casino taxes.

Given the narrow bases of these taxes, increased marginal tax rates are required to achieve the same level of revenue, thereby running counter to the principle of minimising efficiency losses through taxation (see Chapter 11 for more information on the costs of taxation).

Therefore, where possible, infrastructure should be funded through user-pays mechanisms available to local governments. Aside from their relatively low efficiency costs, funding through these mechanisms can signal the costs of undertaking development and efficiently influence decisions on development. Infrastructure funding from the Queensland governments should be limited to where projects are unable to be funded through mechanisms available to local governments due to the presence of positive externalities.

9.2.3 Priority Development Infrastructure Co-investment Program

The Priority Development Infrastructure Co-investment Program seeks to identify 'catalyst' infrastructure projects for co-investment by the state in conjunction with other Queensland Government agencies, local authorities and industry.

As a requirement of the scheme, the proponent pays back the state's co-investment over an agreed period of time through either:

- payment at each plan sealing
- via a special infrastructure levy
- periodic payments.

The level of assistance over one year is $100 million.

What is the objective of co-investment?

The Department of Infrastructure, Local Government and Planning (DILGP) advised that high quality infrastructure, required to unlock identified potential growth areas and the delivery of a number of major developments, has been hindered due to the inability of local government, water distributors, retailers or developers to fund infrastructure costs upfront. This includes infrastructure such as water or sewer mains and treatment plants, stormwater management, or roads.

The Property Council of Australia considered that:

> *Prioritising catalytic infrastructure - such as those projects identified through the Priority Development Infrastructure Co-Investment Program - will unlock growth, create jobs and provide an ongoing source of revenue for the State and local governments. (Property Council of Australia, sub. 23, p. 7)*

How are the projects selected to participate in the program?

DILGP advised that the primary criteria for selecting priority development infrastructure (PDI) are:

- the PDI is located in a local government area that either intends to, or has infrastructure charges at or below the Fair Value Charges Schedule (Box 9.1)
- the proposed infrastructure meets the definition of PDI. That is, new infrastructure that will generate or facilitate significant economic benefit upon completion
- the final asset owner has agreed, or is likely to agree, to the acceptance of this infrastructure
- economic benefit is likely to be facilitated or generated by the provision of the PDI
- at least one party (other than the state) will agree to co-invest.

The secondary criteria include:

- the methodology and timing of return on the state's PDI co-investment
- the level of cost recovery to the state
- a number of details about the management and delivery of the proposed PDI.

Box 9.1 Fair Value Charges Schedule

Following a review of infrastructure charges, the Department of State Development, Infrastructure and Planning (DSDIP) developed the Fair Values Charges Schedule which 'better reflects the cost of delivering essential infrastructure necessary to support development.'

The Schedule provides an expanded and more differentiated list of land use categories and additional charge categories to align charges and demand. This review generally resulted in a 10 per cent cost reduction for charges for residential developments and 15 per cent reduction for non-residential developments.

Local governments are not required to impose the infrastructure charges listed in the Schedule, however, local governments are encouraged to apply the Schedule through projects such as the Priority Development Infrastructure Co-investment Program (PDI).

Ultimately, the primary principle for the scheme should be that funds are directed towards projects which are in the public interest, rather than whether the local government has implemented the Fair Values Charges Schedule. Indeed, if the wrong projects are selected, the outcome for the Queensland community will be poor, even if these projects are efficiently funded and financed, and their costs well controlled (PC 2014b).

According to DILGP there is no formal application process for selecting projects and instead, PDI projects are identified by the department in conjunction with local governments and/or other proponents. While the criteria aim to ensure that PDI projects will provide economic benefits to the region, given the lack of transparency in project selection, it is unclear whether the underpinning analysis is robust and if social costs and benefits of each proposal are considered.

Recognising the need for transparency, Ergas and Robson (2009, p. 42) note that:

> *Governments should also regularly publish, in readily accessed form, the CBA rankings of those projects they have decided to proceed with and those they have considered and rejected (as is done in Finland, for example). Were disclosure of CBAs routine, the fact that a CBA had not been conducted on a particular project would become more obvious, as would the relative quality of the CBAs that had been carried out.*

Likewise, the Property Council of Australia supported publicly releasing the criteria through which projects are selected to ensure transparency in the prioritisation process (Property Council of Australia sub. 23, p. 7).

To assist in delivering a net benefit to the community, the Productivity Commission has identified a best practice framework for the provision of public infrastructure (Box 9.2).

Box 9.2 Best practice governance arrangements for the provision of public infrastructure

The Productivity Commission in its inquiry into Public Infrastructure (2014b, p. 39) identified best practice institutional and governance arrangements for the provision of public infrastructure that all governments should put in place. This includes:

- ensuring that decisions are undertaken in the public interest, taken to be the wellbeing of the community as a whole
- setting clear and transparent public infrastructure service standards
- instituting effective processes, procedures and policy guidelines for planning and selecting public infrastructure projects, including rigorous and transparent use of cost–benefit analysis and evaluations, public consultation, and public reporting of decisions
- use of transparent, innovative, and competitive processes for the selection of private sector partners for the design, financing, construction, maintenance and/or operation of public infrastructure
- ensuring efficient allocation and subsequent monitoring of project risks between government and the private sector
- regularly reviewing funding and financing policies, including application of transparent user-charging mechanisms as the default setting where this is efficient
- monitoring of project performance and ex-post independent evaluation and publication of project outcomes (including periodic reporting of benchmark costs by Infrastructure Australia)
- retaining sufficiently skilled public sector employees to be responsible and accountable for performing these functions
- establishing mechanisms for transparent review or audit of the decision-making process by an independent body, for example, an Auditor-General or Infrastructure Australia.

Source: PC (2014b).

Where governments do not establish strong governance arrangements, the outcomes can be costly. The Independent Audit of NBN Public Policy Processes (Scales 2014) found the:

> *...governance arrangements that operated in the very early stages of NBN Co's life had a long lasting and detrimental effect on its operations, and a profound effect on the roll out of Australia's NBN.*

The audit noted the importance of properly considering and analysing proposals prior to commitment. In particular, the audit considered the policy process for the NBN was:

> *...rushed, chaotic and inadequate, with only perfunctory consideration by the Cabinet...After just 11 weeks of consideration, the Government had decided to establish a completely new 'start-up' company (now called NBN Co) to roll out one of Australia's largest ever, single public infrastructure projects. The NBN was to be rolled out in eight years at a preliminary cost of around $43bn. There is no evidence that a full range of options was seriously considered. There was no business case or any cost benefit analysis, or independent studies of the policy undertaken, with no clear operating instructions provided to this completely new Government Business Enterprise, with a legislative and regulatory framework still undefined, and without any consultation with the wider community. (Scales 2014)*

What programs have been identified for co-investment?

Three projects have been identified in the first round of co-investment. They include:

(1) Mount Peter Master Planned Area

This co-investment will enable the construction of trunk water and sewer infrastructure for residential development to begin on the first 1000 lots in the Mount Peter master planned area. Covering over 3300 hectares, Mount Peter will ultimately provide an estimated 18,500 homes for 40,000 residents.

(2) Central Queensland University Priority Development Area

Partnering with the Rockhampton Regional Council and Central Queensland University, the investment funds a new four-way signalised intersection and the first stage of the main street for the CQU Rockhampton Priority Development Area.

DILGP estimated that between 2000 and 2500 new homes, including a mix of detached houses, townhouses and units, will be built within the Priority Development Area over the next 10 to 15 years.

(3) Beaudesert Town Centre Bypass

The Beaudesert Town Bypass is a key project in the ongoing development of the 15,000 hectare Bromelton State Development Area, about six kilometres west of the Beaudesert township. The project partners with Scenic Rim Regional Council, the Department of Transport and Main Roads, Mirvac and Eureka Funds Management to fund the Beaudesert Town Bypass.

DILGP considers the bypass will be the catalyst for the development of the Bromelton Industrial Estate, a major transport and logistics hub, and will also support future redevelopment of the Beaudesert CBD.

Is the program effective?

Sharing infrastructure costs between the government and the private sector has increased as governments seek a balance between encouraging development and ensuring local governments have the funds necessary to provide necessary infrastructure (PC 2014b).

According to the Productivity Commission (2014b, p. 64):

> *Private involvement in infrastructure can, in the right circumstances, improve timeliness, cost and availability of new infrastructure, as well as promoting the efficient operation of existing infrastructure, compared to public operation. For example, one of the potential benefits of private financing is that it can drive efficiency gains through the greater discipline and due diligence imposed by private financiers in the design, construction and operation of public infrastructure services.*

Given the first round of projects were only recently announced, the QCA is unable to comment on whether the projects themselves are effective. However, in the medium to longer term, DILGP expects the projects will:

- unlock the development potential of identified growth areas
- deliver affordable housing earlier (with a reduced cost burden for infrastructure charges and related interest costs)
- facilitate new job-generating developments, including industrial, retail and commercial precincts, and community hubs
- stimulate the construction industry and boost business confidence

- increase rate bases for affected local governments
- accelerate payment of infrastructure contributions to councils as a result of the facilitated development.

DILGP plans to monitor the funding and delivery of priority infrastructure projects and consult with the relevant local governments and developers to determine whether the delivery is cost-effective.

Notwithstanding this, given the limited monitoring and evaluation undertaken, it is unclear whether the program will deliver projects which are in the public interest. By adopting best practice project selection, such as the Productivity Commission's best practice guidelines (Box 9.3), the Queensland Government can reduce the number of projects that become poor investments, giving the PDI program a stronger chance of delivering the greatest net benefit to the community, not just a particular proponent.

Recommendation

9.1 The Queensland Government should:

(a) incorporate the Productivity Commission's best practice guidelines into the project selection criteria for the Priority Development Infrastructure Co-investment Program.

(b) as a priority, publish its project selection analysis and set specific and time-related objectives to determine whether the Priority Development Infrastructure Co-investment Program is achieving its objective.

9.3 Affordability issues in the housing sector

Over the previous two decades, housing affordability across Australia has deteriorated. In 1982, the percentage of households whose gross housing costs exceeded 30 per cent of income was at 9.6 per cent, by 2009 that figure had more than doubled to 20.4 per cent. In particular, over the same period, the home ownership rate among those aged 25–34 years fell by 18 percentage points (Wood *et al.* 2014).

However, more recently, the Commonwealth Department of the Treasury advised the Standing Committee on Economics that:

> *Despite the increase in house prices that we have seen over the last couple of years, home loan affordability has remained broadly stable. That, of course, is because interest rates have remained low. So despite the fact that we have had high house prices, a low level of interest rates means that mortgages remain affordable. (SCE 2015, p. 3)*

Housing is a key policy concern for governments across Australia. The performance of the housing market can have large macroeconomic implications and the level of housing available can have broad employment, educational and health outcomes for a nation's citizens (CFRC 2014).

While demand-side factors such as population and household income growth are frequently cited as significant contributors to house-price inflation, the supply-side of the market has received comparatively less attention (Hsieh *et al.* 2012).

Analysis of the housing market in Australia suggests supply is not especially responsive to changes in price levels. The degree to which new housing supply responds to increasing house prices is termed the price elasticity of supply. Where estimates of the price elasticity of supply

are less than one, supply is not very responsive to price changes (inelastic), while goods with estimates of higher than one are considered to be more responsive to price changes (elastic).

The Organisation for Economic Co-operation and Development estimates Australia's housing supply is not very responsive to price changes with a long-run price elasticity for new housing supply of 0.5 (Andrews *et al.* 2011). Although these estimates vary across Australian cities, with Gitelman and Otto (2010) estimating that housing supply in Sydney is even less responsive (0.36) compared to the Australian average. Given this low elasticity of supply, an efficient solution to the current undersupply of affordable homes must involve measures which remove barriers to housing supply.

The Reserve Bank of Australia (Hsieh *et al.* 2012) identifies a number of housing supply impediments including:

- **Complexity of planning processes** — while there are legitimate reasons (e.g. negative externalities) for councils and governments to impose planning and development requirements, the uncertainty and time taken for approval decisions can increase the costs and risks for developers, making some new housing developments unviable. Henry *et al.* (2010, p. 422) found that:

  > *Higher house prices are likely to result from restrictions on the supply of housing that result from zoning, lengthy approvals processes and building code and other standards imposed on building quality.*

- **Provision and funding of infrastructure** — while the adoption of user-funding of infrastructure is appropriate in a variety of circumstances, this trend has increased the costs of private developments
- **Land ownership and geographical constraints** —expanding the city fringe can be difficult where geographical or ownership constraints prevent further land becoming available for development
- **Public attitudes to infill development** — new developments can attract opposition from existing residents concerned about the possible change in a suburb's character, environmental impacts, the increase in congestion or perceived loss of value in their homes.

9.3.1 Specific housing affordability measures

The Queensland Government provides a number of assistance measures to assist with housing affordability pressures while also providing industry assistance. These include:

- the Great Start Grant
- the National Rental Affordability Scheme
- the First Home Vacant Land Transfer Duty Concession.

The Great Start Grant and the National Rental Affordability Scheme are discussed below. Chapter 11 provides further information on the First Home Vacant Land Transfer Duty Concession.

Great Start Grant

First home owners are eligible to receive a $15,000 grant when they buy or build a new home that is valued under $750,000. The level of assistance provided by the measure is $506 million over five years.

The original First Home Owner Grant was introduced by the Australian Government in 2000 to compensate first home buyers for the expected impact of the Goods and Services Tax (GST) on housing prices. However, the original rationale for the grant has moved on from compensation for the GST to assisting first home buyers more generally.

Responsibility for the grant passed to the States, as part of the Intergovernmental Agreement on Federal Financial Relations. Under this agreement, the states and territories must provide a grant for first home buyers. In 2012, the Queensland Government negotiated changes that restrict eligibility for the grant to new homes only in order to target the grant more effectively.

Is the measure effective?

From the commencement of the Great Start Grant in 2012 until 28 February 2015, 10,590 grants had been paid to first home buyers. Total expenditure on grants over the period was $158.85 million (Queensland Treasury 2015).

The grant program aims to reduce the cost barrier to home ownership and support an increase in the housing supply. While the number and location of grant payments are monitored, there is no monitoring and evaluation of the impact of the grant against the objectives identified above. It is not clear whether the grant has assisted first home owners or resulted in an increase in the housing supply.

A number of empirical studies have questioned the effectiveness of first home owner grants. Wood *et al.* (2006) identified that although the first home owner grant will assist in meeting deposit requirements, rather than inducing additional first home owners into the market, the grant largely brought forward purchasing decisions that would have occurred in the absence of the grant.

Beyond whether the grant induces additional home buyers into the market, the grants' inflationary effect on house prices is frequently raised. The Productivity Commission (2004a)[42] considered that in an extreme case, where there is no capacity to increase the supply of housing when faced with an increase in demand, the grant will be capitalised into house prices. Although:

> *Over the long term, as supply has time to respond to demand pressures, the grant is likely to have even less impact on house prices. That is, the increase in demand will encourage additional supply rather than simply boost prices. (PC 2004a, p. 73)*

More recent econometric analysis by the Council of Australian Governments (COAG) Housing Supply Affordability Working Group (2012) indicated that while the grant has an inflationary effect, the impact on house prices lessened as supply became more responsive to prices over a longer period.

Aside from the uncertainty of the impact of the grant on prices, the grant may expose vulnerable households to repayment and default risks, thereby increasing macroeconomic instability (CFRC 2014). While the extent of this risk is difficult to quantify, Ellis (2010) noted that, following the financial crisis, where first home owner grants were increased, the fraction of owner-occupiers with high loan-to-valuation ratios also increased. (Factors outside of the grant, though, are likely to have a greater impact on default risks.)

The experience of the United States, with the housing price bubble and subsequent market collapse at the time of the Global Financial Crisis, demonstrates that it is not in the long-term

[42] At the time of this report, the First Home Owner Grant applied to both new and established dwellings.

interest of either borrowers or lenders to artificially boost 'affordability' by enabling households to borrow ever-larger amounts (Ellis 2010).

In contrast to this assessment, the Property Council of Australia (2014, sub. 7, p. 2), in their submission to this review, identified that the removal of the Great Start Grant may result in:

> *...greater levels of housing and mortgage stress across the community as a result of an undersupply of new dwellings.*

However, for this effect to be significant, new housing supply growth would have to largely be a function of the Great Start Grant. Given the uncertainty regarding the contribution of the grant to new housing supply, this effect is unlikely.

Summing up the arguments above, the COAG Working Group (2012) found that, when combining the uncertain effects of the grant together with the potential risks of housing stress, the grant should be better targeted or phased out completely. In particular, COAG considered that the first home owner grant:

> *...may not be the most cost-effective way of improving housing supply and affordability in the longer term. (COAG 2012, p. 26)*

Given the existence of supply-side constraints, it appears to be more efficient to target those regulatory constraints that are impeding housing supply rather than focusing solely on demand-side policies such as the grant. Where supply remains relatively inelastic, focusing on the demand-side alone may in fact exacerbate affordability issues facing first home owners.

Therefore, the Queensland Government is more likely to have a positive impact on housing affordability by removing or limiting regulatory and tax policies that unnecessarily inhibit the supply of further housing, such as planning and approval processes, and stamp duties.[43]

In addition, as the costs of providing the grant are substantial and the gains to first home buyers appear to be marginal, it would be beneficial to revisit the Intergovernmental Agreement on Federal Financial Relations through COAG.

In response to the draft report, a number of submissions provided support for addressing supply-side constraints to improve housing affordability (DHPW sub. 39; Property Council of Australia sub. 23). However, while the Property Council of Australia strongly agreed that 'it would be more efficient to target supply side constraints' it noted that 'reform of Queensland's regulatory and taxation systems will take many years to achieve - and must involve the Commonwealth'. It recommended retaining the Great Start Grant in its current format until supply-side constraints can be addressed (Property Council of Australia, sub. 23, p. 4 & 6).

To the extent that ceasing the Great Start Grant is not possible in the short term, due to intergovernmental agreements, improvements could be made to further target assistance towards those more likely to have difficulties entering the housing market.

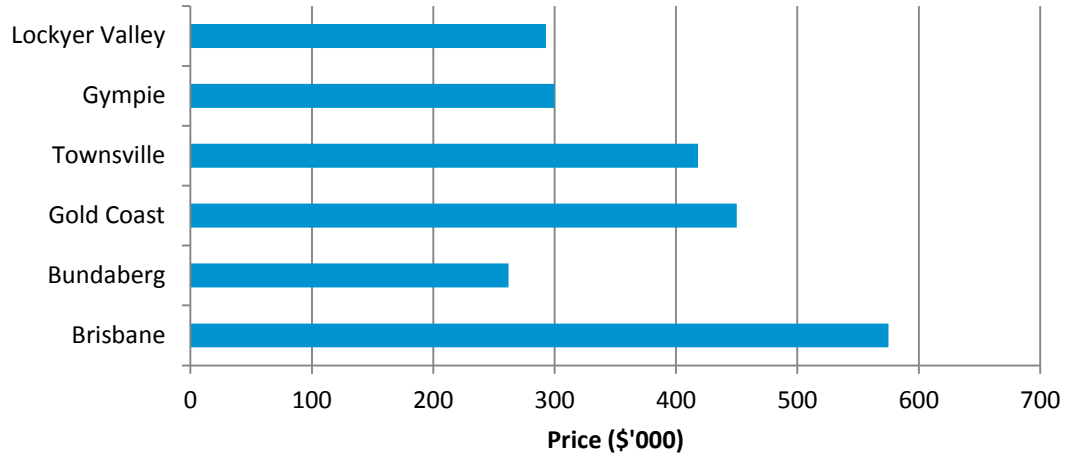
In 2012, the Queensland Government introduced the $750,000 purchase price cap on the grant. This is an administratively simple option for directing the grant to those more likely to require assistance to enter the housing market. However, it is unclear why it is set at $750,000.

Noting that the median new house and land prices fluctuate significantly across Queensland, (Figure 9.1), further consideration could be given to whether this cap is at an optimal level, or whether the cap should account for regional variations in house prices. Further analysis of the

[43] First home owners are eligible for a stamp duty concession where the home is valued at less than $550,000.

impact of this cap and alternatives for identifying those most likely to require assistance to enter the market is required.

Figure 9.1 New house and land median sale price (year ended 30 September 2014)



Source: QGSO (2015).

Recommendation

9.2 The Queensland Government should seek a review of the first home owner grant scheme through the Council of Australian Governments.

(a) Where the grant scheme cannot be shown to be delivering a net benefit to society, the measure should cease.

(b) If closing the grant scheme is not possible in the short term, the Queensland Government should investigate additional opportunities to better target the grant to those in need.

National Rental Affordability Scheme

The National Rental Affordability Scheme (NRAS) was established in 2008 to increase the supply of affordable rental dwellings across Australia and aimed to create up to 50,000 dwellings for low to moderate income households.

The scheme provides financial incentives to investors, for up to ten years, to build well-located dwellings and rent them to eligible low to moderate income households at a below-market rate. The NRAS is an Australian Government program financially supported by the Queensland Government.

In 2014, the Australian Government discontinued further expansion of the NRAS. However, existing NRAS properties and currently tenanted NRAS dwellings will continue to remain in the scheme.

The level of assistance provided by the Queensland Government is $147.6 million over five years.

Is there a rationale for intervention?

Although not necessarily sources of market failure, the Department of Housing and Public Works (DHPW) identifies similar housing affordability issues as raised for the Great Start Grant. Specifically, DHPW advised that:

- *Limited supply of affordable private rental housing for low-to-moderate income households in Queensland*
- *Vacancy rates in Queensland in the major regions were below 3 per cent, indicating a highly constrained rental market*
- *Economic slow-down in the construction industry due to effects of the global financial crisis. (DHPW Information Return)*

Similarly, the Property Council of Australia noted that 'supply and demand constraints make it increasingly difficult for new buyers to enter the property market' and 'in the absence of immediate reform, the Property Council would encourage the Government to undertake discussions with the Commonwealth on the reinstatement of the NRAS program, or similar' (Property Council of Australia, sub. 23, pp. 6–7).

Is the measure effective?

The scheme has a number of objectives, including to:

- stimulate a short-term increase in construction and investment in Queensland's property market
- contribute to a medium to longer-term increase in the organisational capacity of the private and not-for-profit sector to deliver affordable rental accommodation to low-to-moderate income households
- contribute to a long-term increase in the supply of dwellings designed to deliver affordable housing options throughout Queensland
- promote a private market rental option for people who were previously on Queensland's Housing Register or residing in social housing.

The Commonwealth Department of Social Services and DHPW monitor the implementation of the NRAS program. Nationally, the scheme has failed to meet its 50,000 dwelling target and as of September 2014, only 23,664 had been allocated with a further 14,194 reserved for allocation subject to conditions being met by the applicant (DSS 2014).

The Commonwealth Department of Social Services informed the Senate Economics References Committee that:

> *...while the Commonwealth Government understood NRAS' role in providing more affordable rental housing, particularly for low income earners, it also acknowledged that there was 'significant scope' to improve the scheme's operation and administration...the government has tasked it with examining options improve the operation of NRAS and to ensure there were more stringent processes to test compliance. (ERC 2015, p.363)*

While the program has failed to achieve its objective of 50,000 dwellings nationally, given that the state objectives for NRAS are neither quantified nor time-related, it is difficult to assess whether the program has achieved its objective in Queensland. For example, delivering one additional dwelling each year technically meets the department's objective of increasing long-term supply, but this is unlikely to be a satisfactory result.

However, based upon the information provided by DHPW, the scheme's uptake has been comparatively stronger in Queensland, when considering the number of NRAS dwellings

delivered and the proportion they make up of total new construction (Table 9.2). According to the Department of Social Services (2014), incentive allocations to Queensland investors represented 34.8 per cent of all scheme allocations across Australia.

Table 9.2 NRAS dwellings delivered by financial year in Queensland

Financial Year	*Number of dwellings delivered*	*Proportion of total new construction in Qld*
2008–09	6	0.01%
2009–10	290	0.86%
2010–11	508	1.69%
2011–12	1725	6.58%
2012–13	2672	9.47%
2013–14	2651	9.32%

Source: DHPW Information Return

While these results represent a significant portion of total new construction, they should be treated cautiously as the results do not account for the number of dwellings that would have been delivered in the absence of the program. To the extent that affordable housing investment would have occurred in the absence of the program, the incentive payments become a transfer from taxpayers to industry to subsidise private activity.

International experience with similar programs has not always been positive. Since 1987, the United States' Federal Government has sought to lift supply of low-income rental housing by providing an investable Low Income Housing Tax Credit to investors. While the tax credit appears to have an impact on the location of low-income housing (Eriksen & Rosenthal 2008), a number of studies suggest the program crowds out other low-income rental housing opportunities. Studies estimate that the program crowds out between 50 and 100 per cent of other low-income rental housing investment (Desai *et al.* 2009).

Furthermore, any increase in affordable housing as a direct result of NRAS may be short-term. Yates (2013) suggests that, given the ten-year cap on NRAS payments, at the conclusion of the program much of the stock that is produced will need to be sold to enable loans to be repaid or to cover replacement costs as stock ages.

That said, the scheme appears to adequately target low to medium income households. DHPW advised that 78 per cent of households living in NRAS dwellings have a gross income of less than $50,000 per annum and only six per cent of households living in NRAS dwellings having an income of over $70,000.

In addition, given around 28 per cent of all housed NRAS tenants in Queensland had previously listed for social housing, the scheme provides considerable savings for the Queensland Government social housing program and further savings through foregone direct capital, maintenance or tenancy management costs (DHPW Information Return).

DHPW advised that each NRAS incentive payment costs the Queensland Government $2495 per annum while the average subsidy for social housing in 2012–13, identified as the difference between the rent paid by social housing tenants and the market rent, was $7665 per annum. However, this $5170 saving from transferring each tenant from housing register and onto the NRAS scheme is likely to disappear at a societal level, given that the costs are shifted to the Australian Government through its NRAS funding.

Are equity objectives being achieved at minimum cost?

As no further rounds of NRAS will be offered, and the Queensland Government remains obligated to its payments to current investors, major amendments to the program are not possible. However, assessing whether NRAS achieves its objectives at minimum cost is useful for future policy design.

While it is difficult to comment on the effectiveness of NRAS without understanding the additionality of the measure, providing a subsidy to indirectly achieve equity objectives is likely to distort the allocation of resources to one sector of the housing market at the costs of other sectors of the economy. Indeed, Ge and Chen (2013) consider that NRAS created disincentives for investing in Australia's most unaffordable markets where the cost of land and development is relatively expensive.

Aside from distorting geographic allocations, it is unlikely that the payment required to incentivise additional investors to provide low-income dwellings is uniform across investor classes and developments. Therefore, given that the schemes provides the same incentive payments to investors, regardless of these characteristics, a proportion of the assistance provided can be expected to be unnecessarily captured by investors as producer surplus.

Targeting the recipient directly may improve outcomes for society while still achieving the Government's original objective. Rosen (1985, p. 379) argues that:

> *...if the government's sole objective is redistribution, and the recipients' preferences are paramount, then using cash to redistribute income is more efficient than a subsidy, in the sense that the same utility level for the recipient can be reached with a smaller cash outlay*.

Such demand-side programs are frequently cited as a more appropriate mechanism for achieving these objectives. The OECD (Andrews *et al.* 2011) considers that well-designed housing allowances may be preferable to the direct provision of social housing given the labour and residential mobility benefits while Kraatz *et al.* (2015) found that when compared to supply subsidies, the program costs for demand subsidies per unit of housing delivered are less.

Furthermore, the Future Tax System review (Henry *et al.* 2010, p. 597) stated that:

> *Housing assistance for people with limited means is best provided as an integrated component of the income support system. The comprehensive assessment of income and assets undertaken through the income support system is the most effective way of targeting housing support to people with limited means. It also ensures that people of similar means receive the same level of support.*

While demand subsidies are attractive for the reasons above, there is still an opportunity for the Queensland Government to complement its assistance by evaluating other policies and regulatory instruments that affect the supply of affordable housing (see the Great Start Grant section of this chapter). For example, given NRAS seeks to attract institutional investors, other policy settings which inhibit the entry of larger investors into the market such as the application of certain taxes warrant further investigation (see Chapter 11 for further details).

Supporting the need for reform, the Property Council of Australia noted that:

> *With the NRAS program no longer receiving Commonwealth funding, there is now a more pressing need for the Government to reform the regulatory and taxation barriers to supply that will enable the property industry to deliver more affordable housing to the market. (Property Council of Australia sub. 23, pp. 6–7)*

On this issue, Henry *et al.* (2010, p. 247) identifies that:

> *Existing land taxes are narrow, which make them less efficient and fair than they could be. Levying higher taxes on larger holdings discourages investment in land by institutional investors*

in rental housing. Since owner-occupied housing is exempt, land tax on residential investment properties is probably passed through to renters as higher rents.

9.4 Resources industry assistance

Table 9.3 outlines the main resource sector measures.

Table 9.3 Summary of resources industry assistance

Assistance measure	*Description*	*Level of assistance*
Area discounts for Mineral Development Licences	The rental regime for mineral development licences includes a system of "area discounts" whereby larger tenures pay considerably less than the prescribed rental rate per hectare.	$97.66 million over five years
Future Resources Program (excluding the Collaborative Drilling Program)	The Future Resource Program funds seven initiatives to support Queensland's resources and exploration industries (including the Collaborative Drilling Initiative, which is assessed separately).	$22 million over three years*
Collaborative Drilling Initiative	The Collaborative Drilling Initiative provides grants of up to $150,000 to mining companies to co-fund the drilling costs of innovative exploration programs. The initiative forms part of the Future Resources Program.	$3 million over two years

*Note: * The Future Resources Program includes the Core Library Extension ($5 million over three years) which is not considered industry assistance.*

As identified in Chapter 5, the resources industry will receive $700 million in industry assistance from 2013–14 to 2017–18. In addition to the resources-specific measures above, this assistance includes:

- concessions associated with the Gladstone Ports Corporation Limited Port Charges Contracts. The contracts aimed to subsidise industry for the construction of port infrastructure. The level of assistance provided to industry from the subsidy is $244.9 million over five years (see Chapter 12 for further details).
- trade and investment attraction services through Trade and Investment Queensland (TIQ). The level of assistance provided by TIQ across all industries is $130.6 million over five years, with approximately 35 per cent of its activities directly supporting the resources industry.

9.5 Role of government in the resources industry

The Queensland Government, as the owner of the rights to Queensland's mineral and petroleum resources, has a stewardship role on behalf of the community to ensure appropriate development of these resources.

State governments often have a strong interest in developing resources given the royalty revenue it generates. Queensland Treasury advised that in 2014–15 the Queensland Government received $2.05 billion in royalties excluding land rents (Queensland Government 2015c).

This strong interest in resource development is reflected in the previous Queensland Government's vision for the state to be a 'global resources leader', through the *ResourcesQ* 30 year vision. *ResourcesQ* considered that:

> *A strong resources future is essential to secure Queensland's economic future. The state's plans must promote and encourage exploration, resource development and on-time infrastructure*

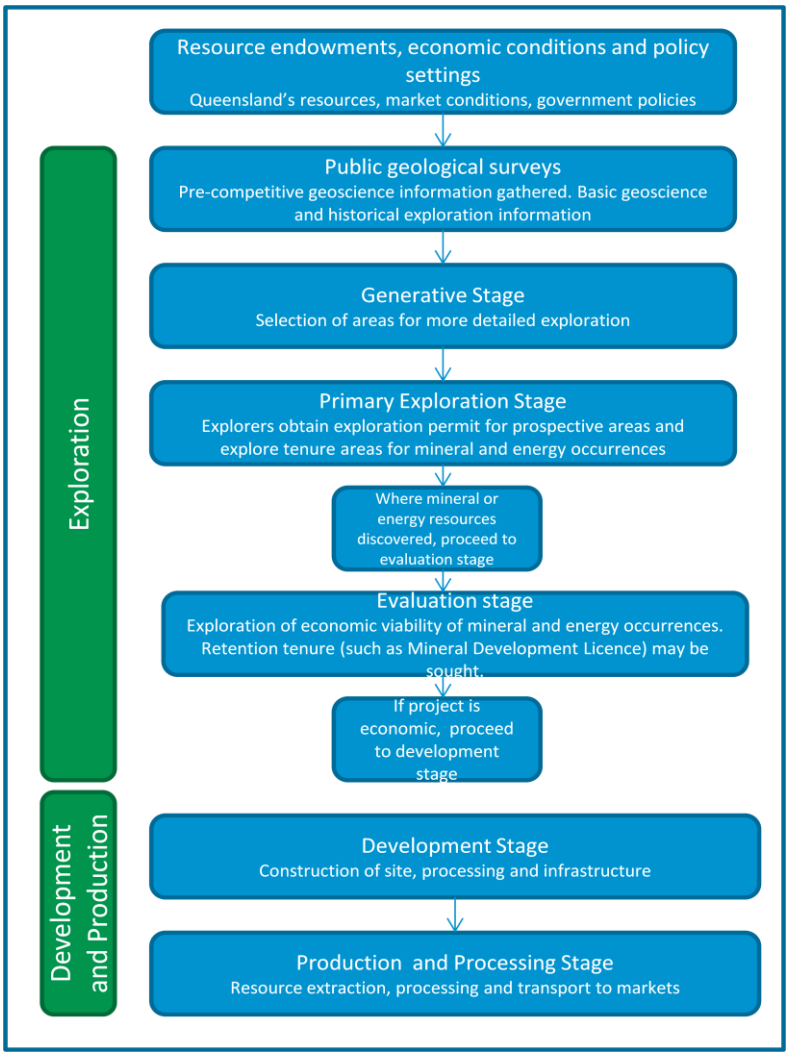
delivery. This will provide investment security and the greatest economic return. (DNRM 2014, p. 24)

According to the Australian Bureau of Statistics (2014a), in 2013–14, the gross value added to the Queensland economy by the mining sector (including petroleum) was $26.57 billion, or approximately nine per cent of total gross value added. In addition, the resources industry is an important source of economic activity for regional and remote economies.

9.5.1 Key Stages in mineral and petroleum exploration and production

There are a number of distinct stages in mineral and petroleum exploration and production, including exploration, development and production, processing and transport, and final consumption at an end market. The key stages are outlined in Figure 9.2 below.

Figure 9.2 Key stages in resource exploration and production/processing



Source: PC (2013a).

9.5.2 Measures which aim to improve geoscience information

The Department of Natural Resources and Mines (DNRM) administers two assistance measures which aim to improve the level of geological information available on Queensland's resources, either by incentivising explorers or directly funding exploration projects.

- **Collaborative Drilling Initiative** (CDI) — included as part of the Future Resources Program, the CDI is designed to incentivise explorers to conduct exploration in under-explored parts of

Queensland. The program co-funds the drilling costs of innovative exploration programs through grants of up to 50 per cent of the project costs to a maximum of $150,000. The level of assistance provided by the CDI is $3 million over two years.

- **Future Resources Program** — aims to maximise exploration success by supporting Queensland's resource and exploration industries. The level of assistance provided by the program (which does not include funding for the Core Library Extension) is $22 million over three years.

  Other specific initiatives included in the Future Resources Program, outside of the Collaborative Drilling Initiative, include:

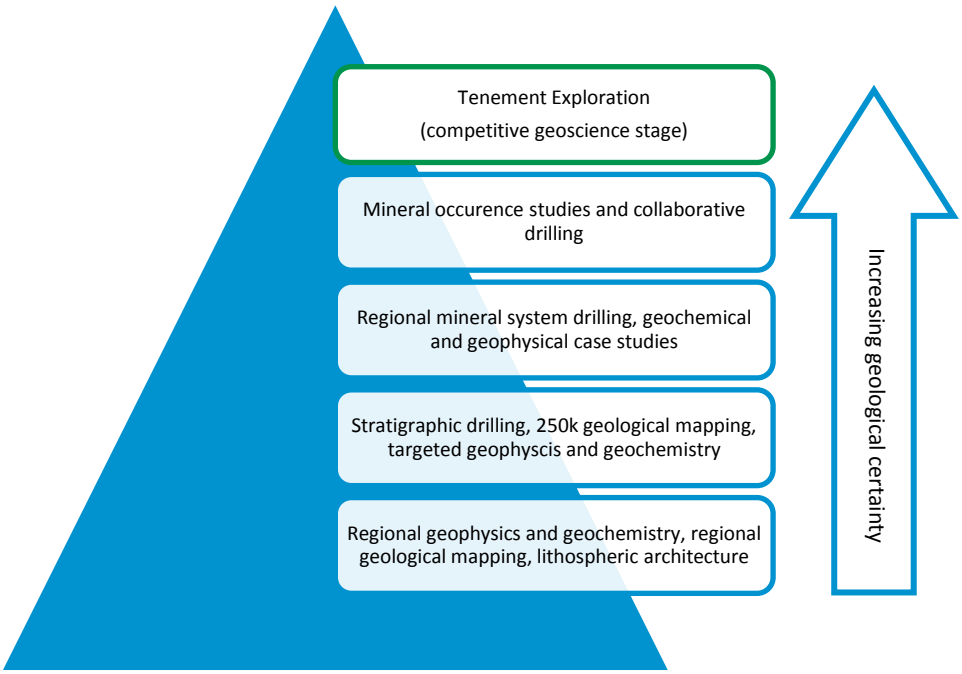
  - Industry Priorities Initiative — provides funding to priority geosciences projects identified by industry such as mapping, test-drilling and electromagnetic surveying of prospective areas.
  - Mount Isa Geophysics Initiative — aims to reduce exploration risk by improving understanding of regional sub-surface geology and cover thickness and character. It should also stimulate further greenfield exploration in Mount Isa.
  - Geochemical Data Extraction Initiative — aims to make valuable geochemical data more accessible for industry, government and the public, and help companies assess the potential of future exploration. It involves providing comprehensive geochemical coverage of Queensland's mineralised regions by extracting data from archived company reports and adding it to the Queensland surface and drillhole geochemistry database.
  - Cape York Mineral Resource Assessment Initiative — in light of new stream sediment data, the initiative uses geological mapping and sampling to re-evaluate the strategic mineral potential of the Cape York region.
  - Seismic Section Scanning Initiative — digitises sepia versions of company seismic sections to make it easier for industry to access and to preserve the data.

While the Core Library Extension Initiative is also included in the Future Resources Program, given that it aims to increase the storage capacity of DNRM's Core Sample Library, it is not included as industry assistance.

9.5.3 What is pre-competitive geoscience information?

Pre-competitive geoscience information is made available to explorers to assist them in identifying possible targets for further exploration. The information generally includes data on the physical and chemical composition of areas and is usually obtained through surveying, mapping, data compilation and interpretation of geophysical data (Figure 9.3).

Figure 9.3 Pre-competitive Geoscience Workflow



Source: Hill and Davis (2013).

Is there a rationale for providing or co-funding geoscience activities?

Resource exploration is an inherently high-risk business. Exploration expenditure will not generate any revenues if resources are not discovered and the discovery of a resource does not guarantee a return to the investor. Noting this high risk, DNRM advised that:

> *The exploration sector since 2008 has found it very difficult to obtain funding to undertake high risk innovative exploration through normal financial channels despite the potential high return if this results in a discovery. (DNRM Information Return)*

To address this, DNRM seeks to co-fund certain geoscience projects through the CDI and entirely fund others through the Future Resources Program. DNRM considers the Future Resources Program will reduce exploration risk for the industry while the CDI will:

> *…encourage higher risk exploration in under-explored regions of Queensland and enabling companies to apply new and innovative approaches to brownfield as well as greenfield areas.*

Evidence of a company not being able to obtain finance for a project is not, on its own, a source of market failure but reflects the high-risk nature of the investment. The Financial System Inquiry (Murray *et al.* 2014, pp. 2–60) notes that:

> *New ventures can typically take several years of development before any cash flows are generated from their activities, and failure rates are high. As a result, new ventures have limited access to credit, and market-based financing can be inaccessible or too costly to acquire.*

However, where exploration has public good characteristics, and the firm cannot capture all the benefits, the level of the activity may be at a socially sub-optimal level. In this case, there is basis for government to fund some provision of geoscience information.

Geoscience information is commonly considered to have public good characteristics:

> *The case for some public funding of pre-competitive geoscience information is widely accepted on several grounds. In terms of partial public good characteristics, the use of the information by one explorer does not prevent its use by others, and therefore the level of private investment in publicly available information may not be socially optimal. (PC 2013a, p. 28)*

The Queensland Resources Council considered pre-competitive geoscience programs:

> *...contribute to the dynamic efficiency of the Queensland economy in that their geological findings can push out the state's production possibility frontier. (QRC sub. 22, p. 2).*

That said, geoscience information provides a mixture of public and private benefits and assists the resources industry in a number of ways. The information assists explorers in identifying prospective areas for further exploration and improves the likelihood of success. Furthermore, geoscience information prevents explorers from duplicating their effort (Duke 2010).

Maximising the return on state-owned resources

Beyond the use of the information by other firms, governments also benefit geoscience information gathered by explorers. The Productivity Commission (2013a, p. 55) notes that:

> *Governments require information about the location and nature of these resources in order to make informed decisions about their best use. Governments undertake their own data gathering (pre-competitive geoscience), in part to have a broad understanding of the extent of those resources.*

Aside from government-funded exploration initiatives, private explorers also contribute to geological understanding of Queensland's resources. Under Queensland's resource legislation, explorers are required to report on the progress and results of their exploration activities to DNRM. For example, pursuant to the *Mineral Resources Act 1989*, exploration permit holders must inform DNRM within 14 days of discovering minerals of commercial value. These reporting mechanisms allow the Geological Survey of Queensland to process and release exploration data gathered by explorers into the public domain after confidentiality provisions have been met. The public release of this data promotes cost effective data capture and research for the resource exploration industry.

As the owner of Queensland's resources, the State Government has an interest in optimising the development of these resources to maximise its return. Geoscience information is often described as analogous to a prospectus as it may be cost effective for governments to provide this information to maximise the value of the state's resources (PC 2013a).

The Department of Finance and Deregulation (2011, p. 39) elaborates on this point:

> *The 'prospectus' analogy represents a departure from the public good argument that is typically used to justify government provision of pre-competitive information. While public good attributes certainly apply to pre-competitive information, under this model it is the Government's desire to maximise its private interests, as sovereign owner of resources and recipient of secondary tax revenues from resource development, that forms the core business case for the Government to generate and provide pre-competitive information as described above.*

ACIL Tasman (2012, p. 66), in its review of Australia's Offshore Petroleum Exploration Policy, considered that under a competitive tendering system, such as Queensland's, providing early stage exploration information:

> *...would improve competition and bids under such a cash bidding system, and facilitate its management by guiding time of release of areas for bidding, setting of reserve prices and decisions on acceptance and rejection of bids.*

Effectiveness of the measures

The objectives of the Future Resources Program and Collaborative Drilling Initiative (CDI) are broadly similar, as both aim to improve the level of geoscience information available on lesser-explored areas:

- The CDI aims to stimulate exploration investment in under-explored parts of Queensland and introduce new technology and exploration concepts to Queensland, potentially resulting in new resource discoveries.
- While the Future Resources Program, given it includes a suite of measures, has a more general objective of seeking to maximise the success of exploration ventures by supporting Queensland's resource and exploration industries.

The level of monitoring and evaluation between the programs is varied. DNRM advised that exploration investment activity is largely determined by exogenous factors, such as commodity prices, and the impacts of the Future Resources Program are not directly monitored. DNRM does monitor Queensland exploration expenditure, Queensland exploration expenditure relative to Australia, and Queensland area under exploration tenure.

DNRM also obtains feedback to determine the projects that are most beneficial for industry. Monitoring feedback may be useful for identifying future exploration targets, but it does not provide any further insight into the effectiveness of current initiatives.

If exogenous factors are the largest determinants of a program's success, it is likely that much of the progress towards achieving the Future Resources program's objective would have occurred in the absence of the program.

In contrast to the Future Resources Program, DNRM does monitor the impact of the CDI. DNRM considers the CDI is achieving its intended objective of stimulating investment as it has "created impetus throughout the industry awaiting further rounds". An overview of the CDI is provided in Table 9.4 below.

Table 9.4 Collaborative Drilling Initiative performance since 2006

No. of projects co-funded	*Technical successes*	*Technical success to project ratio*	*Total cost of funding*	*Company funding invested*	*Industry to government funding ratio*
74	42	0.58	$5.99 million	$18.4 million	3.1

Source: Minister for Natural Resource and Mines (2014).

Without an estimate of what the level of investment would have been in the absence of the assistance, it is not clear what investment was generated by the program. However, on the basis of the information available, the CDI does appear to be associated with a number of technical successes. Furthermore, the industry to government funding ratio of over three suggests that the measure may have facilitated some exploration.

Key Findings

Given the public good characteristics of pre-competitive geoscience information, there appears to be a rationale for government intervention. However, given that DNRM does not monitor the effectiveness of the Future Resources Program, it is unclear what the outcomes of the program are or whether the initiatives themselves have a causal relationship with the outcomes they sought to induce.

Furthermore, as DNRM's industry assistance aims to target information provision that would not be provided by the market, it is appropriate for DNRM's exploration assistance programs to target those areas which are under-explored and unlikely to be explored by the private sector.

Although the level of monitoring undertaken for the Collaborative Drilling Initiative is an improvement on the wider Future Resources Program, a 'before and after' assessment does little to explain the additionality of the measure. Further consideration could be given to

whether the information obtained as a result of CDI projects has benefited other parties which did not receive the funding.

Given that both the CDI and the Future Resources Program target outcomes that are influenced by a range of market factors, DNRM should establish a credible counterfactual to measure the impact of assistance.

Finally, opportunities exist for the Queensland Government to encourage activity in the sector and improve the return on state assets in ways other than providing assistance for geoscience information. For example, it may be more beneficial for the Queensland Government to remove those regulatory processes which impose unnecessary regulatory burdens and act as a barrier to investment.

According to the Fraser Institute's annual Policy Perception Index (2014), which scores jurisdictions on the attractiveness of their mining policies by surveying the opinions of mining companies and mining consultancies globally, Queensland is ranked 33rd out of 122 jurisdictions worldwide. Further, when compared to the Policy Perception Index's ranking of other Australian jurisdictions, Queensland is the second least attractive Australian jurisdiction in terms of mining policies.

Recommendations

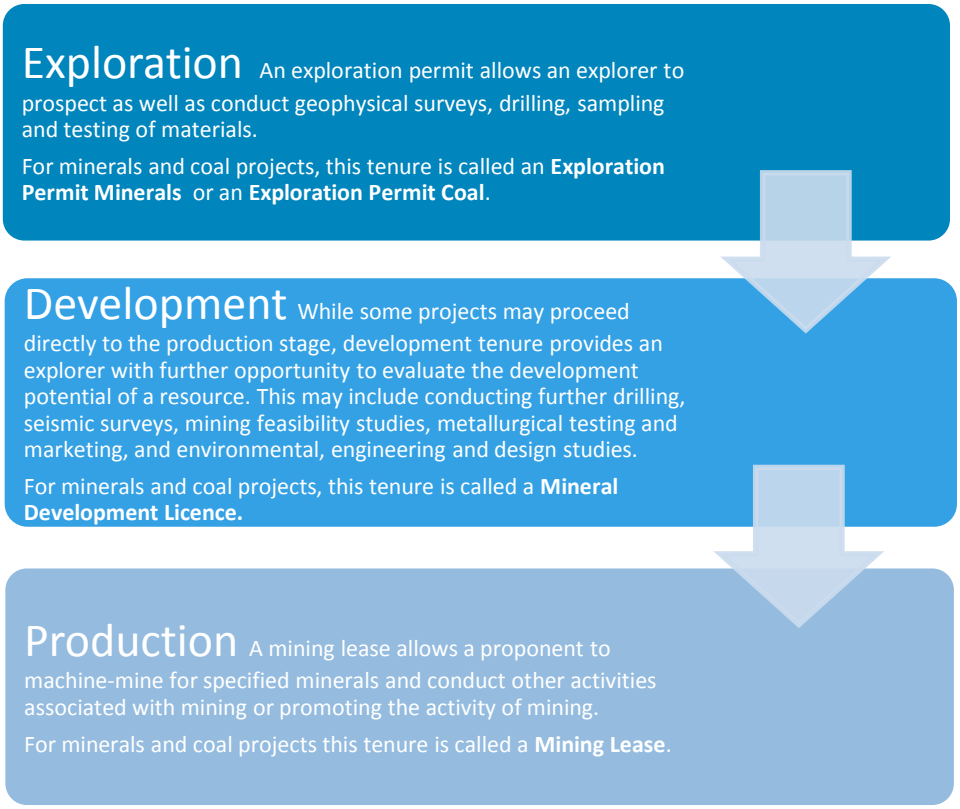
9.3 The Queensland Government should set a range of specific and measurable targets which allow decision-makers to assess whether initiatives included in the Future Resources Program (including the Collaborative Drilling Initiative) are achieving their objectives.

9.4 The Queensland Government should consider whether the regulatory framework for resources is achieving the desired policy outcomes at minimum cost.

9.6 Area Discounts for Mineral Development Licences

Given the Queensland Government's stewardship role of resources, DNRM regulates the allocation and operation of resources activities through a tenement administration system. Exploration and production is controlled through the granting of various permits and licences which vary between resource types (e.g. minerals or petroleum) and tenure holders have rights and obligations associated with these permits. While the licences and permits vary between resource types, a similar order of progression occurs across each. The broad permit framework for minerals is shown below.

Figure 9.4 Key stages in Queensland's Mineral Resource Tenure Framework



DNRM advised that Mineral Development Licences (MDLs) are designed to encourage the evaluation and economic development of a potentially viable mineral resource while providing greater investment security. MDLs permit a proponent to retain rights to an area, at the exclusion of other parties, while further evaluation work is undertaken.

All mineral and petroleum tenures in Queensland are required to pay an annual rental as a condition of their tenure. These annual rental payments are distinct and in addition to resource royalties which are paid to the Queensland Government for the right to extract the resource.

DNRM provides a rental discount to hold larger areas of land under a MDL, substantially reducing the retention costs of an MDL. Rental rates for MDLs are all charged the same base rate, with a varying discount applied depending on the MDL's area (see below). Assuming the base rental rate is set at an efficient rate, the level of assistance provided by the discount is $97.66 million over five years.

Table 9.5 MDL Rental Rate and Discount

Base rental rate		*Discount applied to base rental rate*	
Amount payable per hectare	***Rate per hectare ($)***	***Area of MDL***	***Proportion of rental rate payable***
For the first year of a licence	3.95	For the first 1000 hectares	100%
For the second year of a licence	8.10	For the next 1000 hectares	40%
For the third year of a licence	12.35	For the next 3000 hectares	25%
For the fourth year of a licence	21.25	For the next 10000 hectares	5%
For a year of a licence after the fourth year	25.55	For each additional hectare	1%

Source: DNRM (2013).

What is the rationale for providing a discount?

The Department advised that, at the time of implementing the measure in the mid 1990s, the discount on the rental rate attempted to address the:

> *...potential anomaly existing between say a coal area with a very thick concentrated seam, and one with a much thinner seam but extending over a far larger area. From an economic viewpoint the two MDLs could potentially contain similar quantities of coal reserves and be of a similar quality, such that the total gross resource value is approximately the same. However, as rents are normally applied on an area basis the MDL with the much thinner seam extending over a large area would pay considerably more than the one with smaller area but thicker coal seam. (DNRM Information Return)*

Unlike most other forms of industry assistance, this measure represents a discount on a government-created instrument with rates that are determined through regulation. There is no evidence that the rate is set efficiently or whether the MDL rate is largely based on legacy, cost recovery or other principles. As such, there is a question as to whether the MDL discount does assist industry and if so, by how much. Indeed, the Queensland Resources Council suggested that the area discount should not be portrayed as an underpriced asset:

> *The discount applies to rent on the tenures and that rent should not be misrepresented as "an asset price" as it is not a market-set price. (QRC sub. 22, p. 3)*

DNRM does not provide further rationale for the discount and it appears the discount addresses equity considerations between tenure holders. Given MDL rental rates are set on this basis, it is unclear whether operators, whose business targets less concentrated resources, should receive a discount by virtue of that choice.

In comparison, Queensland aquaculture, viticulture and agriculture producers on term leases are not discriminated by land use and are all charged an annual rent equivalent to 0.75 per cent of land value (DNRM Information Return).

Is the discount effective?

Although the problem identified was the 'anomaly' between resource types, DNRM advised that the objective of the discount is to encourage the evaluation and economic development of a potentially viable resource, while providing the necessary security of tenure.

Given the measure's objectives are not measurable or time-related, it is difficult to gauge how effective the measure has been in encouraging the evaluation and economic development of Queensland's resources.

While the measure has significantly reduced rental costs for the holders of larger areas, it is unclear how the discount increases security for tenure holders. Assistance measures should be as closely aligned to the identified problem as possible. If the proposal is designed to increase security of tenure, that problem is likely to be better addressed through the conditions attached to MDLs rather than indirectly through the rental fee.

Does the discount induce other distortionary effects?

While the policy is effective in reducing cost for holding larger quantities of tenure, DNRM considers that the area discounts for MDLs:

> *...have overcompensated for the apparent anomaly that they sought to address...*

And has:

> *...led to the unintended consequence of 'land banking' with the average age of tenures being approximately 12 years. (DNRM 2013)*

A firm making a rational choice to 'land bank' is not evidence of a market failure:

> *The act of abstaining from actually exercising mineral rights because, for example, the (real) value of such rights is rising is exactly what society should applaud, since it is in the interests of those with a stake in the outcome (e.g. via royalties) to maximise the net worth of any particular asset. Thus `real estating' can be highly desirable in the right circumstances. (IC 1991b, p. 39)*

However, decisions by tenure holders should be based upon market signals rather than inducements to, or subsidies for, retaining land. A policy instrument, such as the area discount could distort economic decisions.

Although it is unclear for how long an area would have been retained in an MDL in the absence of the discount, DNRM advised that in 2012, 43 per cent of all MDLs had been held for at least 15 years (see Table 9.6 below).

Table 9.6 Age of MDLs

Age of MDL	*% tenures/cumulative total %*	*% area/cumulative total %*
Less than 5 years	24% / 24%	29% / 29%
5 years to 10 years	15% / 39%	22% / 51%
10 years to 15 years	18% / 57%	14% / 65%
15 years to 20 years	26% / 83%	34% / 99%
Greater than 20 years	17% / 100%	1% / 100%

Note: Based on 181 tenures for which rental was raised with a due date of 31 August 2012.

Source: DNRM (2013).

MDL rental rates are unlikely to be a major driver of firms' decisions to develop a resource, but the costs of retaining tenure may affect relinquishment decisions at the margin. In addition, given that the discount is based on the size, rather than the concentration of a resource, some MDL holders are likely to needlessly receive assistance given they were not the intended target of the measure.

Where this discount reduces incentives for land turnover or further development, prospective development areas may remain undeveloped for longer than in the absence of the discount. In

such cases, this is likely to reduce the amount of land available for other firms, the Government's competitive tendering initiative and the opportunity costs of foregone development and royalties.

While it is difficult to accurately judge the value of forgone royalties, the difference may be material:

> *Apart from occasional royalty paid on bulk samples sourced from MDLs the revenue contribution from MDLs is understandably minimal. If only 5% of MDLs by area were converted to producing mining leases this might translate to additional royalty of around $87 million per year. (DNRM Information Return)*

However, estimates of foregone royalties should be treated cautiously, given that a number of other factors such as commodity prices are likely to have a far greater impact on a firm's investment decisions.

Recommendation

9.5 The Department of Natural Resources and Mines should evaluate the development tenure framework with a view to:

- **(a) identifying the aims of providing area discounts for Mineral Development Licences**
- **(b) reviewing the pricing structure to ensure it effectively achieves those aims and limits distortions.**

10 INDUSTRY-SPECIFIC ASSISTANCE: SERVICES

Key points

- The Queensland Government provides 17 assistance measures to the services industry.
- From 2013 to 2018, assistance to services industries is expected to total $1.16 billion. This consists of $1.14 billion in budgetary outlays (98 per cent) and $22 million (two per cent) in underpricing of assets and services.
- Of the 17 services measures catalogued, 11 are monitored in some way by departments. Only two measures have been formally evaluated by departments.
- The majority (56 per cent) of this assistance is paid to education providers to subsidise vocational education and training followed by subsidies to maintain and operate stadiums (14 per cent) and assistance to the racing industry (10 per cent).
- A number of measures have in-principle cases for government intervention that accord with generally accepted roles of government. Some measures also target social and equity objectives, where industry assistance is provided in the course of achieving those objectives, for example, the taxi fare subsidies for people with disabilities.
- However, a number of measures have weak rationales including assistance provided to the racing industry, and the measures targeted at the film production industry.

10.1 Assistance provided to the services sector

The services sector (also known as the tertiary sector) provides services to consumers as final products, or services to other producers as an intermediary input. Unlike primary industries, service industries are not directly engaged in the production of goods. The services sector includes retail, transport, education, health and community services, accommodation and restaurants. The services sector is the largest component of the Australian economy in terms of number of businesses, employment and gross value added (ABS 2014f).

Businesses in the services sector receive various forms of financial assistance. The QCA has identified 17 assistance measures that benefit service businesses with total assistance of $1.16 billion provided from 2013 to 2018 (see Table 10.1). This consists of $1.14 billion in budgetary outlays (98 per cent) and $22 million (two per cent) in underpricing of assets and services.

Subsidies to vocational education and training services are the most significant category of assistance ($662 million, or 56 per cent of total assistance to the services sector) followed by subsidies to maintain and operate stadiums ($162 million, or 14 per cent of total assistance) and assistance to the racing industry ($119 million, or 10 per cent, of total assistance).

Some measures provide direct support to industry in the traditional sense, such as the racing and film industry assistance measures. Other measures result in businesses receiving assistance as a consequence of government targeting broader social and equity objectives, such as taxi fare subsidies for people with disabilities. These subsidies partly offset the higher cost of taxi fares that result from taxi licence regulation (see Chapter 16).

Some assistance measures provide funding to business for activities normally funded by business themselves. For example, the government, in partnership with industry, provides late-night security at taxi ranks to improve driver and community safety, while other businesses

requiring security services (nightclubs, for example) tend to provide security services at their own cost. Other assistance, such as the Australian Packaging Covenant grants program, target environmental objectives.

The services industry also benefits from a range of general assistance measures including tax concessions, regulatory restrictions and, in some cases, subsidised electricity and water prices. These measures are discussed in Chapters 11, 12 and 16 of this report.

The most significant assistance measures, on the basis of their cost to government and their potential to distort economic decisions and the allocation of resources, are examined in more detail below.

Table 10.1 Summary of services sector assistance

Assistance measure	*Description*	*Level of assistance 2013–18*
User Choice — Apprentice and Trainee Training Subsidy	The User Choice program provides government funding to training providers to reduce the cost of accredited, entry level training for Queensland apprentices and trainees. The program enables apprentices, trainees and their employers to select a preferred provider from an approved list for the delivery of accredited training to meet their specific needs.	$410.3 m (2013–14 to 2014–15)
Certificate 3 Guarantee Tuition Fee Subsidy	The Certificate 3 Guarantee commenced in 2013–14 and replaces the Vocational Education Training –Tuition Fee Subsidy program which was previously only available to TAFE Institutes. This subsidy arrangement was extended to approved private registered training organisations (pre-qualified suppliers) from 1 July 2013, and was largely provided to subsidise the tuition fees paid by students undertaking eligible vocation education and training courses (primarily at Certificate 3).	$197.0 m (2013–14 to 2014–15)
Stadiums Queensland	Grants are provided to Stadiums Queensland, which manages, operates and promotes the use of major sporting and entertainment facilities on behalf of the Queensland Government.	$161.6 m
Racing Industry Capital Development Scheme / Racing Infrastructure Fund	The Racing Infrastructure Fund and Racing Industry Capital Development Scheme provide funding to infrastructure projects at racing venues throughout Queensland.	$106.3 m
Taxi Subsidy Scheme	The Taxi Subsidy Scheme subsidises taxi travel — half of the total fare, up to a maximum of $25 per trip — for people with severe disabilities. This measure seeks to address social objectives.	$72.7 m
Film and TV funding — Screen Queensland	The Queensland Government provides grants to Screen Queensland, which develops and supports the local screen industry and attracts production to Queensland. Screen Queensland also administers the Film and Television Rebate.	$57 m
Higher Level Skills Tuition Fee Subsidy	Higher Level Skills was introduced in 2013–14 and replaces the Vocational Education Training –Tuition Fee Subsidy program which was previously only available to technical and further education (TAFE) institutes. During 2013–14, funding was largely provided to subsidise the tuition fees paid by students undertaking eligible vocational education and training courses (Certificate IV and above) at TAFE Queensland.	$55.0 m (2014–15)

Assistance measure	*Description*	*Level of assistance 2013–18*
Contracted air services	The Queensland Government awards service contracts to airlines and subsidises a number of regular passenger transport air services in rural and remote Queensland. DTMR endorses the routes and minimum service levels that apply to the air service contracts.	$50.9 m
Long-distance bus subsidies	The Queensland Government provides subsidies to bus and coach companies to financially support coach services throughout regional Queensland.	$8.3 m
Maritime safety - Commercial ship registration concessions	Commercial Ship Registration and Licensing includes vessel design and inspection standards, ship and operator competency standards, development and enforcement. It is funded from commercial ship registration, licensing revenue and a concession from the Queensland Government. The concession represents a benefit to commercial ship owners and licensees.	$24.5 m
Passenger safety secure taxi ranks	The Passenger Safety Secure Ranks program provides subsidies to industry to increase the number of secure taxi ranks across the state to improve late-night safety and security for taxi drivers and patrons.	$7.9 m
Training Track Subsidy Scheme	The Training Track Subsidy Scheme offsets the costs to Queensland thoroughbred race clubs of maintaining training facilities at their venues.	$10 m
Rejuvenating Country Racing Program	Provides funding to support three additional thoroughbred country race programs developed by Racing Queensland.	$3.0 m (2013–14 to 2015–16)
Grants program supporting objectives of the Australian Packaging Covenant	The program contributes funding to councils and industry to deliver projects that assist in reducing litter and aid recycling of packaged products.	$0.87 m (2013–14 to 2014–15)
Legal Aid Queensland database access	Preferred suppliers of Legal Aid Queensland are provided with access to Legal Aid Queensland's online database library at no cost.	$0.35 m
Continuing Professional Development Training	Legal Aid Queensland provides in-house Continuing Professional Development Training sessions to preferred suppliers to Legal Aid Queensland and members of Community Legal Centres, at no cost.	$0.22 m
Emerging Barrister Program	Legal Aid Queensland and the Bar Association of Queensland collaborate to implement a development program for emerging barristers, providing opportunities to develop criminal law advocacy experience.	$37,000 (2013–14)

10.2 Vocational education and training services

10.2.1 Overview

Vocational education and training (VET) is training that leads to formal qualifications across a wide range of trade and professional fields. It provides students with skills and knowledge that are specific to certain industries and occupations. VET is provided through all state and territory

governments and the Australian Government, along with industry, public and private training providers across Australia (Australian Skills Quality Authority n.d.).

Until the late 1980s, VET services were generally provided solely by governments, through state-run and funded TAFE institutions. However, reforms have since opened this sector to private training providers. As of 1 January 2015, there were 4609 registered training organisations in Australia with 3440 being private VET providers (Department of Education and Training 2015). Private registered training organisations now serve around 30 per cent of the market for government subsidised VET services with TAFE institutions capturing around 53 per cent of the market and the residual being provided by schools, universities and community education providers (Department of Education and Training 2015). This increase in private sector involvement and competition was aided by funding reforms which encouraged training organisations to compete for government funding.

Three related programs provide financial assistance to VET providers in Queensland, specifically:

- Higher Level Skills Tuition Fee Subsidy
- Certificate Guarantee Tuition Fee Subsidy
- 'User Choice' Apprentice and Trainee Training Subsidy.

These measures deliver subsidies directly to approved training providers to offer training for selected courses of study. The targeted courses of study are identified based on industry skill shortages and the future needs of industry, with the level of subsidy provided determined by the relative priority and value of the qualification.[44] Training in vocational areas that align with critical skill needs attract a higher subsidy. Higher subsidies are also paid to support participation by concessional students, including disadvantaged groups, and those undertaking training in remote locations.

Training recipients are typically required to contribute to the cost of the training through a co-contribution. Co-contribution fees are not regulated with the exception of those under the User Choice program.

The cost of direct assistance provided through these three measures is expected to total $662.3 million over the period 2013–15.[45] The Queensland Government has announced additional expenditure for these, and other related programs in 2015–16.

Certificate 3 Guarantee

The Certificate 3 Guarantee provides a subsidy directly to VET providers to support eligible individuals to complete their first post-school Certificate III qualification. It also aims to help Year 12 graduates transition to employment by providing fully-subsidised training in high priority qualification areas. The subsidy is paid directly to the training organisation following delivery of training to students.

The annual average subsidy per student ranges from $416 to $6900 depending on the qualification undertaken. Students undertaking certificate III training, and non-concessional

[44] Priority qualifications are identified based on the Annual Skills Priority Report produced by the Ministerial Industry Commission, and national and state skills shortage data and priorities.

[45] Queensland Government funding to general education services (early, primary and secondary education) was considered out of the scope of this inquiry. Privately operated (non-state) schools receiving government funding to provide primary and secondary education are required under the *Education (Accreditation of Non-State Schools) Act 2001* to operate as not-for-profit organisations, which are excluded from the definition of industry assistance.

students undertaking lower level training, are required to contribute to the costs of their training through a co-contribution fee.

'User Choice' Program

The User Choice Program provides funding to training providers to reduce the cost of accredited, entry-level training for Queensland apprentices and trainees. The program enables apprentices, trainees and their employers to select a preferred registered training organisation from a list of approved pre-qualified suppliers for the delivery of subsidised accredited training to meet their specific needs. The level of subsidy is determined by the relative priority and indicative value of the qualification. The annual average subsidy per student is $2726.

This program operates in conjunction with the Australian Government-managed Australian Apprenticeships System. Under this system, apprentices and trainees enter into training contracts with their employers and receive structured training to achieve a nationally recognised qualification.

Higher Level Skills Program

This program provides eligible students and employers with access to subsidised training places in a priority Certificate IV, diploma or advanced diploma level qualification, or training in a priority industry-endorsed skill set.

The program aims to assist individuals to gain the higher-level skills required to secure employment or career advancement in priority industries, or to transition to university. It also provides eligible employers with the capacity to address existing workforce development needs, where individual employees meet the program's eligibility requirements (DETE 2014).

The annual average subsidy per student ranges from $1050 to $6910 depending on the qualification undertaken.

Other relevant assistance measures

Students studying at the diploma, advanced diploma, graduate certificate, graduate diploma or Certificate IV level through an approved training provider may also be eligible for loans to assist in paying tuition fees, through the Australian Government's VET FEE Higher Education Loan Programme (FEE-HELP).

10.2.2 Is there a case for government intervention?

The Australian, state and territory governments play a significant role in the VET sector by funding providers, coordinating supply-side planning, providing information, regulating the sector and assisting students through various financial support programs.

There are a number of rationales for government intervention in the market for vocational education and training, including:

- overcoming market failures:
  - education and training has both public and private benefits. For example:
    - the entire community benefits from individuals having basic knowledge capabilities to function in society. Where individuals cannot capture sufficient benefits to outweigh the costs, there will be less education and training than is socially optimal. However, public benefits are likely to be greater for general primary and secondary schooling rather than VET and university education, where considerable evidence links VET to private returns, in terms of higher lifetime earnings and employment (see for example, Forbes, Barker & Turner 2010 and Lee & Coelli 2010).

- a similar private/public benefit assessment is made by employers, who may be less incentivised to provide training, particularly generalised training when they may not recover the investment if employees do not stay with the business.

– information asymmetries whereby students may have less information about the quality of VET or be myopic about the future returns from education.

- ensuring equitable access to VET for disadvantaged groups and low income households.

The significant role played by governments in funding and regulating VET also means it intervenes in the planning of VET provision. For example, governments coordinate planning to limit skills shortages and ensure industry has a sufficient supply of suitably qualified labour to meet its future needs. Indeed, addressing skills shortages is a fundamental objective of these three policies.

10.2.3 Are these policies effective?

The core stated objective of these assistance measures is to increase the state's qualifications profile, address current and future skills requirements in priority industries and increase the state's social and economic prosperity. The primary non-individual beneficiaries of the measures are the VET providers (directly through subsidies) and indirectly the trainees and various industries in which they will eventually work (Box 10.1). All Australian states and territories operate similar programs that deliver targeted, subsidised training to meet specific industry needs.

Box 10.1 Which industries indirectly benefit from VET subsidies?

Each year, the state government, through the Ministerial Industry Commission *Annual Skills Priority Report*, establishes the priority industries for VET investment. For 2014–15, the report identifies a range of priority areas for each funding program as set out below, among others. These industries benefit from subsidised training by gaining access to a larger, job-ready pool of candidates.

User Choice	Higher Level Skills	Certificate 3 Guarantee
Bricklaying, cabinet making, plumbing and engineering – mechanical trades	Hospitality, aged care, competitive systems and practices, process plant technology, and water operations	Transport, health, communications, construction, mining, agriculture, tourism and hospitality industries, as well as foundation skills

Source: Ministerial Industry Commission (2014)

The focus of the measures is to alleviate current skill shortages and ensure a sufficient supply of suitably qualified labour to meet future needs. This type of government-led forecasting and targeting higher subsidies to priority areas is primarily driven by perceived information failures surrounding future labour market requirements. Regardless of the overall merits of these measures, for them to be effective it would be necessary for governments to accurately predict future labour market needs. This is challenging because:

- future demand for skills is subject to considerable uncertainty, and is further complicated by rapid technological and market change
- industry requirements are not homogeneous and vary across markets and regions

- industry preferences may favour sector-specific training while trainees may prefer more generic, transferable training. Industries also have an incentive to argue for more subsidised training in their sector to keep wages low (PC 2011f, pp. 73–74).

The Department of Education and Training (DET) undertakes market performance reviews on particular industry qualifications and monitors client satisfaction with training services provided to apprentices and trainees. DET also monitors qualification completion rates and employee benefits gained by enrolled students in some cases.

A number of broader reviews of the VET sector are underway through the state government and the Council of Australian Government's VET reform program. The Australian Government is also conducting a Senate Committee inquiry into the operation, regulation and funding of private VET providers, brought about by concerns surrounding the rapid increase in government funding for private VET providers, following implementation of the market-driven funding model for VET (Education and Employment References Committee 2015). A final report is due to be tabled by August 2015.

Ideally, an evaluation of these three assistance measures should be undertaken within a review of the broader VET system to consider the range of complex and interrelated issues associated with government funding, regulation and planning of the VET system along with a consideration of the national and state split of responsibilities. Particular consideration should also be given to whether the funding appropriately reflects the public/private split of benefits from education, provides the right incentives to achieve its objectives and avoids unintended over- or under-provision of VET services.

Recommendation

10.1 The Queensland Government should, as part of the broader state and Council of Australian Government reviews of vocational education and training (VET), review the effectiveness and efficiency of the targeted VET subsidies. Particular consideration should be given to whether the subsidies appropriately reflect the public/private split of benefits from education, provide the right incentives to providers and students and avoid over- or underprovision of VET services.

10.3 Stadiums Queensland

Stadiums Queensland is a statutory body tasked with operating and promoting Queensland's major sporting and entertainment facilities on behalf of the Queensland Government. Its objectives are to:

- attract major sporting and entertainment events to Queensland
- provide facilities to help optimise the performance of Queensland's elite athletes and coaches to succeed internationally
- maximise utilisation of sport and recreation facilities for community participation, when not required for major events or elite athlete training.

Stadiums Queensland has statutory obligations to perform its functions in a manner consistent with sound commercial principles.[46]

[46] *Major Stadiums Facilities Act 2001*, Section 7 (2).

Stadiums Queensland receives grants from the government to perform these functions and also derives revenues from venue hire and naming rights, tenancies, catering and membership fees, which are charged on commercial terms. Stadiums Queensland is responsible for managing major sports facilities in Queensland declared under Part 2 of the *Major Sports Facilities Act 2001*. These include:

- Metricon Stadium (Carrara, Gold Coast)
- The Gabba (Wooloongabba)
- Sleeman Sports Complex (Chandler)
- Queensland Sports and Athletics Centre (Nathan)
- 1300SMILES Stadium (Townsville)
- CBus Super Stadium (Robina)
- Suncorp Stadium (Milton)
- Brisbane Entertainment Centre (Boondall)
- Queensland Tennis Centre (Tennyson).

The total value of government grants provided to Stadiums Queensland over the period 2013–18 is estimated at $161.6 million.

Based on information provided by Stadiums Queensland, it appears that around half of the total assistance represents an operating grant provided to make Stadiums Queensland's facilities available for community sport and recreation, not-for-profit community and school events, as well as elite athletes and coaches. The community sport and recreation and not-for-profit activities are not considered industry assistance.

The key form of industry assistance relevant to this review is the Queensland Government capital grant provided to Stadiums Queensland to maintain its venues to particular standards deemed necessary to support major commercial events, which represents around a third of the total government grants provided to Stadiums Queensland.[47] Stadiums Queensland has advised that these capital costs are not recovered through revenue from the commercial hire of venues. This equates to underpricing, some of the benefits of which would likely accrue to commercial users of Stadiums Queensland facilities.

For example, Stadiums Queensland's 2013–14 annual report identifies a range of capital upgrades undertaken at The Gabba which would be expected to directly benefit commercial entities, including upgraded player dugouts, coaching boxes, upgraded cricket change rooms, turf replacement, new scoreboards and cricket sightscreens (Stadiums Queensland 2014, p. 12). It is unclear if these capital costs are met by the government capital grant, or whether rates for commercial services are set to recover some portion of these costs from the main beneficiaries (i.e. the Australian Football League and Cricket Australia).

Stadiums Queensland noted that hirers cover the operational cost of hiring its venues and no direct event attraction incentive/subsidy, akin to that provided by Tourism and Events Queensland, is provided to hirers (Stadiums Queensland, sub. 28, p. 2). Nonetheless, the capital

[47] Stadiums Queensland also receives grants to service debt on some venues (around $5.4 million per year or $27 million over the period 2014–15 to 2018–19) and to cover land tax payments (around $7.2 million between 2014–15 and 2018–19).

expenditure required to build and keep these facilities to the standard necessary to support these events is, at least partly, funded by government.

10.3.1 Is there a case for government intervention?

One of the main stated objectives of providing grants to Stadiums Queensland is to ensure that sports facilities are maintained and operated to a standard that enables major sporting and entertainment events to be attracted to Queensland, generating increased economic activity as a result (Department of National Parks, Sport and Racing (DNPSR) Information Return).

For this government assistance to be justified, it is necessary to establish that:

- there is a market failure that means these stadiums and services would be underprovided by the private sector
- the assistance can generate additional economic activity that outweighs the costs of providing the subsidy.

Most Australian state governments and many international jurisdictions fund the building and operation of stadiums to host marquee sporting and entertainment events. It is often argued that the private sector alone would not sufficiently invest in stadiums due to the high cost and lumpy nature of the investments, coupled with extended periods needed to recover investment, and potentially irregular and uncertain revenue streams. However, the fact that the private sector does not provide this infrastructure under prevailing market conditions is not evidence of market failure.

Stadiums Queensland noted that:

> *The market will not provide the scale of investment in infrastructure desired as part of the social fabric of communities and which contributes to civic life, due to the lack of investment return. It is for this reason governments provide capital grants for the construction and maintenance of sports and entertainment facilities. (Stadiums Queensland sub. 28, p. 1)*

There is some evidence that the current level and structure of stadium provision in Queensland would not be supported by the private sector. Stadiums Queensland has reported significant losses in recent times (–$35.3 million in 2014 and –$36.9 million in 2013, after government grants).[48] However, these losses are at least partly the result of over-capitalisation driven by government decisions to build and maintain assets to a particular standard in order to attract specific major events.

There are also legal restrictions on the number and type of events that may be hosted at these stadiums, effectively imposing a cap on potential revenue streams. Most notably, under the Major Sports Facilities Regulation 2014, Suncorp Stadium is restricted to hosting a maximum of four major music concerts each calendar year. In June 2015, the Queensland Government announced that it would increase the maximum number of concerts allowed at Suncorp Stadium to six per year in 2016 (Queensland Government 2015b).

Ultimately, given the pervasive involvement of governments in funding stadiums, there is no genuine counterfactual to test what stadium infrastructure the market would deliver and whether it would be socially optimal.

[48] Financial losses include depreciation charges incurred for the venues of $57.7 million in 2013 and $54.6 million in 2014.

However, stadiums are generally built and maintained to accommodate for-profit elite sporting teams and athletes and international entertainment acts.[49] There would appear to be no substantive case for governments to subsidise these business activities, unless it can be demonstrated that the community gains a positive economic or cultural return from the subsidy. The evidence that subsidising stadiums will generate substantial amounts of additional economic activity is at best weak (Box 10.2). Based on their research into sport stadiums in the United States, Zimbalist and Noll (1997) found that:

> *A new sports facility has an extremely small (perhaps even negative) effect on overall economic activity and employment. No recent facility appears to have earned anything approaching a reasonable return on investment. No recent facility has been self-financing in terms of its impact on net tax revenues. Regardless of whether the unit of analysis is a local neighbourhood, a city, or an entire metropolitan area, the economic benefits of sports facilities are de minimus.*

Box 10.2 Mega sporting events — are they worth the cost?

There is a significant body of literature examining the purported economic benefits of hosting major sporting events. These studies regularly conclude that such events offer minimal economic benefits to host locations and, where benefits are produced, they tend to be localised.

In the United States, arguably the most significant sporting event is the annual National Football League (NFL) championship game, otherwise known as the 'Super Bowl'. Many states compete vigorously for the privilege of hosting the Super Bowl, attracted by the prospect of economic benefits and a boost to civic pride. Would-be host cities often spend significant sums of public money building or upgrading stadiums to meet the standards of the NFL, and on campaigning in the hope of attracting the event.

However, the benefits to host communities may not be as significant as often touted. Matheson and Baade (2004, p. 3) examined the economic impacts for communities hosting the Super Bowl between 1970 and 2001, and concluded that the benefits are on average one-quarter, or less the magnitude of the benefits suggested by the NFL.

Matheson and Baade (2003, pp. 28–29) conducted similar analysis on major college basketball tournaments, which are also significant events on the US sporting calendar. Looking at outcomes over 18 years (for women's tournaments) and 30 years (for men's tournaments), the study found that on only two occasions did either event induce a statistically significant change in the host city's real income.

The potential for flow-on economic benefits from major events are discussed in more depth in Chapter 8 with regard to tourism industry funding.

Zimbalist and Noll (1997) do however note the limited circumstances in which stadiums could deliver economic benefits, specifically:

> *...a stadium can spur economic growth if sports is a significant export industry — that is, if it attracts outsiders to buy the local product and if it results in the sale of certain rights (broadcasting, product licensing) to national firms. But, in reality, sport has little effect on regional net exports.*

In the absence of significant economic gains, stadium subsidies would need to generate social and cultural benefits that would not arise without the subsidy. Such benefits would also need

[49] Other Queensland Government facilities, not covered by the scope of this review, may also provide subsidised access to performance venues for commercial activities.

to outweigh the cost of the subsidy and be greater than the benefits derived from alternative uses, for example, community sport.

Following the recommendations of the Queensland Commission of Audit in 2012, two reviews have been conducted into the operation of Stadiums Queensland and management of facilities. These reviews have not been published. The Queensland Government should examine how cost-recovery might be improved to reduce subsidies. As part of this review, the Queensland Government should consider the best way to deal with any legacy issues where specific investment decisions were made to subsidise infrastructure to support particular teams or events that may not be fully recoverable. Any future investment decisions should be based on a robust business case rather than building infrastructure to attract or subsidise particular teams or events.

Recommendation

10.2 The Queensland Government should not subsidise stadium infrastructure and services for major sporting and entertainment events.

10.4 Racing industry

10.4.1 Overview

The Queensland racing industry consists of thoroughbred racing, harness racing and greyhound racing. Thoroughbred racing is by far the largest sector with over 46,000 participating horses and prize money of around $75 million per year (Queensland Government 2013c). Harness and greyhound racing are considerably smaller sectors with fewer participants and significantly less prize money offered.

The industry is overseen by Racing Queensland, which administers funding to racing clubs and has a range of other roles including, developing and implementing policies, licensing, enforcing safety and integrity standards and administering the rules of racing.

The racing industry is structurally linked and financially dependent upon the wagering industry — racing and wagering are complements. While the Queensland racing industry derives revenue from a variety of sources, the most significant revenues are derived from wagering providers paying product and program fees for access to racing information and products. The Queensland racing industry funding model is explained further in Box 10.3.

The racing industry in Queensland is also financially supported by the Queensland Government through a number of direct assistance measures, specifically the:

- Racing Industry Capital Development Scheme (RICDS)/Racing Infrastructure Fund (RIF)
- Rejuvenating Country Racing program
- Training Track Subsidy.

The value of assistance provided through these measures is expected to total $119.3 million over the period 2013–14 to 2017–18. These individual measures are discussed further below.

Box 10.3 How is the Queensland racing industry funded?

The racing industry in Queensland is funded primarily through three revenue sources:

- Product and Program Agreement – Under this agreement, TattsBet pays Racing Queensland 39 per cent of gross wagering revenues, plus fixed fee components (Tatts Group 2014). These fees are typically the largest source of revenue for the Queensland racing industry.
- Race Information Fees – All wagering operators are charged for the use of Queensland race information where it is used to accept or facilitate wagering. The fee is determined by Racing Queensland and is based on the turnover of each wagering operator (Racing Queensland, n.d.(a)). These fees are designed to limit free rider problems associated with use of Queensland race information by interstate wagering operators.
- Racing Fees – Industry participants are charged various fees by Racing Queensland to fund services and the overall management of the racing industry.

Individual clubs also derive direct revenues from other activities including food and beverage sales, broadcast and sponsorship rights and club membership fees.

Funding provided through the RICDS/RIF, Training Track Subsidy and Rejuvenating Country Racing programs are supplementary to these revenue streams. The QCA understands the RICDS is mostly funded through redirected wagering tax receipts. The RIF is funded from a portion of the $150 million exclusive license fee paid by TattsBet. This fee, in practice, is negotiated consideration for monopoly rights over physical wagering outlets in Queensland and, in essence, redistributes a portion of the rents extracted from wagering customers back to the racing industry.

Racing Industry Capital Development Scheme/Racing Infrastructure Fund

The RICDS provides funding to deliver infrastructure at racing venues throughout Queensland. An Industry Infrastructure Strategy developed by Racing Queensland identifies key projects for infrastructure upgrades to assist in providing a competitive and viable racing industry. Grant money is issued once a suitable business case has been submitted by Racing Queensland and approved by Queensland Treasury. Some examples of the projects funded are listed in Box 10.4.

Box 10.4 Projects funded under the Racing Industry Capital Development Scheme

A number of capital projects have been completed using funding from the RICDS, as set out in Table 10.2. Allocation of funding for these projects is made in accordance with Racing Queensland's Infrastructure Investment Strategy. In describing the objectives of these funding programs, Racing Queensland (2013, p. 9) has noted:

> *The fundamental basis of the IIS is that the investment be viewed as providing infrastructure necessary to the growth and sustainability of the industry. This includes the infrastructure needed not only to support the actual race day delivery of racing, but also the infrastructure investments needed to ensure the long-term viability of the extended industry, and in particular, provide infrastructure that will stimulate industry growth.....Many of the proposed initiatives will have a side benefit of adding extra/increased revenue opportunities to clubs, as well as profit improvement from decreased maintenance costs of currently deteriorating assets.*

Table 10.2 Projects delivered under the RICDS – Queensland thoroughbred racing clubs

Facility	*Investment*	*Project Cost ($)*
Bundall Racecourse, Gold Coast	Refurbishment of public bar and lounge facility; extension of restaurant including the construction of 10 new corporate boxes; replacement of grandstand roof sheeting and guttering; construction of a new 40 metre equine training pool.	15,461,696
Ooralea Park Racecourse, Mackay	New turf, including running rail, irrigation, electrical and communications; new member and public facilities; new jockey and stewards building; new stalls, steward and camera towers; new mounting yard.	8,178,360
Clifford Park Racecourse, Toowoomba	Upgrade training track to synthetic material improvements to replace the all-weather track surface; additional onsite water harvesting and reuse system.	2,661,820
Beaudesert Racecourse, Beaudesert	Reshape and widen existing sand track including the replacement of drainage culverts; installation of lighting; construction of an additional 24 stalls; refurbishment of public facilities and grandstand.	3,785,539
Cannon Park Racecourse, Cairns	Renovation of course including new irrigation system; installation of grassed ambulance/access track; upgrade to existing stable facilities.	1,859,339
Multi-use race day event infrastructure	20 marquee structures of various sizes; 2 large video 'superscreens' including truck and towable trailer.	1,462,537

Sources: Racing Queensland (2013); Racing Queensland (2014, p. 39); and DNPSR.

In 2014, the RIF was established as a result of a $150 million fee to be paid by TattsBet as part of the tripartite deal which awarded it with an exclusive licence for 'bricks and mortar' retail wagering outlets in Queensland until 2044. As part of this agreement, four instalments (in 201415, 2016–17, 2020–21 and 2023–24) will be paid to fund the RIF. Current approved

projects under the RICDS will continue to be funded from the RICDS until the projects are completed ($28.4 million in total). The residual unallocated balance of the RICDS ($21.3 million) has been transferred into the RIF in 2014–15 (DNPSR Information Return).

The stated objective for these two funding programs is to provide improved infrastructure with the goal of attracting stronger competition, more punters and increased revenue, and to ensure the long-term sustainability and competitiveness of the racing industry. Specifically, DNPSR (Information Return) has submitted that a key justification for these programs is to address issues of ageing infrastructure:

> *Ageing infrastructure has long been recognised as an impediment to the success of the racing industry. In recognition of this, the Queensland Government has committed to providing funding for modern, high quality infrastructure and facilities at racing venues throughout the state. The Racing Industry Capital Development Scheme (RICDS) was established to provide the Queensland racing industry with funding to address critical industry infrastructure development needs.*
>
> *The provision of additional funding ensures the long-term viability of the racing industry by allowing for the development of quality facilities which will, in turn, attract stronger competition, larger crowds and increase the wagering turnover and ultimately result in the collection of increased revenue and ongoing employment throughout Queensland.*

Rejuvenating Country Racing Program

This measure provides funding to support the running of three thoroughbred country race programs developed by Racing Queensland. It involves the provision of $4 million over four years from 2012–13, with one-off grants of $1 million issued each financial year. Race programs include the 'Showcase Country Series', 'Celebrate Country Series' and 'Sustain Country Series'.

The additional funding is intended to facilitate 20 additional race meetings in rural Queensland annually with the goal of increasing attendance at country race meetings and generating increased revenue for racing clubs. DNPSR anticipates that these outcomes will help to 'reinvigorate' country racing and ensure the long-term sustainability of the racing industry. Funding for these country racing programs is in addition to that which is already afforded under the *Racing Act 2002*. The DNPSR also considers that the additional funding will facilitate increased wagering turnover in Queensland providing further revenue for the state, as well as improved employment opportunities within local communities.

DNPSR has articulated the basis for this assistance as follows:

> *Without the assistance grant the thoroughbred racing industry would be unable to conduct additional country race meetings with increased prize money incentives. Together, these factors boost the number of competitors, which in turn attracts crowds to the nominated venues and generates economic and social benefits for the community (Information Return).*

Training Track Subsidy Scheme

The Training Track Subsidy Scheme offsets the costs to Queensland thoroughbred race clubs of maintaining training facilities at their venues. The scheme makes available a total of $2 million per year in funding.

Under this scheme, $1.2 million of the annual total funds are distributed directly to individual race clubs, with the value of individual allocations based upon the category of the race club and an assessment of the quality and value of each training facility to the racing industry. The balance of $800,000 is paid directly to Racing Queensland which offers incentive payments to race clubs based on the number of thoroughbred horses competing and the category of the race club. This is intended to act as an incentive for clubs to actively attract larger race fields. These incentive payments aim to assist race clubs to provide quality training facilities for the benefit of the broader Queensland racing industry.

The stated objective of this measure is to ensure that training facilities at Queensland venues are maintained at a safe and appropriate standard, to improve the quality and performance of racing participants and the viability of individual clubs to, in turn, help ensure the long-term sustainability of the racing industry.

DNPSR (Information Return) has stated the need for this assistance as follows:

> *If funding was to cease many of the training tracks throughout Queensland would deteriorate, resulting in more injuries to horses, jockeys and potential death. Some race clubs would cease to operate which would then have an impact on the community and local businesses. Local trainers would need to travel further to train their horses.*

10.4.2 Is there a case for government intervention?

The Queensland Government plays a number of roles in relation to racing and wagering in Queensland — as a regulator of racing and wagering, through the taxation of wagering products and the exclusive licence arrangement with TattsBet, and the funding agreement. Under the existing structure, there are a number of interdependencies across these activities.

In the absence of such interdependencies, there is a very limited rationale for governments to provide direct assistance to the racing industry. The racing industry should be compensated on a commercial basis for the products and services it provides to the wagering industry, with the Government's role largely confined to its role as a regulator.

Assistance to the racing industry is unlikely to promote additional economic activity. Where assistance attracts additional consumer spending on racing and wagering products by locals, it is generally money that would have otherwise been directed to alternative entertainment purchases. In the context of team sporting events, Wilson and Pomfret (2014, p. 75) noted that:

> *Much of the consumer spending associated with professional sports comes out of the entertainment budgets of local residents. When a new sports franchise appears in a city, local entertainment spending on sports increases and local entertainment spending on other activities like movies, bowling, etc. decreases. Since spending on professional sports teams substitutes for other local consumer entertainment spending and has a lower local spending multiplier, professional sports can reduce local income rather than increase it.*

As such, any additional jobs and income in the racing industry will typically reduce counterpart jobs and income in other parts of the economy.

Similarly, government attempts to reinvigorate the racing industry are also unlikely to be beneficial where any decline is the result of changing consumer preferences. Artificially maintaining or growing the size of the racing industry through subsidies will tend to establish artificially high rates of return, resulting in an inefficient allocation of resources.

The racing industry has experienced a declining share of wagering revenues as a result of substitution towards alternative, emerging gambling products such as online sports betting. This substitution between wagering products represents a change in consumer behaviour brought about by increased competition and improved product offerings. It is indicative of a well-functioning, competitive market, not a market failure that typically justifies government assistance.

The response to this change in consumer preferences should not be to 'top-up' the racing industry with additional government funds, rather the focus should be on the source of the problem, which is most likely a weakness in either:

- the funding model itself, or

- the business model of racing clubs, which may be limiting their ability or willingness to adapt to the changing market.

Racing Queensland has acknowledged these challenges. In its Strategic Plan for 2014–17 (Racing Queensland n.d. (b), p. 9) it stated:

> *The 2013–14 financial year has shown a fall in thoroughbred and greyhound revenue and growth in sports betting continues to represent a major threat to the industry. Racing must address the use of race information fees and ensure it receives a return on its product. The industry must move to ensure it is sustainable without continued reliance on government funding.*

That said, assistance to the racing industry is not provided in isolation from the Government's regulatory and taxation activities. For example, the RIF is funded from part of the $150 million exclusive license fee paid by TattsBet for monopoly rights over physical wagering outlets in Queensland (Box 10.5).

Box 10.5 Exclusive licences for gambling

Governments generally prohibit arrangements which confer market power on particular groups, unless there are good public policy reasons for doing so. Exclusive or monopoly rights are generally opposed because they are inefficient in providing goods and services. However, such arrangements continue to be a common feature of governments' approaches to almost all major forms of gambling including casinos, lotteries and totalisator agency boards (TABs).

The purported benefits from exclusive licences are increased state revenues, support for the racing industry and in some cases, reduced accessibility for problem gamblers. However, such arrangements may not necessarily be in the public interest.

Revenue raising — Notwithstanding the states' imperatives to raise revenue, this is not in itself a sound rationale for restricting ownership. Governments have generally rescinded the practice of selling monopoly privileges to most goods and services, because of the costs imposed on consumers through higher prices and restricted choice. Such effects also arise in the gambling industries. The likely overall outcomes are clouded, however, by regulatory controls on prices and availability, and the presence among consumers of problem gamblers.

If it is accepted that governments should raise significant revenue from the gambling industries, then explicit taxes, through their greater transparency, accountability and flexibility, are preferred measures for collection.

Reducing social costs — In practice, ownership restrictions have not served to reduce the accessibility of gambling. And monopoly rights are unlikely to facilitate harm minimisation strategies for problem gamblers.

Facilitating probity checks — Economies are likely to be gained with fewer operators to monitor. But the costs of probity regulation should in any case be borne by providers and this would partly determine their appropriate size.

Some efficiency benefits — Scale is important for some types of gambling but it does not necessitate exclusivity. There is a case for government intervention to address potential market failures for wagering on horse racing, but monopoly TABs do not appear necessary for this.

Source: PC (1999).

An assessment of this assistance would require a broader review of the funding model, which has not been considered as part of this review. Notwithstanding this, it is clear from the existing suite of assistance that the objectives of the assistance, as well as the associated regulation and taxation frameworks, primarily focus on the interests of the racing industry,

government and the wagering industry rather than consumers of racing and wagering products or the broader public interest. Going forward, any future assistance or regulatory arrangements should be subject to a public interest or regulatory impact assessment.

Recommendation

10.3 The Queensland Government should not provide assistance to the racing industry beyond its commitments in the funding agreement. Any future assistance or regulatory arrangements should be subject to a public interest or regulatory impact assessment.

10.5 Film and television industry assistance – Screen Queensland

10.5.1 Overview

Screen Queensland is a government-owned corporation, which receives Queensland Government funding to develop and support the local film and television industry and attract production to Queensland. The stated objectives of Screen Queensland are to:

- increase the level of film and television production in Queensland
- develop and maintain a creative infrastructure in Queensland for the film and television industry
- develop and maintain an active and vibrant screen culture in Queensland
- make funding available to members of the domestic and foreign film industry through loans, grants, rebates, financial assistance, investment loans or other forms of funding.

Screen Queensland targets its objectives by distributing funding through a range of programs, in three main functional areas (Screen Queensland 2015):

- development and production programs (including production attraction incentives)
- locations and scouting assistance
- Screen Culture Program (including supporting events and activities such as film festivals screenings, workshops, seminars and visits by Australian and international filmmakers).

In 2013–14, $10.7 million was allocated to screen assistance, and from 2013 to 2018 assistance will amount to $57 million.[50] According to Screen Queensland's 2013 annual report, 60.7 per cent of its total expenditure in 2012–13 represented industry funding, 12.4 per cent was allocated to the Brisbane International Film Festival, and the residual represented employee and operating expenses (Screen Queensland 2013, p. 2).

Industry assistance includes the Payroll Tax Rebate, which offers a tax rebate to production companies that incur a minimum of $3.5 million in eligible expenditure in Queensland by completion of their project. The assistance provided through the rebate varies each financial year, depending on the amount of approved projects. An internal review of the rebate policy was recently undertaken by Queensland Treasury.

In addition to budgeted incentive programs such as those delivered by Screen Queensland, state and the federal governments sometimes provide ad hoc incentives to production

[50] Includes assistance provided through the Payroll Tax Rebate, which is administered by Screen Queensland, but is not direct funding to Screen Queensland.

companies in order to secure major film and television productions.[51] A recent example is the production of the fifth instalment of the *Pirates of the Caribbean* film series, which was lured to Queensland following a contribution of $21.6 million from the Australian Government (Queensland Government 2014g). Screen Queensland and the Queensland Government also provided the production with an undisclosed attraction incentive to secure the production in Queensland.

In many cases, the total value of incentives offered outside of budgeted programs is not disclosed by governments. This lack of transparency means it is often not possible to accurately assess these policies as the total cost to the public is not known. Therefore, whether or not the assistance delivers a net benefit, is also unknown.

10.5.2 Is there a case for government intervention?

Three main reasons are generally put forward to justify assistance to the film industry; that is, film and television productions:

- increase economic activity and employment. A number of industry or industry-body sponsored studies estimate significant economic contributions attributable to various sectors of the film industry. For example, the Deloitte Access Economics report for the Australian Screen Association found that in 2012–13 the direct and indirect contribution of the film and television industry in Queensland was $833 million and 6655 full time equivalent jobs (Deloitte 2015)
- increase tourism activity. If attracting major films to Queensland succeeds in showcasing the state and raising its profile overseas and interstate, there may be an associated increase in tourism expenditure (see Box 10.6). Screen Queensland advised that some incentives for international productions are conditional on delivery of tourism objectives
- provide cultural benefits from sharing of local and international stories and heritage.

[51] The Australian Government also offers a range of incentive programs for film production, including tax offsets and direct support through Screen Australia.

Box 10.6 Major films and tourism

There have been some notable examples of film and television productions inducing tourism activity. For example, since the release of the *Lord of the Rings* trilogy of movies (filmed in New Zealand) the country has seen a 50 per cent increase in tourist arrivals, with surveys indicating that six per cent of those new visitors (120,000–150,000 people) cite the film as one of the major reasons they chose to visit, and 80 per cent of visitors are aware that the films were produced in New Zealand (Tourism New Zealand 2015). Similarly, 13 per cent of all international visitors surveyed during 2013–14 cited the film *The Hobbit* as a factor in increasing their interest in New Zealand as a holiday destination (Tourism New Zealand 2015). Other examples of film-induced tourism include:

- *Field of Dreams* featured a baseball field set in a cornfield in Iowa, United States. Visitors to the area increased from nearly nil to up to 65,000 visits per year after release of the film.
- *Dances with Wolves* featured scenery from the Badlands National Park in South Dakota, which experienced a 14.5 per cent increase in visitors in the year after the film's release.
- *Thelma and Louise* featured areas of the Canyonlands and Arches National Parks in Utah. Visitor numbers to these sites increased by 22.6 per cent and 13.7 per cent respectively in the year after the film's release.
- *Close Encounters of the Third Kind* featured a natural formation in Wyoming known as the Devil's Tower Monument. In the year after the film's release, visitors to the monument increased by 74 per cent (116,000 people) and increased again after the movie was first broadcast on television (Ernst & Young 2012).

Film and TV productions that increase tourism typically share two key characteristics — they are highly successful major releases, and they showcase recognisable or unique features of the filming locations, which could also attract and accommodate visitors.

High profile productions can also stimulate interest in a destination during the production phase. Redlands City Council, which hosted filming for parts of the *Pirates of the Caribbean* in 2015, noted that on average around 1000 people gathered near the filming location each day hoping to meet the leading actors (Redlands City Council sub. 35).

The use of industry assistance to increase tourism activity is considered in Chapter 8.

Can incentives increase local production?

Determining whether film incentives actually result in more international films being made in Queensland is difficult given there is no counterfactual (that is, the number of films that would be produced in Queensland without incentives). Presumably a government subsidy would increase activity, but it is not necessarily the case.

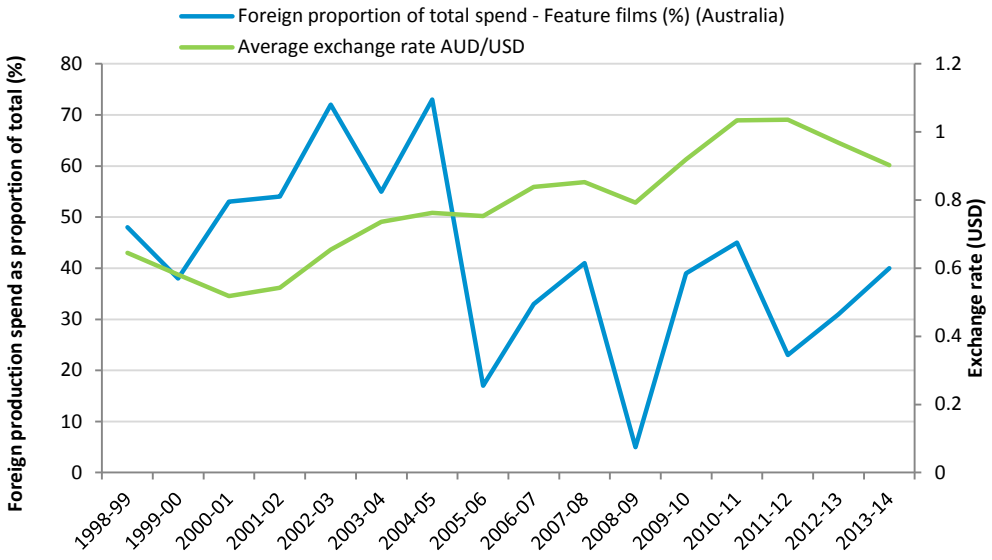
Screen Australia data shows that only a handful of international productions choose to locate to Australia (including Queensland) each year. Between 1990 and 2014, 51 per cent of the 108 foreign feature films produced in Australia originated from companies in the United States and 32 per cent from India, with the residual originating from Japan, UK, China, Hong Kong, Germany, Korea, Pakistan, Thailand, the Netherlands, Nepal and Singapore (Screen Australia n.d. (a)).

Decisions to base productions in Australia are, in the first instance, likely to be based on production costs, which will primarily be influenced by business costs, the exchange rate and

the availability of skills and infrastructure. Where incentives can change that cost calculus, it may result in more films produced in Queensland than would otherwise be the case. There is some evidence that incentives can affect a location decision — that is, production companies build a shortlist of one or more locations based on costs and then 'shop' the film to comparable jurisdictions to extract the greatest incentive payments. However, in cases where Queensland would have 'won' films regardless of incentives offered, assistance is provided to films that would be produced in Queensland anyway.

Figure 10.1 shows the proportion of foreign-film production spend in Australia from 1998–89 to 2013–14. Despite the lumpiness of foreign film production in Australia, there appears to be a correlation between production costs, which are significantly affected by the value of the Australian dollar, and foreign feature film production. Over the last 15 years, when the Australian dollar is worth more than 80 US cents, the proportion of foreign film expenditure declines. This suggests that, while incentive payments may affect some production decisions at the margin, the exchange rate may overwhelm other factors influencing the location decisions of foreign producers.

Figure 10.1 Foreign-film production spend and the Australian dollar



Sources: QCA analysis; Screen Australia n.d. (a) and n.d. (b); OzForex (n.d).

Employment and output

The justification for providing film assistance is often based on an expectation that attracting film production to Queensland will generate employment, increase output and promote economic growth. For example, Matchbox Pictures (sub. 33, pp. 1–2) considered that:

> *Increased employment is a direct benefit of the assistance provided by Screen Queensland to support and attract production activity to the state. A small drama series may provide employment for up to about 35 people over the period of its preproduction, production and post-production. These are all real employment positions and ones which deploy and develop skills that are in demand within the industry, both in Australia and internationally.*
>
> *A larger drama series or feature film would employ 50 people over a much longer period, often up to 6 months. The more production that can be attracted then the more ongoing these jobs become. And, of course, the more sustainable the businesses that are providing the employment positions.*

Similarly, Screen Queensland (sub. 34, p. 1) submitted that:

> *Film and television investment generates benefits that provide jobs, industry growth and legacy infrastructure, as well as laying foundations for future pipeline investment that will be enjoyed by Queensland's screen practitioners now, and into the future.*

There is a body of industry-sponsored, or -produced, literature focusing on the economic contribution of film and television industries to various economies around the world (for example, see Deloitte (2015), Oxford Economics (2012), Olsberg SPI (2012), Loren C. Scott & Associates (2015), HR&A Advisors (2013) and MNP (2013 and n.d.)). However, these studies generally suffer from many of the limitations of input–output techniques discussed in Chapter 8. In particular, the studies tend to assume that:

- all output is produced by local factors of production, and that there are no leakages to other states or countries
- there are no factor constraints in the economy. That is, the increase in economic activity is assumed to produce a direct increase in welfare, and that any increase in economic activity in one area does not increase prices and crowd out activity in other areas of the economy.

Ultimately, even if studies are able to accurately measure the economic contribution of particular industries, this is not what is relevant for determining whether governments should subsidise an activity. Otherwise, this logic would support high levels of assistance for industries making even larger contributions to economic activity. Economic contribution studies do not examine the economic costs incurred to produce output and employment, including opportunity costs, the cost of incentives (including the costs of failed bids to attract productions), or the cost of incentives provided to productions that would have occurred in Queensland anyway. Importantly, such studies do not examine whether assistance has been effective in inducing additional activity or has resulted in an overall benefit.

There is no evidence to suggest that funding film and television production is any more effective in generating output and employment[52] than funding any other industry, or any other competing use of government funds.

Few independent empirical studies have estimated the impact of film incentives on employment and output. However, the available evidence suggests that film incentives do not generate substantial economic benefits and are ineffective at creating ongoing jobs. For example, the Massachusetts Department of Revenue (Bal 2009) found that in 2008:

- every job created by its film tax credit incentives cost $88,000
- every dollar of state tax revenue lost because of the film tax credit generated less than 69 cents in income for residents
- for every dollar of film tax credits awarded to film producers, the state gained only $0.16 in revenue, mostly in the form of income tax revenues withheld from film company employees — the remaining $0.84 had to be financed by higher taxes elsewhere or cuts in public services (Tannenwald 2010).

Similarly, Robyn and David (2012) conducted a literature review of incentives provided in the United States and found that they tend to cost more than they recoup from taxes on induced economic activity. The authors found that, aside from studies paid for by economic

[52] The film industry in Queensland is a very small employer, with Screen Queensland (2013, p. 1) estimating that the local production industry employed 1227 people during 2012–13.

development authorities and film industry bodies, almost every other study concludes that film tax credits generate less than 30 cents for every one dollar of spending. Specifically, the following returns were found for every dollar spent:

- Arizona's Department of Commerce — 28 cents
- Connecticut's Department of Economic Development — 7 cents
- Louisiana — between 13 and 18 cents (two studies)
- Massachusetts' Department of Revenue —16 cents
- Michigan's Senate Fiscal Agency —11 cents
- New Mexico's Legislative Finance Office — 14 cents
- Pennsylvania's Legislative Budget & Finance Committee — 24 cents.

Given that many aspects of film and television production can take place basically anywhere thanks to digital technologies, the market for potential filming locations is significant and quite competitive. If production is secured as a result of incentives, any particular location would typically need to continually provide production incentives in order to maintain levels of international production activity. This was acknowledged by a number of stakeholders including Screen Producers Australia, which noted:

> *…attracting offshore production, by utilising a combination of federal and state-based support, is critical if Australia is to maintain its position as an investment destination of choice in the global screen industry. (Screen Producers Australia sub. 29, p. 3)*

Likewise, Cutting Edge (sub. 36) considered that withdrawing incentives would leave Queensland uncompetitive in a highly competitive national and international market.

Attracting more productions may bring local costs down over time; however, Australia is likely to continue to find it difficult to compete on costs with other locations that have naturally lower cost structures and other comparative advantages. In that case, providing production incentives is not an investment in creating a profitable and resilient industry as the industry is unlikely to be self-sustaining in the absence of continued incentives. It also follows that, as the cost of incentives increase, the net benefits (if any) that accrue to the host location are further eroded.

Apart from the direct impact of international film production incentives, a number of stakeholders argued that incentives were necessary to support the development and maintenance of the local industry. For example Screen Producers Australia (sub. 29, p. 2) submitted:

> *Driving this cultural value is a delicate system of government interventions and support for Australian screen producers through tax incentives, content obligations and direct subsidy. Whilst there remains an emphasis on local production, it is important to recognise that these interventions and support include the attraction of offshore production as this ensures a critical mass of production activity in Australia, providing consistency of vital infrastructure and career pathways to develop and retain our talented workforce.*

and:

> *…Screen Producers Australia's view is that the clear weight of support should remain with local production businesses and their content, but a balance must be maintained. (Screen Producers Australia sub. 29, p. 4)*

Similarly, Carbon Media submitted:

> *The benefits of all Queensland based productions small and big is the generation of employment opportunities for local talent and production crew and creation of training opportunities for emerging production crew – this in turn helps to perpetuate a sustainable screen industry. A reduction in screen funding will have a negative impact in industry sustainability – little or no jobs leads to little or no industry as local talent and production crew head south or overseas to look for work–a great loss to our state. (Carbon Media sub. 26, p.2)*

Hoodlum (sub. 41) noted that:

> *Major productions facilitate on the job training, provide practitioners with long working contracts, expose Queensland talent to the world and conversely provide unique opportunities for Queenslanders to work and train under the worlds best creative and technical talent.*

Some stakeholders highlighted a link between attracting international productions and the capacity for the local industry to deliver quality local content. For example, Ausfilm International Inc. (sub. 25) noted that international production:

> *…has allowed Australian companies that service international production to invest in research and development, infrastructure and talent. This in turn has helped the domestic screen production industry tell Australian stories as diverse as The Sapphires and Samson and Delilah to a worldwide standard and make sure that Australians continue to have a strong cultural voice at home and in a competitive global media landscape.*

However, even in the absence of major foreign production activity, there would still be film industry capability, as there was before significant public support commenced in the 1970s — even if it is on a smaller scale (Tunny 2013). Nonetheless, if the local production industry must rely on continued subsidised international productions to sustain a 'critical mass' of production and employment, this supports the view that the local industry is not self-sustaining and remains largely dependent on subsidies.

Targeting cultural benefits

Cultural benefits can be derived through the sharing of Australian and Queensland stories and heritage through film and television (see Box 10.7). Similarly, films that showcase international cultures and stories may offer valuable educational experiences for Australians, broadening understanding and acceptance of other cultures and beliefs. Funding provided for film festivals, educational media and production of local stories is more likely to deliver these benefits than industry assistance aimed at attracting major overseas film production investment.

The benefits, including celebrating our heritage and culture, that flow from local and Australian screen stories may be significant. Funding activities that target these cultural externalities, and result in Queensland productions that would not have been made in the absence of funding, may provide an overall benefit to the Queensland community. However, it is particularly difficult to identify what constitutes local cultural benefits and to estimate the value that individuals attach to them. The broader social benefits that film generates from educating and shaping the values of the community, and influencing national identity are even more difficult to quantify. It is therefore equally difficult to determine the degree of assistance required to deliver those benefits.

Box 10.7 Cultural benefits of film and television

Film and television productions can infer a range of cultural benefits on viewers and society more broadly. Films can articulate new ideas and prompt audiences to reassess their own views, assumptions and prejudices (Oxford Economics 2012, p. 74). One of the most commonly identified sources of such benefits are productions that share local heritage and stories that might not otherwise be told.

Ipsos (2013) conducted focus group research with Australian film and television viewers and found that Australian content played an important role in the lives of participants and their sense of cultural identity:

> *For many it was a valuable platform for the telling of 'our own stories' - be they portrayals of Australian history (Indigenous or otherwise), real people and events, or fictional tales that captured our way of life and the complexity of our contemporary, multicultural and urban culture.*

Participants also acknowledged the educative role that local content played:

> *The 'teaching' aspect of Australian screen stories was highly valued, particularly when it came to stories about Indigenous Australia. Participants discussed how films like 'Rabbit Proof Fence' opened their eyes to parts of Australia's history that are not well understood.*

Carbon Media (sub 26, p. 3) highlighted the value of content featuring Indigenous stories, tradition, language and culture, noting that it plays an important role in:

- fostering inclusion and connectivity between Indigenous and non-Indigenous Australians
- educating and informing
- shifting and breaking down stereotypes
- perpetuating our oldest living culture.

Jonathon M. Shiff Productions (sub. 30, p. 3) argued that children's productions in Queensland deliver cultural benefits:

> *...we believe that the cultural benefits of our activities in South East Queensland, and in particular the Gold Coast, as the heart of live action children's television production in Australia should not be underestimated. Queensland children both need and deserve Queensland stories as it helps define them for a vital future role within our state.*

10.5.3 QCA findings

The objectives of this policy appear to focus on growing and promoting the film and television industry in Queensland, rather than generating benefits for the Queensland community.

As discussed in the context of racing industry funding, providing assistance to industry for the purpose of growing or sustaining an industry is not a sound rationale for intervention. Justifying the assistance on the grounds of flow-on economic benefits is also likely to be flawed.

Measurable net benefits to the state that exceed the benefits from the next best alternative use of the funds are required to warrant government assistance. It is not clear that these funding measures could reasonably demonstrate this, particularly when viewed alongside the range of competing alternative uses for these government funds.

In reality, for most productions attracted through these incentive measures, the benefits to Queensland are likely to be localised and temporary, with the majority of the benefits extracted by the international production companies receiving the assistance.

Given the competitive nature of the industry, maintaining or growing the screen production industry in Queensland would also likely require ongoing (and potentially increasing) incentive offerings that could become more costly, further eroding any benefits accruing to the state.

In short, the Queensland Government should not provide incentives for major film productions as the benefits of doing so are likely outweighed by the costs. Notwithstanding this, some of Screen Queensland's funding activities may deliver net benefits, particularly those that celebrate heritage and culture (for example, productions that target cultural externalities, such as Queensland stories that would not be produced in the absence of funding and film festival funding).

Recommendation

10.4 The Queensland Government should:

- **(a) cease providing attraction incentives for major film productions that deliver benefits largely appropriated by international production companies**
- **(b) focus assistance for film and television production on activities that deliver net cultural benefits to the state**
- **(c) ensure that any incentives, where government chooses to provide them, are provided transparently.**

10.6 Long-distance passenger transport services

10.6.1 Overview

The Department of Transport and Main Roads (DTMR) regulates, and in some cases subsidises, certain regular passenger transport air and bus services in rural and remote Queensland to ensure a minimum level of service to these communities. DTMR endorses the routes and minimum service levels required and awards service contracts to operators through a competitive tender process. These contracts are awarded in accordance with the *Transport Operations (Passenger Transport) Act 1994* (the Act).

The total value of the assistance measures catalogued for 2013–18 is $59.2 million.[53]

Air routes are regulated by exclusive service contracts for declared routes, which provide an operator with monopoly rights over each route. Long-distance coach services are provided through non-exclusive service contracts; however, they are typically subsidised.

The purpose of these service contracts is defined in the Act as:

> *...to hold operators accountable for minimum performance levels to ensure the communities served under the contracts receive, at a reasonable cost, quality and innovative public passenger services.*

Under the Act, service contracts must include details of the minimum level of service to be provided. These minimum service levels must have regard to:[54]

- the needs of the community for whose benefit the service is provided

[53] The Queensland Government also has exclusive service contracts in place for provision of urban and suburban and regional passenger rail, bus and ferry services which are heavily subsidised, representing significant budgetary outlays. General public transport was considered out-of-scope for this review.

[54] *Transport Operations (Passenger Transport) Act 1994*, Section 40.

- service levels in comparable communities, whether in Queensland, elsewhere in Australia or in a foreign country
- the cost of service provision.

In 2014, the Queensland Government conducted a review into these government-supported long-distance passenger routes, to ensure that they were:

- delivering value for money for government and communities
- not restricting existing commercial long-distance transport markets
- providing regional and remote communities with reasonable access to essential services in major centres (DTMR 2014c).

Following the review, new air and bus service contracts were awarded in late 2014, following a competitive tender process. These contracts took effect on 1 January 2015 and will run until 2020.

Some industry assistance provided to the transport sector is delivered through subsidised access to transport networks and government-issued freight transport services contracts. These measures are discussed in Chapter 12.

Long-distance coaches

The Queensland Government subsidises various long-distance, regional bus service routes through non-exclusive service contracts.

Prior to 2002, long-distance bus services in Queensland operated without government assistance as operators were largely able to offset losses on less well-patronised regional routes with revenues from their more profitable interstate and intrastate routes (Moogan 2007).

However, in 2000–01 market conditions changed and the commercial viability of these services deteriorated. A number of factors contributed to this including competition from discount air travel, weakening economic conditions in regional areas (including the impact of drought) and higher fuel and labour costs. These changes prompted long-distance bus operators to approach the Government for assistance. In 2002, the Queensland Government decided to support some of the long-distance bus services using service contracts and subsidies, to ensure their ongoing viability (Moogan 2007). Table 10.3 sets out the existing contracted bus routes, as at 1 January 2015.

Table 10.3 Contracted long-distance bus routes – as at 1 January 2015

Route	Operator	Frequency
Brisbane to Mt Isa	Bus Queensland	Daily return service
Brisbane to Charleville	Bus Queensland	Daily return service
Toowoomba to St George (via Moonie Hwy)	Bus Queensland	3 return services per week
Toowoomba to St George (Via Gore Hwy)	Bus Queensland	3 return services per week
St George to Cunnamulla	Bus Queensland	3 return services per week
St George to Lightning Ridge	Bus Queensland	3 return services per week
Toowoomba to Rockhampton	Bus Queensland	3 return services per week
Emerald to Rockhampton	Greyhound Australia	7 return services per week
Longreach to Rockhampton	Greyhound Australia	2 return services per week
Emerald to Mackay	Mackay Transit	Daily return service
Collinsville to Bowen	Bowen Transit	5 return services, Mon-Fri
Charters Towers to Townsville	Bus Queensland	5 Return services, Mon-Fri
Mount Isa to Townsville	Bus Queensland	3 return services per week
Cairns to Karumba	Trans North	3 return services per week
Cairns to Cooktown (inland)	Trans North	3 return services per week
Cairns to Cooktown (coastal)	Trans North	3 return services per week
Monto to Mundubbera	North Burnett RC	Friday return service
Mundubbera to Bundaberg	North Burnett RC	Tues and Thurs return service
Mundubbera to Maryborough	North Burnett RC	Friday return service
Eidsvold to Bundaberg (via Mt Perry)	North Burnett RC	Wednesday return service
Monto to Ceratodus	G & S Shultz	Wednesday return service

Source: DTMR (2014a).

Air service contracts

Passenger air services to certain regional and remote Queensland towns have been financially supported by the Queensland Government since the 1980s.

As a result of the 2014 review, three routes (Cairns–Weipa, Cairns–Horn Island and Townsville–Cloncurry–Mt Isa) were deregulated. As at January 2015, the government regulates seven air routes and subsides six of these (see Table 10.4). 'Regulated' routes are defined as those that are declared to have market entry restrictions in place under the Act.

Table 10.4 Passenger transport air service contracts – as at 1 January 2015

Route	Provider	Subsidised	Regulated
Brisbane – Roma – Charleville	Qantaslink	No	Yes
Brisbane – Blackall – Barcaldine – Longreach	Qantaslink	Yes	Yes
Cairns – Normanton – Mornington – Burketown – Doomadgee – Mt Isa	Regional Express	Yes	Yes
Brisbane – Toowoomba – St George – Cunnamulla – Thargomindah	Regional Express	Yes	Yes
Brisbane – Toowoomba – Charleville – Quilpie – Windorah – Birdsville – Bedourie – Boulia – Mount Isa	Regional Express	Yes	Yes
Townsville – Winton – Longreach	Regional Express	Yes	Yes
Townsville – Hughenden – Richmond – Julia Creek – Mt Isa	Regional Express	Yes	Yes

Source: DTMR (2014c).

A number of these routes are multiple sector 'milk-run' routes, so called due to the numerous scheduled set-downs and pick-ups occurring along the course of the journey. For example, the 'Western 2' route departs Brisbane and stops a total of seven times before arriving in Mount Isa, some nine hours later (Regional Express 2015).

Regional and remote air services are also supported to some extent by state governments in Western Australia, New South Wales and South Australia. Passenger air services in the remaining states and territories are deregulated.

Related policies

Some passenger and freight air services to remote parts of Queensland are subsidised by the Australian Government under the Remote Air Services Scheme (RASS). The RASS subsidises regular weekly air transport services for the carriage of passengers and goods such as educational materials, medicines, fresh foods and other urgent supplies to communities in remote and isolated areas of Australia. Mail is carried on these flights under a separate contract with Australia Post (DIRD 2015).

Locations served by the RASS are typically cattle stations or Indigenous communities with populations of between six and 200 people. As at 2015, the RASS provides services to 363 locations across the country. This includes around 175 locations in Queensland, predominantly in the Cape York and Gulf regions (DIRD 2015).

10.6.2 Is there a case for government intervention?

The key objective of these policies articulated by DTMR is to provide affordable and accessible long-distance passenger transport services for rural and remote Queenslanders, and to connect people and places within Queensland. DTMR (Information Return) stated that:

> *The State's aim is to provide affordable and accessible air [and bus] services. Without this assistance, the cost of providing mass transit...services across the State, would far exceed the actual revenue received and would not provide a commercially viable business model to private aviation [and bus] operators.*

DTMR has also identified externalities as a possible rationale for both measures. DTMR (Information Return) stated that:

> *Without subsidised air [and bus] services, this would make people use private vehicles which would lead to other problems including, but not limited to, access to essential services not readily available in remote areas; access to employment (mining) in remote areas; traffic congestion, increased requirement on road maintenance, increased pollution and increased dissatisfaction from the community with the State Government.*

There are a range of issues embodied in these objectives. We discuss these, and other potential cases for government intervention below.

Achieving social and equity objectives

Queensland is a geographically large state with population concentrated on the coastal areas. A portion of the remaining population is spread among numerous isolated remote and regional communities. As a consequence many of these centres have limited access to important services such as specialist health care, higher education institutions, commercial and cultural opportunities (Moogan 2007). QRC (sub. 22, p. 3) submitted that, for many regional and remote communities, maintaining regulated air routes is the only means of ensuring access to affordable air services.

The primary objective of these transport assistance measures seems to be based in equity – ensuring that regional communities are not disadvantaged by their location and distance from important services and opportunities. As Johnston and Trembath (2005, p. 16) note, governments can use transport policy to achieve these equity goals:

> *Governments may determine that certain non-viable air routes are 'essential'. Ensuring regular access to these air services may be for social justice reasons, such as providing access to and from transport disadvantaged communities, or for regional development. Indeed, a tenet of Australian society is that people living in remote regions are entitled to basic services: this is manifested, for example, through fiscal equalisation.*

Decisions to subsidise or regulate certain products or services for regional communities on equity grounds are a matter for governments. Such policies may be justified where the equity benefits outweigh the costs of the assistance and there are no market alternatives.

Regional development and provision of government services

Aside from desired social outcomes, these programs may assist in more efficient provision of government services. Using transport service contracts and subsidies to improve access to services and facilities in larger centres (such as specialist medical facilities and education institutions) can represent an efficient solution for government, particularly when compared to the significant (and potentially unjustifiable) costs of establishing these facilities in remote and regional areas with small populations.

However, using these measures as a means of explicitly stimulating regional economic growth is likely to be less successful. Selective assistance to particular regions tends to simply redistribute economic activity around the state, rather than add to it. Providing specific targeted assistance also ignores the range of alternative uses for the resources that could generate benefits of equal or higher value for the broader community. On this basis, regional economic growth is unlikely to be a sound rationale for intervention.

Is there a market failure?

The absence of some transport services is not evidence of a market failure. It may simply reflect that consumers do not sufficiently value the services to pay for them.

Some argue that the characteristics of regional air routes, whereby passenger demand on many of these routes is thin and inconsistent, may not deliver the minimum efficient scale required by commercial regular passenger transport operators to service the market or support more than a

single operator. In the absence of government intervention through exclusive contracts and/or subsidies, the result could be:

- an undersupply of services, characterised by insufficient frequency or quality of services — or no services at all
- unstable or inconsistent aviation services.

However, thin routes may not necessarily result in inadequate service without government intervention. For example, in South Australia some regional air routes with passenger movements as low as 11,000 per year are not regulated and operate without government subsidy (WA Department of Transport 2014).

While the QCA has not assessed what type and level of services would be provided in the absence of regulation, evidence from other Australian states and countries (such as Canada and New Zealand) suggests that even thin air routes may continue to be served, at a lower cost and improved quality, in an unregulated environment (IC 1992d, and Johnston & Trembath 2005).

Notwithstanding this, assuming competition in a market is not viable, a competitive tender for service contracts may be a cost-effective way of providing services (that is, where competition *in* the market is not possible, competition *for* the market may be the next best alternative, depending on the costs). In its final report, the Competition Policy Review Panel (2015, p. 156) stated, in the context of regional air route regulation:

> *In respect of domestic restrictions, state governments sometimes provide exclusive rights for regional airlines to operate on particular routes. Ostensibly, exclusivity is provided to guarantee service, as it gives the operator confidence that it can run the route profitably. Regional routes are often very lightly patronised, supporting only one operator, i.e., they are natural monopolies. While it might be reasonable in these circumstances to restrict competition to guarantee a stable service, exclusive rights create the potential for monopoly pricing.*
>
> *Governments should only create exclusive rights for regional services where it is clear that the air route will only support a single operator. Where exclusive rights are created, they should be subject to competitive tender.*

Even so, policy makers need to demonstrate that regulating and subsidising these routes is the only reasonable approach to achieving the policy objectives. As Johnston and Trembath (2005, p. 4) note, in the context of the National Competition Policy (NCP) requirements:

> *In sum, the NCP does not challenge governments' objectives to ensure that regular air transport services are available to their citizens. The NCP does require, however, that this objective be delivered without restricting competition, unless this is both in the public interest and the objective cannot be otherwise achieved. To the extent that this objective requires subsidisation of a service, the subsidy should be transparent and direct, not hidden and indirect.*

Ultimately, such an evaluation would require an assessment of the potential benefits (ensuring accessible services to regional communities with greater certainty) against the potential costs of:

- relying on one airline per route (there is no guarantee that the airline will remain financially sound in the future)
- limiting competition and the possibility of higher air fares
- restricting innovation and creativity
- limiting incentives to grow the market
- distortions created in the market, both for regulated and non-regulated routes

- administrative costs for government (WA Department of Transport 2014, p. 21).

Monitoring of market conditions, including the appetite for commercial entry on these regulated routes, should be an ongoing exercise for government, with a view to removing restrictions on competition where there is a reasonable chance that doing so would deliver better outcomes. A review of the legislation that creates these market restrictions is underway (DTMR 2014b), through which the case for continued regulation should be examined.

Options for improving the effectiveness and efficiency of long-distance services

DTMR monitors the annual patronage and the average subsidy per passenger for these services, as illustrated in Table 10.5. The department has advised that it considers these measures are achieving their intended objectives of connecting people and places within Queensland.

Table 10.5 Performance against targets in 2013–14

	Patronage (no. of passengers)		*Average subsidy per customer ($)*	
	Target	***Actual***	***Target***	***Actual***
Long-distance bus routes	140,000	130,000	25.35	32.27
Air routes	400,000	480,000	23.46	17.69

Source: DTMR Information Return.

Passenger trip numbers during 2013–14 demonstrate that regulated air services are used by communities to connect people with places, with uptake rates exceeding targets by around 20 per cent. This has also likely contributed to the average subsidy being lower than targeted.

In contrast, patronage on long-distance bus services was below target by around seven per cent in 2013–14, with a larger than targeted average subsidy.

A key challenge in delivering these services (particularly where a subsidy is involved) is the accurate matching of the contracted minimum service level (capacity and service frequency) with passenger demand, to ensure cost effectiveness and efficiency. The cost to government, all other things constant, tends to increase as the minimum service level increases, and vice versa. Similarly, the level of patronage has an inverse effect on the average cost of the subsidy, where one is provided.

For these reasons, it is important to monitor market conditions through regular customer surveys and operator reporting, to gauge whether the routes are delivering services to the expectations of regional communities. Clearly, to realise the full benefits of this information, and ensure optimal efficiency and effectiveness, sufficient flexibility needs to exist in contract arrangements to allow timely responses to changing conditions. In practice, some degree of inefficiency will typically prevail, simply because the 'lumpy' nature of regular passenger transport (RPT) services means demand and supply rarely intersect perfectly, even in highly competitive transport markets.[55]

The simple metrics introduced above are clearly far from conclusive. Any thorough assessment of the effectiveness and efficiency of these measures would need to first examine whether

[55] Bureau of Infrastructure, Transport and Regional Economics (BITRE) (2015, p. 11) notes that the industry-wide load factor for the Australian domestic RPT aviation industry was 75.6 per cent at January 2015. That is, on average nearly 15 per cent of seats on any given service remain unfilled by paying passengers. In contrast, load factors for the Queensland regulated and subsidised air routes are in the vicinity of 30 per cent.

regulation does indeed deliver the best outcomes, and if both the regulation and subsidy are required to deliver these outcomes. Only then could an assessment of these policy measures be undertaken.

Accepting that the government is targeting social and equity objectives, regulation or subsidy of services may be a reasonable approach to delivering on these objectives, where competition is ineffective or non-existent. However, there may be opportunities to improve the effectiveness and efficiency of these policies, particularly the air service contracts. To the extent that the government has not already examined these options during the course of its latest review of long-distance transport, the QCA raises a number of matters that may be considered.

Investigate opportunities for network optimisation

The QCA understands these routes have remained relatively unchanged for many years, despite changes in regional conditions.

The Government could look at opportunities to optimise some routes to a smaller number of larger (higher volume) airports, particularly the 'milk runs' where efficiencies might be gained from reducing the number of stops. In the context of the RASS, the Australian Government (DIRDLG 2009, p. 56) identified opportunities for improving efficiency of the subsidised services (Box 10.8 for more information). It noted that the RASS:

> *...can be inefficient in the number of locations that receive service and infrastructure support. Many subsidised air services and aerodromes are within driving distance of others and funds would be better and more fairly allocated by building up local hubs, with the potential for higher service frequencies and improved infrastructure.*

Similarly, in the context of the United States Essential Air Service (EAS) (Box 10.9), the United States Government Accountability Office (US GAO 2014, p. 1), considered that:

> *Multimodal and community-based approaches can be used to help small communities connect to the nation's transportation network. Multimodal solutions, such as bus access to larger airports or air taxi service, could be more cost-effective than current programs.*

In fact, 2011 analysis of the EAS suggested that, if EAS services to airports that are within 150 miles (241 km) of a medium or large 'hub' airport were removed and replaced with a bus service to the nearest hub airport, the cost of the scheme could be reduced by 68 per cent (MJ Bradley & Associates 2011, pp. 3–4).

Box 10.8 Reform of the RASS: Aviation White Paper recommendations

In 2009, the Australian Government conducted a broad review of Australian aviation policy, which included a review of the existing RASS. In its December 2009 White Paper, the Australian Government suggested a range of improvements to regional and remote aviation service policies, including:

- improving passenger services by introducing shorter flights with fewer stops
- working with other agencies to service a larger number of isolated communities, including better identification of hub communities and identification of regions where there is a need but currently no RASS service
- focusing on a wet-season service to cattle station communities for freight and mail, reflecting the greatest demand in northern communities, and reviewing the need for a passenger service in these areas.

It also considered that higher frequency services to key locations would provide greater opportunities for those reliant on air links with metropolitan centres to expand their activities, thereby increasing traffic volumes and viability for operators (DIRDLG 2009, p. 56).

An examination of Queensland's subsidised air routes reveals that a significant number of towns receiving these services are well within 200 kilometres (124 miles) drive of another airport on the route. A good example of this is the 'Northern 2' route between Townsville and Mt Isa, which stops at Hughenden, Richmond and Julia Creek en route. Julia Creek is around 149 km from Richmond, while Hughenden is only 115 km from Richmond. This raises the question of whether efficiencies could be realised by consolidating this route to a simpler Townsville-Richmond-Mt Isa route, for example.

Furthermore, nearly half of the locations serviced by subsidised RPT air services maintain populations of less than 1000, with some as low as 206, based on 2011 census data.[56] In its 2014 review of regulated long-distance air routes, the Western Australian Government held the following key principle for determining access to regulated air services (WA Department of Transport 2014, p. 20):

> *All communities of more than 500 people should ideally have access to an RPT air service operating a minimum of three services a week within 250km by a sealed road.*

On this basis, the Queensland Government should investigate whether there are opportunities for efficiencies from consolidating some of these routes. The government should also consider establishing clear criteria for determining access to subsidised and regulated services, as is the case in the United States (EAS) and Western Australia.

[56] Thargomindah in Western Queensland had a recorded population of 206 at the time of the 2011 Census: <http://www.censusdata.abs.gov.au/census_services/getproduct/census/2011/quickstat/GL_QLD2852?opendocument&navpos=220> (accessed 5 April 2015).

Box 10.9 Essential Air Service - Regional aviation in the United States

In 1978, the United States Congress passed legislation to deregulate the airline industry, giving airlines freedom to determine which markets to serve and what fares to charge. At the same time, the EAS program was put into place to ensure that small communities that received RPT air services before deregulation maintained a minimum level of air services. Under the EAS, the United States Government subsidises airlines to provide between two and four round trips a day to a major hub airport.

The EAS benefits around 163 rural communities across the country that otherwise would not receive any scheduled air services.

The EAS program was originally established as a 10-year program as communities transitioned to a deregulated aviation environment. It was then extended for another 10 years and, in 1996, the 10-year time limit was removed. The cost of this program has risen significantly as subsidies, and the number of communities being served, have increased over time.

Following various reviews, the EAS has undergone a number of key reforms in recent years, including:

- consolidation of subsidised services to hub airports, rather than maintaining individual services to airports that are relatively close. EAS is now only provided to communities that are at least 70 driving miles from the nearest medium- or large-hub airport (with exceptions in Alaska)
- eligibility for EAS was revised to require that the per-passenger subsidy must be less than $200, unless the community is greater than 210 miles from the nearest medium- or large-hub airport. Access was removed entirely for communities where annual passenger subsidies exceed $1000 per passenger, regardless of their distance from the nearest hub airport
- the requirement that communities must receive EAS using 15-seat or larger aircraft was removed, allowing smaller aircraft to be used where appropriate
- the list of eligible communities was capped and no new communities can enter the program should they lose a commercial service in the future. In addition, subsidised communities must maintain an average of ten passengers per service to retain the subsidised service, unless they are more than 175 miles from the nearest hub.

Sources: United States Department of Transportation (2015); US GAO (2014); and US GAO (n.d.).

Route optimisation (informed by clear, objective and measurable criteria) could be coupled with land transport to a smaller number of connection points to maintain the degree of connectivity desired by government. For example, buses could be used to transport passengers to the nearest larger hubs on consolidated routes, from which regulated or commercial RPT services could be accessed.

In some instances there may be good reason to retain air services where ground transport is not a feasible alternative. Clearly many of the towns serviced by these routes are flood prone and can be isolated for extended periods during flood events (for example, Bedourie in Western Queensland).

Other potential improvements to these policies

To the extent that it has not already done so, the Government could also consider the following options to improve their cost effectiveness and efficiency.

Improving load factors

Clearly, average load factors could be improved by offering fewer services and accepting that demand may outstrip supply from time to time. However this would require the government to reconsider the level of service frequency it currently deems to be the 'minimum'. More broadly, the government should also clarify whether these services are provided with the intention of offering improved convenience for communities, or if they are indeed strictly intended to provide a minimum level of essential service.

In practice, more accurate matching of contracted capacity with passenger demand could be achieved using the existing patronage monitoring approach, along with regular detailed customer surveys, and examining opportunities for using smaller capacity aircraft, where feasible and cost effective.

Improved transparency

The Queensland Government undertakes significant consultation with communities and industry during its reviews of these long-distance services. However, its considerations have not been made public to date.

Transparency surrounding the government's considerations and decision-making processes is important with regard to these policies. Specifically, it is important that the community understands why some towns receive regulated and subsidised services, while others with similar populations, and located similar distances from major centres, do not. The QCA considers the Queensland Government should establish clear and transparent criteria for these decisions and make its considerations public wherever possible.

10.6.3 QCA findings

These contracts and subsidies are essentially mechanisms for delivering equity and social objectives — ensuring that regional communities receive transport services that are more reliable and of a higher standard than may otherwise prevail.

While meeting these social objectives does not, prima facie, represent a rationale for direct industry assistance through market restrictions and subsidies, the benefits that accrue to contracted transport operators as a result of these measures are perhaps best viewed as a consequence of the government's social policies, rather than 'traditional' industry assistance.

Contracting and subsidising a minimum number of scheduled transport services is one approach that governments can use to ensure that regional communities are offered a level accessibility and quality of transport services that is unlikely to be offered by the market without intervention. However, restrictions on competition should only be retained where they deliver a net benefit to the community, and when they are the only reasonable means of achieving the policy objectives.

Under the existing arrangements, there may be scope for improving the efficiency, effectiveness and transparency of these measures to achieve the government's social objectives and deliver better value from taxpayer funds.

Recommendation

10.5 The Queensland Government should:

(a) continue to regularly monitor market conditions on regulated air routes and remove regulation where the expected benefits outweigh the costs of doing so

(b) to the extent not considered in the recent review, investigate options for improving the cost-effectiveness of the contracted air services scheme through potential optimisation of hubs and setting service requirements that are the minimum necessary to achieve objectives

(c) as a priority, publish the findings and analysis underpinning the 2013 review of long-distance passenger services.

11 TAX CONCESSIONS

Key points

- Tax concessions are forecast to provide some $17.1 billion in industry assistance from 2013–14 to 2017–18.
- The evaluation of concessions and their underlying taxes are closely linked. A tax raises the price of the taxed product or input. A tax-induced increase in prices results in less of the product or input being demanded or consumed, resulting in welfare losses. A concession reduces or eliminates the price impact for some products or inputs, but not others.
- Tax concessions increase the burdens of taxes. Tax concessions narrow the base to which taxes are applied thereby reducing the amount of revenue that can be generated for a given tax rate. Assuming the revenue target for government remains unchanged, the foregone revenue from the exemption or concession needs to be made-up by raising the rate of tax. Alternatively, the tax rate on some other tax needs to be raised. Raising marginal tax rates increases welfare losses.
- Most tax concessions are a highly selective form of industry assistance, distorting resource allocation towards some industries or even specific product markets. Other tax concessions are broadly available across industries, but they are highly selective based on a characteristic of businesses (e.g. available only to small businesses).
- Some tax concessions have clear objectives that, if achieved, might provide sufficient benefit to justify the concession even after taking account of the implications for reduced efficiency. This is most likely where concessions address a clear market failure or a pre-existing distortion in a market resulting from a separate government policy.
- The legal incidence of a tax may fall on businesses, but the economic incidence will often be shifted to households and labour through higher prices or lower wages.
- The primary production deduction, moveable dwelling parks and aged care facilities concessions primarily seek to offset distortions from the principal place of residence exemption under land tax, but, on the information available, it is not possible to determine whether the concessions are effective in achieving their objectives.
- Exemptions and concessions erode the bases of land and payroll tax reducing their efficiency, and alter who benefits and who bears the burden of the tax. A large improvement in the welfare of Queenslanders could be obtained from tax reform that broadened the base of these taxes. However, reform is both more likely, and likely to be better designed, if any significant reforms to tax concessions are considered within the broader context of the future of the overall tax system.
- Legislative reforms should require that the rationale for concessions is clearly stated, that concessions expire after specific periods of time, and that continuance of concessions is subject to an independent review.
- To provide an environment supportive of all businesses, the government should avoid tax concessions to specific businesses or industries and focus on ensuring the tax system raises revenue efficiently, simply and transparently.

The Queensland Government imposes various taxes on Queensland businesses and households for the purpose of raising revenues to fund government expenditure. Each tax includes various concessions that eliminate or reduce the tax liability for certain individuals and/or businesses.

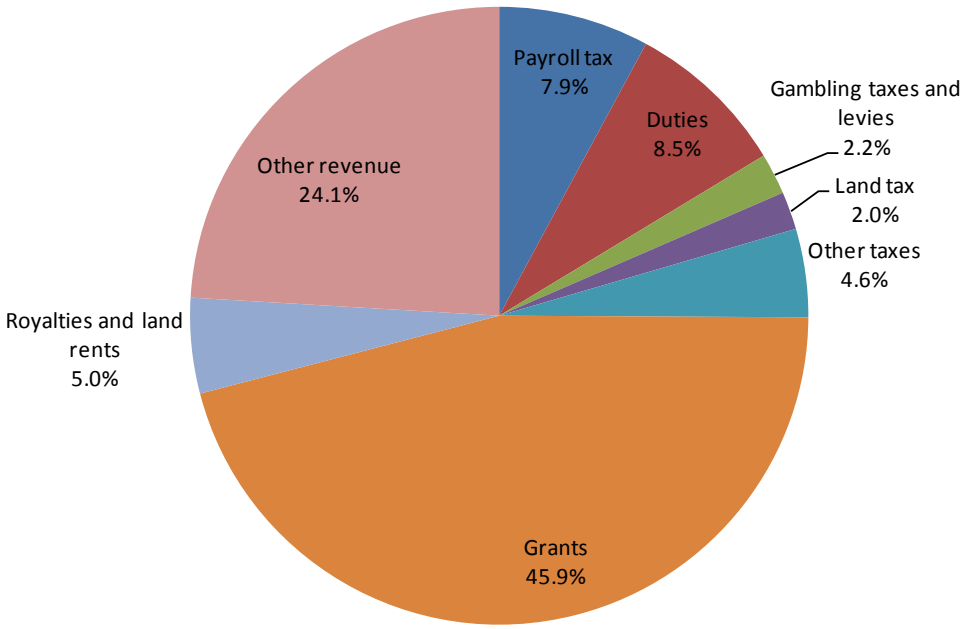
Tax concessions are reductions in tax revenue that result from the use of the taxation system as a policy tool to deliver government policy objectives.

Some of the concessions qualify as industry assistance measures. The concessions provide a significant level of assistance impacting on resource allocation across industries, incentives to invest, employment and the integrity and efficiency of Queensland's tax system.

11.1 Queensland state taxes

Grants from the Australian Government form the largest revenue source for the Queensland Government. In 2014–15, grants were expected to provide $23 billion, or 46 per cent, of general government sector revenues (Figure 11.1). The largest sources of grants are the Goods and Services Tax (GST) revenues collected by the Australian Government and paid to the Queensland Government, and payments made under National Partnership projects.

Figure 11.1 Queensland Government revenue sources, 2014–15



Notes: Based on 2014–15 Mid Year Fiscal and Economic Review data. Other revenue includes: Sales of goods and services; Interest income; Dividends; Income tax equivalents, and Other revenues.

Source: Queensland Government (2014k).

Queensland employers pay payroll tax to the Queensland Government if their taxable wages are $1.1 million or more. Any payments made to an employee that are subject to payroll tax are called 'taxable wages'. Payroll tax is paid at the rate of 4.75 per cent on taxable wages after exemptions and deductions. In 2014–15, payroll tax was expected to raise $3955 million or 8 per cent of total Queensland general government revenues of $50,230 million.

The Queensland Government imposes land tax on the owners of freehold land in Queensland. Land tax is payable if the taxable value of land owned exceeds the tax free threshold. Different thresholds and land tax rates apply depending on the type of owner (residents, absentees, companies, trustees). In 2014–15, land tax was budgeted to account for 2 per cent of total general government revenue.

Duties include transfer duty, vehicle registration duty and insurance duty. Transfer duty is payable on dutiable transactions for property in Queensland. Vehicle registration duty is payable on the registration or transfer of new vehicles, used vehicles, modified vehicles, vehicles as part of business or land contracts, special vehicles, and a taxi or limousine licence. Insurance duty is payable on compulsory third party insurance, accident insurance, life insurance and general insurance. Duties were expected to raise 8.5 per cent of general government revenue.

A range of gambling activities (e.g. casinos, lotteries and gaming machines) are subject to state taxes and levies. Gambling taxes and levies were expected to account for 2.2 per cent of Queensland Government revenue in 2014–15.

Most of the assistance identified takes the form of an exemption. In the case of land tax, reduced rates of tax also apply. The Queensland Government has recently announced payroll tax holidays for new companies established in Queensland as part of the Advance Queensland suite of initiatives.

11.2 Industry assistance provided by tax concessions

Tax concessions are provided in a number of ways:

- tax exemptions — where entities or activities are exempt from the tax, or are exempt if the base upon which the tax is calculated is less than a threshold value (an exemption threshold)
- tax deductions — losses or outgoings incurred in producing income or running a business that can be used to reduce an assessable tax base (e.g. taxable income). Tax deductions reduce the tax base upon which the rate of tax is applied
- tax rebates — rebates are expenditure programs administered by departments which sit outside the formal tax system. An example would be a program which rebated or returned to a business the payroll tax paid by the business. Rebates are examined in the chapters evaluating specific budgetary outlays
- reduced tax rates — these apply to certain groups or sectors of the community
- deferral provisions — these provisions defer payment of a tax liability to a future period (e.g. 'tax holidays' for a business relocating).

11.2.1 Industry assistance measures

Information is provided on the Queensland Government's main tax concessions in its Tax Expenditure Statement (TES), included as part of the annual budget papers. Tax concessions applying to businesses are included as industry assistance measures. Certain concessions applying to individuals or households are also included as assistance measures.

Exemptions and concessions are subject to qualifying eligibility criteria and conditions being met.

The concessions all have some form or degree of 'selectivity':

- the concessions apply to some industries or products and not others

- the concessions apply to businesses based on some characteristic of the business. Within an industry, the concession favours some businesses over others to the extent it excludes businesses that do not have the characteristic. The distribution of the characteristic may differ widely across industries so that the concession effectively favours some industries over others. For example, concessions based on the size of the business will favour small businesses over medium and large businesses, and the prevalence of small businesses is much higher in some industries than others.

Tax concessions favour — that is, direct resources towards — one industry over another or one set of businesses over another. Therefore, tax concessions have the potential to distort resource allocation and reduce the 'neutrality' of the tax system. The concept of neutrality comes from the theory of optimal taxation and is one of the key principles of an optimal tax system. A neutral tax system is one that does not adversely influence taxpayer behaviour such that decisions by economic agents are based on preferences before tax considerations are taken into account. By definition tax concessions depart from neutrality. The primary justification for departing from neutrality is the existence of market failure.

Concessions are grouped into those applying to payroll tax, land tax, duties and gambling with descriptions of each concession provided below (Table 11.1).

Table 11.1 Description of Queensland Government tax concessions

Measure	*Description*
Payroll Tax	
Exemption threshold and deduction scheme	Employers who employ in Queensland with an annual payroll of $1.1 million or less are exempt from payroll tax. On the basis of 2012–13 average weekly earnings, this threshold corresponds to approximately 15 full-time equivalent employees. This exemption is designed to assist small and medium-sized businesses. It excludes Section 14 exemptions (Local Govt, Education, Hospitals) that are identified in the Tax Expenditure Statement. Employers who employ in Queensland with Australian payrolls between $1.1 million and $5.5 million benefit from a deduction of $1.1 million, which is reduced by $1 for every $4 by which the annual payroll exceeded $1.1 million.
Exempt employees	Wages or salaries paid to apprentices, trainees and 'other' employees are exempt from the calculation of taxable wages.
Land Tax	
Liability thresholds	Land tax is payable on the value of taxable land equal to or above a threshold which depends on the land's ownership. The threshold for companies, trusts and absentees is $350,000 and for resident individuals the threshold is $600,000. Land owned by resident individuals as their principal place of residence is excluded from the estimate. The exemption from paying below a minimum amount is not included as a tax expenditure as it is regarded as the application of an administration threshold.
Graduated land tax scale	A graduated (concessional) scale of land tax rates is applicable to land with a taxable value of less than $5 million for resident individuals and companies, trustees and absentees. The benchmark rates used for estimating the tax expenditures were 1.75 per cent for individuals and 2.0 per cent for companies, trustees and absentees.
Primary production deduction	The taxable value of land owned by a resident individual, trustee or some absentees and companies does not include all or part of their land that is used for the business of agriculture, pasturage or dairy farming.
Moveable dwelling parks	A moveable dwelling park is a place where caravan or manufactured home sites are leased or rented. An exemption can be claimed if: • the land is used predominantly as a moveable dwelling park

Measure	*Description*
	• more than 50 per cent of sites in the park are occupied, or solely available for occupation, for residential purposes for periods of more than 6 weeks at a time.
Aged care facilities, including retirement villages	A taxpayer may be able to claim an exemption if the land is used as the location for an aged care facility. This exemption applies to facilities that are an approved provider under the *Aged Care Act 1997* (Cwlth). A taxpayer may be able to claim an exemption if the land is used for premises or facilities for residents of a retirement village. This exemption applies to facilities registered under the *Retirement Villages Act 1999*.
Land developer's concession	From 1 July 1998, land tax payable by land developers has been worked out on the basis of the unimproved value of (undeveloped) land subdivided in the previous financial year and which remains unsold at 30 June of that year is 60 per cent of the Valuer-General's value (legislation provides for a 40 per cent discount). This concession is outlined in Section 30 of the *Land Tax Act 2010*.
Duties	
Insurance duty: private health insurance concession	An exemption from insurance duty is provided for private health insurance. The *Duties Act 2001* (the Duties Act) provides that insurance duty is not imposed on a contract of insurance entered into in the course of an insurer's health insurance business as defined in the *Private Health Insurance Act 2007* (Cwlth) (the PHI Act), section 121-1.
Transfer duty: first home vacant land concession	A first home concession is available for the purchase of certain vacant land up to the value of $400,000, with a full concession available on certain vacant land up to the value of $250,000.
Vehicle registration: agricultural vehicles concession	An exemption is available to primary producers if an agricultural vehicle: • has a gross vehicle mass of more than 6 tonnes under the *Transport Operations (Road Use Management Act) 1995* • will be used solely in a business of primary production.
Gambling	
Casino tax concessions	A concessional tax rate of 10 per cent applies for gross revenue from standard transactions in the Cairns and Townsville casinos. The tax rate applicable to gaming machines in casinos is 30 per cent of gross revenue in Brisbane and Gold Coast casinos and 20 per cent in the Cairns and Townsville casinos. In addition, concessional rates of 10 per cent also apply for revenue from high rollers in all casinos. A GST credit is provided to casinos that approximates a reduction in the above tax rates of 9.09 per cent. A tax rate of 20 per cent of gross revenue applies for standard transactions in the Brisbane and Gold Coast casinos.

Source: Queensland Government (2014j).

11.2.2 The level of industry assistance

Queensland Government tax expenditures are measured using the revenue foregone approach.[57] This approach measures how much tax revenue is reduced relative to a benchmark assuming taxpayer behaviour is unchanged.[58]

[57] See the Queensland Government's Tax Expenditure Statement (TES), Appendix A, Budget paper no.2.

[58] Alternative estimation approaches are the revenue gain and outlay equivalence approaches. The revenue gain approach measures how much revenue could increase if a particular tax concession was removed. Accurate estimation of this cost would require estimates of the secondary behavioural effects associated with such a change. The Australian Government tax expenditures are measured primarily using the revenue foregone approach. In some cases the Australian Government also provides revenue gain estimates in its

The assistance measures are estimated to result in revenue foregone of $3.28 billion in 2014–15, with the payroll tax concession contributing $1.71 billion (Table 11.2).

Table 11.2 The level of assistance provided through tax concessions, $ million

Concession	*2013–14 Estimated actual $m*	*2014–15 Budget $m*	*2015–16 Budget $m*	*2016–17 Budget $m*	*2017–18 Budget $m*	*2013–18 $m*
Payroll Tax						
Payroll tax — Exemption threshold and deduction scheme	1480.0	1524.0	1569.0	1617.0	1697.0	7887.0
Payroll tax — Exempt employees	184.5	189.9	195.4	201.4	211.1	982.3
Land Tax						
Land Tax — Liability thresholds	542.0	549.0	570.6	593.4	617.1	2872.1
Land Tax — Graduated land tax scale	493.0	499.0	518.7	539.7	561.3	2611.7
Land Tax — Primary production deduction	93.0	94.0	97.9	101.8	105.9	492.6
Land Tax — Moveable dwelling parks	8.0	8.1	8.4	8.8	9.1	42.4
Land Tax — Aged care facilities, including retirement villages	3.3	3.3	3.4	3.6	3.7	17.3
Land developer's concession	18.0	18.0	18.0	18.0	18.0	90.0
Duties						
Private health insurance concession	333.0	365.4	389.2	414.5	441.4	1943.5
First home vacant land concession	18.0	21.6	21.9	22.5	23.9	107.8
Agricultural vehicles concession	1.0	1.0	1.0	1.1	1.1	5.3
Gambling Tax						
Casino tax concession	9.5	9.8	10.1	10.4	10.7	50.6
Total revenue foregone	3183.3	3283.1	3403.7	3532.1	3700.3	17,102.5

Source: QT Information Return.

annual TES. The outlay equivalence approach estimates how much direct expenditure would be needed to provide a benefit equivalent to the tax expenditure. This approach measures the direct expenditure required, in before tax dollars, to achieve the same after-tax dollar benefit as the tax expenditure, where the direct expenditure receives the tax treatment appropriate for that type of income in the hands of the recipient (Australian Treasury TES).

Estimates calculated using the revenue forgone approach identify the financial benefit of tax concessions to taxpayers receiving those concessions relative to taxpayers that do not, which is what is sought from an estimation methodology for the purpose of measuring industry assistance. However, it does not necessarily follow that there would be an equivalent increase to government revenue from the abolition of the tax expenditures. The estimates do not take account of any behavioural responses by the recipients of tax expenditures and overlaps in the coverage of different tax expenditures (Box 11.1). As a consequence, the above estimates may over- or underestimate the revenue that would be gained by government if the tax concessions were removed.

Box 11.1 Interpreting revenue foregone estimates

The introduction of a tax expenditure tends to increase concessionally taxed activity. Accordingly, the same activity would be expected to contract should the related tax expenditure be abolished, with consequential implications for potential revenue flows. Other responses may follow, such as:

- the removal of one concession may result in increased use of other concessionally taxed activities, lowering tax revenue elsewhere
- under a progressive income tax system, the removal of a tax expenditure may result in some taxpayers moving into a higher marginal tax bracket, increasing tax revenue
- as tax concessions may alter resource allocation and direct scarce resources from one activity to another, removal of those concessions may affect economic efficiency and the overall level of economic activity. This change in activity could affect tax revenues.

In most cases, the net effect of these influences on revenue is unclear.

Furthermore, in cases where the level of activity is highly sensitive to a concession, the increase in revenue from removing the tax expenditure could be very small. In these cases, reporting tax expenditure estimates as the cost to revenue (that is, using the revenue gain approach) would give the impression that the tax expenditure has little material effect when actually the recipients derive quite large financial benefits.

Source: Australian Government the Treasury (2012).

11.3 Framework for evaluating tax concessions

11.3.1 Tax concessions and their underlying taxes

The evaluation of tax concessions is inextricably linked to the evaluation of taxes:

- The incidence of a tax concession — who benefits from or bears the burden of the concession — depends on the incidence of the underlying tax. In addition, tax concessions can shift the incidence of the underlying tax.
- The efficiency or inefficiency of a tax may be impacted by a concession.
- In certain cases, a concession may improve the efficiency of the underlying tax.
- Recommendations with respect to concessions have implications for the underlying tax.

Therefore, while the focus of analysis is on tax concessions, the incidence and efficiency of the underlying taxes are also discussed.

11.3.2 Evaluation framework

Consistent with the performance assessment framework, the evaluation of Queensland Government tax concessions first considers the rationale and objectives of the tax concessions.

The tax concessions are then evaluated against tax system design principles, including: efficiency; distributional impacts; simplicity; and transparency (Box 11.2). The assessments draw on theory, empirical studies and recent reviews of Commonwealth and state taxes.

Particular attention is paid to the ways in which taxation changes the decisions of businesses and households resulting in them being less well off. This has parallels with the concern that industry assistance can distort resource allocation in a way that does not improve welfare. The welfare loss from these distortions is summarised by estimates of the efficiency burdens of taxation taken from the literature.

The principle of policy consistency is also used where there are clear linkages with other policies and industry assistance measures.

The incidence of taxation is examined as it goes to the question of who bears the burden of taxation and the potential benefits of tax concessions.

As a traditional rationale for industry policy relates to the attraction and retention of business investment, Queensland's tax competitiveness is also briefly considered, including the role of tax concessions in tax competition, and implications for the efficiency of the tax system.

The evaluations against the principles are constrained by the fact that the inquiry did not undertake:

- economy-wide modelling of the impacts of concessions or reform options, with the exception of the modelling discussed in Chapter 6 which included a marginal cut in the rate of payroll tax
- surveying of businesses to gain information on compliance costs, and their experiences with the design of the concessions with an eye to whether administrative and compliance processes could be simplified
- cost modelling of Office of State Revenue tax administration processes that would support estimates of how administration costs might vary depending on reform options (e.g. the lowering or raising of exemption thresholds).

Box 11.2 Tax system design principles

Efficiency and equity

The tax and transfer system should raise and redistribute revenue at the least possible cost to economic efficiency and with minimal administration and compliance costs. All taxes and transfers affect the choices people and businesses make by altering their incentives to work, save, invest or consume things of value to them. The size of these efficiency costs varies from tax to tax and from transfer to transfer, reflecting, in part, the extent to which they affect behaviour.

One view of 'equity' in relation to tax is that the tax and transfer system should treat individuals with similar economic capacity in the same way (horizontal equity), while those with greater capacity should bear a greater net burden, or benefit less in the case of net transfers (vertical equity). The extent to which a tax system is equitable is best assessed on the basis of the overall system.

Simplicity

Simplicity can lower the cost of taxation by minimising the waste of productive resources involved in transferring resources from the private sector to the public sector. Whereas efficiency is concerned with minimising the distortions in resource allocation caused by tax-induced changes in relative prices, simplicity relates to minimising the costs imposed by the tax system on taxpayers and tax administrators.

Simple taxes are preferred because they minimise the costs of compliance and administrative costs as far as possible. Complex taxes that apply different tax rates to different entities or transactions, or to the same entity or transaction in different circumstances, can significantly complicate the tax system making it harder for taxpayers to comply with, and open up opportunities for increased tax avoidance. This imposes economic costs through the need for more complex recording of activities and the need for additional accounting and legal advice to ensure compliance with tax law.

Transparency and robustness

In a transparent tax system, the key features of a tax – such as its purpose and how it operates – are easily identified and are certain. The tax system needs to be transparent to the community as a whole and in particular to the taxpayers. The community and taxpayers should clearly understand what is being taxed, who is liable, and how their liability is calculated. Taxpayers should also clearly understand the scope and applicability of taxes and be able to plan with certainty their individual tax liability.

In general, a robust tax system is one that is: sustainable, in that taxes generate revenues that grow in line with economic growth and population change, having a stable relationship to the level of economic activity and population change; stable, in that tax revenues are not subject to wide fluctuations; and resilient to changes in market and industry structures, with minimal incentives and opportunities for tax avoidance.

Policy consistency

Tax and transfer policy should be internally consistent. Rules in one part of the system should not contradict those in another part of the system. To the extent possible, tax and transfer policy should also be consistent with the broader policy objectives of government.

Sources: Henry et al. (2009a); and IPART (2008).

11.4 The incidence of tax concessions

11.4.1 Who benefits?

Who bears the burden of a tax depends on the 'economic incidence' of the tax and not the 'legal incidence'. Legal incidence refers to who is legally liable for the payment of monies to the tax collection agency. Economic incidence refers to who actually bears the burden of the tax (for example, whose income is reduced by the tax).

The economic incidence of a tax concession is closely related to the economic incidence of its underlying tax. If a tax imposes a burden on business owners, then a concession which exempts certain businesses from the tax provides a benefit to those businesses.

Payroll tax

Businesses bear the legal responsibility to pay payroll tax. However, the economic incidence of payroll tax, at least in the long run, is largely shifted to customers through higher prices and/or to workers through reductions in nominal wages over time. As it is unlikely that either supply or demand is perfectly elastic or inelastic, some sharing of the burden will occur, but businesses are generally able to avoid it.

Following the introduction of payroll tax, or changes to its rate, businesses may incur proportionally more of the burden or capture proportionally more of the benefit. This is because market adjustments are not instantaneous. Prices may take some time to 'settle' as businesses and consumers adjust behaviours.

Land tax

Land tax is a relatively efficient means of raising revenue because land, unlike labour and capital, is an 'immobile' input to production. Land cannot be shifted to other regions, states or countries so that changes in demand, or the imposition of taxes, change the price of land but not the amount that is supplied.

Where land is viewed as being in fixed supply, the owners of land bear the full burden of land tax. This is the textbook situation where the supply of land is represented by a perfectly inelastic (vertical) supply curve and the tax is applied to all land (as broad a base as possible) and is a theoretically best land tax (see Appendix F). In reality, there is some sharing of the burden due to the effects of exemptions and concessions.

Transfer duty

A liability to pay transfer duty arises when an entity enters into a dutiable transaction in Queensland, such as for land. In most cases, while both seller and the purchaser are liable, the purchaser usually pays the duty. There is some debate about who bears the burden of stamp duty on real property. In its report on First Home Ownership, the Productivity Commission considered that:

> *The burden of taxes affecting housing is generally shared between buyers and sellers, regardless of who initially pays. (PC 2004a, p. 75)*
>
> *…the net effects of taxation arrangements affecting housing, especially broadly-based taxes, could only be quantified through detailed modelling. Nonetheless, the proposition that housing-specific taxes will usually be shared between buyers and sellers is a robust one. (PC 2004a,. p. 88)*

Insurance and vehicle registration duty

Insurance duty imposed on either general insurance or life insurance is paid by the insurer. While paid by the insurer, the economic incidence falls on the policy holder.

To register a vehicle, an applicant is liable to pay the vehicle registration duty. For an application to transfer a vehicle, the transferee and the transferor are liable to pay the vehicle registration duty. The economic incidence falls on consumers through higher prices.

Casino tax

There are differing views on who bears the burden of gambling taxation. It is likely that the burden of taxation varies by the type of gambling service taxed, in line with the strength of demand responses to changes in price.

Casinos operate in a highly regulated environment. Casinos are effectively granted regional monopolies to provide casino services. As a quid pro quo, governments apply a higher rate of tax than is applied to other industries as the restrictions on supply can result in rates of profit significantly above normal risk-adjusted rates (sometimes referred to as economic rents).

In theory, if gambling taxation only extracted economic rent, and there was no shifting of the tax forward to gambling prices, then there would be no excess burdens from gambling taxation because neither casino operators nor gambling consumers would alter their behaviours.

In practice, the burden of casino taxes is likely to be shared by casino operators and gamblers:

> *The burden of gambling taxes may sometimes fall on economic rent, but sometimes on gamblers and gambling businesses. (Henry et al. 2009b, p. 460)*

The more responsive gamblers are to changes in the price of gambling, the less room casino operators will have to pass on the increased cost of taxes. The price responsiveness of gamblers is likely to be greatest for high rollers and least for problem gamblers, with recreational gamblers, whom form the vast majority of gamblers, falling somewhere in between.

11.4.2 Economic incidence of the concessions

While a business may be legally liable for a tax it may not bear the burden of the tax if it is able to shift the burden to consumers through higher prices or backwards to workers through lower wages.

When a tax or tax concession is introduced or altered, market processes may take some time to adjust to the change in price. Therefore, economic incidences in the short run may differ from the long run incidence of the tax concession. In general, as the legal incidence of the concessions falls on businesses, businesses may bear proportionally more of the burden or benefit in the short run compared to the long run.

However, in the long run, the benefits of the tax concessions are largely captured by labour because the burdens of the underlying taxes fall mostly on labour (Table 11.3). The benefits may take the form of lower consumer prices or higher nominal wages in employment (both increase the real purchasing power of households), and/or lower prices for the rental and use of land.

Table 11.3 Long run incidence of the tax concessions — who benefits?

Concession	*Owners of capital*	*Owners of land*	*Labour*
Payroll tax — Exemption threshold			X
Payroll tax — Deduction scheme			X
Payroll tax — Exempt employees			X
Land tax — Land developer's concession		X	X
Land tax — Graduated land tax scale		X	X
Land tax — Liability thresholds		X	X
Land tax — Primary production deduction		X	X
Land tax — Moveable dwelling parks		X	X
Land tax — Aged care facilities, including retirement villages		X	X
Transfer duty — First home vacant land concession	X		X
Insurance duty — Private health insurance			X
Vehicle registration duty — Agricultural vehicles			X
Gambling — Casino tax concessions	X		X

Source: QCA.

The long-run incidences of the tax concessions are consistent with those presented in modelling undertaken for the Henry Tax Review by KPMG EconTech (2010) with two exceptions:

- Land tax concessions — some of the burden of land tax and, therefore, the benefits of land tax concessions, falls to labour, which in this case are the users of land, even if a larger share is captured by the owners of land. KPMG EconTech modelled the incidence of land tax as falling solely on owners of land, which would be the case under a theoretically best tax on land (see the evaluation of land tax concessions in Appendix F)
- Transfer duty— first home vacant land concession: the benefit of the concession is shared between labour (users of land) and owners of land.

11.4.3 Tax concessions can shift the incidence of the underlying tax

Tax concessions can shift the economic incidence of a tax. For example, payroll tax concessions narrow the base of payroll tax, which has two important effects on the incidence of the tax:

- Reduced wages for all workers in an economy, not just workers in businesses subject to payroll tax. The burden of the tax will be shared by workers in the taxed and the untaxed sectors. Workers in the taxed sector initially face a lower wage due to the tax relative to workers in the untaxed sector. Wage relativities are reduced as workers in the taxed sector seek out the higher wages in the untaxed sector (that is, labour supply expands in the untaxed sector, putting downward pressure on wages).
- A change in the composition of employment, moving some workers away from jobs where they would be more productive (in the absence of the tax) (Freebairn 2009 and Henry *et al.* 2009b, p. 297).

Land tax exemptions and concessions also impact on the incidence of land tax. In theory, the burden of land tax is borne only by land owners because land is in fixed supply. However, in

practice, the supply of land is not perfectly inelastic because the purpose for which the land is used can change. Exemptions and concessions result in preferential tax treatment of some uses of land over others. The result is that tax impacts on land use decisions, and supply is no longer 'fixed'. This means that the economic incidence of land tax is shared between the owners of land and those who use the land.

Someone pays

The incidences above are based on an analysis of the impacts of the concession in a particular market, industry or set of industries (a partial equilibrium analysis). However, a state tax concession reduces government revenues which, given a fixed revenue target, implies higher taxes elsewhere, which also results in a burden falling on labour, capital or land owners.

The 'burdens' in dollar terms that result are likely to be greater than the 'benefits' from the tax concessions (see the discussion below 'Higher marginal tax rates drive efficiency burdens').

11.5 Are tax concessions effective and efficient?

11.5.1 Potential benefits of tax concessions

Tax concessions may result in a net benefit if they target and are effective in:

- correcting a significant and enduring market failure, or
- offsetting distortions introduced into markets from other government policies.

Other rationales for concessions are unlikely to lead to improvements in efficiency.

11.5.2 The efficiency impacts of taxes

The purpose of taxation is to raise revenue to fund government expenditure.[59] Government expenditure, if the money is spent well, may provide services sufficiently valued by the community to offset the costs of their provision, including the costs of taxation.

Taxation imposes significant costs on individuals and businesses. When a tax takes a dollar from one person and gives it to another person, or uses the money to provide a service to another person, it results in a 'transfer'. One person loses a dollar and another person benefits. However, the benefit provided is usually well less than a dollar as there are costs in running the tax system (e.g. the resources provided to the Australian Tax Office (ATO) and Queensland's Office of State Revenue), there are costs to businesses and individuals in complying with the tax system, and there are the 'deadweight losses' of taxation (Box 11.3).

Taxation alters the prices of goods and services as well as the prices of inputs to production. A tax drives a wedge between the price a buyer must pay for a product or input and the price which the seller receives. Tax-induced price changes lead to people and businesses changing their behaviours or purchasing decisions with the result that the value or the utility individuals receive from their consumption, or the output of a business, is less than it would have been without the tax.

[59] Taxes are sometimes specifically designed to change prices in order to better incorporate external benefits or costs into prices and decisions (e.g. a tax on alcohol or a pollutant).

Box 11.3 The costs of taxation

Government activities, including industry assistance, are funded through taxation. While taxes provide governments with a source of revenue, there are costs to society as a whole in raising this taxation revenue. This cost does not refer to the income simply transferred between individuals and businesses to government. The costs of taxation refer to the additional costs, and thus loss to society, resulting from a government's revenue-raising activities. These additional costs can be categorised into:

- collection or administration costs – the cost of administering the tax and collecting the revenue
- compliance costs – the monetary and time costs incurred by taxpayers to comply with the tax system
- deadweight losses – the value of the consumption or output foregone as a result of the price effects of taxation. The costs of raising a dollar in taxation are higher than a dollar, because taxation alters the incentives to produce, to work, to save, to buy or to invest. The deadweight losses of taxation are also referred to as the excess or efficiency burden of tax.

Although taxation revenues may be spent on beneficial uses, the benefits have to be weighed against the deadweight losses and other costs of taxation incurred as a result of levelling the tax.

See Appendix F for further information on the costs of taxation.

All taxes have efficiency consequences:

> *Because all forms of taxation alter economic choices and drive economic activity from higher to lower valued uses, a dollar increase in government revenue ends up costing the economy far more in real terms than the dollar that is actually paid in taxes. These harmful effects of taxation are present for all kinds of taxation and exist irrespective of whether tax revenue is spent productively or wasted. (Robson 2007, p. 31)*

Many taxes, even if implemented as 'purely' as possible, will result in significant efficiency losses due to their inherent characteristics (e.g. duties on transactions). In addition, where the same tax base is used, state tax impacts come on top of Australian Government tax impacts:

> *But the efficiency of State taxes is also affected by the presence of Commonwealth taxation. In some cases, relatively low rates of State taxation are levied on bases that attract no additional Commonwealth taxation (eg. land), so the efficiency losses are likely to be very low. In other cases, relatively modest rates of State taxation are imposed on commodities that attract very high Commonwealth taxation …, so the efficiency losses associated with the State taxes are likely to be much higher than the State tax rates alone would imply. (Gabbitas & Eldridge 1998, pp. 32–33)*

Tax concessions can either increase or lower collection and administration costs, compliance costs and the deadweight costs of taxation.

11.5.3 Industry assistance concessions contribute strongly to the erosion of tax bases

In 2013–14, payroll tax concessions totalled $1665 million, or roughly 43 per cent of the revenue generated by payroll tax (Table 11.4). Land tax concessions totalled more than the revenue generated by land tax. Duties related concessions totalled 9.6 per cent of the revenue collected from all duties. Casino tax concessions were $10 million in 2013–14, or roughly 1.5 per cent of the revenue collected from the gaming machine tax and wagering tax.

Table 11.4 Concessions as a proportion of their underlying taxes — 2013–14

Tax	*Budget (actual) ($m)*	*Estimated revenue foregone ($m)*	*Revenue foregone as % of Budget (estimated actual)*
Payroll tax	$3914	1665	42.5%
Land tax	$986	1157	117.4%
Duties	$3684	352	9.6%
Gaming machine & wagering taxes	$628	10	1.5%

Source: Queensland Government (2014k); QT Information Return; and QCA estimates.

Narrow bases mean higher tax rates

An important principle is that the tax system, for a given public sector revenue requirement, should generate the required revenue in a way that minimises economic efficiency losses.

A tax concession reduces the revenue that the underlying tax would otherwise generate. The revenue shortfall can be made up by increasing the rate of tax of the underlying tax, by increasing the rate of tax of other taxes, or by increasing the revenue streams from other types of revenue sources (assuming that the level of public sector expenditure, and the efficiency of the expenditure, is taken as fixed).

If the discussion is confined to an individual tax, then, under the above constraints, a tax concession necessarily increases the rate of the underlying tax.

Higher marginal tax rates drive efficiency burdens

Tax concessions narrow the base of the underlying taxes. Narrowing the base and increasing marginal rates run counter to the principle of minimising economic efficiency losses. The same amount of tax revenue could be collected at a lower overall efficiency loss if bases were kept broad and rates were kept as low as possible.

A rule of thumb is that the excess burden of a tax is roughly proportional to the square of the tax rate:

> *This excess burden of taxation represents an efficiency loss which must be compared with any perceived gains arising either from income redistribution or the non-transfer expenditure carried out by the government. An important property of this excess burden from taxation is that it increases disproportionately with the tax rate: indeed this burden is approximately proportional to the square of the tax rate. This result provides the basis of a general presumption in favour of a broad-based and low tax rate system: any exemptions which reduce the tax base inevitably raise the tax rate required to obtain an equivalent amount of total tax revenue. (Creedy 2003, p. 3)*

Overall, tax concessions increase the welfare losses from taxation (under the assumption of a fixed revenue requirement) because the marginal rate of the underlying tax, or some other tax, is higher than it otherwise needs to be. In the absence of the tax concessions, the estimates of efficiency burdens (welfare losses) of taxation would be lower.

It is possible that a tax concession might have an objective that, if achieved, provides enough benefit to offset the welfare losses from the raising of tax rates at the margin (e.g. where the concession corrects a market failure or offsets other policy-induced distortions).

11.5.4 Individual tax concession evaluations

This section provides a summary of the evaluation of the tax concessions against the principles outlined earlier. Further information on the evaluation of each tax concession is provided Appendix F. Table 11.5 provides a listing of the evaluation outcomes for the concessions against the evaluation principles.

Do the concessions have a sound rationale?

Concessions that do not address a market failure or have no clear basis in an equity objective are difficult to justify.

The private health insurance concession is the only concession where market failure arguments are prominent in identifying a problem and designing a policy response. Health insurance markets exhibit the problems of adverse selection and moral hazard (see Appendix F). A consequence of adverse selection and moral hazard is that insurance premiums are higher than they otherwise might be. Any duty (or other tax) applied to a health insurance policy would raise premiums further.

Many concessions are designed to address problems resulting from distortions introduced into markets by other government policies, rather than a problem related to market failure. This is the rationale for the deduction scheme concession, exempt employees concession, primary production deduction concession, moveable dwelling parks concession, aged care facilities concession, and the first home vacant land concession. A plausible rationale is that the concessions indirectly address distortions from other government policy interventions in housing markets, particularly the principal place of residence exemption from land tax. However, why these particular uses of land have been chosen for preferential treatment over other possible uses is unclear.

Do they achieve their objectives?

The payroll tax exemption threshold and land tax liability threshold are set at a level higher than can be justified based solely on a tax administration and business compliance cost rationale. The efficiency of a tax is reduced where the revenues collected by the tax are less than the actual costs of administering the tax combined with the costs of complying with the tax. Therefore, some level of threshold may be justified where it takes into account how tax administration and business compliance costs vary as the threshold is varied.

The Deduction Scheme is intended to reduce distortions to small business growth that arise from the exemption threshold. The design of the scheme appears sound and should improve the efficiency of payroll tax. However, no Queensland data are available that can confirm this.

A frequently cited concern is the employment impacts of payroll tax. A broad-based payroll tax is effectively equivalent to a broad-based personal income or value-added consumption tax and, therefore, has similar effects on employment.

Incomplete coverage of types of remuneration in the base (taxable wages) provides incentives for firms to change the way employees are reimbursed, or in which state to produce, to reduce tax liabilities. This is probably less of a problem than in the past as state governments have expanded the definition of taxable wages to capture a wider range of ways in which employees are remunerated.

To the extent that businesses are unable to pass forward the burden of the tax to consumers or backwards to workers through wage reductions, the business bears the burden of the tax. The cost of employing labour is raised and this can alter the relative price between substitutes in production. Depending on the technology of an industry, the relative increase in the cost of

labour can lead to substitution of capital for labour. Businesses are less likely to bear the burden of taxation in the long run and in highly competitive markets (as supply is more elastic).

The exempt employees concession seeks to reduce the costs to businesses of employing primarily trainees and apprentices. As businesses do adjust their labour demands in response to changes in wage levels, the concession should result in apprentices and trainees employment being higher. However, this may be offset by reductions in employment for jobseekers who do not qualify as trainees or apprentices. In addition, costs and risks of hiring are influenced by a range of other government policies, and there may be a case for addressing the underlying problems more directly.

A number of tax concessions could be provided as budgetary outlays (direct subsidies) rather than through the tax system as a concession. There are disadvantages to using the tax system as a means to provide industry assistance:

- it requires legislation and therefore is not flexible and tends to lock-in assistance
- tax administration costs and business compliance costs are raised.

The effectiveness of concessions in offsetting other policy-induced distortions

The primary production deduction concession, moveable dwelling parks concession and aged care facilities concession primarily seek to offset the distortionary impacts of the principal place of residence exemption from land tax. The concessions remove land tax as a factor in determining how land can best be used when deciding between the uses of primary production, a moveable dwelling park, an aged care facility or as a principle place of residence.

While there is a plausible rationale for the concessions, the limited information available on the performance of the concessions means that it is not possible to determine:

- the magnitude of the problem being addressed
- whether the concessions are effective in achieving their objectives
- whether the objectives could be achieved in a way that results in a greater net benefit.

Land tax still applies to other uses of land, primarily land used for commercial and industrial activity. If the government makes up the revenue foregone from the concessions by applying a higher rate of land tax on non-exempt uses, then the price distortions between non-exempt and exempt uses is magnified (e.g. because of the narrowing of the base, a rate of tax of, say, five per cent is applied rather than a rate of two per cent). So, the concessions reduce distortions between some uses of land and magnify them between other uses.

Table 11.5 Summary of concession evaluations

Concession	*Sound rationale*	*Achieves objectives*	*Efficiency*	*Transparency*	*Simplicity*	*Distributional impacts*
Payroll tax						
Exemption threshold	No (at current threshold levels)	No clear objective	Reduces efficiency	Significantly reduces	Reduces	Negative
Deduction scheme	Yes	Uncertain, but likely	Should reduce growth distortion	Neutral	Reduces	Neutral
Exempt employees	Yes (but problem should be targeted directly)	Uncertain if it increases employment of target group	Net benefit unclear	Reduces	Reduces	Assists primarily young labour market entrants
Land tax						
Graduated land tax scale	No (historic anomaly)	No clear objective	Reduces efficiency	Reduces	Reduces	
Liability thresholds	No (at current threshold levels)	No clear objective	Reduces efficiency	Significantly reduces	Reduces	Reduces horizontal equity
Primary production deduction	Plausible, principal place of residence exemption	Uncertain	Net benefit unclear	Reduces	Reduces	No linkage with capacity to pay
Moveable dwelling parks	""	Uncertain	Net benefit unclear	Reduces	Reduces	
Aged care facilities	""	Uncertain	Net benefit unclear	Reduces	Reduces	
Duties						
First home vacant land concession	""	Uncertain	Net benefit unclear	Reduces	Reduces	
Private health insurance	Yes	Uncertain	Net benefit unclear	Reduces	Reduces	Improves vertical equity
Agricultural vehicles	No	No clear objective	Reduces efficiency	Reduces	Reduces	No linkage with capacity to pay
Gambling						
Casino tax concessions	Plausible	Uncertain	May improve efficiency	Reduces	Reduces	Marginally progressive

Are they efficient?

Overall, industry assistance tax concessions reduce economic output, productivity, and household incomes without necessarily making the overall tax system any fairer. This is particularly true of the largest concessions: the exemption and liability thresholds for payroll tax and land tax.

The Independent Pricing and Regulatory Tribunal (IPART) considered that payroll tax and land tax exemptions and concessions had significantly reduced efficiency in New South Wales:

> *In theory, payroll tax is one of the more efficient taxes available to State governments...However, policy decisions by the State governments have eroded some of the positive theoretical aspects of payroll tax. Increases in the tax-free threshold have reduced its efficiency by narrowing the tax base. In addition, the establishment of numerous exemptions and concessions further narrow the payroll tax base and therefore reduce efficiency. On efficiency grounds, payroll tax should have a broader base and a lower tax rate. (IPART 2008, p. 57)*
>
> *But land tax is less efficient than it could be, due to the wide range of exemptions that narrow its base and may encourage land to be devoted to exempt activities. (IPART 2008, p. 59)*

There are a number of arguments against the broad base–low rate prescription for improving efficiency, including:

- Ramsey pricing and optimal differential product taxation[60]
- 'moral' arguments against taxation which essentially say that, while necessary to some extent, taxation is an involuntary appropriation of earnings so any concessions are therefore 'good'[61]
- critiques of the efficiency of government spending that lead to concerns that efficient tax bases make it easier for governments to increase the level of taxation and expand government.[62]

Some concessions may reduce the negative consequences of other distortions, although, as noted above, it has not been possible within the scope of this inquiry to determine whether the concessions are actually effective in achieving their objectives. In a number of cases, further evaluation work is necessary.

Transparency, simplicity and distributional impacts

Concessions reduce the transparency of the underlying taxes. Concessions can alter the incidence of taxes as well as leading to an increased rate of tax for some other tax. Who bears the burden of the underlying tax is made less transparent by the presence of concessions.

IPART (2008) provided a summary indicator of its evaluation of NSW taxes against tax system design principles (Table 11.6). A ranking of 'one' for payroll tax means that, across the tax principles, payroll tax performs better than other NSW taxes. Land tax, motor vehicles registration duty and gambling taxes received an equal weighted score. While there are some differences between Queensland and New South Wales taxes and tax concessions, the IPART findings are instructive in considering the broad impacts of Queensland tax concessions.

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[60] A Ramsey pricing approach to taxation applies higher taxes to goods and services that are not sensitive to price changes, and lower taxes on those products sensitive to price changes. The idea is to selectively set tax rates to affect behaviour (purchasing decisions) as little as possible in order to minimise the deadweight costs of taxation.

[61] See, for example, Rothbard (1998) and Locke (1988).

[62] See, for example, Becker and Mulligan (2003).

Payroll tax was assessed as having high transparency, land tax had a low level of transparency; duties tended to be highly transparent as buyers can see the impact of duties on transactions; and gambling taxes had a low level of transparency.

However, the final incidence of payroll tax is far from transparent: workers in businesses paying payroll tax probably do not understand that payroll tax impacts on their take-home wages; consumers do not see the price impacts of payroll tax on final goods purchases (unlike the case for GST and duties); and workers in the untaxed sector would be unaware of the flow-on impacts on their wages (see Appendix F for a discussion).

Tax concessions reduce the simplicity of taxes. For those businesses that are taxed, compliance costs are likely to be higher. However, some concessions remove the liability to pay the tax, thereby reducing compliance costs for a sub-set of businesses. In the case of NSW, only land tax scored well on the simplicity principle.

The equity scores for NSW taxes tended to be better than for the simplicity, transparency and robustness principles. Nonetheless, IPART considered that payroll tax detracts from horizontal equity because of exemptions and concessions:

> *Payroll tax does not rate highly in terms of vertical equity. While the legal liability for payroll tax falls on employers, in the longer term it falls on employees and consumers without reference to their ability to pay or to their individual financial circumstances.*
>
> *Payroll tax does not rate well in terms of horizontal equity because of concessions and tax free thresholds. Analysis of payroll data shows that there is a bunching of firms just below and just above the threshold. Thus some firms pay payroll tax, while others do not despite there being little difference between the firms. (IPART 2008, p. 57)*

Table 11.6 IPART's assessment of NSW Government taxes

Tax	*Efficiency*[a]	*Equity*[a]	*Transparency*[a,b]	*Simplicity*[a,c]	*Robustness*[a]	*Weighted score*	*Ranking*[d]
Payroll tax	3	2	4	4	4	3.2	1
Land tax	3	2	2	1	3	2.5	3
Purchaser transfer duty	2	2	4	3	1	2.1	8
Insurance duty	1	3	4	5	2	2.3	6
Motor vehicle registration duty	2	3	3	4	2	2.5	3
Motor vehicle weight tax	3	2	4	4	4	3.2	1
Fire services funding contributions[e]	1	2	3	3	4	2.2	7
Gambling taxes	3	1	1	4	3	2.5	3

Notes: [a] An evaluation score of 5 means the tax meets the principle very well, whereas an evaluation score of 1 means it conforms poorly to the principle. From the individual principle scores, a weighted score was calculated which determined the overall ranking of each tax (far right column). [b] Transparency was assessed in terms of transparency to the person who ultimately bears the burden of the tax. [c] Simplicity includes administration and compliance costs. [d] In order from highest ('best') to lowest ('worst') (i.e. 1 is highest ranked tax). [e] Fire Services Contributions refers to the Statutory Contribution made by insurance companies.

Source: IPART (2008).

11.6 Tax concessions and improving Queensland's tax system

A number of tax reform proposals have been put forward in recent reports which would fundamentally alter state tax systems (such as, the Henry Tax Review's support for a cash flow tax or a different form of a broad-based tax on labour value added). But within the existing set of taxes, what is done with exemptions and concessions is central to any reform proposals. Many of the exemptions and concessions which should be considered for reform qualify as industry assistance measures.

11.6.1 Reduce concessions for the most efficient state taxes

Land tax and payroll tax are efficient state taxes, although more efficient in theory than in practice. Exemptions and concessions erode their bases reducing their efficiency and altering the incidence of the taxes. Even so, land tax is still a relatively efficient tax.

Longer-term, there is a strong economic argument for Queensland and other state governments to undertake tax reforms which result in a significantly larger share of state revenues being generated by land tax and, potentially, payroll tax.[63] This means reforms should reduce or remove many of the exemptions and concessions which presently apply. There may be a case for maintaining thresholds at a lower level based on a balancing of revenues collected against

[63] Longer term reform options include replacing payroll tax with an alternative tax on the value added of labour or, for example, a sharing of the personal income tax base.

the administration and compliance costs that result from the taxes. A summary of tax concession reform recommendations is provided in Table 11.7.

Table 11.7 Summary of tax concession recommendations

Tax concession	*Maintain*	*Reform*	*Notes*
Payroll tax			
Exemption threshold		Lower threshold	Reform independently or as part of a new national tax reform process
Deduction scheme	Yes		Even if thresholds are lowered, the Deduction Scheme should be maintained
Exempt employees	Yes		
Land tax			
Liability thresholds		Lower thresholds	Reform independently or as part of a new national tax reform process
Graduated land tax scale		Change to uniform rate	
Primary production deduction	Yes		Maintain pending more fundamental reform of land tax
Moveable dwelling parks	Yes		Maintain pending more fundamental reform of land tax
Aged care facilities, incl. retirement villages	Yes		Maintain pending more fundamental reform of land tax
Land developer's concession	Yes		
Duties			
Private health insurance	Yes		
First home vacant land	Yes		
Agricultural vehicles		Evaluate further	
Gambling tax			
Casino tax		Evaluate further	

11.6.2 Targeting the least efficient tax first

Given a fixed level of government expenditure and resulting revenue target, the abolition of a tax concession would mean that the tax rate of an underlying tax could be reduced, or, depending on the size of the concession, certain inefficient taxes could be abolished. For marginal changes in tax rates, the marginal efficiency burden estimates (Appendix F) are relevant. For the abolition of a tax, the average efficiency burden estimates are relevant.

Both theory and empirical estimates of efficiency burdens point to duties as being a very inefficient way for governments to raise revenue. The long-run incidence of duties can vary by the type of duty, but, in general, the burden of duties falls on labour.

In the case of a tax concession, the concession should be evaluated as being funded at the margin by duties even if the concession is against a different tax. A reduction in duties offers the greatest potential welfare improvement.

In the case of tax concessions like the exemption threshold and liability threshold, and the private health insurance concession, average efficiency burden estimates of efficiency losses are more relevant given the large amounts of revenue involved.

11.6.3 Compete on the basis of an efficient and fair tax system

Expenditure can either be funded by taxation, or by debt which means future taxation. Both the level of taxation and the relative level of taxation impact on businesses and, therefore, Queensland households.

In recent times, Queensland Government expenditure grew very rapidly in real terms, and this rate of growth held for almost a decade. The rate of growth was also higher than in other states leading directly to a loss of tax competitiveness. A range of indicators can be used to compare the competitiveness of tax systems (see Appendix F). On the basis of tax revenue as a percentage of gross state product, Queensland ranked fifth (equal with South Australia) in 2013–14, with only Victoria and New South Wales collecting more tax relative to the size of their economies. Queensland has gone from being the lowest tax state to being a bit higher than average.[64] The loss in tax competitiveness means that Queensland is a less attractive destination for business investment compared to previously.

The policy settings of a tax system form part of the 'framework conditions' in which businesses make investment, location, employment and other decisions. When a jurisdiction is no longer, or is relatively less, attractive as a location to invest based on conditions applying equally to all businesses and across industries, then it leads to increased pressure for discretionary and highly selective forms of industry assistance (for example, more advocacy will be seen for investment attraction funding to offset the 'penalty' of an uncompetitive local tax regime). These policies often do not provide a net benefit to the jurisdiction.

Rather than selective industry assistance, Queensland businesses are better assisted by the maintenance of low taxes, and a tax system that is efficient. This is consistent with an approach to policy that assists businesses by improving the framework conditions applying to all businesses.

11.6.4 Legislative reforms to support evidence-based policy

Many of the concessions appear not to have been evaluated previously, or at least not evaluated in a public way. A number of the concessions do not have any clear objectives. These problems suggest a number of procedural reforms:

- tax concession laws could be amended to include a specific explanation of what the concession is intended to achieve (that is, an objects clause in the legislation specific to the concession)
- legislation could be amended so that all concessions expire after specific periods of time
- continuance of any tax concession could be made subject to government consideration of an independent and public review of the performance of the tax concession.

[64] Arguably, this is a low benchmark. When tax comparisons are made among jurisdictions all having problems controlling expenditure, then a low tax status may just indicate that the jurisdiction's fiscal policy is, 'the least bad of a bad bunch'.

Recommendation

11.1 Legislation which underpins tax concessions should clearly state the objectives of the concessions, and include sunset or similar clauses with continuance of the tax concession subject to government consideration of an independent evaluation of the concession.

11.6.5 Options for progressing reform

The role of this inquiry is to identify, measure and, where feasible, evaluate industry assistance measures. The inquiry provides input to a broader public policy process.

The tax concession evaluations point to the potential for significant welfare gains from reform.

The Queensland Government could choose to abolish or amend any of the industry assistance tax concessions unilaterally and on a measure by measure basis. However, some of the changes are likely to be difficult and involve wide-ranging impacts, and there are risks in taking a measure by measure approach which could result in needed reforms not being achieved.

As Commonwealth policy levers are usually more suited to addressing the distributional consequences of reforms, some reforms might best be considered within a national tax reform context. The QCA notes that the Queensland Government has stated a commitment to participation in the national tax reform White Paper process.[65]

Should the national process not produce needed reforms, then the Queensland Government could proceed with a state tax inquiry similar to the present inquiry in South Australia.[66] The inquiry could:

- review the objectives of the state tax system overall, and what is needed going forward
- analyse options for improving the design of the underlying taxes which will involve analysis of tax concessions
- design packages of reforms and transitional options which make it both more likely that reforms will proceed and that they will maximise net benefits
- measure the distributional consequences of proposed reforms and consider how best to address those impacts
- investigate how the package of reform proposals interact with other government policies, for example, in relation to housing markets, home affordability and health care provision.

Recommendation

11.2 Queensland could obtain significant benefits from the reform of tax concessions. The Queensland Government should consider how best to progress reforms, including through the national tax reform White Paper process or a Queensland state tax review.

[65] See Australian Government the Treasury (2015b). The Re: Think discussion paper on tax reform is available at http://bettertax.gov.au/.

[66] The South Australian Government is undertaking a public review of state taxes with a discussion paper released in February 2015.

12 NETWORK INFRASTRUCTURE

Key points

- The Queensland Government provides some electricity, water, rail and port (network infrastructure) services at below full cost to industry.
- The QCA has identified 18 network infrastructure assistance measures. The total value of network infrastructure assistance (for 2013–18) is $4.69 billion, with the majority of assistance being directed to energy and rail users.
- Even though there may be equity or social grounds for subsidising these services for low income households, it is not a suitable rationale for providing assistance to businesses.
- Government subsidies for these services distort pricing signals and the allocation of the community's scarce resources. Overall, they are likely to result in a net welfare loss for the Queensland community.
- Although there may be a sound rationale for transitionary policies (allowing businesses time to adapt may reduce their adjustment costs associated with changes in policy), these arrangements may also distort prices throughout the transitionary period resulting in the inefficient consumption of resources.
- Previous governments entered into a number of non-commercial legacy agreements to provide network infrastructure services to industry. Although the legacy agreement may increase the income of the beneficiary, it is unlikely to increase aggregate economic activity or employment for Queensland over the longer term.
- Most network infrastructure measures are not monitored or evaluated to assess if they are effective.

12.1 Background

Where the government does not obtain a commercial return for the provision of access to energy, water, rail and port government-owned infrastructure (and the services they provide), and businesses benefit as a result, this will constitute industry assistance.

The government plays a significant role in the provision of network infrastructure in Queensland as an owner (or financier of infrastructure) and regulator of monopoly assets and prices for essential services, as well as setting the policy and regulatory framework (Box 12.1).

Box 12.1 Role of government in the provision of network infrastructure

Elements of the energy, rail, water and port networks exhibit natural monopoly attributes, which arise from the high sunk costs associated with developing such networks. The expensive network infrastructure required to deliver these services means that it is often inefficient to have more than one service provider due to the high cost of duplicating the required infrastructure. Network infrastructure services are generally seen as essential services to the functioning of the economy.

- Where the provision of network infrastructure is provided by a commercial entity that exhibits monopoly characteristics, governments may have a role to regulate how the services are provided to promote an efficient outcome for society or to protect the community's interest. Economic regulation can involve government controls over the prices, operating costs, investments, profits and the terms and conditions of sale of the regulated firm, with the goal of improving economic performance (QCA 2013d).
- Where the provision of critical network infrastructure services to some groups of consumers, such as those in rural communities, is deemed to be uncommercial, governments may have a role in providing this infrastructure, or financing a third party to provide these services.

Network infrastructure in the energy, transport and water sectors in Queensland was initially built and operated by government departments or entities. Over time, government entities were corporatised into government-owned corporations (GOCs) under the *Government Owned Corporations Act 1993*. Corporatisation is defined as a structural reform process for government entities that:

- changes the conditions and (where required) the structure of entities so that they operate, as far as practicable, on a commercial basis and in a competitive environment
- provides for the continued public ownership of the entities as part of the process
- allows the state, as owner on behalf of the people of Queensland, to provide strategic direction to the entities by setting financial and non-financial performance targets and CSOs.

Many of the government network infrastructure service providers in the energy, transport and water sectors were converted into GOCs including: CS Energy; Stanwell Corporation; Powerlink Queensland; Energex; Ergon Energy; SunWater; Far North Queensland Ports Corporation; Gladstone Ports Corporation; North Queensland Bulk Ports Corporation; and Port of Townsville Limited.

There are also a number of statutory authorities (e.g. Queensland Rail and Seqwater) that provide network infrastructure services in the energy, transport and water sectors. Statutory authorities are established as separate legal entities (not as corporations) to provide some level of independence from the government.

12.2 The provision of industry assistance

The Government (or taxpayers), as owner, will ultimately bear the financial costs associated with the operations of GOCs and statutory authorities when the revenue received for these services does not cover the relevant costs of provision. A government-owned business not obtaining a commercial rate of return on network assets and the services they provide will result in a cost to taxpayers through either:

- foregone revenue that would have otherwise been obtained from the government-owned business, or
- a subsidy paid to the government-owned business to cover the shortfall between revenue and costs.

The costs incurred by the Queensland Government are the result of the government-owned business not implementing full cost pricing — that is, consumers are not being charged a sufficient amount to cover the relevant costs of provision (including a commercial return).[67] It is important to note that full cost pricing should only incorporate the recovery of those expenses that can be considered prudent and efficient (that is, customers cannot be expected to pay for expenditure incurred by a government-owned business that is not prudent or efficient).

Underpricing is likely to result in an inefficient outcome, by encouraging inefficient use of these services by consumers, and providing poor incentives for the infrastructure operator to appropriately operate and invest in them. Moreover, the use of resources, including subsidies or foregone revenue, will preclude those resources being used elsewhere in the economy.

In competitive markets, market forces determine the amount of a product or service produced and the price charged to consumers, to ensure that it is produced and consumed efficiently. However, government-owned electricity, rail, water and ports monopoly operators are not subject to effective competition.

In the absence of effective competition, full cost pricing offers a benchmark for efficient prices to improve the allocation of those resources within the economy. Charges that recover the costs of provision from network users better reflect the value of the resources, providing signals to users about the costs of the resources involved in their provision. These signals can provide incentives to the infrastructure operator and its customers to provide and use these services in a more efficient manner. In particular, consumers will be better placed to make more efficient decisions about how much of the product to use and when to use it, while operators can make better decisions on where, when and how much to provide.

In certain instances, governments may not recover a commercial return for access to the assets and services they provide in order to achieve non-commercial policy objectives such as social and equity goals. Community Service Obligations (CSOs) are non-commercial activities that the government has directed the commercialised business unit to undertake. CSO payments are provided to government-owned businesses to implement a non-commercial policy objective under a commercialised policy framework.

12.2.1 Level of assistance

Assistance provided through network infrastructure is difficult to accurately quantify, particularly where it is provided through underpricing and targets both business and residential customers. This inquiry is only concerned with the subsidies or foregone revenue that is to the benefit of industry. CSO assistance to households is not considered to be industry assistance. Where possible, the proportion of the CSO payments being directed to households has been excluded from the level of industry assistance. Where CSO payments do not separately identify assistance directed to households and business, the QCA has estimated the proportion of

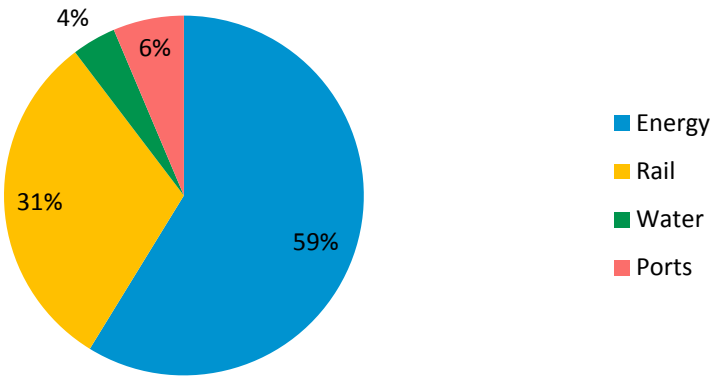
[67] The Queensland Treasury's (2010b) Full Cost Pricing Policy sets guidelines on how to implement full cost pricing. In setting prices under the Full Cost Pricing policy, the commercialised business unit must meet all fixed and variable costs (including tax equivalents), and must achieve an appropriate rate of return.

assistance directed toward industry. The methods and assumptions used to estimate assistance are outlined in the Catalogue of Industry Assistance (Appendix C).

The QCA has identified 18 network infrastructure assistance measures. The total value of network infrastructure assistance catalogued (for 2013–18) is estimated at $4.69 billion. This includes $2.83 billion in budgetary outlays and $0.55 billion in underpricing of assets and services. Budgetary outlays consist of those measures where the government provides funding (e.g. a subsidy or CSO payment) to the network infrastructure operator to cover the shortfall between revenue and costs. Underpricing of assets and services consists of those measures where a government-owned business foregoes revenue that would have otherwise been obtained if full cost pricing was applied. The Solar Bonus Scheme ($1.3 billion in assistance across five years) is not a budgetary outlay or a form of underpricing — the costs of the policy are incurred by electricity consumers. It has therefore been classified as an 'other' form of assistance.

Network services that do not obtain a commercial rate of return will confer benefits to those industries that use these services. In certain instances, assistance will be directed to specific sectors, such as irrigators, and in other instances benefits are captured by a number of industries, such as regional electricity users. The majority of network infrastructure assistance is directed to energy and rail users (Figure 12.1).

Figure 12.1 Proportion of infrastructure assistance by type of network



Source: QCA estimates.

Table 12.1 outlines the main network infrastructure measures.

Table 12.1 Summary of network infrastructure assistance measures

Measure	*Description*	*Level of assistance 2013–18*
	Energy	
Uniform Tariff Policy	The government's Uniform Tariff Policy ensures that Queensland non-market electricity customers of a similar type pay the same price for electricity, regardless of where they live. The notified prices paid by non-market customers do not reflect the full cost of electricity supply for most regional and remote customers. A subsidy (CSO) is provided to Ergon Retail (and to a limited extent Origin Energy). The CSO covers the difference between the costs of supply allowed for in the notified prices and actual costs of supplying regional areas.	$1416 million* over 5 years
Solar Bonus Scheme	The Solar Bonus Scheme involves a government-mandated solar feed-in tariff, which pays eligible customers for the electricity generated from eligible solar photovoltaic (PV) systems and exported to the Queensland electricity grid.	$1307 million over 5 years
Energex and Ergon Energy regulated service charges	Under Schedule 8 of the Electricity Regulation 2006, service charges for a range of services (e.g. disconnection and reconnection of supply) provided by Energex and Ergon Energy to energy retailers are capped. The maximum amount that Energex and Ergon Energy are able to charge for these services is less than the value which the Australian Energy Regulator ascribes to the provision of these services, resulting in a concession provided to energy retailers.	$35 million* over 5 years
Interconnection and Power Pooling Agreement	CS Energy Limited is party to the Interconnection and Power Pooling Agreement, a long-term contract which allows CS Energy to dispatch and partially trade the output of Gladstone Power Station. The costs of maintaining this contract exceed the revenues of the trade which benefits the private sector owners of the Gladstone Power Station.	Unable to quantify
	Rail	
Rail network and infrastructure financing	Funding is provided to Queensland Rail through a Transport Service Contract to ensure that the rail network is safe, reliable and fit for purpose. Funding is also provided to Queensland Rail to support major capital projects and related asset strategies. The funding directly benefits both freight and passenger customers of the state supported rail network; however, this inquiry is primarily focused on benefits provided to freight customers.	$1100 million* over 5 years
Regional Freight and Livestock Transport Service Contracts	The government provides funding for the provision of freight (road and rail) and cattle train services. Fixed price contracts are established with Aurizon so that a minimum number of regional rail and road services are offered to the market, which would otherwise be non-commercial services.	$270 million over 3 years
Kuranda Scenic Railway	Kuranda Scenic Railway is a 37 km railway line predominantly for tourist services between Cairns and Kuranda. QR does not recover the full cost of this service, effectively subsidising users of the railway.	$43 million over 5 years
Heritage rail services	Queensland Rail (QR) repairs and maintains the heritage rail fleet, making it available to interested parties at below cost. QR does not recover the full cost of these services.	$31 million over 5 years

Measure	*Description*	*Level of assistance 2013–18*
	Water	
Urban water price path	Bulk water prices in south east Queensland overall are currently set at levels below the cost of supply. The difference between revenue received (based on these below-cost prices) and the costs to be recovered, is funded by debt that is due to be repaid from bulk water prices by 2027–28.	$110* million over 2 years
Stanwell Fixed Water Grid Contracts	Stanwell Corporation, a GOC, pays a non-commercial charge for water supply from Seqwater. The fixed component of the water grid charge is non-commercial to the extent that prices paid by Stanwell Corporation are in excess of full cost recovery. The additional revenue paid by Stanwell Corporation to Seqwater is effectively a subsidy as it reduces the costs to be recovered through south east Queensland bulk water prices.	$7 million* over 2 years
Rural irrigation water price subsidy (SunWater and Seqwater)	A subsidy (CSO) is paid to SunWater and Seqwater to compensate them for the extent to which rural irrigation prices are set below the efficient cost of supply.	$32 million over 4 years
Rural Water Use Efficiency — Irrigation Futures	The program funds rural industry bodies to provide technical and financial assistance to irrigators throughout Queensland.	$8 million over 4 years
SunWater Water Supply Contracts	SunWater Limited has a number of historic uncommercial water supply contracts with council customers, which is funded through foregone revenue from SunWater rather than a CSO payment.	$21 million* over 2 years
Cloncurry CSO	A subsidy (CSO) is paid to SunWater in relation to the Cloncurry Water Pipeline between the Ernest Henry Mine and Cloncurry. The pipeline was constructed to ensure water security for the township of Cloncurry.	$8 million* over 3 years
	Ports	
Port of Gladstone port charges	The Gladstone Ports Corporation entered into a number of historical port charges contracts at the Port of Gladstone, with the mining industry to support various industries and Government initiatives.	$245 million over 5 years
Leases of port land at below commercial rate	Concessional leases for land located at the ports of Bundaberg, Gladstone, Mackay, Townsville, Lucinda, Mourilyan and Cairns. In Gladstone, these leases benefit the mining sector (specifically resource processing) while for other ports they generally benefit the sugar industry.	$54 million over 5 years

*Note: The assumptions and methods used to estimate the level of assistance are presented in the Catalogue of Industry Assistance (Appendix C). * Measure provides assistance to households and business, but only the proportion allocated to industry is recorded.*

12.3 Basis for assistance

There are various reasons why government-owned network infrastructure operators may not recover a commercial return for access to the assets and services they provide. These are explored below.

12.3.1 The implementation of non-commercial policies

A number of the industry assistance measures listed in Table 12.1 are associated with implementing non-commercial policies to achieve social or equity outcomes. For instance:

- Energex and Ergon Energy's service charges are regulated to make the price of electricity supply more affordable
- the Cloncurry CSO supports the operation of a pipeline, which was constructed to ensure water security for Cloncurry Shire Council
- SunWater's Water Supply Contracts were introduced to reduce the pressure for regional local governments to increase their water price.

Non-commercial policies to benefit households may be provided for social welfare and equity reasons; however, this is not a suitable rationale for providing industry assistance. Furthermore, welfare and equity objectives are generally better achieved through clearly specified objectives and targeted approaches. A fundamental theorem of economics is that direct subsidies to individuals the government wishes to target for support are normally more efficient than indirect subsidies (QCA 2013d). While the ability of households to access these services may be a priority of the government, these goals are normally better targeted through the welfare system and concessions.

In certain instances, the government provides network infrastructure assistance to support economic activities in regional areas. For instance, assistance is provided to:

- keep the Kuranda Scenic Railway operating in order to support the tourism sector in Northern Queensland, specifically in Kuranda
- maintain and preserve significant heritage locations to encourage people to visit these heritage attractions and contribute to the local tourism industry.

Issues associated with providing assistance for the purpose of stimulating tourism expenditure are discussed in Chapter 8 (Tourism).

12.3.2 Legacy agreements

There are a number of non-commercial legacy agreements entered into by previous governments, mostly to achieve policy objectives unrelated to those of the GOCs. These legacy agreements transfer benefits to industry, while Queensland Government incurs losses due to foregone revenue that would have otherwise been obtained. Legacy agreements are often long-term in nature and are used to attract investment or to assist certain industries to transition through policy change. For example, legacy agreements include the Interconnection and Power Pooling Agreement, Gladstone Ports Corporation port charges contracts and leases of port land at concessional rates (Boxes 12.2 and 12.3).

Box 12.2 CS Energy's Interconnection and Power Pooling Agreement

In the early 1990s the owners of the Boyne Island Aluminium Smelter decided to increase the plant size and production output of the smelter. However, the expansion was conditional on the acquisition of the Gladstone Power Station because of the importance of maintaining a secure and cost effective supply of electricity. The Gladstone Power Station was sold in 1994 to the owners of the Boyne Island Aluminium Smelter to support its expansion (CS Energy n.d.). The Interconnection and Power Pooling Agreement formed part of the terms of this transaction.

As part of this agreement, CS Energy trades Gladstone Power Station's generation capacity in the national electricity market (NEM). CS Energy pays a capacity payment to the Gladstone Power Station, which provides CS Energy access to the output of the power station above a certain level. CS Energy derives a return from the wholesale electricity market. However, the costs to CS Energy of maintaining this contract exceed the revenues of the trade, which benefits the private sector owners of the Gladstone Power Station.

The Interconnection and Power Pooling Agreement is a long-term legacy agreement that was used to attract investment — the expansion of the aluminium smelter. The annual estimates of the level of assistance provided, as well as certain aspects of the contract, are commercial-in-confidence. Furthermore, the extent of CS Energy's liability is highly sensitive to the pool price forecast and other market factors. Although Queensland Government monitors the value of the contract, it does not monitor the resulting outcomes of the agreement.

Box 12.3 Non-commercial legacy agreements — port authorities

No CSOs are paid to the government-owned port authorities. Port infrastructure is provided on a commercial basis by GOCs where the volume and value of trade at the port is sufficient to enable the recovery of the costs.[68] However, there are a number of non-commercial legacy agreements where the port corporations receive lower revenue, and the Queensland Government receives lower dividends, than may have otherwise been obtained from users of port facilities. These non-commercial legacy agreements include:

- Gladstone Ports Corporation port charges contracts

  The Gladstone Ports Corporation entered into a number of historical long-term port charges contracts at below commercial rates for access to the Port of Gladstone. These contracts were entered into to attract certain mining and resource companies to Gladstone.

- Leases of port land at concessional rates

  Concessional leases are provided for some lots of strategic port land located at the ports of Bundaberg, Gladstone and Mackay. At the Port of Gladstone, the concessional leases benefit the mining industry while at other ports these leases generally benefit the sugar industry. The land lease agreements with the sugar industry were implemented as a consequence of the deregulation of the sugar industry and most were entered into in the early 2000s.

[68] Each GOC is responsible for setting its port user charges through commercial negotiations. Port charges have regard to QCA pricing principles to maximise volume throughput for the ports.

Although these legacy agreements may increase income for the beneficiary, they are unlikely to increase aggregate income or employment for Queensland over the longer term. An artificial shift in resources to the assisted industry will generally come at a cost to other sectors in the economy.

These legacy agreements often have very long timeframes with ongoing costs for the community. Therefore, although the government may not have scope to address the costs associated with previous agreements, it should exercise considerable caution before entering into such long-term agreements with industry in the future.

12.3.3 Transitional arrangements

As noted above, achieving a commercial return from government-owned network operators has become more of a focus for the government. Transitional arrangements, such as price paths, may be implemented in order to minimise price shocks for customers while prices move toward a more cost-reflective level. There may be sound rationale for transitionary policies, as allowing businesses time to adapt may reduce their adjustment costs associated with changes in policy. Stability and predictability may also reduce uncertainty associated with long-term investment and operational decisions.

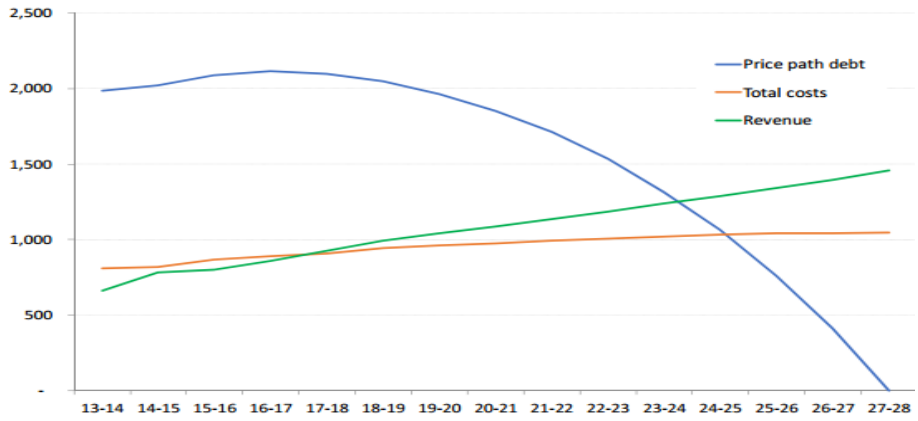
However, these arrangements may distort prices throughout the transitionary period resulting in the inefficient consumption of resources. The economy's use of resources during a transitionary price path will be intertemporally inefficient (see Box 12.4). The benefits of a transitional arrangement need to outweigh the associated costs in order to justify its implementation.

Box 12.4 Bulk water price path

To strengthen water security in south east Queensland, the Queensland Government made significant investments in the bulk water supply system between 2007 and 2012. Significant increases in bulk water prices were required in order to cover the costs associated with these new investments. In 2008, the Queensland Government implemented a price path for bulk water prices to phase in cost-recovery.

During this transitionary period, bulk water prices are not set at a level that recovers the costs of bulk water supply, with Seqwater selling bulk water at a loss. The difference between revenue received (based on these below-cost prices) and the costs incurred, is funded by debt. The debt is factored into the price path and is due to be repaid (including interest on accumulated debt) by bulk water prices from 2017–18 to 2027–28. This arrangement means that Seqwater's accumulated debt rises over the first part of the price path as Seqwater under-recovers costs, and then gradually declines to zero as Seqwater's revenues start to exceed its costs (Figure 12.2). From the point where prices exceed the cost of provision, the price path is no longer providing assistance to industry.

Figure 12.2 Price path debt repayment ($ m)



Source: QCA (2015c, p. 68).

The objective of the price path is to minimise price shocks for south east Queensland water customers by allowing prices to increase gradually towards cost-reflective levels. Transitionary price paths provide businesses with more certainty and an environment that allows them to adapt and respond to changes in policy. However (assuming that the full cost price is the efficient price), during the transitionary period, water consumption is intertemporally inefficient — the low costs during the first stage of the price path will stimulate inefficient water consumption, while high prices will deter efficient consumption when revenues exceed costs.

The benefits associated with providing business certainty are difficult to measure and will vary between industries. Therefore, it is difficult to estimate whether implementing the bulk water price path for Queensland businesses has been effective in allowing them to adapt to full cost pricing and whether the transitionary period will result in a net benefit for Queensland. Furthermore, the impact of the intertemporal costs of the bulk water price path on business activity is not monitored by the Queensland Government.

12.4 Specific electricity sector measures

12.4.1 Industry background

Over the past 20 years, significant structural change has occurred in the Queensland electricity sector. The sector historically consisted of a series of government-owned, vertically integrated electricity monopolies operating in a non-commercial environment. This has transitioned into the current electricity supply network comprising:

- a mixture of government- and private-owned generators, who produce and supply electricity to the supply network
- government-owned transmission network service providers (TNSPs), who transport electricity at high voltages from generators either directly to large customers or to connection points with the distribution networks. The transmission network is owned and operated by Powerlink Queensland
- government-owned distribution network service providers (DNSPs), who distribute electricity at lower voltages from the transmission and embedded generation connection points to end-use residential, commercial and industrial customers. The distribution networks are operated by two DNSPs — Ergon Energy (in rural and regional Queensland) and Energex (in south east Queensland)[69]
- 31 licensed retailers (29 of which are privately owned[70]), who purchase electricity from the market and sell it to end-use consumers.

Queensland has an extensive transmission and distribution network, which includes around 14,000 kilometres of high-voltage transmission network and around 200,000 kilometres (line length) of distribution networks. At the formation of the NEM in 1998, these monopoly network service providers became subject to national economic and access regulation by the Australian Energy Regulator (AER).[71] In addition to the national regulatory framework, the TNSPs and DNSPs are required to comply with the Queensland's *Electricity Act 1994*.

The Queensland Government has progressively introduced competition into the state's retail electricity market. Competition was introduced in 1998, when the largest customers were able to choose their electricity retailer, and was extended to all customers in 2007 with the introduction of Full Retail Contestability. Around 45.5 per cent of consumers are currently supplied under a market contract (QCA 2015b). Customers who have not accepted, or do not have access to, a market contract are supplied on a regulated standard contract and pay notified prices.[72] Retailers compete by offering different benefits. Nearly all customers outside of south east Queensland continue to be supplied by Ergon Energy under a standard contract, paying notified prices.

12.4.2 Solar Bonus Scheme

In 2008, the Queensland Government introduced the Solar Bonus Scheme as part of the *Clean Energy Act 2008*. The Solar Bonus Scheme was made available to residential and small business

[69] In addition, Essential Energy is a NSW government-owned distributor whose supply network also extends into Queensland near Goondiwindi.
[70] Ergon Energy is the Queensland government-owned retailer providing services to regional Queensland.
[71] The QCA regulated Energex and Ergon Energy until mid-2010, when responsibility transferred to the AER.
[72] Notified prices are set by the QCA after consideration of AER-approved network charges, and estimated energy and retailing costs.

customers who consume less than 100 megawatt (MW) hours per year. The Solar Bonus Scheme was to be reviewed 10 years after commencement or at 8 MW of eligible capacity, whichever occurred first. However, capacity exceeded this review trigger within the first 12 months. The government decided to keep the scheme without change after a review in April 2010 (Queensland Government 2010), even though installed capacity was 36 MW (Yurasek 2010).

The initial Solar Bonus Scheme is funded by the DNSPs, Energex and Ergon Energy. The DNSP is required to pay the amount of the feed-in tariff, which is then credited to the PV customer by the retailer. As distribution network charges are regulated, the costs incurred by the DSNP are recovered through higher network charges for all customers (QCA 2013a).

The feed-in tariff was initially set at 44 c/kWh for net eligible electricity supplied to the network. Only surplus electricity that is exported to the grid attracts the feed-in tariff. This price was considerably higher than the tariff paid by households when they consumed energy from the main electrical grid. At the end of each billing period, the customer's meter is read to determine the total amounts of surplus electricity exported to, and imported from, the network. The solar bonus payment is then reflected as a credit on the retail bill.

The Queensland Government scaled back the feed-in tariff in 2012. The feed-in tariff scheme was closed to new applications from 9 July 2012 and replaced with an interim scheme, which reduced the feed-in tariff from 44 c/kWh to 8 c/kWh. The impact of the Solar Bonus Scheme on electricity costs for all Queenslanders was noted as one of the key factors in the government's decision to reduce the feed-in tariff (Queensland Government 2012b).

The 8 c/kWh scheme ended on 30 June 2014; however, participants on the 44 c/kWh feed-in tariff will continue to receive this amount for the duration of the scheme (to 2028) provided they maintain their eligibility (QCA 2013a).

The revised Solar Bonus Scheme currently mandates that energy retailers (not DNSPs) pay eligible participants in regional areas the prescribed feed-in tariff for each kilowatt hour (kWh) of electricity generated by a PV system and exported back into the network. Under the *Electricity Act 1994*, the QCA is required to set the regional feed-in tariff annually. The QCA's estimate of a fair and reasonable, cost-reflective value of exported PV energy for regional Queensland in 2015–16 is 6.348 c/kWh (QCA 2015d). This is based on the direct financial benefit that a retailer would receive if it on-sold a kilowatt hour of exported PV electricity at a cost-reflective retail price. There is no mandated feed-in tariff in south east Queensland, due to the existence of retail market feed-in tariff offers.

Solar Bonus Scheme rationale and effectiveness

The Queensland Government outlined a number of objectives for implementing the Solar Bonus Scheme. A parliamentary information paper released in 2010 cited that the intent of the Solar Bonus Scheme was to:

- make solar power more affordable
- boost Queensland's use of renewable energy
- encourage energy efficiency
- stimulate the solar power industry in Queensland (Paltridye 2010).

While not an explicit objective of the Solar Bonus Scheme, reducing greenhouse gas emissions through increased renewable energy use is assumed to be an underlying goal of the policy.

For the purpose of this analysis, the aims of the scheme have been broadly categorised into two objectives:

- to support the solar power industry
- to reduce Queensland's greenhouse gas emissions.

Supporting the solar power industry

Stimulating the solar power industry and making solar power more affordable relate to the notion that Queensland may have a comparative advantage in the solar PV industry, which cannot be realised without initial government assistance (the infant industry argument — see Chapter 3). Production costs for a newly established industry may fall over time, due to greater experience, know-how or economies of scale associated with a more mature industry. However, if the industry is not initially assisted it may not achieve the cost advantages associated with higher production due to the initial absence of experience and scale.

Examining the outcomes of the Solar Bonus Scheme, it appears the measure has been successful in stimulating the solar power installation industry in Queensland. Since the implementation of the Solar Bonus Scheme in 2008, there has been a significant increase in small-scale solar PV installations in Queensland. The total installed small-scale PV capacity in Queensland rose from 9.5 MW in 2008 to 763.9 MW when the 44 c/kWh scheme closed in 2012. These results suggest that premium feed-in tariffs are an effective way to increase the adoption of a renewable energy source.

The number of registered PV installers in Queensland has also grown considerably (see Table 12.2). Queensland has the largest rooftop solar generating capacity of any state in Australia (Clean Energy Council 2013).

Table 12.2 Accredited solar panel installers and designers in Queensland

Year	*Accredited installers and designers*
2007	73
2008	143
2009	349
2010	675
2011	1187
2012	1391
2013	1336
2014	1263

Source: Clean Energy Council (2015, p. 46).

Despite the apparent influence of the Solar Bonus scheme on industry growth, it is difficult to isolate the impact of the scheme from that of other factors influencing solar panel uptake. There is evidence to suggest that the primary driver in rising installations has been the sharp decline in the price of solar panels since 2010 largely due to excess supply from China and a strong Australian dollar:

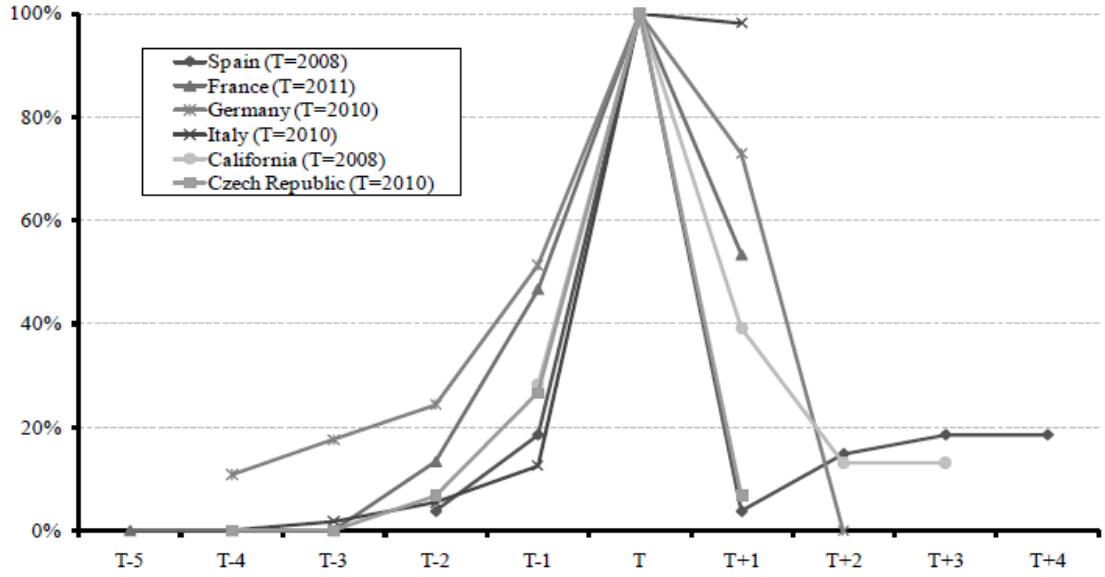
> *Although electricity consumer subsidies have been an effective stimulant, most of the uptake in household PV has arisen through the reduced cost of PV panels, having decreased from AU$8000 per kW in the mid-2000s to the current AU$1500 per kW. (Burtt & Dargusch 2015, p. 447)*

In recent years, there has been a sharp drop in the cost of installing solar PV. In August 2012, the average price for a 3 kilowatt solar PV system in Brisbane was $7267, while by June 2015 a similar system could be installed for $3390 (Solar Choice 2015a; Solar Choice 2015b). As a result, residential PV has continued to grow despite closure of the 44 c/kWh premium scheme in 2012. Energex and Ergon Energy data indicate that, by June 2015, the total number of residential PV systems installed in Queensland had reached nearly 400,000 with a generation capacity of 1.37 GW in total.

Although the aggregate impact of the Solar Bonus Scheme on solar PV is difficult to isolate, there is evidence to suggest the scheme had a temporary but unsustainable impact on demand for solar PV systems. Nelson *et al.* (2012), citing various international markets, found that a highly unstable and pro-cyclical 'boom-bust' cycle generally accompanies feed-in tariff policies (see Figure 12.3). A solar industry boom follows the implementation of the feed-in tariff, while the bust occurs as the policies are substantially wound back or closed once the subsidy costs have been revealed:

> *The market then responds, and the take-up rates of solar PV installations increases exponentially. After two years of activity, the unexpected market expansion causes unforeseen cost blowouts of the feed-in tariff policy. ... Policymakers, quite understandably, react rapidly by reducing or eliminating feed-in tariffs to new entrants. ... This then creates a second round of impacts – collapsing solar PV installation businesses ... (Nelson et al. 2012)*

Figure 12.3 PV installations relative to 'maximum year'* in various international jurisdictions

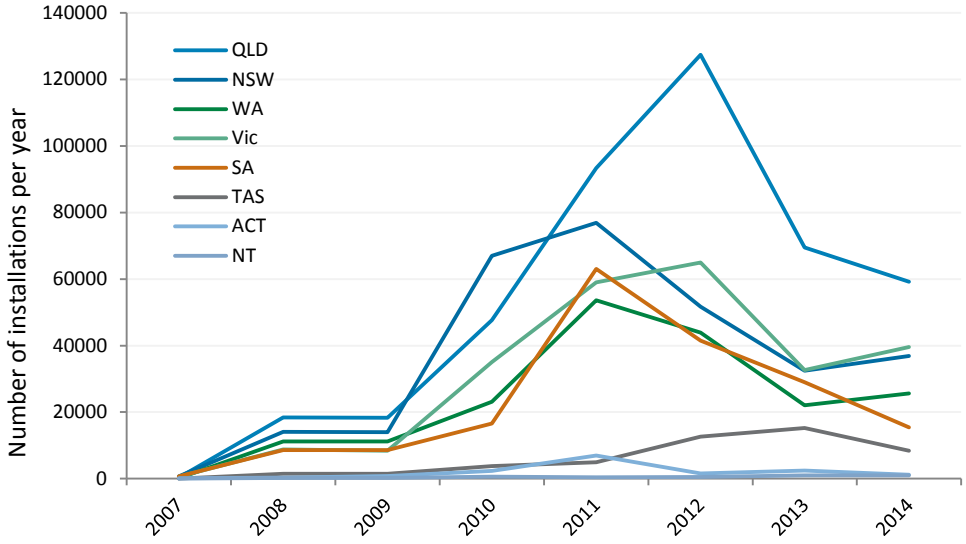


*Note: *Year T (the 'maximum year') is the point at which the feed-in tariff reaches its most unsustainable point, and soon after is varied by policymakers.*

Source: Nelson et al. (2012, p. 10).

A similar expansion–contraction pattern occurred in Australian jurisdictions with feed-in tariffs. The reduction in Queensland's feed-in tariff followed a wide-scale reduction in solar incentive programs in other states. The closure of state-based support schemes shifted the solar industry into a period of consolidation, with less profitable businesses being pushed out of the market as demand reduced (Clean Energy Council 2013). Figure 12.4 shows the annual solar PV installation rates observed in Australia since 2007. This illustrates the impact that Queensland's 44 c/kWh scheme (and its closure) had on installations.

Figure 12.4 Annual solar PV installations since 2007

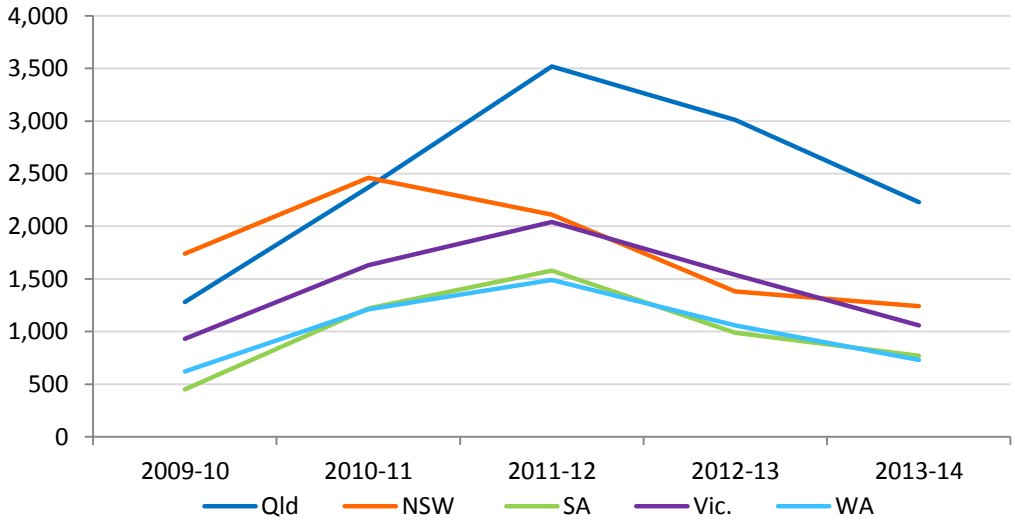


Note: Includes some commercial PV systems up to 100kW; however, the majority of installations are residential.

Source: QCA analysis and Clean Energy Council (2015).

ABS data (2015) indicates that employment in the solar industry in Queensland peaked in 2011–12 at 3520 direct full-time equivalent (FTE) positions. This is highest of all the states, but nonetheless a very small contributor to overall employment in Queensland. Employment in the sector has since declined to 2230 FTEs in 2013–14. This decline appears to follow the closure of the 44c/kWh feed-in tariff in July 2012. This is likely also influenced by changes to the Small-scale Renewable Energy Scheme (SRES), which have progressively reduced incentives since 2011. As illustrated in Figure 12.5, similar employment trends are evident in the other states where premium feed-in tariffs have been reduced or removed in recent years.

Figure 12.5 Direct employment in the solar PV industry (FTEs)



Source data: ABS (2015).

While the Solar Bonus Scheme may have temporarily influenced the size of the solar PV installation industry in Queensland, its ability to stimulate other sections of the solar power industry is questionable. No commercial manufacturers of solar PV cells and modules have been established in Queensland.[73] This suggests that the wealth transfer associated with the high feed-in tariff may have simply supported the installation of imported solar PV products in Queensland.

It could be argued that the Solar Bonus Scheme provided incentives to invest in R&D, as installers and manufacturers looked to drive down costs or improve the generation capacity of solar PV. However, the solar PV industry in Queensland is essentially focused on retail and installation, not design or manufacturing. It is therefore likely that assistance was captured by solar PV importers and installers, and foreign manufacturers. While not explicitly identified as an objective of the scheme, if a goal of the scheme was to encourage R&D investment, it would be far more efficient to directly target incentives toward R&D activities, for example the work of the University of Queensland into new PV cell materials, improved cell efficiency, grid integration technologies and large-scale solar generation.[74]

Reducing Queensland's greenhouse gas emissions

The objective of reducing Queensland's greenhouse gas emissions is based on a negative externality argument — that the social costs of greenhouse emissions are not reflected in the private costs associated with the use of non-renewable energy.[75]

The Department of Energy and Water Supply (DEWS) does not monitor the impact of solar bonus scheme on greenhouse gas emissions. While an increase in solar PV should be correlated with a reduction in consumption from traditional generators, and therefore emissions, the extent to which the policy has actually reduced greenhouse gas emissions in Queensland is not clear. In this instance, a reduction in greenhouse gas emissions will not depend on the amount of installed solar PV capacity, but rather the extent to which rooftop PV installed as a result of the Solar Bonus Scheme has displaced non-renewable generation (and the emissions intensity of that displaced generation) and changed the overall generation mix. This review has not attempted to quantify this impact.

From 2009–10 to 2013–14, annual energy consumption from the NEM in Queensland fell at an annual average rate of 1.5 per cent to 46,362 GWh (gigawatt hours) (AEMO 2014). However, this reduction in energy consumption cannot be directly attributed to the Solar Bonus Scheme. Increases in electricity prices, energy efficiency measures and other market factors will also influence the amount of electricity demanded by consumers.

Burtt and Dargusch (2015, p. 444) attempted to quantify the emissions reductions from rooftop solar PV, finding that household PV may have reduced Australia's total emissions by 4.7 million tonnes of CO_2 in 2014 (2.3% of Australia's total emissions) with the reduction expected to reach nearly eight million tonnes (3.7% of Australia's total emissions) by 2020.

Even so, various policies aimed at reducing greenhouse gas emissions have also been implemented in other states and territories, as well as at the national level. As part of its

[73] Australia's sole manufacturer of PV cells and modules is located in South Australia.

[74] See, http://solar-energy.uq.edu.au/solar-research-projects and https://www.qut.edu.au/research/research-projects/dye-sensitized-solar-cells

[75] This inquiry has not assessed the overall rationale for pursing emission reductions or the extent to which Queensland reducing its emissions can influence global climate outcomes. The inquiry seeks to examine, within the context of a given an objective to reduce emissions, whether the Solar Bonus Scheme was an effective and efficient policy to achieve the objective.

inquiry on *Carbon Emission Policies in Key Economies*, the Productivity Commission (2011a) found that the interaction between state and territory solar feed-in tariffs and the national renewable energy target (RET) may have resulted in minimal abatement at high cost:

> *All states and territories in Australia offer FITs [feed-in tariff] for solar PV. In 2010, the state and territory FITs overlapped completely with the national RET, as each MWh of electricity subsidised through FITs in 2010 was also eligible for subsidies under the RET. Given that the RET set a binding target for the use of renewables, each MWh of solar electricity simply offset abatement from other renewable sources, and hence the FITs did not lead to any additional abatement.*
>
> *In fact, the Commission's analysis found that if the state and territory FITs increased the installation of solar PV systems, the result could have been a net increase in emissions in 2010. The reason is that owners of solar PV were granted five RECs for every MWh of electricity generated. Therefore, each 'solar-generated REC' was equivalent to only 0.2 MWh of renewable electricity. Other renewable generators received only one REC per MWh. Hence, each 'solar-generated REC' that was surrendered in 2010 would have reduced the net generation from renewables by 0.8 MWh, leading to higher total emissions than if the solar PV system had not been installed. This anomaly was addressed through changes to the RET scheme in 2011. (PC 2011a, p. 84)*

Overall, while the Solar Bonus Scheme has likely encouraged the uptake of solar PV, we have not been able to assess the extent to which the scheme, in isolation, has reduced greenhouse gases.

Cost effectiveness and efficiency of the Solar Bonus Scheme

While the extent to which the Solar Bonus Scheme has reduced greenhouse gas emissions in Queensland is not clear, any outcomes achieved have come at a high cost. The scheme has increased electricity costs for all Queensland electricity customers (households and industry). Energex and Ergon Energy expect to incur accumulated feed-in tariff payments of around $4.28 billion by the end of the scheme in 2028 and these costs will flow directly through to network charges and electricity bills. The QCA estimates that the Solar Bonus Scheme costs add around $89 to the average Queenslander's annual electricity bill for a residential customer on tariff 11 in 2015–16 (QCA 2015a).

As noted above, DEWS does not monitor the cost effectiveness of the Solar Bonus Scheme. Even so, some broad comparisons can be drawn between the abatement costs of solar PV and those of alternative options. ACIL Allen (2011) and PC (2011a) concluded that solar PV was an expensive abatement technology costing between $300–$500 and $400–$1000 per tonne of CO_2 respectively.

While the cost of small-scale solar has declined significantly in recent years, it remains a relatively costly technology.

Wood, Blower and Chisholm (2015) found that the economic cost of the emissions reductions to 2030 due to solar PV is more than $175 per tonne of CO_2. Burtt and Dargusch (2015) estimated the cost of abatement using household solar PV at between $78 and $101 per tonne in 2015. By comparison, the Australian Government's recent auction under the Emissions Reduction Fund reveals an average price for purchased emissions of $13.95 a tonne. Further, the recent review of the Renewable Energy Target (RET) calculated the cost of emissions reductions under the large-scale RET at $32 a tonne (Wood *et. al.* 2015). This suggests that, while there are a range of estimates in the literature, small-scale solar PV remains a high-cost form of emissions abatement.

Solar PV may have benefits other than reducing greenhouse gas emissions, such as deferring network investment. However, the available evidence indicates that solar PV is unlikely to lead to any net savings in network investment, and in some cases, may increase costs for network

businesses. In its review of the subsidy-free value of electricity from small-scale solar PV units, the Independent Pricing and Regulatory Tribunal (IPART) concluded:

> *We found that there may be some benefits (and costs) of solar PV to network businesses and these are likely to be time and location specific. However, network expenditure is largely driven by the need to meet peak demand and PV exports tend not to be at their greatest in times of peak demand. Further, solar customers imposed some additional costs on networks. Therefore, we found that PV customers are unlikely to significantly reduce network costs. (IPART 2013, p. 9)*

Ergon Energy (2014b, p. 5) also noted that the amount of peak demand reduction due to solar PV is not significant enough to contribute to any potential deferral of network investment. Box 12.5 discusses the link between solar PV and peak demand, as a key driver of network costs. Ergon Energy (sub. 21, p. 1) considered cost reflective pricing will incentivise more appropriate electricity use through reduced peak demand and increased utilisation volumes — increasing asset utilisation and reducing the need for infrastructure investment.

Electricity distributors have also identified additional costs as a result of increased solar PV penetration, particularly for augmenting the network to accommodate more energy being exported to the network (i.e. reverse energy flows), and remediation of power quality problems caused by the intermittent nature of solar PV output. Energex (2014, p. 146) noted that:

> *…Traditionally, distribution networks around the world were designed to accommodate voltage drops arising from the flow of power from the high voltage systems through to the low voltage system. With the connection of embedded generation on the distribution network, particularly the large number of connections of rooftop solar PV to LV systems, in some areas power flows in the reverse direction from the LV to HV have occurred at times of peak solar generation….*
>
> *Given this phenomena, there is emerging evidence that high penetration of solar PV is already causing voltage rise beyond the statutory limit of 240 volts + 6 % (254.4 volts phase to neutral) in particular parts of the Energex network. Energex is very concerned about this outcome and the source of funding required for mitigation plans, including regulatory funding proposals to address this issue in the short and medium term.*

Similarly, Ergon Energy (2014b, p. 5) noted that:

> *Solar PV also has a number of adverse technical network impacts, particularly for low voltage (LV) distribution networks. In areas with high penetration levels of solar installations, there are design and cost implications of maintaining appropriate voltage levels on networks so that solar customers' inverters do not switch off due to high network voltages. At the same time higher voltage levels produced by a concentrated presence of solar generation – particularly at lightly loaded times of the day when solar generation is at its maximum – can also have consequences for appliances and equipment at customers' homes.*

Box 12.5 Does solar PV reduce peak demand?

'Peak demand' describes the maximum power delivered through an electricity network at any point, over a given period of time. Peak demand is a key driver of investment in electricity networks as it determines the capacity that the network must be built to accommodate. Electricity networks look for ways to reduce peak demand, as it can reduce the need for network augmentation investment.

Peak demand typically occurs in the early evening in residential areas, and during the day in commercial and industrial areas. In aggregate, the 'system' peak demand in Queensland tends to occur during summer, in the late afternoon or early evening.

Solar PV tends not to reduce system peak demand, as it usually occurs outside of the times that PV is generating useful output. However, where the demand peak coincides with solar PV output, there may be some impact on certain parts of the network. Two example scenarios in which this could happen are:

- where solar exists on feeders that predominately support commercial and industrial loads that experience maximum demand during business (daylight) hours. However, as most small-scale solar PV installations are found in residential areas, the impact of solar PV is likely to be concentrated in parts of the network that experience typical residential (evening) peaks, when solar has little or no useful output
- where the peak demand occurs during daylight hours (for example, during summer heat waves). Solar PV is also likely to have a useful moderating effect on peak demand.

In contrast, it has been suggested that generous feed-in tariffs may exacerbate peak demand. Ergon Energy (2014a, p. 9) noted that the Solar Bonus Scheme can create incentives to add to the peak:

> *Residential solar PV reduces the demand in non-residential peak periods (midday) and tends to have little to no reduction on the residential peak demand (early evening). Early adopters of residential PV who receive the $0.44 FiT have essentially been incentivised to increase peak demand, as moving energy consumption from midday to the early evening maximises the benefit of the high FiT….The approximately 80,000 customers who took advantage of the 44 cents/kWh net Feed in Tariff are less likely to shift their consumption to high solar generation times as there is greater benefit in feeding back to the grid rather than using the generated electricity for their own requirements.*

It is possible that increased use of battery storage combined with solar PV and time-of-use (and demand-based) pricing, could change these incentives. Using solar PV to charge batteries during the day, which can be drawn on by the household during the evening peak (when prices are higher), would reduce demand on the network and moderate the peak, at least on some parts of the network.

Ultimately, a reduction in peak demand (or growth in peak demand) is a necessary, but not sufficient, condition for solar to reduce network costs. It must also have sufficient impact to allow the deferral or avoidance of capital (and/or operating) expenditure. The extent to which investment can be deferred will depend on a number of location-specific factors, including whether capacity constraints are emerging on the relevant part of the network.

The use of a feed-in tariff to specifically subsidise the uptake of small-scale solar PV is unlikely to be the most efficient policy instrument to achieve environmental objectives. Where there is a national emissions target (for example, under the Renewable Energy Target), the market will determine the mix of renewable energy sources to meet an overall target at the lowest cost (PC

2011a). In comparison, feed-in tariffs set a guaranteed tariff rate for a particular renewable energy source to encourage its adoption. Where feed-in tariff rates are set at excessive levels, subsidies will be higher than would be necessary to induce the least-cost mix of renewable energy sources.

Recent analysis by the Grattan Institute (Wood *et. al.* 2015) suggests that emissions abatement using solar PV may come at a net economic cost:

> *The widespread adoption of solar PV has brought economic benefits and costs. Switching from centralised electricity generation, mainly from fossil fuels, to distributed, solar PV generation brings two main benefits. First, solar PV has reduced the amount of electricity that needs to be produced. This represents a benefit of $7 billion of avoided generation costs.*
>
> *Second, electricity generated from solar PV will reduce emissions by an estimated 66 million tonnes of CO2 by 2030 — or about four million tonnes a year. Installed solar PV will achieve less than 10 per cent of the abatement required to achieve Australia's 2020 emissions target over the next five years.*
>
> *If those emissions are priced at $30 a tonne, the reduction represents a benefit to society of about $2 billion. Once the electricity savings are added in, the total benefit is just over $9 billion. But purchasing, installing and maintaining the solar PV systems until 2030 will cost $18.7 billion, outweighing the benefits by more than double. The net economic cost is $9.7 billion…*

There are also equity issues associated with implementing the Solar Bonus Scheme, as electricity customers who may not be able to afford (or who choose not to invest in) a solar PV installation are forced to pay the feed-in tariff to those customers who choose to install solar panels, without receiving any benefit in return (QCA 2013a). This also applies to those customers who may wish to participate in the scheme but may be unable to install solar PV, for example those who do not own their own property and those who live in apartments. Origin Energy (sub. 24, p. 1) submitted that, because costs are recovered on a volumetric basis, customers without solar installations pay proportionately more of the cost than those customers who do have a solar installation.

In summary, the evidence suggests that setting a feed-in tariff in excess of the cost-reflective value of exported PV energy is not an efficient, or cost-effective, option for reducing greenhouse gas emissions. The initial feed-in tariff was set at a very high level — 44 c/kWh compared to the estimated efficient price (6.348 c/kWh), which has resulted in a wealth transfer, increasing network charges for all electricity customers to subsidise those households and small businesses that install solar PV at a large cost to the Queensland economy. The benefits of the Solar Bonus Scheme would need to be very large to outweigh the high cost of the scheme.

Improvements in technology will likely continue to reduce the costs of solar PV, making it more competitive with other renewable and non-renewable energy sources. Furthermore, greater penetration of electricity storage facilities may mean that PV generation has a more material impact on peak demand, thus reducing network augmentation costs.

The Queensland Government has recently announced plans to support renewable energy with the aspirational target of Queensland having one million solar rooftops by 2020 (Hon. Bailey 2015). We understand the Queensland Productivity Commission will be tasked with reviewing feed-in tariffs for solar PV, and this would appear to be an appropriate forum to consider the benefits and costs of such a policy.

Recommendation

12.1 The Queensland Government should ensure that future solar policy:

(a) effectively and efficiently targets environmental pollution

(b) avoids selective or excessive subsidies, which are borne by electricity customers.

12.4.3 Uniform Tariff Policy

The costs associated with supplying electricity to households and businesses in regional and remote areas in Queensland are considerably higher than the costs involved in supplying electricity to the more densely populated south east Queensland (QCA 2014c). The higher regional costs reflect the costs of transporting electricity over long distances and the fewer people in remote and regional Queensland to share fixed network costs, such as the towers, poles and wires that deliver electricity.

Under the Uniform Tariff Policy, customers of the same class (for example, residential or small business) that are not supplied under a market contract have access to uniform retail tariffs. That is, the non-market customers pay the same regulated retail price (the regulated benchmark price) for their electricity supply, regardless of their geographic location. The regulated retail prices are set for:

- residential and small business customers based on the costs faced by a retailer in south east Queensland (including a network cost component)
- large regional business customers based on the costs faced by a retailer in the lowest cost area of regional Queensland (including a network cost component) (QCA 2014c).

The government provides a subsidy (CSO payment) to Ergon Energy and Origin Energy[76] to cover the additional costs involved in supplying electricity outside south east Queensland. The CSO subsidises both household and business customers and varies depending on the difference between the regulated network electricity costs incurred in the regions and the reference tariff in south east Queensland. The industry assistance component of the CSO payment (that is, the amount provided to business) is $1.42 billion from 2013–18.

Although uniform tariff policies exist in other jurisdictions in Australia (South Australia, Western Australia and the Northern Territory), Queensland is the only state to allow large business customers access to uniform retail tariffs (QCA 2014c). Queensland is also the only state in the NEM to allow large business customers access to uniform retail tariffs.

The Uniform Tariff Policy rationale and effectiveness

The objectives of the Uniform Tariff Policy are not clearly specified. Although it is often stated that the Uniform Tariff Policy's objective is to enable customers to pay the same regulated price for electricity across Queensland regardless of their geographic location, this is the intended effect of implementing the Uniform Tariff Policy and not its objective.

In its 2014 review, the QCA found that that the initial objectives of the Uniform Tariff Policy originated from the 1936 Royal Commission on Electricity, which recommended a long-term

[76] The CSO payment is mainly provided to Ergon Energy. Only around 1% of the overall CSO payment associated with the Uniform Tariff Policy is directed to Origin Energy.

policy of equalising retail tariffs to achieve social equity and regional development objectives (QCA 2014c). The rationale for these two policy objectives are considered below.

Social welfare and equity

While equity may be a valid policy objective for residential customers, it is difficult to justify it as a reason to provide subsidised electricity to industry.

Equity in itself is difficult to define. The concepts of vertical and horizontal equity, which are used in tax policy, provide some guidance that may be relevant when considering the equity objectives of pricing decisions. The principle of **vertical equity** implies that policy should take due account of different circumstances (for example, in general individuals that have a higher income should contribute and pay more tax than those who have a lower income). The principle of **horizontal equity** requires that individuals in similar circumstances should be treated equally (e.g. individuals with similar income and assets should pay the same amount in taxes).

Even if a case could be made to provide social welfare for businesses, the Uniform Tariff Policy does not target businesses based on their need, but rather based on their location. It applies equally to all regional customers, regardless of their financial circumstances. The policy is therefore not addressing the principle of vertical equity.

Given that the Uniform Tariff Policy provides that, wherever possible, customers of the same class should pay no more for their electricity, it may be considered to be consistent with the horizontal equity principle. However, equity must be considered as a whole and not just in relation to electricity prices. Businesses in urban areas may face (and not be subsidised for) a range of higher costs compared to regional counterparts, such as higher rental prices.

Furthermore, the concept of beneficiary pays can also be invoked as satisfying a concept of fairness in relation to who should pay for a particular service (QCA 2013d). From a horizontal equity perspective, the Uniform Tariff Policy could be considered inequitable because regional business customers are not covering their full costs of supply. Similar businesses in south east Queensland are required to pay the full cost of electricity, even if electricity is a significant input to business activity. This perspective is considered by Kaserman and Mayo (1995, p. 505):

> *Suppose that one particular group is not required to pay the costs it imposes on the firm to supply the services. Because the firm is legally entitled to recover all the costs it legitimately incurs, this means that some other group of customers will be required to pay more than the costs they cause to be imposed on society to support the underpayment by the former group. Although there may be legitimate equity reasons for deviat[ing] from cost based prices for particular individuals or products, it seems to be a reasonable first step toward promoting equity to begin with prices that reflect the costs caused by the consumption decisions of customers who pay those prices.*

In any case, even if equity arguments are justified for residential electricity customers, it is difficult to use this to justify a subsidy for businesses. The provision of cheaper electricity to regional industries is not targeting social welfare and equity outcomes, but rather affecting the profitability of those rural businesses whose electricity is being subsidised.

Regional economic growth

Governments often subsidise industry electricity prices with the aim to promote regional economic growth through greater output from businesses located in these regions and attracting new businesses. By reducing electricity costs, the Uniform Tariff Policy is reducing input costs for many regional businesses. This may result in greater economic output from businesses located in regional areas than would have occurred without it.

As the Queensland Government does not monitor whether the Uniform Tariff Policy generates regional economic growth outside of south east Queensland, it is difficult to evaluate whether the industry component of this policy is achieving economic growth in the regions. However, while there is potential for the subsidy to benefit industry output in some regional areas, policy interventions that simply redistribute growth from one region to another are unlikely to promote net economic growth for Queensland. In this instance, income is being redistributed from taxpayers to regional and remote areas.

Realising economic growth from subsidising electricity costs for businesses in regional areas will depend on whether the greater industry output outweighs the potential resource allocation costs. In general, markets encourage economic growth wherever it is most efficient, so intervention that redistributes economic activity will usually impose redistribution and efficiency costs that are ultimately incurred by the whole economy.

Furthermore, setting prices below the costs of supply provides incentives for regional businesses to make inefficient consumption and investment decisions. Subsidised electricity prices will stimulate inefficient electricity consumption in regional areas. This is likely to result in excessive and inefficient investment in the electricity network for some regions and to exacerbate the level of CSO paid to Ergon Energy and Origin Energy.

An Interdepartmental Committee on Electricity Sector Reform (IDC) was established in 2012 to scrutinise cost pressures on electricity prices. The IDC (2013) noted that there is potential to realise cost savings in areas where the Uniform Tariff Policy is implemented:

> *The state has a significant opportunity to reduce electricity consumption and implement demand management initiatives in Queensland Government operations—slowing growth in electricity costs and improving network use. ... Significant direct and indirect opportunities for savings exist in rural and remote areas of the state where the uniform tariff CSO is paid. (IDC 2013, p. 58)*

Improving the design of the Uniform Tariff Policy

Within the confines of the existing Uniform Tariff Policy, there is scope to improve its design. The way in which the CSO is provided to the distribution companies may exacerbate the size of the CSO over time. Ergon Energy and Origin Energy are the only retailers that receive a subsidy to supply regional customers, creating a significant barrier to the development of retail competition in regional Queensland[77] (QCA 2014c). As a result, Ergon Energy's and Origin Energy's retail business is not exposed to the same pressures to lower costs and improve efficiency as businesses operating in a competitive market.

Alternative options exist for delivering the CSO payments to the electricity industry, while reducing the barriers to the development of retail competition in regional Queensland. One such option is to continue to pay a subsidy at the retail level but make it available to all retailers. Extending the provision of the subsidy to all retailers would promote retail competition and more efficient operation of the retail market, but would likely introduce additional complexity and administrative costs (QCA 2014c). Another option is to pay the CSO to the distributors, which would enable all retailers to access subsidised network charges (QCA 2014c). The IDC (2013) supported this approach:

[77] Less than 1 per cent of small regional customers are supplied on a market contract with a market retailer, despite the legislative barriers to competition being removed nearly seven years ago. The proportion of large regional customers is higher, at around 27 per cent. This compares to south east Queensland where around 70 per cent of small customers and 100 per cent of large customers are supplied under a market contract (QCA 2014b).

> *Over the longer term, the objective should be to develop retail competition in regional Queensland by introducing a network based CSO. A network CSO should only be introduced in parallel with meaningful structural reform of Ergon Energy's retail business and ideally improved targeting of the UTP. (IDC 2013, p. 104)*

Key findings

The objectives of providing assistance to regional businesses through the Uniform Tariff Policy have not been clearly specified by the government. However, there appears limited rationale to subsidise electricity prices for businesses in regional areas.

Where governments choose to address equity concerns between the south east and regional and remote areas, the target should be low income residential households and not industry.

Recommendation

12.2 The Queensland Government should review the Uniform Tariff Policy with a view to:

- **(a) clearly specifying the Uniform Tariff Policy's objective**
- **(b) removing direct electricity subsidies to Queensland businesses**
- **(c) ensuring that where the Government decides electricity prices should be subsidised for residential consumers, the subsidy should be provided in a form that is the most effective (i.e. targets those in need), efficient (i.e. avoids price distortion) and transparent (i.e. costs are known to the public).**

12.5 Specific rail sector measures

12.5.1 Industry background

The rail transport industry in Queensland is dominated by two companies – QR and Aurizon Limited (Aurizon).

QR is the only statutory authority delivering rail transport services in Queensland. QR owns, and provides access to, the south east Queensland rail network and a regional freight network. The central Queensland coal network is owned by Aurizon.

QR's business activities can be separated into three distinct segments:

- public transport passenger rail services in south east Queensland — QR operates 'CityTrain' which provides rail passenger services in Brisbane and the surrounding areas
- long-distance and tourist passenger services in regional Queensland — QR operates regional passenger travel through 'TravelTrain' services
- regional rail network for the purpose of operating freight, livestock, coal and passenger services by rail — QR's responsibilities for the regional freight network include providing access to network infrastructure and maintaining and expanding track infrastructure as required. QR does not operate any above-rail freight services.

Aurizon is a publicly listed, national rail transport and network company predominantly servicing freight, coal and iron ore markets. In Queensland, Aurizon owns and operates a coal rail network, linking more than 50 mines with major shipping ports, power stations and refineries. Most regional freight services provided by Aurizon are operated on the QR-owned regional network.

QR and Aurizon are subject to economic regulation of their below-rail services through the declaration of their networks for third party access under the *Queensland Competition Authority*

Act 1997. Access to the rail networks is to be offered to all railway operators on a non-discriminatory basis in accordance with an approved access undertaking.

12.5.2 Rail network and infrastructure financing

The Queensland Government provides funding to QR through a Transport Service Contract to ensure that the state-supported rail network is safe, reliable and fit for purpose. The contract also provides funding to QR to support major capital projects and related-asset strategies. This funding provides for general maintenance of rail infrastructure and repairs to the rail network, as well as capital works such as bridge replacements and re-sleepering programs. Funding for capital works is calculated as the sum of return on assets, depreciation and capitalised works expenses (Queensland Rail 2014).

The funding provided via this contract directly benefits customers of the state-supported rail network, including both freight and passengers. The Department of Transport and Main Roads (DTMR) has submitted that without this funding, rail access charges would be significantly higher for all users of the rail network.

Subsidies provided to the household sector are considered out-of-scope for this inquiry, except in circumstances where the financial assistance is tied to the purchase of specific goods or services not considered part of the general welfare system (see Appendix C). As such, funding provided to subsidise public transport is considered out-of-scope and only subsidies that benefit freight operators and customers were considered industry assistance for this inquiry. Other transport subsidies are considered in Chapter 10 (Services).

Rail network and infrastructure financing rationale and effectiveness

Two main rationales are put forward to support subsidies to rail:

- Governments are heavily involved in providing road infrastructure. Where road freight users are being subsidised by the government through lower charges this may have distortionary effects on freight modes, stimulating the inefficient use of the road network.
- Road transport may create social costs that are not reflected in the costs that freight operators incur to use the road network (negative externalities). As a result, use of road transport may be higher than the efficient level because the cost of use does not accurately reflect the social costs associated with road use relative to rail use.

The stated objective of freight industry assistance provided through rail network and infrastructure financing is to provide affordable network charges to freight services, in order to encourage businesses to choose rail over road freight. Providing a government subsidy for any product or service has the potential to make it 'more affordable', however, from the community's point of view, this is desirable only where it is being provided at a sub-optimal level.

Where road and rail are potential substitutes to transport freight, the relative costs associated with the two modes will determine the mode of transport adopted by business to move freight. Where a market is working effectively, subsidising the costs of one mode of transport will distort price signals for customers and may lead to an inefficient use of rail and road infrastructure. However, market failures and distortions may limit the ability of a market to allocate resources in an efficient manner.

Road freight subsidies

If the government does not recover the full cost of provision for a mode of freight transport, this will affect the relative costs passed on to freight customers. Altering the relative costs of

using rail and road freight may potentially incentivise freight customers to shift between these alternative transport modes.

Heavy vehicle charges are set to recover the capital and operational costs of the road network that are allocated to heavy vehicles. The charges are agreed upon by the Transport and Infrastructure Council (consisting of Transport Ministers from the Australian, state and territory governments), which considers advice from the National Transport Commission (an independent transport body):

> *All heavy vehicles in Australia are charged an annual registration fee and a road user charge (RUC) levied on each litre of diesel fuel. These charges are determined according to a charging framework known as PAYGO. The primary objective of PAYGO or 'pay as you go' is to deliver a nationally consistent set of heavy vehicle charges that efficiently recover the cost of providing and maintaining the road network. ... while sophisticated in its design, PAYGO at its best represents a hypothetical approximation of the heavy vehicle share of total expenditure on roads. (National Transport Commission 2014, p. iv)*

Asciano, Aurizon and the Australian Rail Track Corporation (sub. 32, p. 3) stated that there are limitations with the heavy vehicle charging methodology and submitted that government subsidies for road freight are substantial:

> *State governments and the Commonwealth government invest substantial amounts of capital in road infrastructure which then substantially benefit the road freight industry, but the road freight industry does not pay an adequate price for the use of these assets. This comes about due to inherent flaws in the operation of the current heavy vehicle road charging mechanism, inadequate allocation of costs between heavy and light vehicles, and cross-subsidies within and between classes of heavy vehicle. (Asciano, Aurizon and the Australian Rail Track Corporation, sub. 32, p. 2)*

Asciano, Aurizon and the Australian Rail Track Corporation (sub. 32) noted that if heavy vehicle charges do not recover all of the associated costs from users, road freight is being subsidised — which would constitute industry assistance. However, given that roads are used by the wider community, it is more difficult to allocate relevant costs to road freight operators. The extent to which road freight is subsidised through heavy vehicles charges has not been assessed as part of this inquiry.

In the Queensland Government response to the Final Report of the Competition Policy Review, it supported cost reflective road pricing and considered that the first priority in this regard should be improved heavy vehicle charging.

Even if road use is subsidised, a rail subsidy can only be effective where rail transportation is available for industry to use. Rail is not accessible to all road freight customers and, thus, is not always an available substitute. Similarly, road transportation is not always an available option to rail freight customers.

Where rail is accessible for businesses to transport freight, conversion from road to rail transport will depend on the level of substitution between the two modes (e.g. coal cannot be economically transported by road). Due to the differing characteristics between the two modes of transport, certain freight products are better suited to road transportation. For instance, the Productivity Commission (2006a) notes that road freight is more flexible than rail and is especially suited to carrying perishable, fragile or time-sensitive freight. Rail freight subsidies may not be able to facilitate a modal shift for these products.

Therefore, encouraging businesses to choose rail over road freight will only be effective where freight transportation is contestable between road and rail. Where road and rail are not potential substitutes to transport freight, assistance provided to subsidise rail freight may

simply be captured by existing rail freight customers. The Productivity Commission estimates that only a small proportion of freight is contestable between the two modes:

> *As a result of the inherent differences in the service characteristics of road and rail, only a small proportion of the total freight task is considered to be contestable across the two modes — most estimates are around 10–15 per cent. (PC 2006a, p. XXIX)*

Transport externalities

DTMR submitted that subsidising rail infrastructure addresses negative externalities associated with inefficient road use. Commonly noted external costs of road vehicle use include:

- traffic congestion
- environmental costs — noise and air pollution
- social costs associated with vehicle accidents.

There is no evidence on the magnitude of such externalities from road freight on regional routes in Queensland. Even if these were substantial, it is important to establish whether the costs of the subsidy (distortionary effects on freight customers) are likely to be less than the benefits (reducing the externality), and that the most efficient solution is chosen.

To determine the extent to which externalities should be internalised would involve calculating:

- the external costs imposed on society, such as noise pollution and traffic congestion costs
- the relative modal change from road to rail required to reduce these external costs.

Both of these outcomes are complex to measure. However, without this information it is difficult to determine the implications of such a policy. For instance, both transport modes result in location specific externalities (e.g. noise and traffic congestion) and substituting one mode of transport for another may simply transfer the externalities to another location (e.g. from highways to railways).

Policymakers have a range of tools available to attempt to internalise social costs associated with transport. Externalities associated with road usage are generally better addressed by capturing the full social costs through road use charges, rather than through the subsidisation of rail freight charges. As the Centre for International Economics describes, subsidising alternative transport modes to internalise externalities present in other modes, is a second-best option:

> *Where it is not possible, for whatever reason, to price in the full social costs of road use, drivers will over use existing road infrastructure and automatically generate signals to transport planners that additional road capacity needs to be brought on line sooner than it would otherwise be. A second best approach to pricing would suggest that, failing the ability to correct for externalities directly, there could be gains by pricing the substitute means of travel below its marginal cost. (CIE 2001, p. 15)*

Key findings

The objectives of rail subsidies are poorly specified. Ideally, the government's objective should be for transport networks to be as efficient as possible, rather than promoting one mode of freight transport over another.

The change in freight moved by rail (and subsequent reduction in freight moved by road) as a result of the subsidised rail charges is not monitored by the DTMR. Consequently, it is not possible to draw conclusions on the effectiveness of the rail network and infrastructure financing to encourage rail freight use. To do this, the Queensland Government should measure whether the freight subsidies are addressing market failures and distortions (that may be limiting the ability of the freight market to allocate resources in an efficient manner).

The interrelationships between road and rail, and the objective of improving efficiency of transport as a whole, suggests that the transport sector should be considered together. For example, Asciano Ltd (sub. 31) noted that any analysis of rail industry assistance should recognise that road and rail freight access pricing must be determined in a consistent manner.

> *Changing industry assistance levels to rail freight access without addressing heavy vehicle road freight access charges will result in a substantial modal shift of freight from rail to road. (Asciano Ltd, sub. 31, p. 8)*

Similarly, Asciano, Aurizon and the Australian Rail Track Corporation (sub. 32) supported a broad policy inquiry into the transport sector, but noted that it would need to examine the extent to which heavy vehicle pricing subsidises road freight and potential pricing reform options.

A comprehensive investigation of the transport sector, including rail and road subsidies, could consider the interrelationships between the various transport modes and the effects of the various policies on the efficiency of the transport system.

Recommendation

12.3 The Queensland Government should conduct a broad policy inquiry into the transport sector. This inquiry should consider the significant assistance provided to various transport modes and some freight customers, with a view to identifying efficiency improvements.

12.5.3 Regional Freight and Livestock Transport Service Contracts

The government provides funding for the provision of freight (road and rail) and cattle train services. Fixed-price contracts are established to ensure that a minimum number of regional rail services are offered to the market, some of which may otherwise be non-commercial. These contracts commenced with the separation of QR Limited into QR and QR National (now Aurizon) in July 2010.

- The Regional Freight Transport Services Contract is used to purchase around 6000 rail and road regional freight services each year. The services provide benefits to regional communities that produce and receive freight in the north-west, central-west and south-west of the state. The Regional Freight Transport Services Contracts expired on 30 June 2015.
- The Livestock Transport Services Contract is used to purchase a minimum of 325 rail cattle train services each year. These services transport cattle from regional hubs in the north-west, central-west and south-west regions to processing plants. These contracts financially support what may otherwise be non-commercial services. The Livestock Transport Services Contracts are due to expire in December 2015.

Regional Freight and Livestock Transport Service Contracts rationale and effectiveness

The stated objective of these measures is to deliver the priorities outlined in the former Queensland Government's 'Moving Freight' strategy including, expanding the use of rail freight and facilitating greater freight infrastructure investment. The Moving Freight strategy notes:

> *There is latent capacity across some sections of the rail network with the ability to support the growing freight demand. However, ensuring the rail system offers adequate access, reliability and flexibility will be essential to expanding its use. The inherent characteristics of rail make it well suited to emerging freight demands across the state. Ideally, rail is suited to freight tasks that are high volume, point-to-point pick up and delivery over long distances. Opportunities exist to attract freight volumes to rail for agricultural and general freight tasks via alternative train*

> *operating models, enhancing contestability and promoting the use of latent infrastructure. Attracting freight to rail will also greatly benefit the road network by minimising future maintenance and development demands associated with heavy vehicles as well as provide broader safety and environmental benefits. (Queensland Government 2013a, p. 26)*

In justifying these subsidies, the DTMR specifically noted that these freight subsidies would improve freight modal choice to regional areas, improve the utilisation of existing government-owned below-rail assets and maintain rail assets to accommodate future freight volume growth. The Government's intent is that, over the course of the contracts, some of these services would become commercially sustainable and financial support could be withdrawn.

The main beneficiaries of the Transport Service Contracts are the rail freight operators that win the contracts to run the additional services and the freight customers (which are primarily from the agriculture industry). Aurizon (sub. 44) submitted that, while there are likely to be benefits in promoting demand for rail services, the main beneficiaries of a well-designed and targeted agricultural transport service contract are primary producers as the policy intent is to support transport cost equivalence and not modal shift.

It is not clear whether these rail services are resulting in additional rail freight or are simply financially assisting pre-existing users of the rail infrastructure. While there is some monitoring of service provision and freight volumes transported, the DTMR has acknowledged that existing monitoring is not ideal, noting that an absence of key performance indicators and transparency with the service provider has potentially inhibited the DTMR's more extensive evaluation of value for money and contract success.

It is likely that much of the assistance is captured by the direct beneficiaries of the assistance. The government funding provided to subsidise rail freight is replacing industry costs that would have otherwise been incurred by businesses to transport freight (either by road or rail). Similarly, rail freight operators who obtain the Transport Service Contracts will also directly benefit from subsidies.

The Transport Service Contracts are highly selective and distortionary measures, which are likely to result in perverse outcomes. Where freight transportation is contestable between road and rail, subsidising the costs of rail freight transport for a select group of customers will distort price signals and may lead to an inefficient use of rail infrastructure. The selective nature of the policy will mean that not all freight customers will be given access to subsidised rail freight. This has the potential to distort the efficient allocation of resources between businesses, as not all businesses receive freight transportation subsidies.

The Transport Service Contracts also have the potential to limit competition between rail freight operators. Granting subsidies to a particular rail freight operator will restrict other rail freight operators from competing to provide similar services. This was noted by Asciano (2014, sub. 2, p. 6):

> *These subsidies effectively limit any potential for above rail competition for these cargoes on this line as only one above rail provider receives a financial benefit not available to other above rail provider.*

Asciano Ltd (sub. 31) commented that subsidies for regional freight transport contracts should be retained if road use charges are not cost reflective. However, it argued that any subsidy provided should be more transparent and provided directly to the freight owner or shipper rather than a specific transport provider, so as not to limit competition between rail freight operators. Aurizon (sub. 44) considers that any ongoing assistance package to support the provision of agricultural rail services must be efficient, transparent and achieve its intended objectives.

Although the DTMR noted that there are benefits from the Transport Service Contracts associated with addressing negative externalities associated with inefficient road use, there is no evidence that externalities are being reduced as a result of these additional rail services. Regardless, such market distortions would be better addressed by capturing the full social costs through road use charges, rather than providing highly selective assistance to certain rail freight operators.

Recommendation

12.4 As part of a broader policy inquiry into the transport sector (see Recommendation 12.3), the Queensland Government should consider how best to encourage efficient rail freight pricing. This includes considering the removal of highly selective freight subsidies.

12.6 Specific water sector measures

12.6.1 Industry background

Queensland's water supply network consists of bulk water suppliers, distributors and retailers. Bulk water supply involves the delivery of water from dams, weirs, treatment plants and manufactured water assets to distributors, retailers and, in certain circumstances, directly to large water consumers. Distribution and retail involves the delivery of water to consumers through a network of reservoirs and pipes, which often includes additional services provided to households and businesses, such as the treating and disposing of sewage and other wastewater and issuing bills.

Bulk water supply entails large investments in infrastructure. Given the high fixed costs associated with the bulk supply of water, bulk water services are generally provided by a monopoly entity (primarily state- and local government-owned water businesses). The two largest Queensland government-owned bulk water supply businesses[78] are Seqwater and SunWater.

Seqwater is a statutory authority responsible for the bulk water supply in south east Queensland. Seqwater operates dams, water treatment plants, recycled and desalinated water plants and major pipelines. It also provides irrigation services to around 1000 rural customers in south east Queensland.

SunWater is a GOC that manages Queensland's regional (outside of south east Queensland) network of bulk water supply infrastructure. SunWater services around 5000 customers, including large water users such as irrigators, mines, power generators and industrial businesses as well as local governments who are responsible for supply to towns in their area.

The water sector has undergone institutional reform, which has separated the regulatory and commercial functions of the water entities and implemented independent price regulation. Although there has been a shift toward the commercialisation of bulk water assets, the Queensland Government is yet to obtain a commercial return for many of these assets.

[78] In addition to these two government-owned businesses, other, smaller statutory water boards operate bulk water supply infrastructure. The private sector also owns bulk water supply infrastructure. These private entities typically own these assets to supply their own operations, although some privately owned assets also supply third parties, including local governments. Certain government-owned corporations, such as Stanwell Corporation and CS Energy, also own bulk water infrastructure for power generation.

12.6.2 Rural irrigation water price subsidies

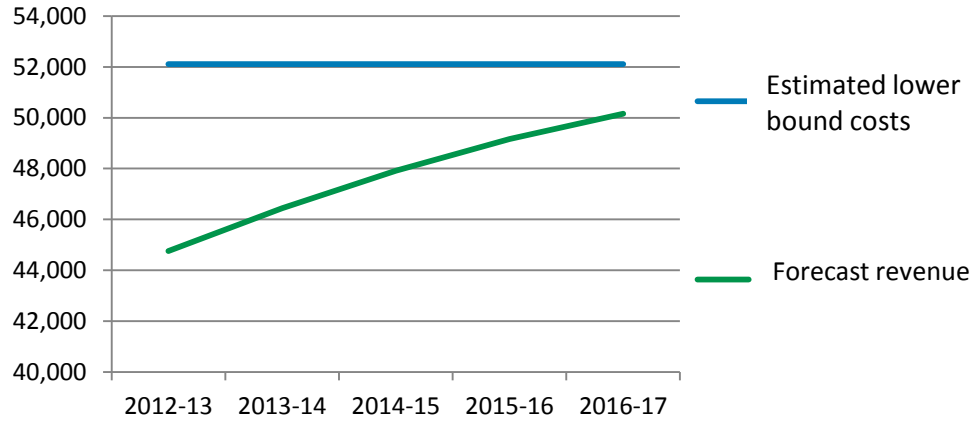
Both Seqwater and SunWater provide irrigation services to rural customers in their respective water supply schemes across Queensland. The Queensland Government sets the irrigation prices for these water supply schemes, with the first irrigation price path implemented in 2000.

The price paths were initially applied to reflect the pricing principles presented in the 1994 Council of Australian Governments (COAG) water reforms and the 2004 National Water Initiative (Department of Natural Resources and Mines 2006). These pricing principles require water prices to move towards full cost recovery, which includes a commercial rate of return on assets where practical. The irrigation price that recovers the costs of operating, maintaining and refurbishing irrigation water supply schemes is the 'lower bound' price and the level at which irrigation prices also recover a commercial rate of return on assets is the 'upper bound' price.

The most recent price paths for SunWater's (2012–17) and Seqwater's (2013–17) irrigation prices were set by the government, largely informed by the QCA's SunWater (2012b) and Seqwater (2013c) irrigation price reviews. The Queensland Government set irrigation prices to reflect lower bound prices — unless a water supply scheme's prices are already above the lower bound price level prior to the start of the price path. Prices are not required to recover a rate of return on any assets that have been established prior to the start of the price path period. A commercial rate of return is only sought for capital expenditure for augmentation that is commissioned following the start of the price path period.

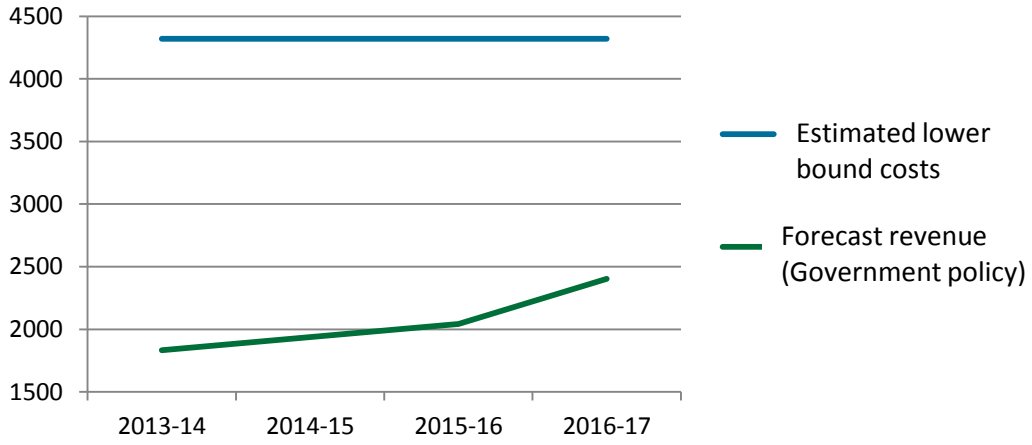
The recovery of costs for supplying irrigation water differs for each water supply scheme. While irrigation prices in some schemes are set above the lower bound prices, a number of schemes do not recover their operating, maintenance, administration and asset refurbishment costs. A CSO is provided for schemes (or scheme segments) that do not recover lower bound costs. Prices for these schemes continue on a gradual price path until they achieve the lower bound prices. As such, the difference between the revenue and lower bound costs associated with SunWater's and Seqwater's irrigation schemes is decreasing as the price path progresses (see Figures 12.6 and 12.7).

Figure 12.6 Comparison of SunWater's irrigation revenues 2012–17 (real $'000)



Source: QCA (2012b).

Figure 12.7 Comparison of Seqwater's irrigation revenues 2013–17 (real $'000)



Source: QCA (2013c).

The level of industry assistance provided through irrigation price subsidies is calculated based on the level of the CSOs provided to SunWater and Seqwater (the difference between forecast revenue and lower bound costs for each scheme). However, this does not represent the full level of assistance being provided to irrigators. Prices that do not recover all efficient costs associated with providing irrigation services (upper bound prices) will convey a benefit to irrigators.

In setting irrigation prices, the government did not consider the irrigation asset base commissioned prior to the commencement of the price paths. As such, the cost-reflective revenue associated with upper bound prices cannot be determined and the level of assistance provided through irrigation underpricing cannot be fully estimated. To make the level of assistance provided to irrigators through the price paths more transparent, the revenue requirement associated with upper bound pricing would need to be calculated for each water supply scheme.

Rural irrigation water price subsidies rationale and effectiveness

The CSO payments made to SunWater and Seqwater are to assist with the transition to more cost reflective pricing. The Queensland Government considered that the increases in irrigation prices required to recover costs were too substantial to occur immediately in certain irrigation schemes. The objective of these payments is to avoid price shocks for SunWater's and Seqwater's irrigation customers by allowing prices in certain irrigation schemes to increase gradually towards cost recovery levels.

DAF (sub. 27) considers that supporting industry in rural and regional communities through rural irrigation water price subsidies is a means of achieving and maintaining social and political outcomes, by ensuring the ongoing viability of the community.

> *Communities evolved to support agricultural production and some of these communities may not survive in their present form without the channel irrigation schemes or the continuing subsidies for agricultural water. It is true to say that the current policy is to reflect the true cost of water but the transition time is adjusted to ensure the best opportunity for adaption to the new cost structure. (DAF, sub. 27, p. 5)*

Similarly, AgForce (sub. 43) supported the smoothing of prices over time, given the capital intensive changes required to achieve more efficient irrigation systems and flow-on impacts to irrigation communities.

As noted above, there may be a rationale for providing irrigators with more certainty to allow them to adapt and respond to changes in prices. However, irrigation prices are transitioning toward 'lower bound' prices that do not recover a rate of return on existing assets (do not recover the full cost of providing these services).

Irrigation prices in Queensland have been transitioning toward lower bound prices since 2000. The National Water Commission (NWC) (2011) notes that there has been progress in implementing water pricing and institutional reforms envisaged under the NWI and the 1994 COAG Water Reform Framework, although implementation varies across jurisdictions:

> *While there has been progress in moving to lower-bound cost recovery, some rural systems, particularly in Queensland, have not yet achieved it. (NWC 2011, Chapter 2)*

The prices in certain water supply schemes are still less than lower bound prices. A potential rationale for not pricing irrigation water to recover the full cost of provision is where the government's provision of water infrastructure is not at an efficient level (for instance, the government may have initially overinvested in water infrastructure). In these instances, it may not be feasible (or efficient) to recover the full costs associated with the certain schemes from irrigators.

However, simply providing assistance to offset high costs is unlikely to provide an overall benefit for the Queensland economy. Pricing signals provided to irrigators about the efficient use of on-farm water will be distorted. This view is supported by the NWC, which notes that government intervention may lead to inefficient outcomes:

> *Government interventions in pricing and investment decisions undermine the efficacy of water pricing reforms that are designed to encourage economically efficient water use and service provision. The blurring of institutional roles and responsibilities can distort and reduce incentives for water businesses to plan and invest efficiently. It can also create uncertainty and undermine the confidence of private sector investors. (NWC 2011, Chapter 2)*

For those irrigation schemes that are able to recover costs through irrigation prices, the Government should transition to full cost recovery prices (assuming that costs incurred are efficient) — that is, recover a return on the existing asset base, in addition to recovering the efficient costs of operating, maintaining and refurbishing irrigation water supply schemes. This will improve price signals to irrigators about the efficient consumption of irrigation water.

Recommendation

12.5 The Queensland Government should set efficient irrigation water prices. Where the Government subsidises water prices for irrigators:

- **(a) the objective for providing assistance to any irrigation schemes should be clearly explained**
- **(b) the full level of assistance should be made transparent (i.e. calculate the upper bound revenue requirement and associated prices for each water supply scheme to measure total assistance provided to industry).**

12.6.3 Rural Water Use Efficiency—Irrigation Futures

The Rural Water Use Efficiency—Irrigation Futures (RWUE–IF) measure assists rural industry bodies to provide technical and financial assistance to irrigators throughout Queensland. The program aims to assist irrigators to make better use of their on-farm water supplies through improved irrigation system design and management.

The program offers various services to irrigators, including:

- providing information through workshops, field days, fact sheets and web-based tools on ways to improve water and energy efficiency
- conducting assessments on irrigation and pumping systems to determine their efficiency and to identify where water and energy savings can be made
- offering incentives to irrigators to encourage them to make system and practice changes
- providing advice on managing agricultural wastewater, including the management of nutrients applied through irrigation (Queensland Government n.d.(b)).

Policy objective and rationale

The RWUE–IF program specifically aims to assist the irrigation sector through the uptake of new technologies and by maximising the performance of on-farm irrigation hardware. While farmers face a number of incentives to allocate water to its most productive uses on-farm, there may be impediments or distortions affecting their decisions on water use and trade (PC 2006b).

The issue of irrigators not adopting on-farm water efficient irrigation practices is not a market failure in itself. However, there are potential market failures that act as barriers and impediments inhibiting the adoption of better irrigation practices. These potential market failures include:

- imperfect information — irrigators may not have access to sufficient or accurate information about their irrigation options leading to the adoption of inefficient practices. Some of the reasons why market information may be imperfect include:
  - information can be costly to obtain (this may include costs associated with gathering, assessing and applying information)
  - information can have public good characteristics (Chapter 3), which decreases the incentives for irrigators to disseminate such information (PC 2005b)
- positive externalities associated with R&D and demonstration projects — if firms are unable to appropriate all of the benefits from being the first mover, there will be an under-adoption of new technologies (PC 2005b). In this instance, an irrigator that adopts a new technology may demonstrate the net benefits of the investment to its competitors. This reduces the risk to the competitor of investing in R&D and adopting the same technology. Irrigators may not invest as much into R&D than they would otherwise if they are unable to capture all of the benefits associated with an investment in R&D.

There may potentially be a role for government to provide information to irrigators on ways to improve water efficiency. This may address potential market failures that are preventing the dissemination of water use efficiency improvements. In this instance, for government intervention to be justified, the inadequate information being provided to irrigators must result in an inefficient outcome.

> *Incomplete information itself is not necessarily inefficient because information is often costly to gather and process. In many cases, it may not be worthwhile or economically efficient for a farmer (or group of farmers) to undertake information gathering and processing. Instead, farmers may develop risk management strategies (which may be more cost-effective than addressing the information gaps themselves) to address the risks arising from information deficiencies. (PC 2006b, p. 120)*

Aside from market failures, irrigators may not adopt water use efficiency improvements for on-farm irrigation practices because it is not cost-effective to do so. If the improvement is not

sufficiently cost-effective for an irrigator, given other possible uses of capital and other inputs, the irrigator has no incentive to invest in such a practice. In this instance, the costs, (including risks or uncertainty) may be too high for irrigators to identify and/or invest in improvements when compared to the potential private economic returns. This is not a market failure for investing in water use efficiency improvements, as it may be inefficient for an irrigator to invest in such practices:

> *When the costs of new technology (in terms of capital outlay and running costs) outweigh the benefits (in terms of the value of the water saved), investment in these new technologies will reduce economic efficiency (in contrast to physical water-use efficiency). (PC 2006b, p. 119)*

The level of water scarcity and prices, as well as other factors that affect the returns for irrigators, will determine whether investing in improved irrigation efficiency is economical for an irrigator. The Department of National Resources and Mines (DNRM) noted that one of the challenges of implementing the program is to engage with irrigators, where other influences on their business, such as commodity prices and input costs (e.g. energy and fertiliser costs), weigh more heavily than water use efficiency. For some irrigators, the cost savings of adopting water use efficiency practises will be low when compared to other on-farm costs:

> *Water is not a large component of most agricultural input costs. In the more water intensive irrigated industries, such as rice growing, the cost share is 10–20 per cent. In other irrigated industries where capital and labour intensity is higher, such as horticulture, water's share of input costs may be in the range of 1–2 per cent (Appels et al. 2004). The benefits from highly water-efficient technology may be small if water use is already low. (PC 2006b, p. 118)*

The Queensland Farmers Federation (sub. 1, p. 5) submitted that the cost of these on-farm investments may limit the uptake of these activities from farmers:

> *The program has accelerated the modernisation of Queensland farming systems, it has benefited individual farmers, it has benefited the environment and greater community through efficiency savings, it has made industries more sustainable and resilient, and it has made a substantive contribution toward helping Queensland industries remain globally competitive. The [RWUE-IF] project has identified the great expense that comes with making these on farm investments and that they exceed the capacity of farmers to invest in individually. RWUE-IF has helped make these benefits accessible to a large number of farmers, in instances where the changes would not have otherwise occurred.*

While investments to improve irrigation practices may not be privately cost effective, this is not necessarily an issue that needs to be, or can be, addressed through government intervention. In particular, where factors (such as input and commodity prices and water scarcity) that affect the returns for irrigators are continually changing, providing financial incentives to directly address the cost effectiveness of irrigation practices is likely to be an inefficient use of the community's resources. Given that factors that affect the value of irrigation water to irrigators are changing over time, infrequent financial outlays will not address the long-term incentives for irrigators to invest in water efficiency outcomes. Rather, factors that affect whether it is efficient for an irrigator to invest in such practices — such as the value of water to the irrigator (e.g. water price and scarcity) — are more likely to drive on-farm water use efficiency investment in the long run.

Water markets and efficient prices create incentives to allocate water to its most productive uses on-farm. Therefore government intervention would be better targeted at reforming water markets and pricing, rather than provide financial incentives to irrigators:

> *The competitive nature of agricultural markets provide disciplines for producers to grow crops sought by consumers and to use inputs efficiently. Existing water markets also provide signals to farmers to make efficient water-related decisions because they reveal the opportunity cost for*

> *irrigation water in different regions. Water trading can shift water to uses where it yields higher marginal returns (net of distribution costs) with gains to buyers and sellers. (PC 2006b, p. 119)*

As noted above, rural irrigation prices do not recover the full cost of these services and this distorts pricing signals provided to irrigators about the efficient use of on-farm water. Such market distortions to the price of water influence whether the adoption of improved irrigation practices is privately cost effective for the irrigators. Subsidising irrigation water prices and at the same time providing financial incentives to increase the cost effectiveness for irrigators to adopt water efficient practices are not efficient.

Government intervention through financial incentives may also simply replace private investment that would have otherwise taken place. In this instance, any irrigator that receives financial assistance to improve on-farm water efficiency may, as a result, reduce private investment.

There is limited rationale for the government to provide financial incentives to irrigators to encourage them to uptake more efficient irrigation systems and practices. Given that irrigation water prices are subsidised, irrigators are unlikely to have sufficient private incentives to invest in change. However, there may be a rationale for the government to provide education, information and audit type functions to address barriers and impediments inhibiting the adoption of better irrigation practices.

Recommendation

12.6 The Queensland Government should consider narrowing the scope of the Rural Water Use Efficiency – Irrigation Futures (RWUE–IF) to focus on providing information for irrigators.

13 RESEARCH, DEVELOPMENT AND INNOVATION

Key points

- From 1992–93 to 2011–12, real research and development (R&D) activity in Queensland grew at an average rate of 5.8 per cent per annum with growth in business R&D contributing 68 per cent of the change.
- Queensland Government policies fund R&D which assists many industries, with agriculture, forestry and fishing and health related industries receiving the bulk of assistance.
- R&D plays an important role in broader innovation processes which make lasting improvements to economic, social and environmental outcomes. However, the importance of R&D, or any other activity, is not what determines if it is policy relevant.
- The rationale for public assistance to R&D primarily rests on the potential for knowledge spillovers, market coordination problems and risk and uncertainty associated with private financing of innovation activities. Markets are adept at overcoming many of the problems commonly used to justify public assistance.
- There are a variety of risks for any policy which seeks to raise the level of R&D activity or improve business innovation performance. Although best practice appraisal processes should identify the range of potential impacts of a policy, the potential will remain for unintended impacts resulting from incomplete understanding of how the economy operates, behavioural responses by market participants, informational constraints on public sector agencies and decision makers, exogenous technological changes and uncertainty. The complexity of market and innovation processes heighten these risks.
- It is important to have processes in place to support policy learning. Most assistance measures include some degree of monitoring and evaluation activity. But, overall, there is scope to improve monitoring and evaluation efforts and to consider mechanisms which support better sharing of what is learned from evaluations.
- As it is both critical and difficult to measure the additionality of a policy, R&D and business innovation policies should be guided by a comprehensive set of funding principles in order to minimise the ex ante risks that policies will not be effective.
- R&D provides broad community benefits, as does infrastructure, education and many other activities in which government plays some role. Empirical evidence is not capable of determining whether the level of public investment is too high or too low in any of these activities given the complexity of the issues involved.

Research and Development (R&D) is an important source of technological change, economic growth and improvements in welfare. The value of R&D is realised through the exploitation of knowledge to improve economic, social and environmental outcomes. Innovation processes explore how best to put new knowledge to use, introduce new products and processes, improve quality and adapt organisational institutions and structures.

Many government policies across all levels of government influence the level of R&D and business innovation processes. Some policies set the broad framework conditions which influence the incentives for private investment, while others establish and fund various

institutions which assist in generating, absorbing and diffusing new knowledge. Many other policies seek to directly and indirectly assist the performance of business R&D and innovation.

13.1 Rationales for public support

Governments support R&D to improve their own functions and service delivery. DAF noted the linkages between R&D and improved program performance:

> *There are also inter-dependencies between measures. The ability of the Queensland Government to deliver the programs of Biosecurity Response and Recovery, Rural Water Use Efficiency and Reef Water Quality Protection Plan, amongst others, hinges on work it undertakes or funds through agricultural Research, Development and Extension (RD&E)...A primary input of these programs is information about management practices or systems, information which is gathered, tested and disseminated through, primarily, state-funded applied research, development and extension. (sub. 27, p. 1)*

Governments also support R&D to improve broader economic performance, including through policies which assist the R&D activities of businesses, universities and other institutions.

A number of arguments suggest that, in the absence of public support for R&D, too little R&D would result. 'Too little' means that in the absence of public support, there would be an opportunity for policies to be introduced to raise the level of R&D activity and that this would translate into broad and lasting improvements in welfare. The rationales for intervention primarily rest on the existence of knowledge spillovers, the role of institutions, coordination problems, risk and uncertainty in financing investment, and various other forms of externalities, such as, locational externalities.

Knowledge spillovers and absorption costs

Spillovers can be classified as knowledge spillovers or pecuniary (rent) spillovers. **Knowledge spillovers** usually relate to disembodied knowledge transmitted through formal and informal professional communication in journals, at conferences, through other interpersonal contact, and through the movement of human capital around the economy. **Pecuniary (rent) spillovers** relate to knowledge embodied in equipment or material products supplied by one firm and used as inputs in production elsewhere. When users achieve higher productivity, lower costs and/or enhanced product quality as a result of their suppliers' innovation activity, some of the resulting benefits may flow either to the user or the final consumer, but not back to the supplier. Whereas knowledge spillovers can have implications for R&D policy, pecuniary spillovers generally do not.[79]

The most cited economic rationale for public funding of R&D is based on the existence of knowledge spillovers. Knowledge spillovers can provide benefits to users of knowledge which are not fully reflected in the compensation they pay, if any, to producers of knowledge. Knowledge spillovers can result because knowledge, at least to some extent, and depending on conditions, is characterised by the property of non-excludability and non-rivalry (see Chapter 3).[80] Researchers may be unable to exclude or deny access to the new knowledge from their R&D investments.

[79] See IC (1995b, pp. 167–9) and Griliches (1979). See also van Pottelsberghe (1997) and Shanks & Zheng (2006), Appendix F for a discussion of spillovers in the context of measurement issues, trade, foreign direct investment, technological proximity measures and the construction of knowledge stocks.

[80] *Non-rivalry* is often cited as a property of knowledge that may provide a rationale for public support to R&D. The idea is that a 'piece' of knowledge can be made available to many users simultaneously at no extra cost

Where knowledge is non-excludable, private actors may have insufficient incentives at the margin to invest in research because some of the benefit of the research accrues or spills over to others. The objective of many public R&D policies is to increase R&D expenditure to a higher level than would have been the case in the absence of intervention.[81]

Knowledge spillovers are only policy relevant if public support stimulates additional R&D:

> *…if the private returns are above the required rate, then the investment will proceed regardless of the magnitude of any spillovers. In such inframarginal projects, subsidies would have no effect on whether the investment is made, and no matter how big spillovers were, there would be no case for public support. Thus, spillovers are only a relevant rationale for public support when subsidies change the private decision about whether to proceed with an investment. (PC 2007, pp. 64-65)*

The generation of new knowledge may have high ex ante fixed costs and low ex post marginal costs of diffusion. As R&D sometimes can involve significant up-front investments in research, R&D can exhibit 'fixed costs'.[82] Once new knowledge results from research, its diffusion may involve low marginal costs to each additional user of the knowledge. This trait of knowledge may increase the likelihood that spillovers are large and may provide a justification for public support to meet the fixed costs of research, which is then diffused at marginal costs to many users.

The properties of non-rivalry, non-excludability and the cost structure of knowledge are a starting point in the analysis of the impacts of R&D and spillovers, and the diffusion of technological and other forms of knowledge. In some cases these properties are a fair representation of the conditions that influence the transmission of knowledge. In most cases they overstate the extent to which knowledge costlessly spills over and is used by others as a 'free input' (Box 13.1).

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to the researcher. However, the Productivity Commission (2007) notes that knowledge is only economically useful when it is embodied in people, machines or goods, which are rivalrous in consumption. Therefore, spillovers can be better understood from considering the incremental cost of usefully embodying knowledge (diffusion).

[81] See Arrow (1962) for an early statement of the rationale for public support of R&D.

[82] The generation of new knowledge is subject to 'indivisibilities'. A commodity is indivisible if it has a minimum size below which it is unavailable, at least without significant qualitative change. To produce a given step or expansion in knowledge a fixed level of investment may be required, below which there is no advancement in knowledge. Indivisibility yields economies of scale and scope.

Box 13.1 The nature of knowledge spillovers

Knowledge is 'stored' and transmitted in different ways. New technological knowledge can be embodied in improved or new capital equipment and intermediate inputs. Knowledge can also be tacit in the sense that it has not been explicitly recognised and articulated, but resides 'in the heads' of those who possess it (see Machlup 1980, Nelson & Winter 1982 and Cowan *et al.* 2000).

Fundamental innovation generates knowledge characterised by a high degree of uncertainty in terms of the potential uses and impacts of the knowledge. Secondary innovation, in part, explores the opportunities created by fundamental innovation and involves a process of learning how to make best use of the new knowledge. Use of the knowledge is refined over time as outcomes become more predictable and a common understanding of the knowledge increases amongst suppliers and users. The knowledge is increasingly embodied in physical objects or codified, such as, in patents, journal articles and manuals. As technologies mature, an increasing proportion of the knowledge required for use of the technology evolves from being highly tacit to being explicit.

Knowledge which is more codified, articulated or embodied tends to require fewer resources in its re-use and adaptation (that is, diffusion costs are relatively less). Uncodified, tacit, or unarticulated knowledge can entail significant absorption and imitation costs.

Some of the factors influencing the incentives to codify include: whether institutional arrangements affect the structure of relative rewards for codification activities; the state of available technologies affect the costs of codifying knowledge (e.g. the maturity of the technologies); and the storage, retrieval and transmission of information (Cowan *et al*. 2000). The high cost of codifying a certain type of knowledge can reduce the incentives to go further, by lowering the private rate of return on codification. This low rate of return can, in turn, support the development of a large community of people possessing the tacit knowledge. In this case, there will be a labour market that can be used to store and transfer the knowledge from firm to firm. Of course, the presence of a thick labour market as a way of transferring knowledge further reduces incentives to codify.

Relaxing the assumption that knowledge is non-excludable and is characterised by low incremental costs in diffusion, weakens the rationale for public support to R&D.

Pure basic and strategic basic research (defined in Box 13.2) are characterised to a greater extent by the property of non-excludability than applied research or experimental development is.[83] In general, businesses can appropriate a larger proportion of the benefits of investments in the latter types of R&D. Appropriability can be increased through, for example, secrecy, investments in complementary assets, and time to market strategies.

[83] Productivity Commission (2007, p. 60), considered that the spillover benefits of basic research do not require non-excludability or ease of use of knowledge (low incremental costs in diffusion) as the institutions that facilitate codification and open exchange would be weaker in the absence of public funding.

Box 13.2 Types of R&D

Pure basic research

Experimental and theoretical work undertaken to acquire new knowledge without looking for long-term benefits other than the advancement of knowledge.

Strategic basic research

Experimental and theoretical work undertaken to acquire new knowledge directed into specified broad areas in the expectation of practical discoveries. It provides the broad base of knowledge necessary for the solution of recognised practical problems.

Applied research

Original work undertaken primarily to acquire new knowledge with a specific application in view. It is undertaken either to determine possible uses for the findings of basic research or to determine new ways of achieving some specific and predetermined objectives.

Experimental development

Systematic work, using existing knowledge gained from research or practical experience, which is directed to producing new materials, products, devices, policies, behaviours or outlooks; to installing new processes, systems and services; or to improving substantially those already produced or installed.

The performance of R&D can result in expansions in knowledge, but it also increases an institution's absorptive capacity (see Cohen & Levinthal 1989 and Griffith *et al*. 2003). R&D can improve an institution's ability to identify, access, understand, learn and apply knowledge from outside the institution.

To the extent that businesses must invest in R&D to gain the benefits of knowledge generated by others, businesses do not 'free ride' on the efforts of others. This reduces the likelihood that knowledge spillovers will result in underinvestment in R&D (Box 13.3).

Box 13.3 Absorption costs and underinvestment in R&D

Businesses and other institutions must often make investments in their capabilities to identify, understand and exploit the benefits of others' commercially useful knowledge. This reduces the prospects for free riding on the global science and innovation system. But the extent to which the presence of absorption costs are relevant for public science and innovation policy depends on the context.

Where innovative firms are engaged in competitive rivalry, they will undertake R&D to absorb each others' ideas, develop new innovations and to gain a temporary edge — thus pushing the knowledge frontier further out in a virtuous cycle. These circumstances are more likely in particular markets, where firms are undertaking more radical business innovations. Public support may potentially intensify such cycles of innovation, but strong incentives already operate through market forces.

Where absorption of external knowledge is based on R&D that exploits non-R&D strategies (such as hiring experts) or that does not produce its own global spillovers, the grounds for public support are often weak. Absorptive strategies aimed at relatively cheap imitation of widely available technologies, while commercially useful, are likely to proceed without support.

On the other hand, the costs of absorbing the foreign R&D could sometimes be high, but, once available domestically, may not be costly to copy. Leading domestic firms are then effectively forced to undertake more costly larger-scale R&D to absorb and partly re-create foreign stocks of knowledge. But if other domestic firms can cheaply absorb the knowledge created by these leaders, then the leaders have weaker than optimal incentives to undertake R&D and subsidies are potentially justified. Again, these spillovers are more likely to arise if the novelty of the innovation is greater and there are a wide group of other domestic firms than can exploit the knowledge generated within Australia by the technological leaders.

The same situation can apply if there is a need for innovation that is highly specific to Australian circumstances and the investments of leading firms can, as above, be cheaply imitated by rivals.

Public policy strategies that promote trade openness, investment in human capital at all levels, the free movement of (especially highly skilled) people across borders, the development of excellent information and communication technology (ICT) infrastructure, and appropriate standards are important methods for reducing the costs of absorption. They are likely to widen the types of investments that can be successfully used to promote absorption.

Source: PC (2007).

Risk, uncertainty and capital market imperfections

The 'production' of advancements in knowledge through R&D investment is subject to technical risk and uncertainty.[84] In addition, high levels of risk can be associated with commercialisation and exploitation of the potential benefits of knowledge. These risks and uncertainties are often argued to be higher than for alternative forms of business investment.

[84] For a discussion of risk and uncertainty in the context of R&D their implications (see Arrow 1962, IC 1991a, and Rassenfosse *et al.* 2011).

Information problems can arise when parties to a transaction have different levels of knowledge about the trade. This can be an issue for owners of information seeking to sell at a profit, because to allow a full assessment of the benefits of the information, it is necessary to reveal the information itself. Conversely, potential buyers do not fully know beforehand what they will receive. These problems can be compounded when the trade involves investments with uncertain outcomes.

Some R&D and business innovation policies seek to address the problem of imperfections in capital markets that can constrain private external funding of R&D investment:

> *...even if problems associated with incomplete appropriability of the returns to R&D are solved using intellectual property protection, subsidies, or tax incentives, it may still be difficult or costly to finance R&D using capital from sources external to the firm or entrepreneur. That is, there is often a wedge, sometimes large, between the rate of return required by an entrepreneur investing his own funds and that required by external investors. By this argument, unless an inventor is already wealthy, or firms already profitable, some innovations will fail to be provided purely because the cost of external capital is too high, even when they would pass the private returns hurdle if funds were available at a "normal" interest rate. (Hall 2002, p. 3)*

Hall (2002) discusses three reasons why there might be a gap between the external and internal costs of capital:

- asymmetric information between inventor and investor: an inventor frequently has better information about the likelihood of success and the nature of the innovation project than potential investors. The implication of asymmetric information, coupled with the cost of mitigating the problem, is that firms and inventors will costs that are higher for external than internal capital for R&D due to the 'lemons' premium[85]
- moral hazard problems: these problems can arise on the part of the inventor or from the separation of ownership and management. An example is where risk averse managers are reluctant to invest in uncertain R&D projects which are in the long-term interest of shareholders
- tax considerations that drive a wedge between external finance and finance by retained earnings: depending on the design of tax systems, including R&D assistance policies, the cost of financing new investment may differ by source of funds (debt, new shares or retained earnings).

According to Hall (2002, p. 14), these reasons '…imply that new debt or equity finance will be relatively more expensive for R&D than for ordinary investment, and that considerations such as lack of collateral further reduce the possibility of debt finance. Together, these arguments suggest an important role for retained earnings in the R&D investment decision.'

These information problems are not necessarily 'failures' in finance. Markets have also proven to be very innovative in overcoming these problems (Box 13.4).

[85] See Akerlof (1970) on the problem of asymmetric information in used car markets. Applied to R&D investment, the 'lemons premium' means that external financiers will require a higher premium on R&D investments compared to ordinary investments because R&D projects tend to be longer term with uncertain outcomes and financiers have relatively greater difficulty distinguishing between good R&D projects and bad R&D projects.

Box 13.4 A transactions cost view of 'failure' in external financing of R&D investment

A major limitation of some descriptions of market failure problems based on information asymmetries, other transactions costs and general uncertainty is the definition of the appropriate counterfactual. If the counterfactual is a market with no information gaps, then the existence of information asymmetries and its consequences are indeed 'failures'. But if the counterfactual is one in which transactions costs are viewed as real features of the market, like other costs, gaps in finance do not necessarily constitute a failure (Zerbe and McCurdy 2000 and Demsetz 2002).

From this perspective, a gap between internal and external costs of finance need not signal a 'market' failure, but reflect the role of the firm as an economiser of transactions costs that are higher outside the firm. Inside the firm, managers know more about the merits of various projects and whether their internal advocates may be exaggerating their benefits and prospects, and these managers have a wide range of carrots and sticks, not available to outsiders, for penalising poor internal disclosure.

Governments are unlikely to have any special access to information that would allow use of their own judgements to economise on transaction or information costs for firms who need access to external finance.

Financial intermediaries have shown a dynamic capacity to develop their own solutions to information asymmetries, adverse selection and other agency problems. For example, warranties, collateralisation, development of specialised expertise in judging risky R&D ventures, and giving up managerial control to financiers have been developed as mechanisms to solve or reduce the problems posed by asymmetric information in goods and finance markets. Finance markets are continually adapting to develop new approaches for dealing with asymmetric information, whether R&D or other risky investments. Indeed, in models of risky finance, Lacker (1994) was unable to find circumstances where government intervention in loans markets was superior to new forms of financial intermediation. Government interventions in capital markets risk impeding the development of innovative private initiatives.

A concern for policy interventions in highly risky activities, like R&D, is that governments face political penalties for bearing risk. Wallsten (1997) examined the financing arrangements of the Small Business Innovation Research program and found that it had low additionality, almost completely crowding out private finance. He conjectured that the low additionality reflected the political need for commercial success, which prompted fund managers to select the most promising projects, which would have received private funding anyway.

An alternative problem is that governments may be less able to credibly commit to early exit strategies from financing a firm's project because it may be seen, politically, as failing to provide sustained support. This is important because the existence of highly uncertain, but potentially highly profitable, R&D projects suggests an options approach to financing projects compared with the usual static financing approaches. Under an options approach, the financier puts forward finance for a project to commence, with the option of discontinuing finance if the technology looks unpromising later.

Overall, a broad reading of the literature suggests limited scope for governments to use policy instruments to improve welfare outcomes from any financing gaps. This suggests significant caution in giving public support to address capital market imperfections.

Source: PC (2007).

In any case, financial market policy interventions to address these problems have frequently performed poorly:

> *The disappointing and occasionally disastrous performance of government initiatives to subsidise the provision of venture capital for 'hi-tech' enterprises has signalled a predominantly negative message as to the viability of such markets. The Management and Investment Company scheme was premised on the assumption that then existing institutions systematically avoided financing viable (albeit risky) investments. Instead, the experience is more consistent with a tendency for governments to systematically underestimate the inherent riskiness of these types of projects. (IC 1991a, p. 55)*

Coordination failure

Markets are adept at solving coordination problems. Private coordination of R&D efforts can address problems associated with the high fixed costs of investment in R&D and the level of risk of R&D investments, as well as exploit specialisations, reduce the appropriability problem, better diffuse the learning from investments within partners, and result in improved business performance.

However, in limited cases coordination failures can occur where there are spillovers and external benefits to other parties from one firm's coordination efforts resulting in underinvestment in coordination efforts. Coordination can also fail where businesses and other agents do not have all the necessary knowledge about markets, technologies, and other conditions to efficiently design, evaluate, choose and implement the activities they wish to carry out (Rassenfosse *et al.* 2011, p. 32).

Governments fund a range of policies designed to assist business innovation apart from policies which specifically target R&D investment. These policies often seek to improve coordination through, for example, promoting linkages between businesses, universities and other institutions.

Australia has low levels of collaboration on innovation between universities and industry compared with other OECD countries.[86]

In Queensland, the science research base is reasonably collaborative, including international linkages. However, similar to the rest of Australia, collaboration between businesses and higher education or public research organisations on innovation is much less than in most countries (Queensland Office of Chief Scientist 2014b).

Research Australia sees a role for government in further developing linkages:

> *...there is justification for government intervention to improve the interactions between universities and business. This includes measures to encourage universities to seek to develop relationships with business as well as providing assistance to businesses, particularly small businesses, to enable them to identify and engage with researchers within universities. (sub. 37, p. 5*

The rate of collaboration in Australia has featured prominently in discussions about how to improve Australia's innovation and economic performance. Rates of collaboration — often

[86] For a discussion see Department of Industry (2014), PC (2007), and Verreynne & Steen (2014). Cross-country performance differences are influenced by country characteristics, for example, industry structure, state of technology relative to each market's technological frontier, business demographic characteristics, institutional and governance structures, and human capital characteristics. Country characteristics need to be taken into account when using international comparisons to assess whether collaboration in Australia is broadly appropriate.

used as an indicator of the state of linkages within Australia's innovation system — is seen as important (and policy relevant) to the extent that it assists in realising the potential benefits of R&D undertaken by universities and public research bodies, and affects the rate of business innovation flowing through to business performance and productivity growth.

A business's innovation strategy may or may not involve formal R&D, may be achieved largely in-house or through many different forms of joint or collaborate arrangements, and involve any number of strategies to achieve needed information and technological know-how. Collaboration with universities or other public research bodies is one strategy amongst a choice of alternative strategies. Cross-country differences in rates of collaboration may, in part, simply reflect these choices.

Competition and the profit motive give businesses a strong incentive to improve their goods and services, and/or introduce new goods and services. Depending on the strategies businesses adopt — how they intend to compete in their markets and the role of innovation in those strategies — they have a monetary incentive to develop relationships with other businesses, as well as higher education and other institutions, where those linkages will help achieve improved business performance. The incentives for higher education and other non-business institutions to develop linkages with businesses will generally be weaker. Therefore, the extent to which there are sub-optimal linkages between institutional sectors may have more to do with the features and impacts of public policy interventions than the decisions of market participants.

Even in the absence of policy impediments to collaboration, 'network externalities' might lead to sub-optimal linkages between businesses and institutional sectors. Each potential collaborator may not take into account the potential benefits to other parties from their individual choice to collaborate.

There are many design features of public policies which influence linkages between businesses and other actors in an innovation system. Some features include:

- R&D assistance can be designed to support the undertaking of R&D within institutions which include multiple participants and sources of funding to address the twin objectives of expanding the state of knowledge while simultaneously establishing mechanisms for the diffusion of knowledge.
- The R&D funded within higher education and other non-profit institutions (e.g. by research field or socio-economic objective) influences its relevance to industry.[87] Priority setting and project selection mechanisms involving business input can help better align R&D efforts between sectors.
- The extent to which university R&D substitutes for or complements business R&D projects will influence the incentives to collaborate.
- The design of intellectual property management policies can significantly alter the incentives for researchers and research bodies to identify, manage and exploit the outcomes of R&D,

[87] There are significant differences between university and business R&D (Queensland Office of Chief Scientist 2014b). For example, business R&D is concentrated in resources, manufacturing, information and built environment areas, while university R&D is concentrated in the medical domain and frontier sciences. This implies that there may be a lack of complementarity between university and business R&D which may help explain the level of linkages between sectors. However, there are many problems with drawing this sort of conclusion including that the purpose of university R&D — or a significant proportion of it — is to expand the state of knowledge in areas that provide benefits other than through the production and consumption of goods and services, or provide advances that only over the long-term impact on economic systems.

including through university and public research institute intellectual property commercialisation activities.

Box 13.5 provides examples of specific policies.

In a submission to a senate inquiry into Australia's innovation system, Universities Australia noted a range of other mechanisms being pursued to improve linkages:

> *Australian universities are committed to extending and deepening their collaboration and connections with the end-users of research. Strategies include locating research students in industry and encouraging researchers to engage end-users in research programs, including through staff exchange and joint use of facilities. The broadening of research training is also enhancing the attractiveness of PhD graduates as employees in industry, which in turn facilitates connections with the end-users of research. (Universities Australia 2014, p. 6)*

Box 13.5 Public policies influencing linkages with industry

Australian Government policies

The Australian Government has a range of science and industry policies that are designed with the development of institutional linkages in mind. Some examples include the Australian Research Council's Linkage Projects, Industrial Transformation Research Program, Linkage Infrastructure, Equipment and Facilities scheme, ARC Centres of Excellence, and Co-funded Centres program. The Department of Industry administers the Cooperative Research Centres program, Connecting Australian-European Science and Innovation Excellence program, and facilitates linkages through the Research Service Provider service in conjunction with the R&D Tax Incentive. CSIRO's Small and Medium Enterprise Centre and Flagship Collaboration Fund also support linkages between public research organisations and businesses.

Research, Development & Extension (RD&E) co-investment model

Funding for RD&E is based on a co-investment model. A funding pool is drawn from primary producers who provide support for RD&E through national levies managed by Rural Research and Development Corporations. These levies attract matched funding from the Australian Government. Other sources of funding come through CSIRO, higher education institutions, other research programs, the Queensland Government (particularly through DAF), non-profit organisations and privately owned businesses.

Queensland Government Intellectual Property Principles

The Queensland Public Sector Intellectual Property Principles, and the information licensing framework the Australian Governments Open Access Licensing Framework (AusGOAL), provide the high level policy guide for the management of intellectual property (IP) by Queensland Government agencies. Commercialisation principles include:

- In making decisions about licensing and other commercialisation of IP, the agency must be satisfied that Queensland is obtaining the maximum benefit.
- If a core function of the agency is to disseminate policy and public sector information, it may be the agency's policy to focus on open government Creative Commons' licensing choices rather than restrictive licence exceptions.
- Where an agency has obtained funding to support R&D projects, the agency should prepare an IP plan (pathway) to demonstrate how the IP will be protected, commercialised and managed.
- As a general rule, commercialisation of IP should be carried out with the assistance of another party with appropriate IP skills and expertise.
- When selecting a commercial partner, such as a head licensee or distributor to commercialise an IP asset, agencies should, where practicable, select a Queensland or an Australian owned enterprise.

Rewards for Creating Commercially Valuable Intellectual Property Directive

The Queensland Government Directive prescribes the conditions for offering monetary rewards (cash payments or leave flexibilities) to eligible public sector employees who develop intellectual property that is successfully commercialised with positive revenue returns to the Queensland Government. The scope to provide rewards is intended to provide incentives for the better identification and exploitation of the value of public sector IP.

Sources: DSITIA (2013); and Public Service Commissioner (2007).

Locational externalities

Clusters are a geographic concentration of firms, higher education and research institutions, and other public and private entities that facilitate collaboration on complementary economic activities.

Policies to promote clusters are often justified on the basis of market failures related to geographic locational externalities, information asymmetries, and network effects. Cluster policies also seek to support stronger interaction between individuals, businesses and institutions. Clusters provide a range of benefits:

> *Co-location is associated with better access to specialised, high productivity employees with lower search and training costs. At the supply input level, intermediate industries provide downstream firms with local access to specialised materials and components, finance, marketing and business services, as they themselves exploit greater internal economies of scale and benefit from reduced transport costs. In addition, technological externalities arise through shared technological information and knowledge spillovers (Langlois & Robertson, 1996). Other kinds of advantages associated with clusters derive from more favourable market conditions, namely the presence of demanding customers, greater rivalry and complementarities in products and technologies (Porter 1998). (Uyarra & Ramlogan 2005, p. 6)*

The main rationale to promote clusters is to achieve an increase in knowledge spillovers among cluster firms and thus generate a collective pool of knowledge that results in higher productivity, more innovation and an increase in the competitiveness of firms.[88] While clusters can provide benefits, policy attempts to artificially create them have not been successful:

> *It is important to remember, however, that many benefits of clusters occur naturally, without policy intervention. The influence of policy, while important, is often indirect, driven by policies such as infrastructure, research, education and training rather than policies directed at clusters per se. As noted by OECD (2009, p.26), "a frequent mistake made by policy makers and analysts is to think that clusters are synonymous with deliberate policies or deliberate cooperation in formal networks". It is worth noting that most of the instances of innovative clusters referred to in the literature, not least highly celebrated cases such as Silicon Valley, have emerged without specific policies to foster networking or cluster behaviour (Sölvell et al. 2003, OECD 2007b).*

Empirical research has similarly found limited success from government created clusters:

> *Van der Linde's (2003) cluster meta-analysis, covering 733 clusters in 49 nations, identified just one instance, the electronics goods cluster in the Hsinchu Science Park, where a competitive cluster was established primarily due to a conscious government action to attract it. In a worldwide survey of clusters by Enright (2000), the role of policy was seen mainly as 'unimportant' by respondents in terms of their contribution to the development of the cluster. Most clusters have tended to evolve instead from initial, largely spontaneously generated clustering, followed by more conscious policy-support efforts. (Porter 1998 and Andersson et al. 2004 in Uyarra & Ramlogan 2005, p. 10)*

However, many aspects of government policies can indirectly influence cluster development. For example, where decisions are made to fund R&D, consideration is also given to the governance and other arrangements under which the R&D will be performed. Co-funding arrangements can promote linkages between businesses and institutional sectors, and may also help ensure that funding results in truly additional R&D activity.

[88] See OECD at http://www.oecd.org/sti/outlook/e-outlook/stipolicyprofiles/interactionsforinnovation/clusterpolicyandsmartspecialisation.htm.

13.1.1 The additionality of R&D

Public support of R&D to assist industry should only be undertaken where it leads to a net increase in R&D activity:

> *The challenge for public policy measures is to elicit private investments that would not otherwise have been made ('additionality') and that generate total private and spillover returns that are still sufficiently positive to exceed the costs associated with the policy measures. These costs include the efficiency distortions of taxation required to finance the measures, the utilisation of resources on administration and compliance, and the consequences of poor choices when selecting projects to be funded. Programs need to be designed to ensure that public funds stimulate genuinely new R&D rather than displacing privately funded R&D. (PC 2007, p. xix)*

R&D policies can have a range of unintended consequences that result in no, or less than expected, additional R&D being undertaken by crowding-out private R&D through price effects, directly displacing it, and/or businesses substituting publically supported R&D for self-financed R&D (Box 13.6).

AgForce (sub. 43, p. 9) cited evidence from the Australian Farm Institute from a survey of 50 agri-business firms investing over $1 million per annum in R&D. The firms:

> *...saw government funding as complementing their activities. Of these firms, 40% indicated they would reduce their investment levels in response to a 50% decrease in investment by RDCs and 55% would increase their investment if RDCs were to increase levels by 50%. The study also highlighted that motivating factors behind private investment include the level of public R&D investment and public/private interactions.*

Box 13.6 Unintended effects of public support for business R&D

Public policies that aim to stimulate additional business R&D investment might be successful where they result in spillovers that stimulate private R&D by raising the returns to business R&D investment. R&D in higher education and government institutions can provide technological opportunities for business investment by advancing the science and engineering knowledge base. Where this knowledge is formally transferred or spills over to businesses it can raise the private return to additional investment by businesses. Other benefits associated with public R&D contracts can include:

- increases in the efficiency of the firm's R&D by lowering common costs or increasing absorptive capacity
- signalling future demand
- improving the chances for success on the firm's other R&D projects
- reducing the barrier from high fixed R&D start-up costs.

However, policies aimed at stimulating additional business R&D investment can have unintended effects.

- *Crowding-out*: Government spending can crowd out private investment by increasing the demand for R&D. Increased demand will result in R&D costs rising. The increase in costs will also affect the investment decisions of firms that are not a direct target of the policy measures. Goolsbee (1998) and David and Hall (1999) argue that the major effect of government funding is to raise the wage of researchers. This raises the costs of undertaking R&D and, therefore, firms will invest less in R&D at the margin. Even if the total nominal amount of R&D is higher due to government funding, the amount of knowledge from R&D investment will be less as average efficiency is lower.
- *Displacement/substitution*: Public money can directly displace private funding where contracts are targeted in areas of technological development that firms would otherwise undertake. In this case, public funding substitutes for private funding, with little change in the overall level of research. For other firms, displacement relates to lower expected rates of return to R&D in the same area as the policy intervention, because of the expectation that the contracted firms will succeed in producing commercially exploitable innovations and that the government may disseminate knowledge to increase competition in the end-product market.
- *Allocative distortions*: Government allocation of R&D resources may be less efficient than market allocations (that is, directed towards projects which improve welfare less). Government allocation can also distort competition amongst firms.

International and domestic evidence on R&D policies suggests that R&D assistance that allows businesses to choose the R&D projects, and that work by lowering the after-tax cost of investments in R&D (such as the R&D Tax Concession), can result in some additional R&D being undertaken:

> *The evidence suggests that it is likely that every dollar of public support generates somewhat less than a dollar of new business R&D because it substitutes for R&D that businesses would otherwise undertake. This may well rise above one dollar for well designed incremental schemes. (PC 2007, p. 108)*

The additionality of government business R&D grants that are capped and use merit-based selection of R&D projects was considered to be highly dependent on policy design features.

Some studies suggested high additionality of competitive grants policies, but poor program design risked lower additionality than tax concessions because of selection biases in the application and merit award processes for grants. These biases can favour firms with projects that have strong commercial viability and that would probably still be financed in the absence of the grants. There was also a risk that:

> *… flaws in the selection processes (reflecting the difficulties in technical assessments by grant committees of the quality of R&D) result in choices of projects with high additionality, but little likelihood of commercial or spillover gains. Consequently, outcomes from competitive grant programs depend on the nature of grant selection processes. (PC 2007, p. 108)*

While a reasonable number of empirical studies identified a crowding-out effect from public R&D, the Productivity Commission considered that, overall, there was little crowding out between government-funded R&D in public institutions and the R&D performed and financed by businesses. However, crowding-out was a risk for individual, publicly funded projects with research applications likely to be used by relatively narrow groups of industry members.

In general, European studies tend to provide support for significant additionality, whereas studies of the effects of United States policies support low or no additionality.[89]

13.1.2 The social return to R&D

The social return to R&D is the sum of the conventional return (a normal risk-adjusted rate of return), any private supranormal returns, and external effects (including spillovers).

Both international and Australian empirical studies generally support the finding that the private rate of return to R&D investment is positive and higher than for other forms of capital investments (Box 13.7). As R&D investments are often riskier, the higher rate of return largely reflects a return to risk.

Economy-wide and industry studies of the impacts of business R&D generally support the finding that the social return to R&D, while imprecisely measured, is likely to be high on average reflecting a return to the external effects of R&D, in particular, knowledge spillovers.

[89] Productivity Commission (2007), chapter 4, provides a good summary of the empirical literature as well as the methodological and other caveats surrounding estimated returns to R&D.

Box 13.7 The effects of R&D: some empirical findings

- Social rates of return on basic R&D are higher than those on applied R&D.
- Public R&D yields lower rates of return than private R&D, but higher rates of return than public infrastructure.
- Private rates of return to R&D investments are generally higher than those observed for other forms of capital. However, the difference may largely reflect the higher risk of R&D investment relative to other investments. While some projects earn very high rates of return, many more projects fail: the distribution of returns is highly skewed.
- Social rates of return to private R&D investment are generally well above private rates of return. The wedge between the two rates of return – the return to spillovers – varies significantly by industry, country and point in time.
- R&D spillovers reduce variable costs and enhance productivity; the magnitude of the results depends on whether the sample studied is at the firm level or at the industry level. Similar qualitative results were found in project-level samples within firms.
- R&D spillovers contribute to output expansion (more products) and to output price reduction (declines in their quality-adjusted price).
- R&D spillovers are generally partial substitutes for labour and materials, but complements to capital (other than R&D capital). This means that spillovers reduce the demand for labour and materials, and increase the demand for capital. Since the major component of R&D capital is skilled labour, the substitution effect that acts on the demand for labour should be seen, at least in part, as one that reduces the demand for unskilled labour in favour of skilled labour.
- R&D spillovers induce an increase in R&D capital investment in R&D capital-intensive firms, but act as a substitute for R&D capital in firms where R&D capital investment forms a small portion of total investment. However, at the industry level, spillovers are generally a substitute for the R&D investment of the recipient industry.
- R&D spillovers in one country contribute to productivity gains in other countries. These international spillovers are a function of trade and other relations (for example, educational and cultural ties) that countries maintain with each other. Moreover, the direction of productivity gains induced by international R&D spillovers is from large R&D-intensive economies to small open economies that are less intensive in R&D. In other words, economies that spend a relatively low proportion of their GDP on R&D (for example, Canada) benefit more, through cost reductions and productivity increases, from international spillovers than those that spend a relatively higher proportion (for example, the United States and Japan).

Sources: Department of Finance (Canada) (1997); Bernstein (1994); Mohnen (1992); Henderson & Cockburn (1993); Grossman & Helpman (1991); Bernstein & Yan (1995); Bernstein & Mohnen (1994); and Coe & Helpman (1993).

'Average' rates of return to R&D (that is, the return to the stock of all business R&D) are not a good measure of the return to marginal investments (for example, if a government was considering investing an additional $100 million in R&D). While the return is positive, some Australian studies have found an apparent decline in the effect of R&D on productivity growth:

> *As found in Shanks and Zheng, it appears that elasticities are steadily declining. This is consistent with the view that when R&D investment rates were much less, the marginal gains to*

> *productivity were more. These diminishing marginal effects might reflect large early catch-up gains from investing in R&D when a country is well behind the world's best technical frontier. Arguably, that gap has now closed somewhat, and with it, the marginal gains. As we discuss later, there is also some evidence of this phenomenon using international panel data. It is worth noting that even with a fixed elasticity, the implied spillover rates of return decline over time as the GDP to R&D ratio has fallen. With elasticities also trending slowly down, this implies more rapid reductions in spillover rates — though they remain high. (PC 2007, pp. 124–5)*

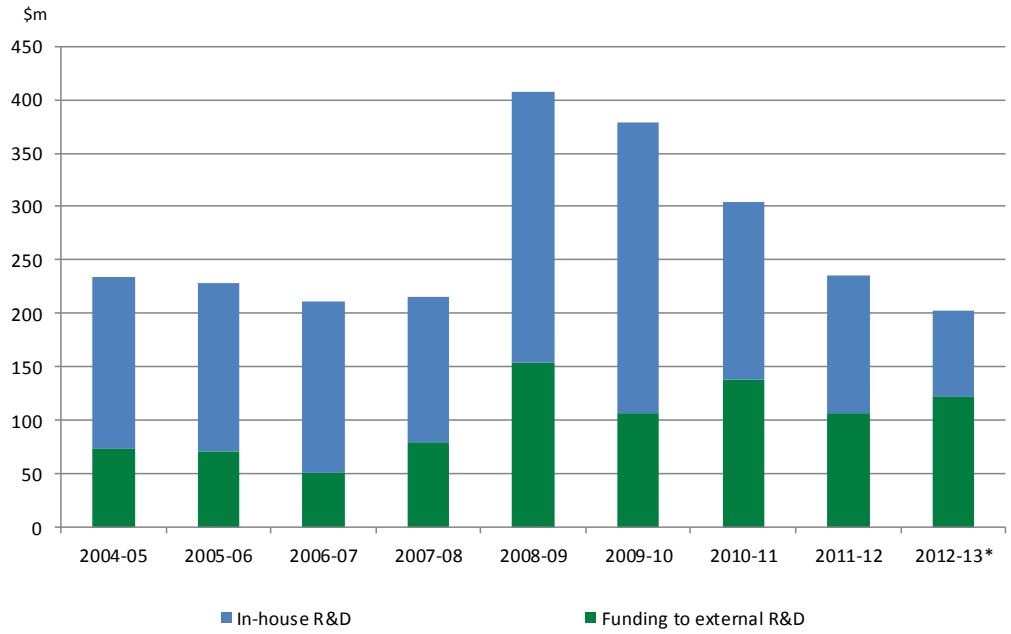
Given possible reasons for a diminished effect of R&D (Box 13.8), and significant changes in investment patterns over time, it could be expected that the effect of R&D may exhibit some variation over time, and across industries and countries. The process of diminishing returns can also be offset by new technologies which increase the opportunities for new investment.

13.2 R&D investment in Queensland

13.2.1 Funding of R&D

In 2004–05, the Queensland Government spent $235 million (in real 2012–13 prices) on R&D with in-house expenditure accounting for $161 million or 69 per cent. By 2012–13, the share of in-house (or directly performed) R&D had declined to 31 per cent as a relatively larger share of R&D effort went towards financing R&D performed in external organisations (Figure 13.1).[90]

Figure 13.1 Queensland Government in-house R&D plus funding to external organisations



Source: Queensland Office of Chief Scientist (2014a).

[90] R&D data, particularly at lower levels of aggregation, can be 'lumpy' as capital expenditures are fully accounted for in the year in which they occur, rather than being capitalised as an asset and expensed over time.

Box 13.8 Factors which may dilute the effect of R&D

Duplication and creative destruction: if a large proportion of business R&D investment was directed towards alternative solutions to the same problem, the same types of quality improvements, or the introduction of very similar new products, then a large amount of R&D effort would result in a negative 'duplication' externality and the transfer of rents between past innovators and current innovators ('creative destruction'). However, these effects are part of how markets work and why firms within markets are so successful in innovating compared with other systems of economic production. In this sense, they are not 'negative', as in the long run technological change improves welfare.

Long-term technology cycles and a prolonged transitionary period: the share of business R&D expended on ICT-related research fields increased very sharply over the last two to three decades. From an extremely small base, the share of IT technologies in Australia's capital stock has also risen rapidly. Historically, there have been periods where the wide diffusion of a new set of technologies has had both disruptive and complementary effects on the existing capital stock over a number of decades, even if the longer-term effect was to replace existing technologies and improve productivity.

Product proliferation: the horizontal increase in the number of products (for example, the number of varieties of mobile phones) is a mechanism which dilutes the effect of R&D in some theoretical growth models and constrains the beneficial impacts of R&D on growth in those models. An increasing amount of R&D must be undertaken to obtain the same 'step increase' in knowledge over a much larger number of products.

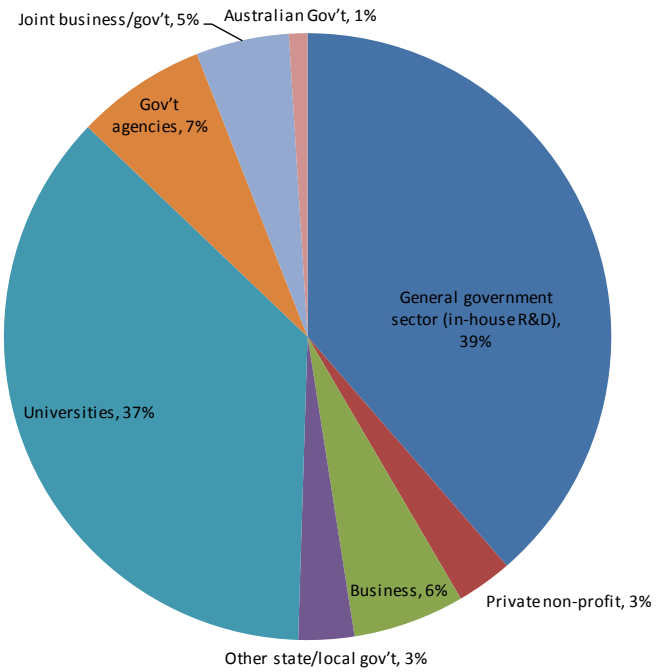
Diminished external technological opportunities: Australia generates a small fraction of the world's technological knowledge, even if it does well in per capita terms. Similar to traditional investments in capital, continued increases in R&D investment can be subject to diminishing returns (the next set of investments offer lower returns than the previous set). For Australia and other small countries, technological opportunities are largely set externally. There is mixed evidence on whether technological opportunities in the leading technology countries has exhibited diminishing returns.

Complexity and the amount of resources required to advance knowledge a given 'distance': technological improvements may become increasingly difficult to obtain as the threshold for new discoveries rises (Evenson & Kislev 1976). The amount of resources devoted to R&D has not been matched by an equivalent increase in indicators of the outputs from R&D (Kortum 1997).

Reduction in the proportion of new knowledge which spills over: the share of applied research and experimental development in R&D has risen and these types of R&D are less prone to the inappropriability problem. As the properties of knowledge are influenced by economic incentives, there may have been changes in the extent to which knowledge is tacit versus codified, and related changes in the costs of transferring and re-using knowledge. R&D assistance policies may distort investments towards activities that qualify for assistance but have a lower spillover rate. Assistance policies may put upward pressure on the prices of R&D inputs, such as scientists and engineers, so that businesses have to invest more just to achieve the same 'output' from R&D.

The Queensland Government provided R&D funding of $203 million in 2012–13.[91] Of this amount, $80 million (31 per cent) funded R&D performed within the general government sector (Figure 13.2). Of the 61 per cent of funding provided to external entities, universities received the largest share at 37 per cent followed by government agencies (government owned entities outside the general government sector) and businesses at seven and six per cent, respectively. Joint business-government funded organisations received five per cent of funding.

Figure 13.2 R&D performing entities receiving Queensland Government funding (2012–13)



Source: Queensland Office of Chief Scientist (2014a).

13.2.2 Performance of R&D

Gross Expenditure on Research and Development (GERD) comprises the gross expenditures of four institutional sectors: businesses (BERD); governments (GOVERD); higher education institutions (HERD); and private not-for-profit organisations. The expenditure measures are defined to include 'intra-mural' expenditure only, meaning all expenditures for R&D performed within a statistical unit or sector of the economy during a specific period, whatever the source of funds.

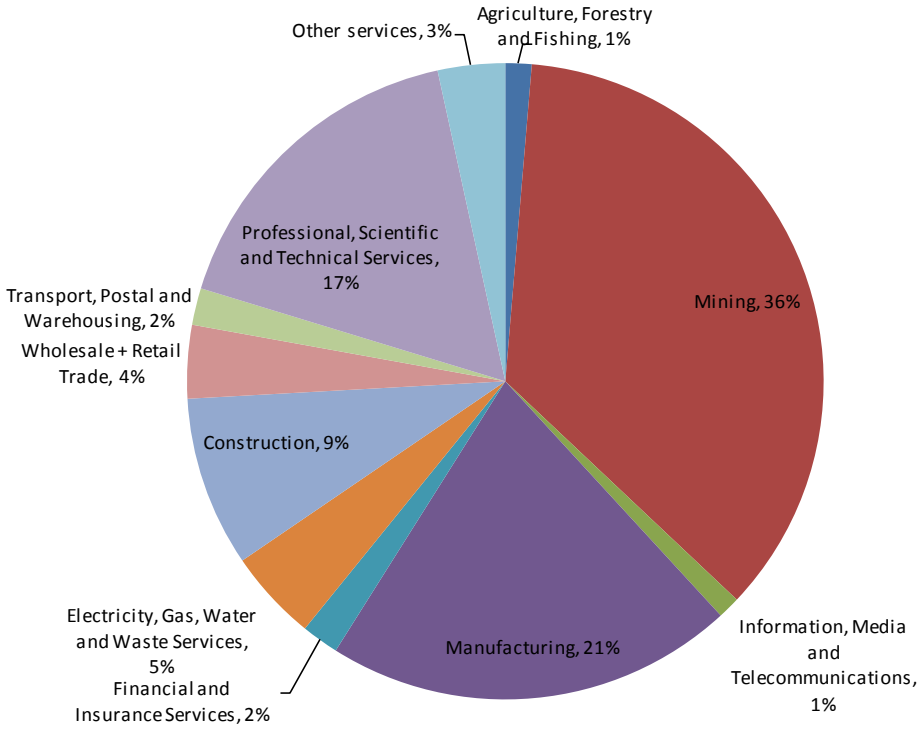
In 2011–12, GERD for Queensland was estimated at $4567 million with businesses spending $2499 million (55 per cent) and higher education institutions spending $1519 million (33 per cent).[92] R&D performed by Australian Government institutions and Queensland Government institutions both accounted for roughly six per cent of GERD.

Business R&D expenditure in Queensland was concentrated in mining, manufacturing, professional, scientific and technical services and construction (Figure 13.3).[93] A significant

[91] More recent data is not available.
[92] Higher Education data for 2011–12 was interpolated using the simple average of data for 2010–11 and 2012–13.
[93] Business data is not available for 2012–13.

proportion of the services provided by the professional, scientific and technical services industry is R&D performed for other industries.

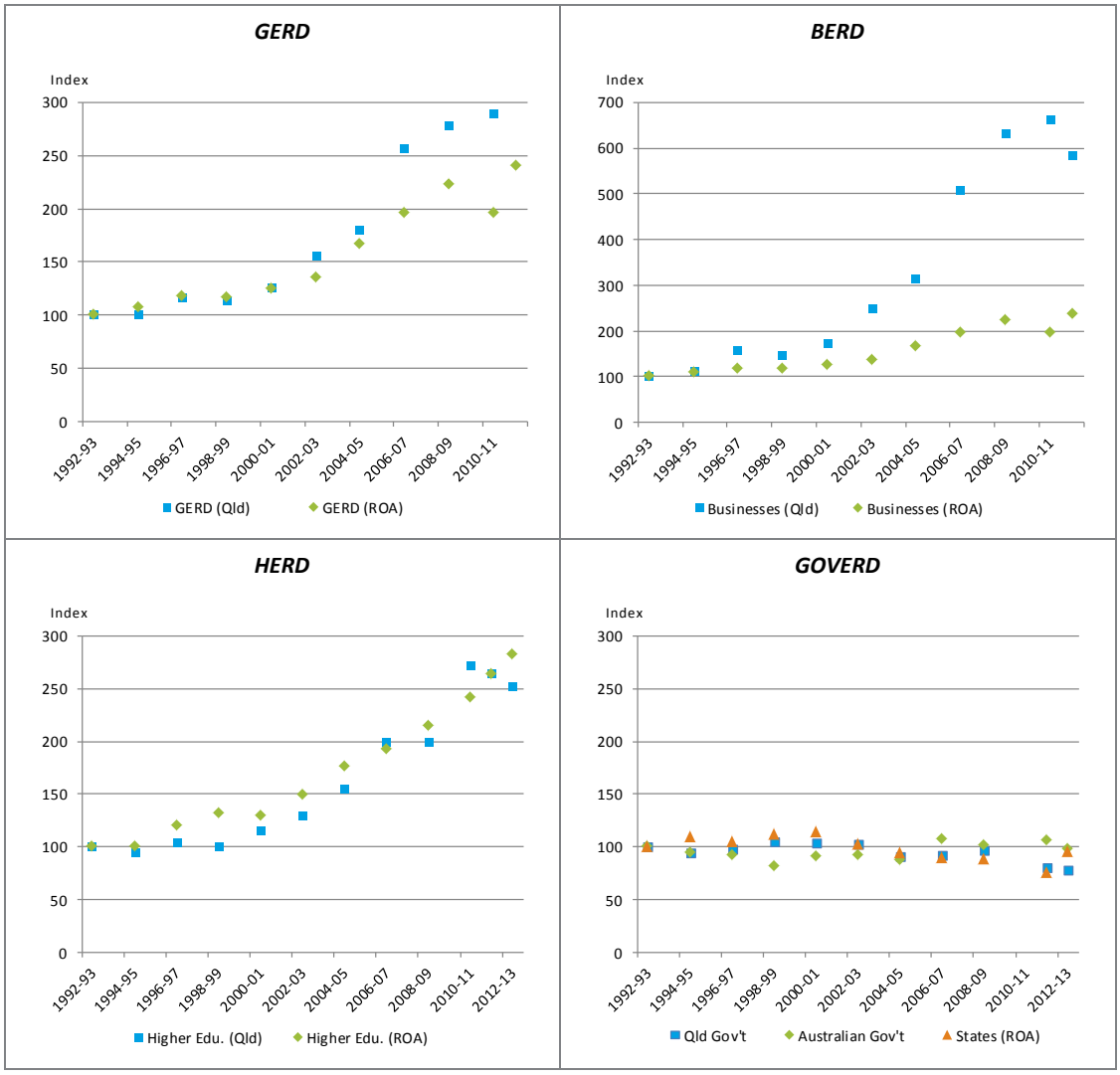
Figure 13.3 Expenditure on R&D by Queensland businesses (2011–12)



Source: ABS (2013b).

From 1992–93 to 2011–12, GERD grew at an average rate of 5.8 per cent per annum in real terms (or by 201 per cent). BERD and HERD averaged growth of 9.3 per cent and 5.1 per cent, respectively (note that the BERD y-axis in the Figure 13.4 has a maximum index value of 700 and not 300 as for the other charts). Queensland Government expenditure declined at an average rate of 1.2 per cent per annum. While the Queensland Government's direct performance of R&D has declined in real terms, the government provides funding to other sectors for R&D.

Figure 13.4 Real Gross Expenditure on Research and Development (GERD) and components

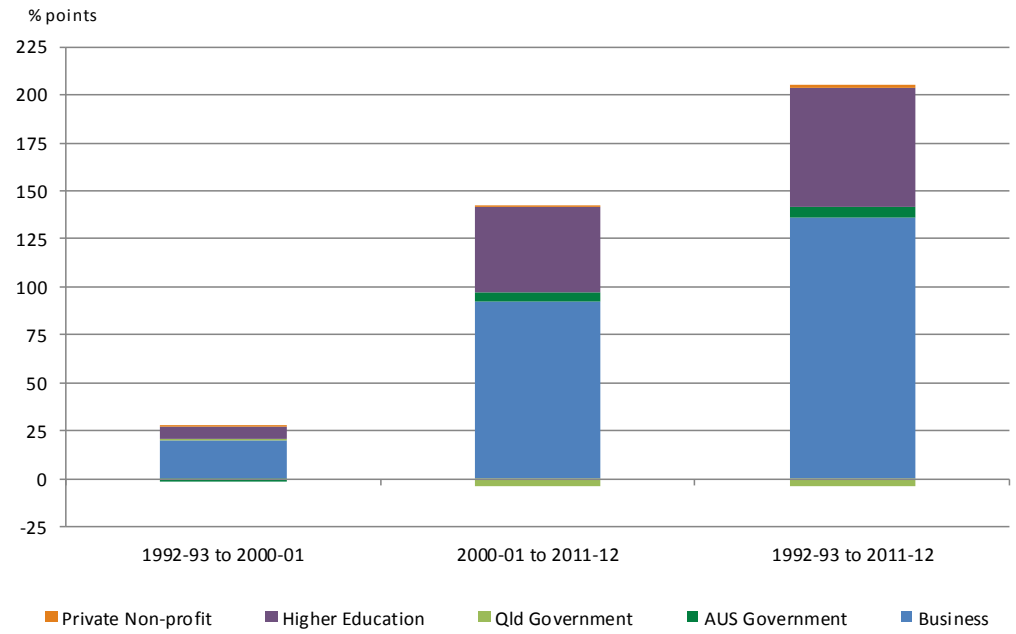


Notes: Deflated using ASNA Private Fixed Capital Formation - R&D Implicit Price Deflator. Maximum Y-axis index value for business expenditure differs from other charts. As at March 2015, the most recent data available is for 2012–13.

Source: ABS (2014e, 2013b and 2014d).

The growth in GERD was driven by business expenditure, with higher education expenditure also contributing strongly. Of the real growth in GERD of 201 per cent, business expenditure contributed 136 percentage points (or 68 per cent of the total change) and higher education expenditure contributed 62 percentage points (Figure 13.5). From 2000–02 to 2011–12, GERD grew by 139 per cent, with businesses contributing 92 percentage points and higher education contributing 45 percentage points.

Figure 13.5 Percentage point contributions to growth in real GERD (Qld)



Source: ABS (2014e, 2013b and 2014d); and QCA estimates.

13.2.3 Determinants of business R&D investment

A large range of factors may have contributed to the strong growth in Queensland business R&D expenditure.

Businesses are in business to earn money. Therefore, the factors that influence the level and character of business investment in R&D and innovation will impact the financial returns that result from the investments relative to alternative investment strategies.

Some of the external factors that may influence the returns to investment include: macro and industry influences; demand conditions; technological opportunities; risk and appropriability conditions; and R&D assistance policies (Table 13.1).

R&D can be part of a process for exploring integration requirements and problems, uncertainties and potential for secondary innovations flowing from new capital or technology acquisitions. For example, the acquisition of new ICT technologies in the 1990s was part of a process of businesses learning how best to use the technologies.

R&D investment, innovation and productivity growth entail change. The successful exploitation of changes in technological knowledge may also require changes in organisational structures, processes and workforce changes. Product and labour market regulations can affect the level of adjustment costs, thereby impeding or supporting change and the returns to R&D investment.

Table 13.1 Influences on business R&D investment

Influence	*Description*
Macroeconomic and demand conditions, and industry influences	
Trade openness and competitive intensities	Changes in the openness of the Australian economy to international trade and other influences alters the intensity of import competition, and may impact the international transfer of knowledge through embodiment in capital and goods, and/or through foreign direct investment. Competition increases the return to R&D and other innovation investments by penalising poor firm performance. Lower industry protection increases competitive pressures and raises the net return from innovating versus not innovating.
Level and volatility of the rate of interest	The rate of interest impacts on consumption, saving and investment. A higher cost of capital will discount benefits more heavily than costs since benefits are spread farther into the future. This can influence the distribution of labour resources between the production and research sectors.
Expected size of market and growth expectations	The expected cost or size of investment required to produce a given step increase in knowledge (which may, for example, achieve a given increase in a product's quality) is independent of the size of the market. However, the financial benefits realised by the business may be proportional to the size of the market in which the innovation is used.
Business cycle	R&D is largely financed internally and cash flow is pro-cyclical with the business cycle
Technological opportunities	
Industry and higher education R&D	Knowledge spillovers may be a substitute or complement to own-R&D. R&D can also produce negative spillovers through obsolescence of existing technologies.
Global stock of knowledge	Australia accounts for a small proportion of the expansion of knowledge globally whether resulting from R&D or other sources. This expansion alters the technological opportunities available to Australian firms through knowledge spillovers and technology transfer. Technological opportunity may not be a steady rate (e.g. general purpose technologies). Trends in foreign R&D may alter the incentives to invest in own-R&D through the 'absorptive capacity' benefit of own-R&D.
Industry evolution	Industry development can be characterised by 'stages' with implications for the orientation and intensity of R&D effort.
Risk and appropriability conditions	
Intellectual property (IP) rules	IP rules are intended to increase the proportion of benefits from an innovation appropriable by the innovator, thereby raising R&D investment. However, IP rules can also have negative impacts on the incentives to undertake R&D.
Cooperation in R&D	Cooperative arrangements may reduce investment, support pooling of specialised knowledge, and improve institutional linkages with implications for the quantum and rate of spillovers.
Technology markets	More developed technology markets reduce investment risk from the inappropriability problem as the scope for obtaining revenues from licensing of technologies is increased.
Rate of technological change or product upgrading	Faster rate of product upgrading in an industry may improve appropriability as it contributes to growth in technology licensing as a source of revenue (shorter product cycles reduce the return to free riding on spillovers given shorter lags). Alternatively, a faster rate of product upgrading may increase uncertainty which increases the value of R&D to a firm as R&D provides product 'options' and flexibility.
R&D policies	
Financial assistance	Grants and subsidies, and tax assistance, can increase the return to R&D investment (reduce the R&D cost of capital on marginal investments). Displacement and substitution effects can reduce or nullify the impacts of the policies.

Many firm-specific characteristics influence business R&D investment patterns, including:

- strategic flexibility: risk and uncertainty increase the return to R&D where R&D contributes to the strategic flexibility and options available to the firm
- choice of innovation strategy: Henderson and Clark (1990) identify four types of innovation strategies including incremental innovation, modular innovation, architectural innovation and radical innovation. How the business positions itself in its markets will influence its demand for R&D
- capabilities and competencies: Carlsson and Eliasson (1991) highlight a firm's ability to identify, expand and exploit business opportunities as being determined by its strategic, identification, technological (production), organisational, and learning capabilities. Businesses learn through prior investments in R&D which may affect the potential returns to future investments
- ownership and governance: forms of ownership may influence the incentives to undertake R&D locally.

It is clear that there are many different ways in which public policies can influence R&D investment even if a government has no specific assistance policies. The growth in Queensland business expenditure is also strongly influenced by a general increase in the size of the Queensland economy (i.e. the demand for R&D increases).

13.3 Industry assistance

In 2014–15, R&D and business innovation measures provided assistance of $91.7 million (Table 13.2). Assistance was heavily concentrated in agriculture, forestry and fishing and services industries. Within services industries, the assistance was primarily related to health industries.

Table 13.2 R&D and business innovation assistance by broad industry sector (2014–15, $'000)

AFF	*Mining*	*Manu.*	*EGWW*	*Const.*	*Tourism*	*Services*	*Not allocated*	*Total*
56,780	107	132	494	307	36	33,140	706	91,703

13.3.1 Scope of included R&D and innovation measures

The R&D measures are not a holistic picture of the level of R&D performed or funded by Queensland Government agencies. The assistance measures represent only a fraction of the agency R&D activity discussed above based on Australian Bureau of Statistics (ABS) and Queensland Office of Chief Scientist (QOCS) data.[94]

R&D funded by the Queensland Government should be included in the industry assistance estimates whether the R&D is performed within government entities or in external bodies, such as research institutes and centres.

[94] Comparing ABS/QOCS data for 2012–13, the latest available, and assistance measures data for 2013–14 (or 2014–15) suggests assistance measures capture just under 50 per cent of Queensland Government R&D expenditure. However, it is expected that assistance measures would form a larger share of Queensland Government R&D expenditure in 2014–15. On the other hand, the assistance estimates include a number of business innovation programs for which some portion of funding would not be captured in R&D statistical collections. However, funding to these programs was only $2.1 million in 2014–15.

R&D within departments is often a component of a broader program or service not measured as industry assistance. Generally, the assistance measures only capture 'discrete' measures or programs of R&D that largely assist industry. Given knowledge spillovers, and that expansions in knowledge may be used in unexpected ways, there is no clear border between R&D that assists industry and R&D that does not.

R&D funding provided to universities not linked in with industry through, for example, joint funding arrangements with industry, is excluded. However, funding for university R&D is predominantly an Australian Government responsibility. State government funding to universities tends to be either for discrete projects, or the funding of bodies which have industry participation.

'Leveraged' R&D is also not included in assistance estimates. An example of leveraged R&D is matched funding arrangements whereby funding from the Queensland Government an R&D project is matched by the Australian Government, universities, industry or other R&D bodies. Queensland Office of Chief Scientist data indicate $321 million in funding was leveraged in 2012–13.

The scope of the measures does not include any recently announced policies under Advance Queensland or Startup Queensland. Advance Queensland initiatives include research fellowships, a knowledge transfer partnerships program, payroll tax holidays to new companies established in Queensland, post-graduate university scholarships, a women's academic fund, and a review of science, technology, engineering and mathematics teaching. Startup Queensland provides grant funding to the Queensland startup community to support the provision of information, advice, networking opportunities, collaboration, connectivity and 'transformational entrepreneurship'. Only certain components of these policies would qualify as industry assistance.

13.3.2 R&D supporting agriculture, forestry and fishing industries

Research, development and extension services have been in place since the 1890s, with the establishment of the Queensland Agricultural College at Gatton and the Hermitage Research Facility at Warwick.

AgForce noted a number of rationales supporting some form of public support for agricultural R&D:

> *There are a range of well documented reasons why there is likely to be an under–investment in R&D within agriculture, including lag times and inadequate capture of benefits such as where domestic consumers appropriate a greater share of the benefits of innovation than the producers themselves. There are also clear links to environmental and resource use outcomes that are unlikely to be fully factored into productivity and profitability–focussed industry research. (AgForce sub. 43, p. 9)*

The Queensland Government provided $55.4 million in direct R&D assistance to agricultural, forestry and fishing industries in 2014–15. Agricultural Research, Development and Extension (RD&E) funding comprised $41.1 million in underpricing of R&D services directly performed by the Department of Agriculture and Fisheries (DAF) and $14.3 million in grants and subsidies to external organisations (Table 13.3).

Table 13.3 Agriculture, Forestry and Fishing industries R&D measures ($'000)

Measure	*2013–14*	*2014–15*	*2015–16*	*2016–17*	*2017–18*	*2013–14 to 2017–18*
Agricultural Research, Development and Extension*	59,000	55,000	0	0	0	114,000
Grants to Fisheries Research and Development Corporation	400	400	400	400	400	2000
The Plantation Hardwood Research Fund^	88	23	0	0	0	111
Total	59,488	55,423	400	400	400	116,111

*Notes: * The budget for 2015–16 to 2017–18 is yet to be allocated (or to be determined) by the Government. ^ Scheduled to finish on 30 June 2015.*

Agricultural Research, Development and Extension (RD&E)

DAF funds R&D via its internal delivery branch, Agri-Science Queensland. The purpose of the funding is to identify improvements or changes in operations that lead to: efficiency gains; growth in productivity; an expansion in demand (such as improvements in product quality, reduction in the barriers to trade or the identification of new products); and increased sustainability in the agriculture sector.

Funded R&D includes R&D performed directly by DAF as well as contracted R&D through external research providers, such as the University of Queensland, the University of Southern Queensland, Central Queensland University, James Cook University, and the University of the Sunshine Coast.

DAF directly performs R&D in research stations and centres, including:

- Bribie Island Research Centre
- Molecular Fisheries Laboratory, Brisbane
- Centre for Advanced Animal Science, Gatton
- Maroochy Research Facility , Nambour
- Plant science centres in Queensland
- Salisbury Research Centre, Salisbury, Brisbane
- Spyglass Beef Research Facility, Charters Towers.

Some of the external bodies receiving grants and subsidies from DAF include:

- Rural Research and Development Corporations (RDCs) (e.g. Fisheries Research and Development Corporation) (Box 13.8)
- Co-operative Research Centres (CRCs) (e.g. Australian Poultry Cooperative Research Centre)
- other external bodies (e.g. Plantation Hardwood Research Fund, North Australian Beef Research Council, Sugar Research Australia).

RDCs and CRCs are described in Box 13.9.

In addition to base funding from the Queensland Government, Agri-Science Queensland attracts an approximately equal amount of external investment from the RDCs and others (such as benevolent institutions) to conduct agricultural RD&E. Agri-Science Queensland's key funders

include the Grains Research Development Corporation, Horticulture Australia Limited, University of Queensland's Queensland Alliance for Agriculture and Food Innovation, Australian Centre for International Agricultural Research, Department of Agriculture (Australian Government), Meat and Livestock Australia and the Cotton Research Development Corporation.

Box 13.9 The Research Development Corporation (RDC) model

In 1992, the RDC model was introduced by the Australian Government. The RDCs are a mix of statutory bodies and industry-owned companies (IOCs) that receive government funding – there are currently six statutory RDCs and nine IOCs. All undertake R&D activities and the IOCs also undertake marketing activities.

The statutory RDCs include: Cotton RDC; Grains RDC; Fisheries RDC; Rural Industries Research and Development Corporation; Sugar RDC and Grape and Wine RDC. IOCs include: Forest & Wood Products Australia; Australian Meat Processor Corporation (AMPC); Dairy Australia; Australian Wool Innovation Limited (AWI); Meat & Livestock Australia (MLA); Australian Egg Corporation Limited; Horticulture Innovation Australia Limited (HIA); Australian Pork; and Livecorp.

The RDCs commission and manage targeted research and foster uptake and adoption based on the identified needs and priorities of both industry and the Australian Government.

The Australian Government provides dollar for dollar matching of industry expenditure on R&D up to a limit of 0.5 per cent of each industry's Gross Value of Production (GVP).

RDCs commission agricultural R&D on a competitive basis amongst public and private providers using funds from levies on production and matching Commonwealth grants.

RDCs can fund R&D into either production (on-farm) or processing (off-farm) issues and are expected to fund portfolios of projects that have a mix of both public good and industry good components given the taxpayer contributions.

Co-operative Research Centres (CRCs) model

The CRC Program was established in 1990 to improve the effectiveness of Australia's research effort by bringing together researchers in the public and private sectors with the end users. The CRC Program links researchers with industry and government with a focus towards research application.

Since the commencement of the Program, there have been sixteen CRC selection rounds, resulting in the establishment of over 200 CRCs over the life of the Program.

CRCs operate across the manufacturing, information and social services, mining and infrastructure, agriculture, environmental services, and medical service sectors.

CRCs are funded by contributions from the Australian Government, universities, state and territory governments, and industry.

Sources: PC (2011c); and http://www.ruralrdc.com.au/Page/Home.aspx.

Other agriculture, forestry and fishing measures

The Fisheries Research and Development Corporation was formed as a statutory corporation in 1991 under the provisions of the Primary Industries Research and Development Act 1989. The Queensland Government contributed $400,000 in funding to the entity in 2014–15.

The Fisheries Research and Development Corporation is charged with investing in priority R&D within the fishing industry, meeting the government's national and rural research priorities and pursuing adoption of that research and development. It receives funding from the Australian Government and contributions from the Commonwealth and state-based fisheries.

The Plantation Hardwood Research Fund was established as a research and development initiative under the statewide forests process to support the development of a viable plantation-based hardwood industry in Queensland. The funding seeks to improve the productivity and profitability of hardwood plantations in Queensland by finding solutions (in conjunction with industry) to key industry challenges including identifying trees with good wood quality for propagating stock, managing stem borer insects, producing solid wood and composites products from plantation wood and understanding the durability of wood products made from plantation wood.

Five projects were selected through an open competitive process supported by a Queensland Government contribution of $2.4 million to be expended over a period beginning in 2009. In 2014–15, the final year of funding, $23,000 was provided.

13.3.3 R&D supporting health industries

R&D assistance to health industries is expected to be $29.6 million in 2014–15 with Medical Research Grants providing the largest amount of assistance at $20.9 million (Table 13.4).

Table 13.4 Health industries R&D measures ($'000)

Measure	*2013–14*	*2014–15*	*2015–16*	*2016–17*	*2017–18*	*2013–14 to 2017–18*
Medical Research Grants	22,550	20,864	20,864	20,864	20,864	106,006
Health and Medical Research Fellowship Program	8062	8374	8374	8374	8374	41,556
Medical Research Commercialisation Fund^	300	300	300	0	0	900
BioPharmaceuticals Australia*	82	45	45	0	0	172
Total**	30,994	29,583	29,583	29,238	29,238	148,634

*Note: ^ Funding in out years year to be confirmed. * BioPharmaceuticals Australia is administered by DSITI.*

*** May not add due to rounding.*

The Department of Health provides Medical Research Grants to fund the delivery of research papers and measurable clinical outcomes. Entities assisted include: QIMR Berghofer Medical Research Institute; Wesley Research Institute; Queensland Emergency Medicine Research Foundation; Australian Centre for Health Services Innovation; and the Queensland Centre for Gynaecological Cancer.

The Department of Health funds the Health and Medical Research Fellowship Program providing research fellowships to build research capacity and facilitate the implementation of evidence based clinical services. The measure is an example of how local industries can be assisted by government policies even where the primary objective is not directly related to industry assistance (for example, to improve the health science base and health outcomes of Queenslanders).

The Medical Research Commercialisation Fund provides Queensland member institutes with support for the commercialisation of early-stage medical research discoveries that originate from its member institutes.

BioPharmaceuticals Australia is a proprietary company, limited by shares, with the sole member being the State of Queensland. The company was established to oversee the staged development of a contract biopharmaceutical manufacturing facility.

In 2014, BioPharmaceuticals Australia commenced its second phase of operations, launching the Biopharmaceutical Development Fund. The Biopharmaceutical Development Fund provides grants to early stage researchers and commercial drug developers and provides access to the state-of-the-art mammalian cell culture infrastructure.

BioPharmaceuticals Australia aims to deliver tailored contract manufacturing solutions to Australian and international biotherapeutic drug developers.

13.3.4 Other R&D measures

Other R&D measures include:

- research into water quality is funded through a number of dedicated programs that work together to foster collaboration between researchers, to address knowledge gaps, and to develop integrated outputs that meet the needs of users. The research being undertaken focuses on a range of themes, including land management practices, catchment indicators and water quality management. Research improves knowledge of water quality itself and water quality primarily in relation to the grazing and sugarcane industries.
- funding is provided to Queensland University of Technology, University of Queensland and Griffith University through the Academic Strategic Transport Research Alliance Agreement. The Academic Strategic Transport Research Alliance is a co-operative relationship working collaboratively in critical areas of transport such as strategic capability, research, learning and development.
- Pavement Deterioration in South East Queensland is a research project undertaken by Griffith University to develop performance based structural deterioration models for Queensland's sprayed seal and asphalt pavements, using long term pavement performance sites in south east Queensland. This will assist in modelling the structural performance of the Queensland road network.

These measures received $2.1 million in assistance in 2014–15 (Table 13.5).

Table 13.5 Other R&D measures ($'000)

Measure	*2013–14*	*2014–15*	*2015–16*	*2016–17*	*2017–18*	*2013–14 to 2017–18*
Great Barrier Reef Protection Package*	1581	1564	1514	1436	0	6095
Academic Strategic Transport Research Alliance	540	556	0	0	0	1096
Pavement Deterioration in South East Queensland	5	5	5	5	0	20
Total	2126	2125	1519	1441	0	7211

*Note: * Funds committed at time of publication.*

13.3.5 Innovation measures

Funding to innovation measures in 2014–15 provided $4.6 million in industry assistance (Table 13.6).

Table 13.6 Innovation measures ($'000)

Measure	*2013–14*	*2014–15*	*2015–16*	*2016–17*	*2017–18*	*2013–14 to 2017–18*
Accelerate Programs	0	2943	2807	1203	275	7228
QMI Solutions Ltd Service Agreement	611	645	600	600	600	3056
iLab (Technology Incubators)	500	500	325	650	575	2550
Life Sciences Queensland*	465	465	0	0	0	930
Partners in Digital Productivity	13	20	0	0	0	33
Total	1589	4573	3732	2453	1450	13,797

*Note: * Further funding yet to be determined.*

The Department of Science, Information Technology and Innovation (DSITI) provides funding to the Accelerate Programs to support collaborative research projects, to attract and retain early and mid-career researchers, and to demonstrate the potential commercial viability of new and existing ideas. Programs are largely targeted to the research community, in particular Queensland-based universities. Accelerate Programs include:

- Accelerate Partnerships: the program provides grants of up to $500,000 over a maximum of two years to recipients of approved projects. The objectives of the programs are to: support the creation of innovative products that will have practical application within five years; create, strengthen and harness collaborative relationships between research organisations and end users; and build critical mass for internationally recognised science and research.
- Accelerate Fellowships: the program supports scientists to undertake research by providing grants for early career fellowships ($180,000) and mid-year fellowships ($300,000). The program aims to: attract and retain world class Queensland-based researchers; support emerging researchers to establish a research reputation by leading and managing a research project (early career researchers); support established researchers to lead a research team; support innovative, practical and applied research; and encourage increased linkages with business and industry.
- Accelerate Ideas: the program provides grants between $25,000 and $50,000 to help Queensland-based organisations demonstrate the commercial viability of a new or existing idea (product, process or system). The project must partner a public research organisation and the product must be close to market entry, demand driven, a contributor to business growth, overcome barriers to commercialisation and provide potential investment opportunities.

QMI Solutions is an external company funded to deliver a range of innovation, collaboration and commercialisation services and programs to Queensland inventors, entrepreneurs, researchers or businesses. DSITI provides funding to the Australian Institute for Commercialisation (a brand

of QMI Solutions), which provides innovation and collaboration services to businesses and governments.[95]

QMI Solutions provides specialist consultants, advisory services and tools to help customers improve their operations and outcomes in the areas of: business growth opportunities; increased profitability; better productivity; innovation; commercialisation and collaboration; and training and education.

iLab was established by the Queensland Government in 2000 originally as a business incubator. In 2009, The University of Queensland acquired iLab in an arrangement with the State Government.

DSITIA provides funding to iLab to support early stage, high-tech companies through the first few years of development by building their business management capabilities, fostering mentor networks for start-up founders, creating investor ready companies, and graduating companies with increased chances of commercial success. iLab provides:

- operational space for regional based business clients when visiting the Brisbane iLab facilities
- opportunities for business skills development suitable for start-up businesses, leveraging UniQuest educational activities
- opportunities for networking of businesses with industry and investors
- operational support for businesses including access to administrative, accounting, legal and IT support services
- mentoring support by maintaining a group of suitably qualified senior business mentors and/or entrepreneurs in residence
- access to an advisory panel of appropriately skilled and experienced sector specialists.

iLab has recently expanded its Queensland presence, and has a renewed objective to deliver services to regional Queensland start-ups.

DSITIA provides funding to assist with the establishment of Life Sciences Queensland Limited, a statewide, industry-led organisation for the life sciences sector. Life Sciences Queensland provides members with tools, services, market intelligence and access to an international network of life sciences organisations with the aim of identifying new business opportunities and accelerating business growth.

13.4 Performance of the industry assistance measures

The QCA does not have sufficiently detailed information on the measures to undertake an empirical evaluation of the effectiveness or efficiency of the measures. Therefore, the following discussion primarily focuses on the risk factors associated with the policies, monitoring and evaluation processes, R&D in the context of a federal state, and considers policy principles.

13.4.1 R&D and business innovation policy risks

The impacts of policies are often not known. Even if there is evidence of the immediate or direct impacts of the policy, information is not available on outcomes, such as, employment, investment, productivity growth, real wages and welfare. This is in part because monitoring and

[95] The Department of State Development provides funding to ICN Queensland (also a brand of QMI Solutions) for procurement related services.

evaluation processes, and often ex ante policy appraisal processes, focus on the visible impacts of policy (the 'street light' effect).[96] Unintended consequences play an important role in the evaluation of R&D and business innovation programs (as discussed earlier), and sit outside what is easily visible.

Best practice ex ante investment appraisal processes should identify the range of potential impacts of a policy, although the potential for unintended impacts will remain from incomplete understandings of how the economy operates, behavioural responses by market participants, informational constraints on public sector agencies, exogenous technological change and uncertainty.

Therefore, it is important to have processes in place to support policy learning.

Departments were asked to identify the key risks to the assistance measure achieving its intended outputs and outcomes, and describe any possible unintended impacts of the assistance measure on the policy's target group and/or other Queensland businesses or households.

Most departments identified the technical risks of R&D projects not achieving the hoped for advancements in knowledge. Changes to funding levels and policy priorities were also seen as risks. The risk that the measure may not actually result in a net addition to the targeted activity was only noted in relation to the innovation and collaboration services provided by QMI Solutions. Other risks that were identified by departments include:

- exogenous shocks, such as weather conditions (Great Barrier Reef Protection Package)
- the benefits of assistance may leak to other states where, for example, R&D personnel re-locate (Medical Research Grants and Health and Medical Research Fellowship Program)
- funding levels being insufficient to allow for hedging of risk through a portfolio approach (Acceleration Programs)
- research projects and initiatives undertaken by universities or other partners may not effectively align with departmental strategic priorities, and services and research of university partners may be underutilised by departments (Academic Strategic Transport Research Alliance, and Grants to Fisheries Research and Development Corporation)
- there may be duplication and overlap of work programs with other research partnerships (Academic Strategic Transport Research Alliance)
- in relation to iLab, lack of eligible start-up businesses within the Queensland marketplace for iLab's services, unwillingness of angel investors and venture capitalists to invest in start-up businesses, and a culture of risk aversion and stigma associated with failure discouraging entrepreneurs to start a business[97]
- in relation to agricultural research, development and extension activities, a decline or uncertainty in state or Australian Government funding may lead to a reduction in industry

[96] The streetlight effect is a type of observational bias where people only look for whatever they are searching for by looking where it is easiest.

[97] Other risks included: lack of skilled workers available to work in start-up businesses; and lack of willingness by start-ups/entrepreneurs and their support services to collaborate at a state level and look beyond regional boundaries.

investment in R&D, workforce capability, partnerships with universities and may result in a focus on academic excellence rather than R&D outcomes.[98]

Research may also result in unintended benefits flowing to the community. DAF noted that research grants may reveal other information that is of concern to management agencies, primary producers, or the general community (for example, in relation to previously unknown food safety issues for a particular species or process).

Some departments noted risks to the assistance measure and continued funding resulting from negative findings. In relation to the Medical Research Commercialisation Fund it was noted that if a technology is found to have a negative impact then future investment could be affected. In this particular case, this risk was seen as a low probability given the rigours around the processes involved in getting new health technologies to the market. Underlying some departmental responses was a concern that the identification of failure was a significant risk to funding, the continuity of measures, and departments.

13.4.2 Investment in policy learning — monitoring and evaluation

The field of R&D research and policy evaluation is probably deeper than in many areas of policy (for example, relative to the more recent study of the impacts of business innovation programs). This relates to the fact that R&D assistance has a longer history than many other forms of assistance and that individual R&D policies tend to be large programs in terms of funding.

The QCA collected basic information from departments on their monitoring and evaluation activities (Table 13.7). Some caution is required in using the data as it is only a partial indicator of the level of resources devoted to policy learning, and it does not capture any notion about the quality of evaluation work. Nonetheless, it does provide a number of results worth noting.

Outputs are monitored in almost all cases, although not necessarily based on quantitative measures as output data is collected in fewer measures. Outcomes are monitored less frequently than outputs, but some form of outcome modelling also occurs for most measures. Similar to the monitoring of outputs, non-quantitative approaches are used in some cases.

In almost all cases, departments indicated that the assistance measure is achieving its intended outcomes. However, given that in some cases output data is not collected, outcomes data is collected less, and data to test whether a measure has actually caused an observed change is rarely collected, conclusions cannot be drawn on the effectiveness or efficiency of many of the measures.

13.4.3 The level of funding and form of evaluations

The resources consumed in monitoring and evaluation activities should be proportional to the potential consequences of the measure. A lack of information to evaluate policy impacts can be rational where the likelihood of significant and unintended impacts is small and the resources required to identify and measure impacts are significant (for example, where impacts are difficult to measure).

[98] Other identified risks included: governments, industry and others may not understand the long term commitment necessary to RD&E to maintain productivity growth and resulting profitability; steady decline in RD&E investment over time; climate variability; industry expectations; and changes to key Australian Government programs.

The measures in Table 13.7 are ordered according to 2014–15 funding levels from high to low. It could be expected that there would be a correlation between a measure's position in the ordering of the table and the apparent level of effort invested in monitoring and evaluation. Some evidence of this can be seen as measures in the bottom half of the table are less likely to have data collection activities (at least on outcomes and causality).

Table 13.7 R&D and innovation measures' monitoring and evaluation statistics

	Monitoring		*Data collection to test -*			
Measure	***Impacts monitored - outputs? outcomes?***	***Cost-effectiveness monitored?***	***Change in outputs?***	***Change in outcomes?***	***Causality of measure?***	***Dept. View, achieving intended outcomes?***
ARD&E	Yes Yes	Yes	Yes	Yes for key projects	Yes in some cases	Yes
Medical Research Grants	Yes Yes	No	Yes	Yes	No	Yes
Health and Medical Research Fellowship Program	Yes Yes	No	Yes	No	No	Yes
Great Barrier Reef Protection Package	Yes No	na	Yes	Project dependent	Project dependent	Yes
Accelerate Programs	Being established Yes[1]	Under investigation[1]	Partial measures being implemented	Evaluation activities to address to some extent	Yes (partially)[1]	Unknown (too early to tell)
QMI Solutions	Yes Yes	Yes[2]	Yes	Yes	No	Yes
Academic Strategic Transport Research Alliance	Yes No	No	No	No	No	Yes
iLab	Yes Yes	Yes	Yes	Yes	No	Yes
Grants to Fisheries Research and Development Corporation (FRDC)	No No	No	No	No	No	Yes
Medical Research Commercialisation Fund	Yes Yes	No	Yes	Yes	No	Yes
BioPharmaceuticals Australia	Yes Yes	Yes	Yes	No	No	Yes (early indications)
The Plantation Hardwood Research Fund^	Yes na	na	na	na	na	na
Pavement Deterioration in South East Queensland	Yes Yes	Yes	No	No	No	Yes

Notes: 1. The M&E framework includes an assessment of emergent outcomes 1–2 years after funding cessation. Work being undertaken on metrics. On data for causality, some basic information will be captured, including a rudimentary analysis of outcomes for unsuccessful applicants. 2. This may be captured in the proposed independent review for 2015. ^ 'na' refers to information not available (or provided).

Performance indicators are commonly used to monitor performance. DAF provided an example of performance measures it uses in monitoring R&D expenditure performance, supplementing other evaluation activities it undertakes (Table 13.8).

Table 13.8 DAF performance measures

2015–16 measures	*Target*	*Notes*
Level of satisfaction that participation in RD&E activity contributes to business improvements	75%	Survey
Level of funding partner satisfaction that research outcomes contribute to industry productivity grow	79% (based on baseline survey)	Annual survey
Percentage return on R&D investment through royalty returns	4%	Data tracked monthly

A number of the evaluation processes for the larger measures include case studies. For example, DAF provided case studies of R&D investments made under the Agricultural Research, Development and Extension measure (case studies were provided on strawberry runners, sorghum, beef, dairy, and pork). A case study approach to evaluation is also adopted for investments under the Great Barrier Reef environmental science measures.

R&D is frequently performed under contractual arrangements with external bodies. These arrangements are more likely to be subject to monitoring and evaluation than R&D that is performed directly by the Queensland Government. Joint funding arrangements with the Australian Government also make it more likely that monitoring and evaluation requirements will be attached to funding.

13.4.4 Selectivity

The degree of selectivity of a measure influences the extent to which the measure may have distortionary and unintended impacts. Many of the assistance measures are highly selective targeting a single industry or industry sub-sector. Based on information provided to the QCA, two exceptions are the Accelerate Programs and QMI Solutions measures (Table 13.9).

Table 13.9 Industry shares in assistance (%)

Measure	*AFF*	*Mining*	*Manu.*	*EGWW*	*Const.*	*Tourism*	*Services*	*Not allocated*
Accelerate	30.5	2.4	0.3	15.7	7.0	0.0	23.4	20.7
QMI Solutions	20.0	5.0	10.0	5.0	15.0	5.0	25.0	15.0

13.4.5 Alignment of assistance with identified problems

The existence of certain properties of knowledge does not mean that research always generates spillovers.

- Basic research: the quality of governance arrangements, the efficiency of knowledge diffusion mechanisms and the quality of the research undertaken all have large influences on the generation of spillovers.
- Commercial research (applied and experimental development): if the private rates of return are above the required rate then the investment will proceed regardless of the magnitude of any spillovers; firms develop sophisticated inter-firm relations to internalise spillovers (Box 13.10); spillovers are partly internalised through the labour market for technical personnel; firms may encourage the diffusion of their intellectual property and seek to obtain benefits

through selling associated activities (such as, consulting services, better versions of the product, complementary services and so on); and absorption costs reduce the scope for free riding (PC 2007).

Box 13.10 Benefits of cooperation in R&D

Cooperation in R&D can:

- increase the efficiency of R&D efforts and eliminate wasteful duplication
- internalise externalities
- allow risk sharing amongst firms (in relation to capital constraints and fixed costs of R&D efforts).

In abstract terms, the 'firm' is an organisational form that economises on certain transactions costs associated with contracts (Coase 1937 and Williamson & Winters 1993), but that nevertheless has many other explicit and implicit contracts with external parties that are often close to those that exist internally. Once seen this way, the boundaries of firms are often ill-defined and fluid, with firms having the capacity to forge complex symbiotic relationships with other firms through consortia, supplier and customer relations and loose networks. This suggests that firms may have greater opportunities for appropriating the benefits of spillovers than the usual firm-centric view of R&D incentives suggests.

Such strategies represent efforts by firms to facilitate spillovers, typically without the need for public support. These strategies are often not feasible for basic science, but they are much more applicable to reasonably narrow, but mutually advantageous commercially focused research.

The potential for such arrangements can also mean that it may be more effective for public policy directed at increasing spillovers to reduce some transaction costs between firms, rather than supporting R&D per se. The legal structures that allow mandatory R&D levies within certain rural industries in Australia are an example. There may be other ways in which public policy can reduce obstacles to, or otherwise facilitate, the formation of such cooperative arrangements.

Sources: PC (2007); and Katz (1986).

A low proportion of Queensland Government assistance is provided directly to businesses. Most assistance is provided through government performance of R&D followed by the diffusion of R&D outcomes to industry, or through external R&D performers with funding provided under contractual arrangements. The latter arrangements may also involve industry co-contributions (e.g. the RDC model), and partnerships with universities and other institutions.

Assistance appears to be more focused on applied research and development, with basic research funding dominated by the Australian Government.

A number of the measures have clear objectives to assist the development of the various knowledge transfer mechanisms that help to exploit the potential of the R&D. For example, the Accelerate Programs and Biopharmaceuticals measures work closely with industry, but also link with the university sector and other institutions to support the sharing of information and direction of efforts.

That said, the QCA does not have sufficient information to identify the magnitude of the potential problems being addressed, or whether the measures effectively target these

problems. This information is an important input into an analysis of the additionality of the policies.

13.4.6 Australian Government and federalism principles

The breadth and scale of Australian Government performance and financing of R&D, as well as funding of business innovation programs, dwarfs state government assistance. As it is important that Queensland Government policies seek to maximise returns to the community, overlap, consistency with, and possible conflicts with Australian Government policy should be incorporated within the design of state policies. There are a range of inter-governmental coordination mechanisms in place and the establishment of research priorities also plays a role in directing resources at the various levels of government.

While program proliferation and poor coordination is a risk, it also creates opportunities for experiments in new program design, consistent with the benefits of competitive federalism more generally. But, for the benefits of experimentation to be realised, evaluations need to occur and the results need to be publicly available.

The Australian Government funds or subsidises R&D in businesses (including Queensland businesses), non-profit institutions, higher education institutions and by government. Budgetary R&D funding which supported industry in 2012–13 included:

- $2.21 billion through R&D tax incentive programs
- $0.47 billion to the Commonwealth Scientific and Industrial Research Organisation (CSIRO)
- $0.10 billion to Cooperative Research Centres
- $0.24 billion to rural R&D corporations (PC 2014c).

Examples of specific industry assistance R&D and business innovation measures that were provided in 2012–13 are listed in Box 13.11.

Box 13.11 Examples of Australian Government R&D and Innovation measures (2012–13)

R&D measures -	Australian Pork Limited - R&D
R&D tax offsets, R&D tax concession, Premium R&D tax concession	Sugar Research and Development Corporation
Cooperative Research Centres	Forest and Wood Products Research and Development Corporation
Grains Research and Development Corporation	***Innovation measures -***
Australian Centre for Renewable Energy	Commercialisation Australia
Horticulture Australia Limited - R&D	Clothing and Household Textile Building Innovative Capability Program
Meat and Livestock Australia - R&D	Enterprise Connect Innovation Centres
Dairy Australia - R&D	Innovation Investment Fund
Fisheries Research and Development Corporation	Venture capital limited partnerships
Rural Industries Research and Development Corporation	South East South Australia Innovation and Investment Fund
Australian Wool Innovation Limited - R&D	Tasmanian Innovation and Investment Fund
Australian Space Science Program	Manufacturing Technology Innovation Centre
Cotton Research and Development Corporation	Clean Technology Innovation Program
Grape and Wine Research and Development Corporation	National Enabling Technologies Strategy
Tourism Industry Regional Development	

Source: PC (2014c).

In 2012, higher education institutions spent $9.6 billion on R&D with the Australian Government financing some 87 per cent of the expenditure. State and local governments contributed roughly four per cent.

The Australian Government:

- provides significant assistance directly to individual businesses through R&D tax measures
- funds industry-specific R&D bodies, for example, through the RDC model
- funds the overwhelming majority of R&D undertaken in Higher Education institutions, and therefore dominates the funding of basic and strategic basic research
  - in 2012–13, Higher Education performed 86 per cent of pure basic research and 47 per cent of strategic basic research
- provides many measures to support business innovation.

Federalism principles suggest that areas of responsibility with significant cross-jurisdictional external effects should be assigned to a higher level of government which is able to internalise those affects in its decision making (Box 13.12). While spillovers are locally 'sticky' (that is, in many cases spillovers are concentrated locally and then diffused over time), the nature of R&D involving knowledge spillovers supports an expectation that, where the Australian Government provides assistance, it would be weighted relatively more towards basic R&D, as is currently the case.

Box 13.12 Federalism principles

White Paper on the Reform of the Federation

On 28 June 2014, the Australian Government released the Terms of Reference for the White Paper on the Reform of the Federation. The White Paper will consider the principles for allocating roles and responsibilities between different levels of government, such as, subsidiarity, equity, efficiency and effectiveness of service delivery, 'national interest' considerations (so that where it is appropriate, a national approach is adopted in preference to diversity across jurisdictions), accountability for performance in delivering outcomes, durability (that is, the allocation of roles and responsibilities should be appropriate for the long-term), and fiscal sustainability at both Commonwealth and state levels.

Fiscal equivalency principle

If the benefits of a policy decision flow to another jurisdiction, then there may be underprovision of a public service: the incremental costs of the decision to those in the jurisdiction (who pay the tax) are greater than the incremental benefits received by those in the jurisdiction. Other jurisdictions can 'free ride' on the policy; that is, jurisdictions can receive benefits without having to pay costs. The reverse is also true where costs are imposed on another jurisdiction (negative externalities).

If a political jurisdiction and net benefit area overlap, the free rider problem is overcome thereby ensuring the optimal provision of public services. Equating the political jurisdiction with the net benefit area is called the 'principle of fiscal equivalence'. Fiscal equivalence also refers to the idea that there are important economic advantages in having each level of government raise the revenue that is necessary for funding its activities.

Subsidiarity

The principle of subsidiarity implies that policies should be administered at the lowest level feasible within the national interest. The rationale is that this permits provision to most closely match the preferences of the people. It also relates to ideas about the ability of an electorate to hold politicians accountable for the performance of policies.

Other principles relate to economies of scale, impediments to factor mobility across jurisdictions, economies of scale and accountability in a representative democracy.

Some implications of the principles for R&D and innovation program measures include:

- Is the spatial distribution of the benefits and costs from assistance policies well matched and contained within the jurisdiction? If there are significant external effects, are they significant in terms of impacting on government decisions to provide assistance? Do they result in over or underprovision of assistance?
- Australian Government grants comprise a large share of Queensland Government revenue. What are the implications for the fiscal equivalence principle, and the provision of industry assistance?
- Are there any economies of scale arguments that suggest the type of assistance should be undertaken by a different level of government?
- Do assistance policies impede factor mobility across jurisdictions or result in inefficient locational decisions?
- Is responsibility for the policy, and performance of the policy, clear to the public?

Source: Australian Government (2014a)

Public support for R&D also serves to improve the functions of government, which might suggest that both levels of government would have R&D programs targeted to their specific service delivery areas. For example, state government R&D assistance oriented towards health measures is consistent with the relatively greater role that state governments play in health markets.

13.5 Policy principles

While theory and empirical studies of R&D can indicate the direction of likely effects and provide broad indications of the magnitude of effects, there are significant uncertainties when seeking to interpret the results and apply them to specific circumstances, such as to particular assistance policies or sets of investments.

Measuring the net additionality of a policy is both critical and difficult. Therefore, prior planning on how the proposed policy will be evaluated and data collection strategies are required.

R&D and business innovation policies should be guided by funding principles in order to minimise the ex ante risks that policies will not be effective. The existing principles included in the Queensland Government's Science and Innovation Investment Framework include the decision rules below which are intended to support better assessment and targeting of investment in science and research:[99]

- real future impact: will the proposed science and research investment increase tangible positive net benefit/impact for the state?
- external commitment: are the necessary collaborative research partners engaged (locally and internationally)? And in seeking much better translation, are the end users of the research engaged, with appropriate 'skin in the game'?
- distinctive angle: in this arena is it clear what is in it for Queensland and/or why are we doing it here?
- scaling towards critical mass: do we have, or are we able to, assemble the necessary critical mass, collaboratively and of competitive excellence, to make a real and effective contribution? Both to the R&D and the absorptive capacity, e.g. in industry, and do we have a 'Team Queensland' approach in place?

In its review of RDCs, the Productivity Commission (2011c, p. 78) strongly argued for the establishment of a set of funding principles for rural R&D (Box 13.13):

> *One way to greatly lessen risks of this nature is to have in place a generally applicable set of public funding principles against which the efficacy of individual funding programs can be assessed. Even if a particular program is then considered in isolation, any changes necessary to promote compliance with such principles are likely to be much the same as the changes that would emerge were that same program to be assessed as part of a framework-wide review against the same principles. Indeed, premising public funding and other forms of government intervention on clear and soundly based principles is a generally accepted component of best practice policy making.*

[99] Queensland Government research priorities are established and discussed in Office of the Queensland Chief Scientist (2014).

Box 13.13 Proposed public funding principles — RDCs

- The primary aim of government funding is to enhance the productivity, competitiveness and social and environmental performance of the rural sector and the welfare of the wider community by inducing socially valuable R&D that would not otherwise be undertaken.
- Public funding programs for rural R&D should:
  - give appropriate recognition to non-R&D related drivers of performance improvement in the rural sector
  - have regard to policy levers other than public funding (and any related funding instruments such as compulsory producer levies) for addressing potential under-investment in rural R&D
  - facilitate, or at least not impede, structural adjustment in the sector
  - be consistent with other policies and programs designed to improve the performance of the sector.
- The design of individual funding programs should:
  - encourage the efficient delivery of quality research outputs, including through promoting effective intra- and inter-program coordination
  - facilitate collaborative research effort where this would improve the quality of research outcomes or avoid wasteful duplication of research effort
  - help ensure that there are appropriately resourced mechanisms to facilitate the adoption of worthwhile research outputs
  - promote transparency and accountability in regard to program outcomes through effective governance, evaluation and reporting requirements
  - facilitate future research efforts by providing for appropriate disclosure and dissemination of research results
  - promote transparency in funding flows and discourage leveraging behaviour that is administratively costly relative to the benefits provided, and/or designed solely to shift costs onto other parties.

The Australian Government should further:

- commit to regular independent review of its various rural R&D programs against these principles
- through the Primary Industries Ministerial Council, seek the agreement of state and territory governments to incorporate the principles and the review requirement:
  - in all of their rural R&D policies and funding programs
  - in the National Primary Industries RD&E Framework initiative.

Source: PC (2011c).

The Productivity Commission principles would be a reasonable starting point for the augmentation/re-drafting of Queensland Government R&D investment decision rules. The principles would apply across Queensland Government R&D and business innovation programs.

A number of other principles could be considered including: diversity should be encouraged; private incentives should be built on where possible; assistance levels should be similar in comparable circumstances; and contestability should play a major role in funding R&D.

The principles would help guide the consistent evaluation of those assistance measures where the scale of funding does not warrant significant resources being spent on monitoring, data collection and evaluation.

A further principle to be considered, and it sits at odds with many of the existing industry specific assistance measures, is that, wherever possible, horizontal (or across-industry) measures should be supported. While there will be exceptions, horizontal policies carry less risk of producing economic distortions that reduce output, real wages and productivity, and are more consistent with the principle of contestable funding.

For assistance focused on direct support to industry, the assistance should be provided in such a way as to facilitate governance arrangements that promote linkages between businesses and institutional sectors. The arrangements should enable significant industry input into the direction of R&D activities, while also improving diffusion mechanisms.

14 GENERAL BUSINESS AND SMALL AND MEDIUM-SIZED ENTERPRISE ASSISTANCE PROGRAMS

Key points

- The Queensland Government provides eight general business and small and medium-sized enterprise (SME) assistance measures:
  - five general business programs which target export development, energy and water efficiency, commercial access to protected areas and workplace health and safety
  - three programs aimed at directly supporting SMEs.
- The level of assistance provided by the general business and SME assistance measures from 2013 to 2018 is $362.7 million. However, this does not include assistance that SMEs receive through other measures such as payroll tax exemptions or electricity tariff subsidies.
- The rationale for measures to increase SME capabilities appears to be limited. Most services appear to be adequately provided, or could be provided, by the private sector, should businesses want to access them.
- Gauging the effectiveness of the assistance measures is difficult as:
  - objectives of the assistance measures are in many cases not specific or measurable
  - many of the monitoring practices used by agencies do not attempt to estimate the causal relationship between participation in the measure and outcomes. Monitoring an assistance measure's take-up and client satisfaction, while useful for improving program delivery, does not provide an estimate of the additionality of the measure.

14.1 Industry assistance for general business programs and SMEs

The total value of the eight catalogued general business and SME assistance measures from 2013 to 2018 is $362.7 million (Table 14.1). The main measures are commercial access to protected areas and export assistance provided through Trade and Investment Queensland (TIQ). Other programs, particularly those focused on SMEs, are smaller programs primarily targeting capability building and energy and water efficiency.

In addition to the eight measures indentified in this chapter, SMEs receive significant assistance through:

- payroll tax exemption thresholds with an estimated value of $7.89 billion over the 2013–18 period (Chapter 11)
- subsidised electricity bills through the Uniform Tariff Policy worth $1.42 billion for 2013–18
- the Urban Water Price Path in south east Queensland which sets prices below the cost of supply.

Table 14.1 Summary of General Business and SME Measures

Assistance Measure	*Description*	*Level of assistance ($m)*
Commercial access to national parks, regional parks, state forests and marine parks	Queensland Parks and Wildlife Services provides and manages commercial access to national parks, regional parks, state forests and marine parks. Commercial access is generally underpriced and is provided for mining (e.g. mineral and gas exploration and extraction), agricultural (e.g. grazing and beekeeping) and commercial tourism (access to iconic sites) activities, as well as for infrastructure (e.g. power transmission corridors, water distribution pipelines and telecommunications towers).	$206.7m over five years
Trade and Investment Queensland (TIQ)	TIQ is a statutory authority which provides services to develop sustainable export markets, improve export capabilities and promote investment opportunities to potential international investors.	$130.6m over five years
Injury Prevention and Management Program	The Injury Prevention and Management Program works with employers that have workers' compensation premiums capped at twice the industry rate or have high statutory costs and/or frequency of claims compared to similar sized businesses in their industry. The program assists employers' to establish and maintain effective injury management systems to improve health and safety outcomes for workers.	$14.11m over five years
Small Business Program	The Small Business Program provides free workshops and workplace consultations, as well as access to export safety advisors and targeted information on a range of workplace health and safety topics to empower small businesses to develop and embed effective work health and safety solutions into everyday practice.	$5.30m over five years
Chamber of Commerce and Industry Queensland (CCIQ) ecoBiz Program	Funded by the Department of Environment and Heritage Protection and operated by CCIQ, the Program provides tools and resources to assist business and industry to implement efficient water, energy and waste management activities.	$4.29m over five years
Mentoring for Growth	The program facilitates access to volunteer business mentors who assist businesses with the challenges faced when in growth mode, and in seeking investment.	$1.11m over two years
Queensland Small Business Week	Funding to hold a week of events to promote the importance of small business to the economy and provide business owners and managers with the opportunity to access information, hear new ideas, and network with other businesses to support business growth, productivity, resilience and sustainability.	$0.52m over one year
People at Work: Minimising the Risk of Psychosocial Injury in the Workplace	A research grant provided by Workplace Health and Safety Queensland (WHSQ) to develop the knowledge and skills of WHSQ's inspectors and Queensland employers with regard to psychosocial risks, including the assessment and management of these risks.	$0.03m over one year

14.2 General business assistance measures

14.2.1 Trade and Investment Queensland

TIQ is a statutory authority that provides services to develop export markets, improve export capabilities and promote investment opportunities to potential international investors.

TIQ's budget is $130.6 million over five years. TIQ employed 125 full-time equivalent employees in 2013–14. In addition to its nine offices across Queensland, TIQ is represented in 14 locations worldwide including, Beijing, Bangalore, Seoul, Abu Dhabi and Santiago.

What is Trade and Investment Queensland's role?

According to the Strategic Plan 2014–18, TIQ's mission is:

> *to win trade and investment by matching Queensland's capability with international market opportunities. (TIQ 2014a, p. 2)*

TIQ has three main functions:

- **Assist Queensland businesses to export** — TIQ engages with businesses to identify export market opportunities, runs international trade missions and organises networking opportunities and workshops
- **Assist international businesses to access Queensland** — TIQ helps international businesses identify and contact suppliers, provides insights on Queensland's capabilities and sources products and services out of Queensland
- **Assist international investors to take advantage of Queensland opportunities** — TIQ provides international investors with detailed market intelligence, assists in preparing business cases, arranges site visits, liaises with government and partners with other economic development agencies and industry to identify investment ready projects.

In addition to TIQ's services, the Brisbane City Council provides similar services through Brisbane Marketing, an economic development agency which promotes Brisbane nationally and internationally. While Brisbane Marketing's services are not limited to trade promotion, the agency does provide advice and support to local businesses to progress their export strategies and works to attract investment to Brisbane.

Brisbane Marketing operates in the UAE, New Zealand, China, South Korea, Taiwan, Japan and Indonesia. With a total operating budget of $31 million in 2013–14, Brisbane Marketing employed 102 full-time equivalent employees in 2013–14.

Many Australian jurisdictions operate similar trade and investment promotion agencies to TIQ (Box 14.1).

Box 14.1 Trade promotion services across Australia

The Australian Trade Commission (Austrade)

In 2013–14, Austrade employed approximately 1000 staff and had an annual budget of $214.8 million (excluding Export Market Development Grant Scheme payments) (Austrade 2014).

With 82 offices in 48 markets worldwide, Austrade provides similar trade assistance services to those of TIQ through:

- general information and advice on exporting and international business
- international trade opportunity alerts
- tailored market entry and expansion services
- assistance for foreign firms to contact Australian suppliers.

Austrade also operates the Export Market Development Grant Scheme which encourages SMEs to access and build export markets. The scheme reimburses SMEs with up to 50 per cent of eligible export promotion expenses above $5000 (provided that the total expenses are at least $15,000).

New South Wales Trade and Investment (NSWTI)

NSWTI's focus is to increase economic wealth and create jobs in New South Wales and has trade offices in six countries worldwide: China, Japan, India, South Korea, the UAE and the USA.

The agency promotes the NSW's capabilities worldwide in priority sectors and facilitates investment, helps NSW exporters to expand internationally and provides support to regional businesses and communities.

NSWTI offers a number of programs to assist businesses to export including:

- NSW Export Accelerator Program — offers eligible businesses a one-year strategic engagement with an export adviser or business advisory manager
- Export Capability Building Program — providing over 40 workshops and sessions across Sydney and Regional NSW, the program assists SMEs to 'consolidate their knowledge and maximise long-term export gains.'

Business Victoria

Business Victoria provides a number of programs to assist businesses to export including:

- Access Program — offers facilities, export-related assistance and in country expertise to Victorian company representatives visiting overseas markets. The program provides free use of overseas facilities and advice for the first two weeks and for a reduced rate thereafter of US$250 per month for up to three months.
- Trade Events Program — designed to help Victorian businesses cover costs (up to $2000) associated with attending international trade events that are outside the current Victorian Government trade mission schedule and those events located in markets where it is not feasible to run a trade mission.
- Export Design Program — aims to assist Victorian designers to connect global markets. The program provides recipients with up to $10,000 to subsidise attendance at international trade fairs, meetings to arrange or confirm sale contracts, and export market research.

Business Victoria's International Trade Team has offices in 18 countries including China, India, Japan, South Korea and the United Kingdom.

Is there a case for government assistance?

Governments promote exports for a variety of reasons including to:

- **broaden the export base** — diversifying the state's export base could reduce the volatility of exports, and insulate an economy from downturns in a limited range of markets.
- **achieve economies of scale** — domestic markets may be small and firms may need to export to achieve greater economies of scale.
- **assist infant exporters** — an industry may need assistance exporting until sufficient experience or market share can be attained.
- **offset anti-export bias** — to counter the impacts of other government policies (IC 1992c)**.**

Another main argument used to support trade development agencies is that they increase aggregate economic activity through export and investment promotion. However, as discussed in Chapter 3, increasing export activity alone will not necessarily produce benefits, as income derived from exporting is generally not worth any more to the economy than income derived from other activities (PC 2000a). Revesz and Lattimore (2011) state that:

> *An economic rationale for assistance to small firms to commence exporting would require that there was some failure which led to firms not exporting when the benefits of exporting — either private benefits or the sum of private benefits and other benefits to the rest of the economy — were greater than its costs.*

In the absence of a market failure, providing export assistance will likely shift domestic resources away from more profitable activities, potentially decreasing the price of exports and reducing the state's aggregate income (PC 2000a). That said, the existence of spillovers or information deficiencies for export markets may provide a 'narrower' rationale for government intervention.

Spillover benefits

In the context of export assistance, there may be positive spillovers[100] associated with product promotion and market development (PC 2000a). For example:

- A Queensland exporter could establish a reputation for high quality goods or a new style of production that not only increases demand for its own products but those of other producers in the industry.
- A Queensland exporter that 'breaks into' a new market may be required to make large investments to establish new ways of doing business that align with the local customs or practices of the market. This information could be obtained at relatively low cost by subsequent Queensland exporters.

However, the existence of spillovers alone is not sufficient to justify the assistance; the nature and magnitude of the spillover benefits must also be considered:

> *...to justify export assistance on the grounds of spillovers, there would be a need to identify clearly the nature of the spillover benefits and to determine that their level is large and causing significant under-investment in export promotion activity. (PC 2000a, p. 11)*

Furthermore, significant spillovers are less likely where export markets have been developed. As Queensland firms have greater involvement in international markets, the spillovers may no longer be of sufficient magnitude to justify government involvement (PC 2000a).

[100] For a general discussion of spillovers and the role of industry assistance, please see Chapter 3.

Information deficiencies

Firms can also face difficulties obtaining sufficient information to support export development activities due to:

- the high costs to obtain information about new markets
- information gaps in assessing the potential benefits from accessing new markets. Firms may not account for indirect benefits from accessing new markets such as access to information on production technologies, new products and market developments.

TIQ does not identify market failure as a rationale for intervention, but rather, seeks to increase economic activity with a minor focus on addressing information deficiencies. Noting the arguments above, where TIQ's activities solely aim to increase economic activity, resources are likely to be redistributed away from more profitable activities in the Queensland economy.

14.2.2 Is TIQ effective?

TIQ was established with the following objectives (Queensland Treasury and Trade 2014):

- to facilitate, promote, identify, attract and develop trade and investment opportunities
- to conduct research into, and analysis of, trade and investment opportunities
- to partner with governments, industry organisations and international networks to promote Queensland business and international trade and investment opportunities through representation in 16 locations worldwide and eight regional locations.

As the objectives above are neither specific nor measurable, it is difficult to assess whether TIQ is effective. Previously, TIQ's key performance indicators (KPIs) focused upon the dollar value of transactions assisted. However, these KPIs were discontinued following a review in 2013 (Mickel & Thomas 2013, p. 19) which considered them to be 'not showing the full picture of TIQ involvement and for distorting behaviour in the market.'

Subsequent to the review, the only KPI publicly reported by TIQ is 'the number of targeted and qualified leads for Queensland businesses generated through TIQ's overseas trade missions and other trade and export development activities'. TIQs performance against previous and current KPIs is listed in Table 14.2 and Table 14.3 below.

Table 14.2 Trade and Investment Queensland key performance indicators

KPI	*2011–12 Target*	*2011–12 Actual*	*2012–13 Target*	*2012–13 Actual*	*2013–14 Target*	*2013–14 Actual*
Number of targeted and qualified leads for Queensland businesses generated through Trade and Investment Queensland's overseas trade missions and other trade and export development activities	420	494	400	310	400	405
Number of structured programs/activities helping businesses build their capacity, improve their performance and/or access opportunities	418	423	400	435	Not available	
Number of business participants in structured development activities	8218	10,033	8000	9119		
Significant one-on-one business consultations undertaken	1692	4,425	2000	1560		
Number of businesses involved in Trade and Investment Queensland's facilitated alliances, partnerships, industry networks, supply chains, clusters etc.	385	248	250	323		
Number of businesses assisted to export or expand market share	3200	3211	2800	1958		

Source: Queensland Parliament Finance and Administration Committee (2014); and TIQ (2014b).

Given that the only KPI reported by TIQ is achieving increased trade and investment activity and noting the subjective nature of 'targeted and qualified leads', it is unclear whether the intended outcomes are being achieved. While a greater number of leads or targets may assist export growth, it does not necessarily equate to additional jobs or higher export earnings.

Table 14.3 Trade and Investment Queensland cost of service

	2013–14	*2014–15*
Number of targets or qualified leads	405 (actual)	420 (target)
Average cost per target or qualified lead generated	$37,049	$69,964

14.2.3 Does the program provide a net benefit to the community?

It is unclear whether TIQ produces a net benefit to the community for a number of reasons. First, without estimating the trade and investment activity that would have occurred in the absence of the measure, TIQ's export development expenditure may be substituting expenditure that firms would have otherwise undertaken themselves.

Empirical research has shown that the impact of export development assistance may be modest. Given that firms choose to receive assistance from TIQ and must meet TIQ's export-ready criteria, it is probable that participating firms are more likely to experience growth in exports regardless of the existence of the program (i.e. there is a selection bias). Revesz and Lattimore (2001, p. XI) questioned the additionality of export and investment attraction activities, with statistical analysis finding that '...export facilitation programs (Export Access, use of Austrade Services, or [International Trade Enhancement Scheme]) had no significant associations with the export growth of participants'.

Studies in the United States of America identify similar outcomes. Bernard and Jensen (2004, p. 1) in their analysis on what drives U.S. manufacturers to export found that 'state export promotion expenditures have no significant effect on the probability of exporting'.

Gencturk and Kotabe (2001), in a sample of 162 US firms, found that although participating in export promotion programs boosted firm profitability, there were no positive externalities across firms and that export assistance programs merely provide a transfer from agencies to the exporting firm.

Aside from possible substitution effects with the private sector, TIQ's services also overlap with those of other trade organisations such as Austrade and Brisbane Marketing. Where the services from competing publicly funded agencies are substitutes rather than complements, it is inefficient for both levels of government to provide them.

Where TIQ is a substitute for Austrade, there may be wasteful duplication in providing these services. Mickel and Thomas (2013, p. 12), in their review of TIQ, considered that leaving the trade and investment activities to Austrade:

> *...is not desirable as Austrade's main operational centres are in Sydney, Melbourne and Canberra, with only a small regional office in Brisbane, which would find it difficult to service a large decentralised state such as Queensland.*

However, this assumes TIQ export promotion activities are generating substantial benefits, and that a substantial physical presence in Queensland is the key to doing so. Were TIQ to focus its activities on addressing genuine and significant information problems or spillovers, there may be greater scope for cooperation across Australian, state and territory governments.

Recommendation

14.1 The Queensland Government should:

(a) target export development assistance towards significant spillover benefits or information problems

(b) systematically monitor whether Trade and Investment Queensland's programs address those market failures and result in outcomes different to those in the absence of its programs

(c) consider the scope for reducing overlap between Austrade and other state-based export development entities.

14.2.4 CCIQ ecoBiz

The ecoBiz program provides tools and resources through workshops, webinars and coaching sessions to assist firms to implement efficient water, energy and waste management activities. The Department of Environment and Heritage Protection (DEHP) provides funding to the CCIQ to supply the ecoBiz Queensland program.

The total level of assistance for the ecoBiz program is $4.29 million over five years.

What is the rationale for the ecoBiz program?

In an efficient market, firms will respond to price signals and adjust energy, water use and waste production accordingly. However, there could be a case for government intervention where firms do not face all the costs or receive all of the benefits of their actions or where firms encounter barriers to identifying or realising privately cost effective changes.

In this context, DEHP advised that:

> *... small and medium businesses are struggling under the increasing cost of energy, water and waste disposal...and that small and medium businesses use unnecessary energy and water and produce excessive waste during their normal business operations.*

In addition:

> *Most business owners want to reduce their operating costs but do not know how to measure utility use or identify actions to reduce their utility use. (DEHP Information Return)*

Presumably, increasing energy, water and waste costs should increase private incentives to become more efficient. However, market failures can reduce the level of energy, water and waste efficiency activities undertaken. These failures are largely associated with:

- imperfect information — efficiency information can be costly to obtain, can have public good characteristics or may be available to some parties in a transaction but not others
- split incentive problems could reduce the adoption of efficiency improvements that are privately cost effective. For example, landlords will not have strong incentives to improve the energy efficiency of their property where the investment costs cannot be recouped through rent increases
- positive externalities associated with R&D and demonstration projects may lead to an undersupply of efficiency activities, as socially but not privately cost effective efficiency improvements may not be undertaken (PC 2005b).

Government intervention may be warranted on these grounds if the social benefits of intervention exceed the social costs.

Is the ecoBiz program effective?

Even though the presence of market failures may provide a rationale for intervention, efficiency programs may still be ineffective for a number of reasons. Firstly, even in the presence of assistance, the relatively minor savings available to industry may not be sufficiently cost effective to entice a firm into taking up the program. The Queensland Parliament's Environment and Resources Committee report into energy efficiency (2010) identified that for Queensland industry as a whole, energy accounts for between four and five per cent of their costs. Therefore, implementing efficiency improvements to save a fraction of these energy costs 'in the absence of other motivations, attracts an even lower level of interest and priority'.

As such, the lack of uptake of the program may be a rational decision by firms as they:

> *...must have regard to many other considerations — product quality, marketing, competitors' actions, other production inputs, occupational health and safety, to name a few — not just the benefits and costs of greater energy efficiency. If improving energy efficiency comes at the cost of forgoing other more cost-effective opportunities (because of capital or labour constraints or because the projects are mutually exclusive alternatives), it would be rational for the firm to give energy efficiency a low priority. (PC 2005b, p. 120)*

Another factor influencing effectiveness is that general efficiency information programs may lack relevance to individual firms. The Productivity Commission (2005b) identifies that while general information can increase the uptake of privately cost-effective efficiency improvements, the usefulness to the firms can be limited by barriers within an organisation to process or implement the information provided.

Indeed, a review of the Energy Efficiency Best Practice program operated by the Australian Government found that providing general information about energy efficiency was relatively ineffective in changing industrial energy user behaviour and 'did not directly assist companies in improving their energy efficiency' (EnergyConsult 2002, p. E1).

Based on the information provided by the department, attendance at ecoBiz programs 'failed to meet expectations' during the early stages of the program (Table 14.4). CCIQ considered the format for introducing participants to the program was 'too prescriptive for the SME market'.

However, CCIQ noted that since the first rounds of sessions 'there has been an increase in the uptake of attendance/participation in the programs delivered'. From July 2014 to March 2015, more than 740 SMEs attended webinars, 240 attended workshops and e-workshops and more than 180 participated in one-on-one coaching sessions.

The administrative costs of these programs appear to be high compared to the level of assistance provided. From 2013 to 2018, administrative costs of the program represented 22 per cent, or $0.97 million, of the $4.29 million of assistance provided by the ecoBiz program.

Table 14.4 CCIQ ecoBiz program results (2013–14 financial year)

	Activity	*KPI*	*Actual*
• Low cost • Less likely to produce efficiency savings • High cost • More likely to produce efficiency savings	Business engagement	4900 businesses per annum	8000 engaged
	CCIQ ecoBiz Webinars	10 webinars to an audience of 250 per session	2356 Registrations
	CCIQ ecoBiz Road show attendees	2500 attendees	1200 attendees
	Face to face workshops	18 workshops half yearly to 500 participants	12 workshops 102 participants
	One on One Business Coaching Program	250 sessions	116 sessions

Given that no specific or measurable target is identified, it is unclear whether the assistance measure is meeting its objective. However, the ecoBiz program may be achieving some positive results. CCIQ advised that businesses participating in the program realise a minimum of 10 per cent reduction in their energy and water usage and production of waste (DJAG Information Return).

CCIQ has developed an online tool for businesses to track businesses' energy use and waste production. Between December 2014 to March 2015, 14 businesses have entered data for two years into the system with:

- four businesses reporting energy savings of greater than 10 per cent per production unit (saving 1553 GJ and $27,873)
- four businesses reporting greenhouse gas savings of greater than 10 per cent per production unit (saving 16,346 kg of CO2e)
- three businesses reporting water savings of greater than 10 per cent per production unit (saving 529 kL and $3,235).

While there is some evidence of positive outcomes associated with ecoBiz, the impact of the program itself has not been isolated. For example, it is not possible to identify whether those firms would have made efficiency changes in the absence of the program. Where businesses were already aware of the efficiency opportunities, the private incentive to access these opportunities may have otherwise been sufficient.

As the ecoBiz program appears to be primarily designed to address the presence of imperfect information and the cost of searching for energy, water and waste efficiencies, it is appropriate for the program to focus on assisting firms to identify and exploit efficiency opportunities. Furthermore, due to economies of scale, a market intermediary, such as ecoBiz, may be able to provide this information at a lower unit cost than had a firm sought the information independently.

In addition to providing general energy, water and waste efficiency information, the ecoBiz program also provides tailored auditing services to individual firms through one-on-one

coaching sessions. While this firm-specific information is likely to produce greater efficiency savings than general information, the justification for the government provision of this targeted information is less given the private benefits accruing to firms.

The Productivity Commission identifies that governments may crowd out private industry through the provision of such services and considers there is a:

> *...fine line between public and private goods and the dilemmas facing governments in pursuing anything but the most basic information provision. If information is specific enough to the needs of a particular firm, there should be sufficient incentives for others (consultants, performance contractors and ESCOs) to provide it. Generally speaking, the information failures in the commercial and industrial sectors are less significant than in the residential sector, suggesting a commensurately smaller role for governments in information provision. (PC 2005b, p. 135)*

EcoBiz is not the only efficiency initiative available to firms (noting that EcoBiz also targets water and waste). The Australian Government, the Queensland Government, local governments and industry groups offer similar, though in some cases less comprehensive, efficiency information including:

- the Watt Savers program offered in south east Queensland and supported by the Australian Department of Industry
- a range of tips for saving energy on the Queensland Government's Business and Industry Portal
- the Australian Government's Kill-a-watt program to provide subsidised energy assessors to businesses in Tropical North Queensland
- the Queensland Government's $2.69m Energy Savers Plus Program for energy audits on Queensland agricultural businesses.

Key findings

Given DEHP has not set appropriate targets to judge the success of the program and noting the difficulties in understanding the additionality of the program, it is unclear whether the ecoBiz program is delivering a net benefit. In addition, given the relatively small size, the program's high administration costs are likely to diminish any benefit generated.

Meanwhile, aspects of the program duplicates other public sources of information and potentially crowds out similar private sector initiatives. Despite these uncertainties, DEHP and CCIQ have worked to improve the take-up and relevance of information provided by the program.

Overall, given the general nature of the information supplied in many instances and the relatively low budget for the program, the effects of the program are unlikely to be distortionary and may provide some benefits.

Recommendation

14.2 The Department of Environment and Heritage Protection should set specific, measurable and time-related objectives for the ecoBiz program to assist in gauging the program's effectiveness.

14.3 The ecoBiz program should focus on the information and transaction cost aspects of the advisory service to avoid unnecessarily crowding out private sector providers.

14.2.5 Underpriced commercial access to national parks, regional parks, state forests and marine parks

The Queensland Government, through the Queensland Parks and Wildlife Service (QPWS), manages 1029 parks and forests including 301 national parks 409 state forests. These protected areas cover around 12.3 million hectares of Queensland. The QPWS also manages the Great Barrier Reef Coast Marine Park, the Great Sandy Marine Park and the Moreton Bay Marine Park.

National parks, regional parks, state forests and marine parks generally have public good characteristics. These characteristics mean that they are likely to be underprovided by the private sector or overused by consumers.[101] Government intervention can be justified to restrict the overuse or address the underprovision of the services provided by national parks, regional parks, state forests and marine parks. As a result, areas such as these are managed by the Queensland Government to protect their natural and cultural values, including conservation values.

Assistance by measure

To maintain their value to the community, QPWS provides and manages commercial access to national parks, regional parks, state forests and marine parks to undertake specified activities. QPWS generally provides this commercial access at below cost, conferring a benefit for industry. In such circumstances, underpricing access is considered industry assistance.

As each commercial access arrangement is directed towards a specific industry such as mining, agriculture or tourism, the nature of this assistance is industry-specific. However, given the broad range of access arrangements provided to a variety sectors, for the purposes of this analysis, the assistance measures are classified collectively as general business assistance.

Specifically, commercial access to QPWS managed areas includes access to:

- specified locations for the construction of resorts and tourist accommodation with leases of more than 80 parcels of land on 29 islands that provide for the operation of tourist resorts and associated infrastructure
- iconic destinations and sites to support the tourism industry including infrastructure to support the delivery of the commercial tour operations (e.g. access roads, parking, toilets, lookouts, and signage)
- state forests to undertake gas exploration and extraction. This includes the authorisation of the construction of well pads, distribution lines, compressor stations, pipelines and water storage ponds to support gas extraction and production

[101] Where the use of common resources, such as national parks, is unrestricted, each user will internalise all of the benefits of accessing these resource but only a fraction of the costs of doing so. This can lead to overuse of common resources and is sometimes referred to as the 'tragedy of the commons'.

- resources reserves and state forests for mineral exploration, development and extraction
- native forests for beekeeping. This includes maintaining the road network to support apiarist access to hive locations and fire management around apiary sites
- national parks and state forests for telecommunications tower construction. Permits are authorised for the construction and long term sitting of telecommunications towers and associated repeaters, radio transmitters, power supply sheds and fenced compounds
- state land for power (transmission) corridors. QPWS authorises easements over national parks and other state lands as well as the use of access roads to enable energy providers (Powerlink, Energex) to install and maintain powerlines
- state land for water distribution pipelines. Water supply entities are provided with agreements, use of access roads and easements over state lands for pipelines
- national parks for hardship grazing. This was a short term initiative to support the grazing industry through drought hardship
- resources reserves, regional parks and state forests for grazing. Lease and permit arrangements for access to state lands to graze cattle
- headlands and islands for lighthouse and other navigation infrastructure. QPWS authorises permissions for the continued operation of lighthouse facilities in several national parks
- iconic sites for filming and photography. Access is authorised via commercial activity permits for undertaking commercial photography to feature films.

The level of assistance provided by these commercial access arrangements varies among sectors. However, the total assistance provided through the commercial access to QPWS managed areas is $206.7 million for 2013–18. The level of assistance provided is estimated using a cost-based method which estimates the direct costs incurred by government to provide commercial access to national parks, regional parks, state forests and marine parks. This has been estimated by adding QPWS labour costs ($42.7 million) and capital costs ($6.95 million) that can be directly attributable to supporting commercial access for tourism, filming and photography, mining, agriculture and infrastructure activities, less the revenue received from industry through permits and agreements ($8.3 million).

QPWS officers undertake various actions associated with assessing, authorising and managing commercial access. QPWS also provides significant infrastructure in key locations and leases those assets (for example Mamu Tropical Skywalk, Double Island Point Lighthouse and Ninney Rise residence). Support to industry is also provided in other forms. For example, the infrastructure owned and maintained by QPWS (for example walking tracks, campgrounds and day use areas) supports the delivery of commercial tour operations, construction and the transportation of quarry materials, beehives and stock. Many of these assets are used by both commercial operators and the community. The development and maintenance of these facilities therefore supports private and commercial visitors.

What is the rationale for providing commercial access to state land?

Access to national parks, regional parks, state forests and marine parks for commercial activities is provided to realise additional resource, agricultural, tourism and/or recreational values associated with these areas. The objective is to maximise the social and economic opportunities these parks provide the community, whilst ensuring that the existing natural, cultural and other values of the land (including timber values) are maintained in the long term.

The provision of commercial access must conform with legislation, which specifies under what conditions access may be granted to commercial operators. For instance, community infrastructure may be installed in circumstances where there are no practicable alternatives and where the activity is in the public interest. In all cases, commercial access is provided on the condition that the natural, cultural and other values of the areas are protected.

Theoretically, access is provided on the condition that the other values of these areas are maintained. Thus, the objective of this measure is to provide additional economic benefits.

Is providing commercial access effective?

Although these policies aim to realise a net benefit for Queensland, evaluating whether the provision of commercial access is effective in doing so, is difficult. First, the public good characteristics of these assets make it difficult to value the benefits they provide to industry and the community as a whole. Second, the departmental costs associated with providing commercial access are also difficult to quantify, as many of these costs are incorporated with the general costs of managing these areas.

While the provision of access should result in a net benefit to Queensland, caution is necessary on how access is provided. While over-access can potentially impose environmental costs, limiting access privileges to specific businesses has the potential to restrict competition, raise prices and reduce the variety and quality of products offered to consumers. It is therefore important to carefully design access arrangements.

14.2.6 Workplace Health and Safety General Business Programs

Work-related injuries result in a range of economic and social costs including foregone production and human capital losses. The Department of Justice and Attorney-General (DJAG) estimate that the total economic cost of a work-related injury represents around five times the direct cost of an injury.

The Queensland Government provides assistance to firms to promote healthy and safe workplaces through two specific programs:

- **Injury Prevention and Management Program** — which provides $14.1m of assistance over five years
- **People at Work: Minimising the risk of psychosocial in the workplace —** DJAG previously provided funding (2013–14) and continues to provide ongoing in-kind support to the program (Box 14.2).

Box 14.2 The People at Work Program: Minimising the risk of psychosocial injury in the workplace

Work-related mental health conditions impose substantial costs on employers, workers and the community (DJAG Information Return). DJAG advised that:

> *...mental health disease claims are on average 2.5 times more expensive in comparison to all other workers' compensation claims. For example, in 2013–14, the cost for a mental health disease claim is $43,800 and the average cost of all other claims across the Queensland workers' compensation scheme is $16,400. (DJAG Information Return)*

These costs include direct costs such as the workers' compensation premiums paid by employers, or payments to worker suffering a mental health disease and indirect costs including production disturbance, human capital losses and administrative costs.

The People at Work Program seeks to understand how workplace characteristics influence employee health and to assist organisations to identify and manage workplace risks to psychological health. The program aims to provide the sustained reduction in the incidence of work related mental health disorders and associated compensation claims. DJAG previously provided funding (2013–14) and continues to provide ongoing in-kind support to the program.

DJAG commented that the project produces positive externalities by conducting research that may otherwise not have been performed by the private sector due to a lack of commercial return.

DJAG advised that the program has developed a normative database of 11,217 workers and that the website has received over 1000 hits. While it may take a number of years for the full effects of the mental health program to become apparent, DJAG noted that the rate of work-related mental health claims in Queensland has fallen since the inception of the project, suggesting that fewer Queensland workers are suffering work-related mental health diseases.

Injury Prevention and Management Program

WorkCover Queensland is the exclusive provider (besides self-insurance) of accident insurance for work-related injuries in Queensland. Employers are required to pay a premium which is a function of wages and an experience-based rating.

The actions of workers' compensation scheme participants have a significant impact on the costs and safety outcomes. In an unconstrained market, workers' compensation premiums would provide appropriate cost incentives for underperforming businesses to improve the work health and safety outcomes for their workers.

However, the Queensland Government caps WorkCover insurance premiums at twice the relevant industry rate in order to limit costs and reduce complexity for firms. This cap shields poorer performing firms from otherwise higher insurance premiums. Where firms do not experience the full costs of their actions through mechanisms such as the premium cap, incentives to improve their safety outcomes will be sub-optimal. DJAG advised that the cap:

- removes the 'level playing field basis' of the workers' compensation scheme
- can affect outcomes for the health and safety of workers
- places a cost burden on the community and government as well as others business as a result of workplace injuries and fatalities
- places additional costs on other businesses in the same industry.

To address the unintended consequences of capping premiums, DJAG provides the Injury Prevention and Management (IPAM) program, to improve the workplace health, safety and injury management systems of poorly performing firms.

Effectiveness of the measure

The measure aims to:

> *deliver safety and productivity benefits for the Individual businesses involved as well as achieve sustained improvement in work health and safety outcomes for Queensland, including the maintenance of a competitive workers' compensation premium rate. (DJAG Information Return)*

Following analysis undertaken by WorkCover (summarised in Table 14.5 below), DJAG considers that the IPAM program is achieving its intended objective. Although it is difficult to compare the results of IPAM participants with scheme-wide participants given the varying risk profiles, IPAM participants have improved their claim statistics by a greater proportion than scheme-wide participants.

Table 14.5 Injury Prevention and Management Program results (2012–13)

	Statutory Claim numbers	***Average paid days***	***Average claim costs***	***Claim frequency (per million dollar wages)***	***Average premium rate***	***Statutory costs****
Scheme-wide	6.3% decrease	steady	4% increase	10% decrease	2.7% increase	0.6% increase
IPAM participants	8.4% decrease	14% decrease	2.8% increase	8.7% decrease	5.6% increase	7.4% decrease

*Note: * Payments and benefits made to an injured worker excluding common law claims.*

Furthermore, surveys of program participants conducted in late 2013 suggest that the program may be achieving long term change. In particular, the surveys found that:

> *Overall, businesses displayed above average levels of confidence that changes to their safety management systems could be sustained both in the short and the long term. Businesses were extremely confident of sustaining changes beyond two years for improvements to the areas of management commitment; safe work procedures and injury management processes. (DJAG Information Return)*

Key findings

Given the indirect costs associated with work health and safety incidents, there appears to be gains to the community from assisting businesses with work health and safety performance. However, while the IPAM program appears to be effective in improving health and safety claim outcomes, poorly performing firms are already subsidised by other compensation scheme participants through the premium cap, and then provided assistance through the IPAM program.

As the IPAM program is a policy response to the regulatory failure created by the workers' compensation premium cap, ideally the Queensland Government should consider whether there is merit in addressing the initial regulatory failure rather than responding to the consequences of regulatory failure with additional intervention.

Notwithstanding this, the IPAM program does appear to have a positive impact. Noting the productivity gains from the program, the IPAM does not appear to introduce additional distortions so the risks of continuing the program in the short term are low.

Recommendation

14.4 The Queensland Government should investigate the distortions created by the premium cap for workers' compensation premiums.

14.3 SMEs in Queensland

The Australian Bureau of Statistics defines small businesses as those employing less than 20 people, while medium businesses are defined as those employing more than 20 people but less than 200. Approximately 99 per cent of the 414,423 businesses operating in Queensland are SMEs (ABS 2014c).

The Queensland Government's *Queensland Small Business Strategy and Action Plan 2013–15* aims to assist small businesses to 'realise their potential and be a part of a strong and sustainable economic future'. To achieve this, the strategy notes that:

> *For small businesses to grow and become more productive, they need the right management skills, knowledge and connections. The government will deliver the services to equip businesses to succeed. (Queensland Small Business Strategy and Action Plan 2013–15, p. 13)*

Lattimore *et al.* (1998) note the rationales for assisting SMEs commonly stem from the perceived weaknesses of SMEs when compared to larger firms. The Chamber of Commerce and Industry Queensland (CCIQ) suggested that 'the Queensland Government has a role in supporting small businesses to overcome the...disadvantages of limited resources' (CCIQ sub. 20, p. 1).

As a result, small business measures generally target perceived or real difficulties associated with:

- **seeking general advice and assistance** — SMEs makes insufficient use of external sources of business advice which could improve efficiency
- **technology transfers** — SMEs underinvest in innovation or have difficulties accessing new technologies
- **accessing export markets** — SMEs face greater difficulties identifying potential export markets and complying with relevant regulations and standards
- **accessing finance** — SMEs cannot obtain loans on the same terms and conditions as larger enterprises
- **training in small business management skills —** SMEs have inadequate management knowledge.

To address these difficulties, SME assistance measures generally fall into five broad categories (Table 14.6).

Table 14.6 SME assistance policy areas

Financial assistance	*Enterprise culture*	*Advice and assistance*	*Technology*	*Management training*
Loan guarantee schemes	Programmes to encourage young disadvantaged individuals to start businesses	Provision of marketing advice	Subsidies to new technology based firms	Subsidies to stimulate the take up of management training in SMEs
Subsidising the creation of businesses and growth of SMEs	Programmes to encourage graduates to start businesses	Provision of general business advice	Creation of science parks	
Tax relief to business angels	Enhancing investment readiness of SME owners	Encouraging SMEs to export		

Source: OECD (2007a, p. 40).

While the rationale and objectives vary between measures, generally, the SME-specific assistance measures seek to improve the knowledge or capability of the SME-sector to improve business performance.

Although SMEs represent a significant portion of Queensland businesses, the economic importance of SMEs alone does not justify providing industry assistance. Indeed, Lattimore *et al.* (1998, p. 54) state that:

> *Any policy which provides selective assistance for small (or large) businesses, without any other rationale which is particular to businesses in that category, will affect the incentives facing entrepreneurs and so create costs resulting from distorted choices.*

14.3.1 SME-specific measures in Queensland

The SME-focused assistance measures generally identify SMEs' lack of access to information or resources as a rationale for intervention. Specifically, the Departmental responses (DJAG, Department of Tourism, Major Events, Small Business and the Commonwealth Games (DTESB) Information Returns) identified that SMEs:

- are not aware of the best strategies for ensuring ongoing growth and smaller firms are unable to access commercialised mentoring services as private sector suppliers charge for these services
- require a large amount of industry-specific knowledge to operate and are disadvantaged by limited access to professional networks, resources and skills. Although third party networking organisations operate in Queensland, they are not always available in regional areas and firms are often required to pay membership fees to participate
- investment in work health and safety is a low priority given other competing economic factors facing small businesses. The cost of engaging external consultants is particularly prohibitive for small businesses, particularly in regional and rural areas.

As a result of the problems identified above, the Queensland Government provides $6.93 million of assistance through the following programs:

- Small Business Program — provides free workshops and workplace consultations, as well as access to expert safety advisors and targeted information on a range of workplace health and safety topics to empower small businesses to develop and embed effective work health

and safety solutions into everyday practice. Administered by DJAG, the level of assistance provided is $5.3 million over five years.

- Mentoring for Growth — facilitates access to volunteer business mentors who assist firms with 'the challenges faced when in growth mode, and in seeking investment'. Administered by DTESB, the level of assistance over two years is $1.11 million.
- Queensland Small Business Week — provides funding to hold a week of events to promote the importance of small business to the economy and provide business owners and managers the opportunity to access information, hear new ideas, and network with other businesses to support business growth, productivity, resilience and sustainability. The Week provides a framework to bring together relevant events with a majority of the events run by the private sector. Administered by DTESB, the level of assistance over one year is $0.52 million.

Is the rationale sufficient to justify assistance?

While the Small Business Program appears to address negative spillovers associated with work health and safety incidents (see the previous section), the main rationale for the other measures appears to be the cost associated with accessing these services. However, a private firm pricing its services above what an SME is willing to pay is not a source of market failure and does not provide sufficient rationale for assistance.

As is the case with any industry assistance program, the wider Queensland community should benefit — not just the assisted firm.

Although the presence of large transactions costs was not identified as a rationale for the Mentoring for Growth and Small Business Week programs, there may be a rationale for assistance where accessing advisory or networking services are privately cost effective, but where information barriers prevent SMEs from accessing them.

However, an appropriate rationale would require evidence that these transaction costs are present and sufficiently large to justify for an assistance measure to reduce them. Where SMEs are underusing advisory or networking services, in the presence of positive informational spillovers, it is possible some government intervention may produce a net gain for the community.

Should high transaction costs associated with identifying sources or benefits of advice or networking organisations exist, Lattimore *et al.* (1998) suggests these transactions costs could be addressed through options such as:

- making detailed and credible information available about the importance and impact of the services on SME performance
- increasing awareness of the impact of training or advisory services by using general information programs such as advertisements, or information packs provided to businesses registering for the first time with government authorities
- developing a user friendly database of training or services provision. It could detail costs, course attributes, and any accreditation details.

14.3.2 Objectives for SME assistance measures

Where a rationale for intervention exists, the objectives of the assistance measure should be specific, quantified and time-related. This assists decision-makers in understanding whether an assistance measure is successful and also aids with further policy development.

While not all the objectives are listed, the Queensland Government's SME-specific assistance measures identify objectives such as:

- *Enable businesses to gain insight into their issues and to develop strategies for moving ahead.(Mentoring for Growth)*
- *...to build stronger business to business and stakeholder engagement by delivering a range of free or low cost networking opportunities to businesses across the state, to encourage business owners and managers to cultivate emerging relationships, and develop and leverage their networks. (Queensland Small Business Week)*
- *To increase the awareness of injury prevention and safety management in small businesses and improve their capability to prevent and manage workplace injury. (Small Business Program)*
- *A reduction in injuries in small businesses. (Small Business Program)*

Although broad objectives, such as those listed above, are useful in conveying the aspirations of the assistance measure, they do not provide an indicative performance target on which to judge the measure's success. Indeed, the Organisation for Economic Co-operation and Development (OECD) identifies that:

> *Without targets, policies can avoid serious evaluation of their ability to deliver cost-effective benefits...and an objective with no time frame need never be reached. (OECD 2013, p. 18)*

Based on the objectives listed above, it is difficult to judge what represents a successful outcome and whether the measure has achieved it. To assist future evaluation practices, objectives should be specific, quantifiable and time-related.

14.3.3 Monitoring and evaluating the effectiveness of SME measures

Assuming an assistance measure's objectives are appropriately specified, Storey's (2000) Six Steps to Heaven Framework provides guidance on the various methods for assessing the effectiveness of SME assistance measures. The framework recognises the graduating sophistication of methods through the use of six steps, step one being the least sophisticated method and step six being the most sophisticated (Table 14.7).

Table 14.7 Six Steps to Heaven: monitoring and evaluating assistance measures

	Method	
Step one	Take-up of schemes	Monitoring
Step two	Recipients' opinion	
Step three	Recipients' view of the difference made by assistance	
Step four	Comparison of the performance of 'assisted' with 'typical' firms	Evaluation
Step five	Comparison with 'match' firms	
Step six	Taking account of selection bias	

Steps one to three are classed as monitoring steps as they rely on the views of recipients to assess a measure's effectiveness. Steps four to six are evaluation steps, as they seek to contrast the performance of the measure with the counterfactual. That is, the method seeks to estimate

the recipient's performance in the absence of the assistance measure. The higher the step used to monitor and evaluate an assistance measure, the greater the likelihood that the improved performance of assisted SMEs can be attributed to the measure.

Although Queensland Government agencies, in administering their SME assistance measures, monitor the take-up of the assistance measures, agencies generally devote fewer resources to determining the effectiveness of a measure. When ranked against the Six Steps to Heaven Framework, the measures were reviewed using steps two or three with no evaluation programs progressing to steps four to six.

Monitoring an assistance measure's take-up and client satisfaction, while useful for improving program delivery, does not establish the additionality of the measure. According to the Queensland Audit Office (2014b, p. 20), client satisfaction and other measures of service quality:

> *...are, at best, indirect indicators of effectiveness. The quality of a service can be quite high but still not be effective; for example, clients of a weight loss clinic may be very satisfied with the service but not have lost any weight.*

Even so, the principle of proportionality should apply and the marginal benefit of conducting a more rigorous evaluation may not always be worthwhile. Where the value of assistance is low, the cost of conducting a sophisticated evaluation which accounts for selection bias is unlikely to outweigh the benefits of more accurately gauging the measure's effectiveness (Oldsman & Hallberg 2002).

Effectiveness of measures

Acknowledging the limitations of measuring service quality and satisfaction, based on the data provided, it appears that participants' response to, and take up of, the three programs are positive. For example:

Number of activities

In 2013–14, the Small Business Program operated:

- 160 workshops with 1321 participants
- 267 workplace consultations
- 56 other services such as presentations, toolbox talks or group coaching.

Program impact

- In 2013–14, 98.5 per cent of attendees rated their satisfaction with the Basic Safety Management System workshop as high to very high.
- A 2012 survey of 172 workshop attendees showed that 76.74 per cent of respondents had implemented changes as a direct result of attending a Small Business Program workshop.
- While not scoring as highly as the Small Business Program, surveyed attendees at Queensland Small Business week events were mostly satisfied (Table 14.8).

Table 14.8 Queensland Small Business Week

Year	*Events and activities delivered*	*Total attendees (estimated)*	*Average cost per attendee*	*Attendee satisfaction of events*	*Attendee satisfaction of networking opportunities*
2013–14	90	4500	$124	N/A	55% rated good or excellent
2014–15	221	10,300	Not available	84%	87% rated good or excellent

DTESB advised that it 'is still refining the scope and delivery of the [Small Business Week], including active consideration of how the department can accurately evaluate the success and impact of the event' (DTESB sub. 42, p. 3). However, a common feature of the Small Business Program and Small Business Week is that the measures of the programs' inputs are reported rather than measures of the intended outcomes. Given this, it is difficult to gauge the effectiveness of the measures and whether the programs are worthwhile. As noted by the Australian National Audit Office (2014, p. 13):

> *Outcome measurement provides information about the effectiveness of programs or services, and supports the longer-term evaluation of programs.*

However, not all the SME-specific programs are focused on input measures. The Mentoring for Growth program's stronger evaluation efforts attempted to gauge the effectiveness of the measure by surveying assisted firms on the resultant increase in business metrics (see Table 14.9 and Table 14.10).

Table 14.9 Mentoring for Growth — cost effectiveness

Year	*Number of businesses mentored*	*Cost of delivery per annum*	*Average cost per assisted firm*	*Value of mentor contribution**	*Estimated average panel hours per participant***
2013–14	126	$536,955	$4,262	$537,000	1.78 hours
** DTESB assumes $300 per hour and 1790 mentor hours.*					
*** Assumes 8 mentors per panel.*					

Table 14.10 Mentoring for Growth — Average impact of assistance to firms

Year	*Increase in turnover*	*Increased profits*	*Increased employment*	*Change in R&D expenditure*	*Investment attracted*
2013–14	45%	17%	11%	43%	$13.6 million

Noting that the mentors provide their time free of charge to the Mentoring for Growth program, the estimated average cost per assisted firm of $4262 appears to be quite high. Particularly given the DTESB's estimate of total panel hours equates to 1.78 hours per participant.

The costs of the program aside, based on the DTESB's estimates of average increase in turnover, profits and employment, the program appears to be highly effective. But these figures are likely to overestimate the additionality of the measure given that potential firms are

screened for rapid growth or high growth potential before joining the program and the measured impact assumes that assisted firms would not have increased their performance in the absence of the program.

In its submission, DTESB considers that the Draft Report:

> *...has taken a very narrow view of these programs, their objectives and evaluation data, and does not take into account the externalities and benefits of both these programs. (DTESB sub. 42, p. 2)*

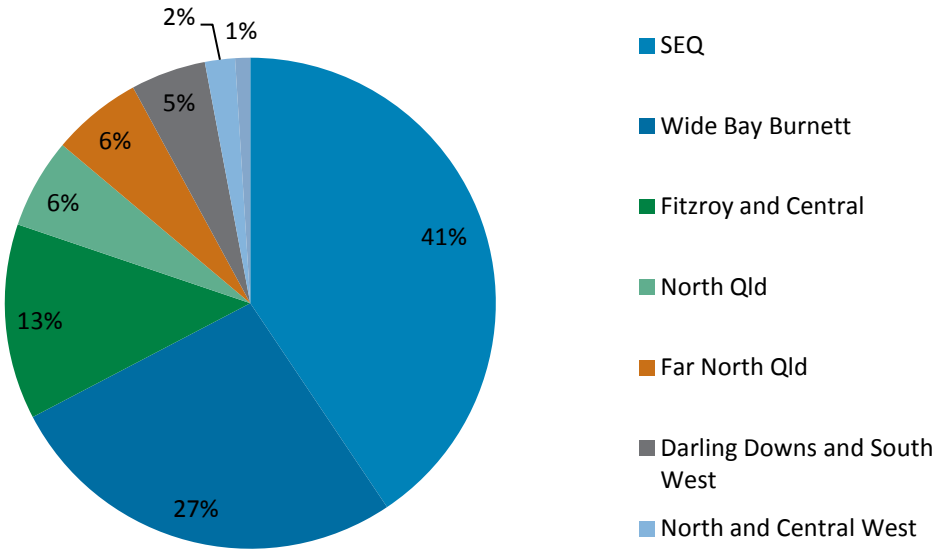
DTESB advised that in 2014–15, 59 per cent of mentored businesses were outside of south east Queensland (see Figure 14.1) and considered:

> *Very few private sector organisations would have the regional reach to be able to deliver these services in the current range of regional locations. (DTESB sub. 42, p. 2)*

And the Draft Report:

> *...underestimates the challenges that private sector providers would face in trying to replicate these activities. (DTESB, sub. 42, p. 2)*

Figure 14.1 Location of assisted businesses — Mentoring for Growth (2014–15)



Source: DTESB (sub. 42, p. 4).

In addition to the benefits to the sector, DTESB considered that providing face-to-face services assists the Queensland Government to:

- *offer the ability to provide tailored information and referral assistance for identified priority regions and/or industries*
- *facilitate the collection of intelligence on business issues, trends, gaps and overlaps in service delivery, to inform policy and program development*
- *assist in building business and government networks which can provide flexibility and responsiveness to achieving priorities. This is particularly important when required to respond rapidly to small business needs (i.e. in the wake of environmental and economic crises)*
- *provide an avenue through which to promote the services available on the business and industry portal. (DTESB sub. 42, p. 3)*

Notwithstanding this, given the limited rationale provided, it is unclear whether the Mentoring for Growth and Small Business Week programs are not activities better provided through the private sector, and taken up by small business where the costs of purchasing the services are less than the perceived benefits of doing so.

Indeed, the private sector already provides similar services. For example, CCIQ hosted the inaugural Small Business Expo in May 2015. Furthermore, the Australian Government operates the Australian Small Business Advisory Services Programme which provides funding of up to $200,000 each year over three years for advisors to provide expert advice to small businesses. These advisors are not limited to south east Queensland and include a number of regional areas of Queensland such as the Fraser Coast, Burdekin, Charters Towers, Cloncurry, Flinders, Hinchinbrook, Mount Isa, Palm Island, and Townsville.[102]

Overall, the SME-specific measures:

- are monitored and subject to some ongoing evaluation. The Mentoring for Growth and Small Business Week measures are one of the few measures that attempt to monitor the impact of the programs
- are unlikely to be highly distortionary given they largely provide advice or information.

However, the SME measures:

- as small programs, are administratively costly, with administration costs for the Mentoring for Growth program outweighing the Department's estimated value of assistance in 2014–15
- appear to have little rationale for the government to provide these services. While there is some evidence they provide material private benefits to participants, they replicate services provided by the private sector should SMEs consider the benefits of accessing them outweigh the costs.

On balance, even though these programs provide a relatively small amount of assistance and are unlikely to be distortionary, there is no rationale for the government to provide these services and sufficient private providers appear to be available to SMEs should they choose to access them.

Recommendation

14.5 The Queensland Government should not duplicate services adequately provided by the private sector to small businesses. The Small Business Week and Mentoring for Growth programs should cease.

[102] Refer to the Programme's website for a complete list of advisory services available to small businesses http://www.business.gov.au/grants-and-assistance/australian-small-business-advisory-services/asbas/Documents/ASBAS-ServiceProviders.pdf

15 PUBLIC PROCUREMENT

Key points

- While much of the activity under Queensland Government procurement policies and programs focuses on improving value for money, some activity may result in the preferential treatment of local businesses, thus providing industry assistance.
- Procurement policies reflect the ongoing tension between the desirability of achieving value for money in procurement and longstanding pressures for policies which preference local industry.
- In general, explicit local preference policies are no longer used by Australian, state and territory governments, although they are still used in those procurement areas exempt under international agreements, including Queensland's Information and Communications Technologies (ICT) small and medium-sized enterprise (SME) Participation Scheme. Explicit preference policies are more common in local government procurement.
- Policies without explicit preferences may still provide assistance because: the value for money principle is weakened or conflicted by other procurement principles; obligations under international agreements apply to some areas or types of procurement but not others; and there are a large range of requirements imposed on tenderers intended to indirectly assist local businesses.
- Preferential procurement policies can protect local businesses from international competition, increase procurement costs leading to higher taxation, and disadvantage businesses with higher productivity. Even if preferences support the expansion of those businesses supplying government, they do so at the expense of other businesses and lower household incomes.
- However, where procurement policies focus on providing information and improving participation in public procurement it may heighten the competitiveness of tender processes and result in improved value for money for taxpayers.
- Public sector procurement decisions should be guided by a single objective — achieving value for money in procurement. Broader economic, social and environmental objectives are best addressed through other policy instruments.
- The Queensland Government should continue to improve procurement processes with the objective of simplifying processes, including removal of the local content oriented requirements in procurement policies and processes.

In 2014–15, the Queensland Government budgeted to spend $15.2 billion on 'other operating expenses', comprising the non-labour costs of providing goods and services, including outsourced services to government and non-government organisations, repairs and maintenance, consultancies, contractors, electricity, communications and marketing.[103] In addition, the budget included an allocation for capital purchases of around $5 billion.

[103] Queensland Government (2014j).

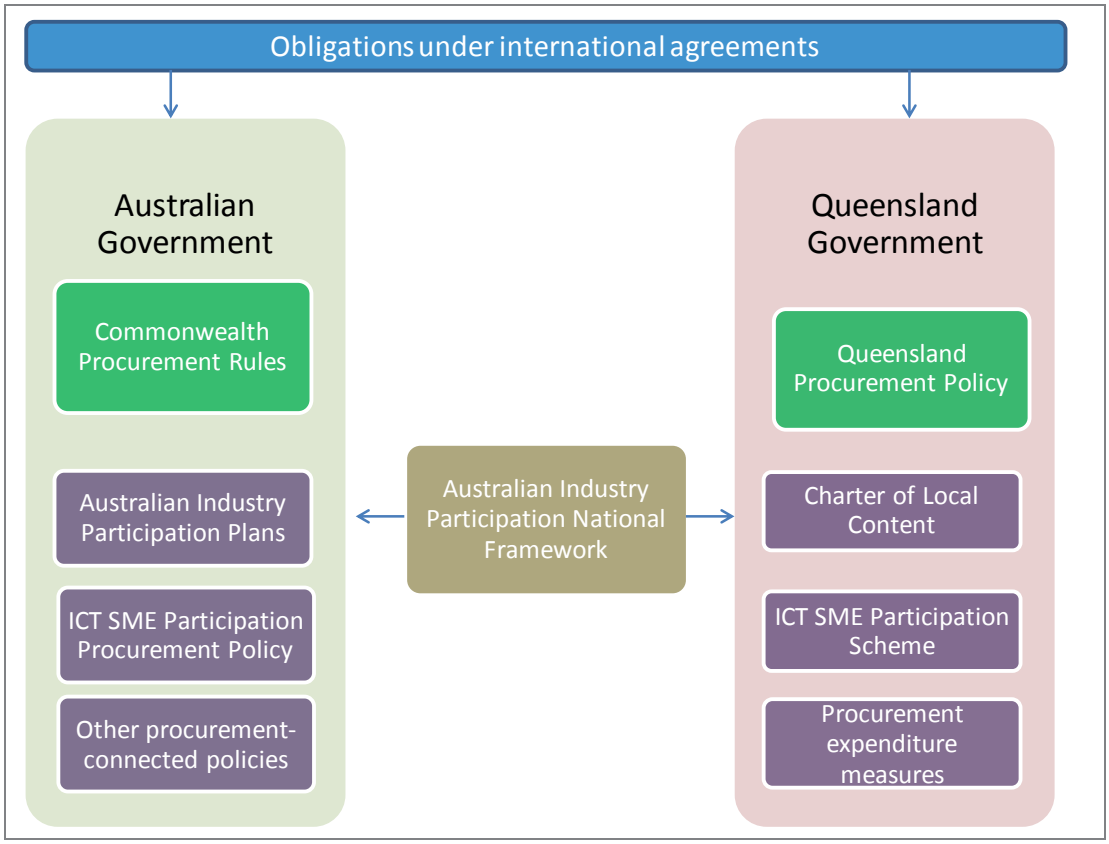
The high cost of procurement policies which explicitly and transparently assist local industries and obligations under international agreements have largely resulted in the removal of such policies. Even where international agreements specifically permit local preferences in procurement, Australian governments have, in the main, refrained from providing explicit monetary preference margins to local supply offers. However, the tendency has been to replace explicit and relatively transparent policies with implicit local participation requirements imposed on potential suppliers.

Reforms have also sought to improve procurement processes more generally in order to assist both local and other businesses. In addition, governments fund policies which seek to assist local businesses in understanding and accessing public procurement processes, as well as improving their capability and likelihood of winning open and competitive tenders.

15.1 The procurement policy framework

Queensland Government procurement policy is influenced by Australian Government policies (e.g. in respect of industry participation plans) as well as obligations under a number of international agreements. The key policies that are relevant to industry assistance are illustrated in Figure 15.1.

Figure 15.1 Key policies guiding public procurement



15.1.1 International agreements

The Australian Government is a signatory to a number of bilateral trade agreements which include chapters on public procurement:

- the Australia–New Zealand Closer Economic Relations trade agreement and Australia New Zealand Government Procurement Agreement

- the Australia–United States Free Trade Agreement
- the Australia–Chile Free Trade Agreement
- the Japan–Australia Economic Partnership Agreement
- the Korea–Australia Free Trade Agreement.

The Queensland Government is a signatory to the Australia–New Zealand Government Procurement Agreement and agrees to observe the requirements of the other bilateral agreements as detailed in each agreement's procurement chapter.

The agreements seek to develop trade between partners by affording preferential access to goods produced within the partner countries in the form of duty-free entry for goods which satisfy rules of origin.

The objective of the procurement rules within the agreements is to create and maintain a single government procurement market between partner countries in order to maximise opportunities for suppliers and reduce the costs of doing business for both government and industry.

While there are some differences between the agreements, each agreement contains non-discrimination principles and impose the following obligations:

- each party shall accord to the goods, services and suppliers of the other party treatment no less favourable than the most favourable treatment the party accords to its own goods, services and suppliers
- neither party may:
  - treat a locally established supplier less favourably than another locally established supplier on the basis of degree of foreign affiliation or ownership, or
  - discriminate against a locally established supplier on the basis that goods or services offered by that supplier for a particular procurement are goods or services of the other party.

The requirements of the agreements apply to agencies as well as other entities listed in the agreements.[104] Further information on international agreements is provided in Appendix G.

15.1.2 Australian Government procurement policies

The main policies guiding Australian Government procurement are:

- the Commonwealth Procurement Rules
- the Australian Industry Participation Plans under the Australian Industry Participation National Framework jointly signed by the Australian and state and territory governments
- the ICT SME Participation Procurement Policy
- a range of policies referred to under the banner of 'Procurement connected policies'.

[104] Not all agencies are covered in the agreements. For example, Australia's trade agreements with the United States, Chile, Japan and South Korea all omit from coverage certain budget sector agencies (e.g. the Department of Education and Training, and Queensland Health (excluding the Queensland Ambulance Service)).

The policies impact on Queensland businesses seeking to supply the Australian Government. The policies also have equivalent Queensland Government counterparts.

15.1.3 Queensland Government procurement policies

The Queensland Government has a range of procurement policies, but in relation to industry assistance the key policies are:

- the Queensland Procurement Policy
- the Charter of Local Content
- the ICT SME Participation Scheme.

There are also a number of procurement expenditure measures.

Queensland Procurement Policy

The Queensland Procurement Policy is the government's overarching policy for the procurement of goods and services, including construction. The policy defines procurement as the entire process by which all classes of resources (human, material, facilities and services) are obtained. This can include the functions of planning, design, standards determination, specification writing, the selection of suppliers, financing, contract administration, disposals and other related functions. The stated purpose of the policy is to deliver excellence in procurement outcomes for Queenslanders.

Principle 1 of the policy states that agencies should base procurement decisions on 'value for money' criteria. Principle 4 of the policy states that procurement can be used, '...to advance the government's economic, environmental and social objectives and support the long-term wellbeing of our community' (see Appendix G for detailed information on Queensland Government procurement policies).

Charter for Local Content

The *Queensland Industry Participation Policy Act 2011* (the 'Act') provides for the development and implementation of a local industry participation policy for the State, and requirements to report to Parliament on the policy's implementation and compliance with it. The Act requires that the Minister develop and adopt a policy for the participation by local industry in projects, developments, procurements and other initiatives undertaken or funded, whether wholly or partially, by the state. The *Charter for Local Content* (the 'Charter') fulfils this requirement.

The Charter states that it provides a mechanism for government agencies to effectively and efficiently give consideration to a wide range of potential suppliers when making decisions relating to major procurements, rather than being about mandating that government agencies use local suppliers.

The Charter has the core objective of maximising local content through greater participation of capable local industry in major government procurement activities. The Charter is guided by five principles:

(1) Full, fair and reasonable opportunity — Government agencies are encouraged to maximise local industry participation in government procurement projects by providing industry full, fair and reasonable opportunity to participate.

(2) Value for money — Government agencies are encouraged to apply the principle of achieving value for money in government procurement as described in the Queensland Procurement Policy.

(3) Regional development — Government agencies are encouraged to work in partnership with regional communities to develop industry capability and capacity, and secure broader economic and societal benefits, as appropriate.

(4) Transparency of process — Government agencies are encouraged to build transparency into their local content policies, processes and criteria to ensure clarity.

(5) Compliance with international obligations — Government agencies are to comply with Australia's international obligations, including those under Free Trade Agreements (DSDIP 2014b).

Procurement expenditure measures

The Queensland Government has a suite of measures that are primarily concerned with improving the participation of local businesses in public procurement processes (Table 15.1). These measures are intended to assist local businesses in building capabilities to win procurement contracts. The measures are included as industry assistance measures as they involve the underpricing of a service provided to businesses.

Table 15.1 Procurement expenditure measures

Assistance measure	*Description*
Industry Capability Network (ICN Qld) Services	Industry Capability Network (ICN) Services represent the suite of assistance measures that are purchased from ICN Qld by the Queensland Government. This incorporates the ICN Gateway and Black Business Finder, ICN Embedment in Major/Iconic Procurement Projects, ICN Gateway Listings, ICN Gateway Registration and Supply Chain Awareness Sessions, Business Matching, Project and Supplier Opportunity Sessions.
Tendering for Government Business (T4GB) Workshops	The Tendering for Government Business (T4GB) Workshops is a program for educating industry on the Queensland Government's procurement process.
Accessing Supply Chain Opportunity (ASCO) Workshops	The 3-day Accessing Supply Chain Opportunity (ASCO) Program has been developed in consultation with proponents in the CSG/LNG and Mining Resources sectors and helps build supplier capability to address and meet the requirements for supply chain opportunities. The program is comprehensive and is both for suppliers and project proponents, particularly those within the resource, gas and energy sectors and is delivered on a demand led basis. The ASCO Program is delivered to help businesses access major project opportunities and meet regional market demand by developing clusters of supply businesses around a major contractor working towards raising the capability of firms currently or potentially supplying to the project.
Top 10 Tips for Tendering Success Webinar	The Top 10 Tips for Tendering Success Webinar is a free interactive webinar which provides tips to assist current or potential suppliers to the Queensland Government. The webinar aims to increase a supplier's chances of winning government contracts. An electronic workbook which supports and expands on the information provided in the webinar is also provided to suppliers participating in the session.
Building an Effective Capability Statement Workshop	Workshops are delivered throughout Queensland to assist firms prepare effective capability statements which are now a key requirement in the pre-qualification for major government projects and procurement opportunities, as well as for private sector major projects and subcontractor work. A capability statement guide, template and workbook is provided as part of this session. These resources have been endorsed by industry and assist businesses in developing a capability statement for their business.
Partners in Technology	Partners in Technology briefings delivered to the local ICT industry provide an update on the ICT strategies of Queensland Government agencies and major Queensland organisations and outline their planned forward procurement related opportunities.

Assistance measure	*Description*
Queensland ICT Directory	The Queensland ICT Directory is a searchable online tool that enables Queensland businesses to locate a wide range of Queensland ICT solution providers. It also provides a platform to foster links, collaborations and business relationships.

Procurement expenditure measures provide a modest level of assistance at $1.5 million in 2014–15 and $4.2 million over 2013–18 (Table 15.2). Funding to ICN Qld forms the bulk of the assistance.[105] ICN Qld funding from 2015–16 onwards is yet to be considered by government.

Table 15.2 Level of assistance provided by procurement expenditure measures ($'000)

Measure	*2013–14*	*2014–15*	*2015–16*	*2016–17*	*2017–18*	*2013–18*
ICN Qld*	1752	1200	-	-	-	2952
ASCO Workshops	56	109	134	134	134	567
T4GB Workshops	78	78	56	56	56	325
Capability Statement Workshop	53	55	50	50	50	257
Partners in Technology	13	13	13	13	13	66
Queensland ICT Directory^	0	tbc	tbc	tbc	tbc	tbc
Total	1952	1455	253	253	253	4166

*Notes: Totals may not add due to rounding. * In 2013–14, grants and subsidies were provided to QMI Solutions through a financial incentive agreement to deliver these services. In 2014–15, the delivery of Industry Capability Network Services changed to DSD purchasing specified services through a contractual agreement. Funding for 2015–16 forward is under consideration by government. ^ The future of the Queensland ICT Directory is currently being considered by DSITI. No funding has been allocated.*

ICT SME Participation Scheme

Procurement of ICTs is excluded from the Charter. The ICT SME Participation Scheme details the local industry participation requirements for Queensland Government procurement of ICT products and services.

The ICT SME Participation Scheme was introduced to help local SMEs gain greater access to the Queensland Government ICT market. In principle, it is open to SMEs from any location, but SMEs are more likely than large businesses to be local. In addition, there are aspects of the scheme that specifically target local SMEs. The key elements of the scheme are:

- *Unbundling of high value contracts*: ICT Strategy 2013–2017 requires departments to unbundle high value contracts where appropriate.
- *Proportional requirements*: for contracts under $150,000 departments are required to demonstrate that they have undertaken a market assessment to identify appropriate SMEs and are required to obtain offers from at least two SMEs. For contracts between $150,000 and $250,000, departments can obtain offers from at least two SMEs or they can adopt SME participation scores (see below). A procurement plan can also be required. For contracts greater than $250,000, SME participation scores and a procurement plan are required.
- *SME participation scores*: SME participation levels will be calculated on the net proportion of the contract which is to be paid to SMEs. The offeror with the highest participation level will

[105] Government also provides the Top 10 Tips for Tendering Success Webinar which is a one-hour presentation produced in Brisbane delivered free of charge. The cost of delivering the presentation is negligible.

be awarded a score of 10 with the remaining offerors' scores being represented as a proportion of 10. For all purchases the SME participation score will contribute 10 per cent to the final tender score. The nominated level of SME participation will be considered a deliverable in terms of the contract and subject to normal contract variation processes where applicable.

- *SME short-listing*: consistent with the ICT Strategy 2013–2017, at least one responding SME will automatically be short-listed in the evaluation of ICT offers. This is on the condition that a suitable offer representing value for money has been submitted by an SME and merits short-listing. An offer from an SME which does not meet the specified requirements and is not fit for purpose will not be short-listed.
- *Permission required to change subcontracting arrangements*: major consortiums cannot change subcontracting arrangements relating to SMEs without the government's express approval. The contract manager must ensure that the contracted SME payments have occurred. Contractors found to have not met their contracted SME participation levels may be subject to contracted liquidated damages by withholding a proportion of the final payment.
- *'Innovative solutions'*: departments can directly engage SMEs in the provision of 'innovative solutions' up to $500,000 which demonstrate value for Queensland in addressing government priorities. A simplified contracting process applies. Any award to an SME should be based on a real innovative outcome that provides the best value for money for the Queensland Government (Queensland Government Chief Information Office 2014).

The scheme's requirements do not breach international obligations as there are exemptions in the United States and Chile agreements with Australia related to SMEs (under the Australia–New Zealand Government Procurement Agreement, New Zealand businesses are treated as equivalent to Australian businesses).

The level of assistance provided by the preferential elements of the Charter and ICT SME Participation Scheme policies is not known due, in part, to the problems of:

- the lack of transparency of the preference policies
- difficulties in testing for the additionality of the policies (the extent to which the policies increase local supply compared to what would happen in the absence of the policies)
- controlling for other elements of the policies which may improve value for money.

Other policies

The Queensland Government has a range of other policies that potentially provide industry assistance, for example:

- the subsidisation of the employment of apprentices and traineeships under the Building and Construction Training Policy (discussed in Chapter 9)
- while not a procurement policy, Principle 3.6 of the Queensland Government's *Intellectual Property Principles* states:

> *When selecting a commercial 'partner', such as a head licensee or distributor to commercialise an IP asset, agencies should, where practicable, select a Queensland or an Australian owned enterprise. (DSITIA 2013, p. 10)*

15.2 Scope for assistance

Industry assistance does not result from procurement transactions where the payment of monies for goods and services is based solely on value for money considerations, and policies have not distorted the 'menu' of supply offers and resulted in offering prices being higher than otherwise. Whereas a grant given is an unrequited transfer, procurement, where it achieves value for money, is an exchange of money for goods and services valued similarly. The goods and services represent the best value that can be obtained by the procuring agency, usually as tested through open and competitive tendering processes. The fact that the supply is sourced from local industry does not constitute industry assistance.

Procurement policies can result in the provision of industry assistance, despite the constraints imposed by the value for money principle and obligations under international agreements, because:

- the restrictions imposed by bilateral trade agreements are subject to a large range of exemptions, exclusions and exceptions, and specifically permit industry assistance in many circumstances
- bilateral trade agreements can extend the provision of industry assistance (Box 15.1)
- the value for money constraint may be diluted by other objectives and requirements of procurement policies, such as the provision of various forms of preference to local businesses (discussed below).

Box 15.1 Extension of assistance under preferential trade agreements

Preferential access under a trading agreement can expand the protected market available to producers of the countries covered by the agreement, potentially raising industry assistance in each of the partner countries.

Local preferences policies result in 'tariff equivalents' being applied to imported goods (Appendix G discusses the concept and modelling of tariff equivalents). The policies can have similar trade effects as traditional tariffs.

Tariffs provide output assistance to some domestic industries while penalising industries which use the imported goods as inputs to production. Where two countries who impose tariffs enter into a bilateral agreement providing preferential access to each other's suppliers, the agreement can expand the protected market available to producers from both countries, raising the level of industry assistance provided through tariffs.

Similarly, where a government conducts its procurement in a way that results in the provision of assistance to local businesses, a preferential trading agreement / government procurement agreement can extend procurement assistance to suppliers from the partner country.

Productivity Commission (2004b) analysed the provision of industry assistance under the Closer Economic Relations (CER) agreement between Australia and New Zealand. It was found that preferential trading agreements can result in the extension of industry assistance:

> *The duty free access available to Australian producers in the New Zealand market can extend New Zealand tariff protection to Australian producers. Similarly, duty free access to New Zealand producers in the Australian market can extend Australian tariff protection to them. In this way, CER expands the protected market available to domestic producers of both countries. It can raise industry assistance in both countries if higher assistance is provided in the other country and is not eroded by intra-CER production or trade.*

Tariffs on imported goods increase the price at which those goods can be sold on the Australian market, and thus allow domestic producers of similar products to increase their prices (referred to as 'tariff output assistance'). Tariff output assistance is extended to Australian exporters but more so to New Zealand exporters.

Tariffs also increase the price of goods that are used as inputs by Australian producers and thus penalise some Australian producers (referred to as 'tariff input assistance', or 'tariff input penalty'). The CER was unlikely to result in significant reductions in the input penalty.

Overall, a small increase in effective rates of assistance for Australian firms was found. For New Zealand, the analysis indicates that the CER arrangements afforded a net increase in assistance to activities of New Zealand firms from exports to Australia:

> *For these reasons, the net increase in effective assistance is typically higher for New Zealand firms exporting to Australia than for Australian firms exporting to New Zealand. (PC 2004b, p. 35)*

The scope for Queensland Government procurement policies to provide industry assistance is the outcome of tensions between the value for money principle and: the extension of preferential access under preferential trade agreements; the various exclusions under the agreements which specifically allow for the provision of industry assistance; and the imposition of other objectives on procurement other than achieving value for money (e.g. local industry participation and other economic, social or environmental objectives) (see Table 15.3).

Table 15.3 The scope for procurement policies to provide industry assistance

Preferential trade agreements and government procurement agreements	
Threshold levels	The United States and Chile Free Trade Agreements (but not the ANZ Government Procurement Agreement) contain thresholds below which procurement is exempt from the obligations of the agreements. Obligations only apply where the value of the contract exceeds Australian $551,000 for goods and services, and Australian $7.769 million for construction services.
Exclusions, exceptions and exemptions	The United States and Chile Free Trade Agreements and the ANZ Government Procurement Agreement each contain a schedule/s of exclusions, exceptions and/or exemptions. These typically apply to certain policy areas, classes of procurement or types of firms or other entities. For example, under United States and Chile agreements, obligations do not apply to procurement related to: non-contractual agreements; intergovernmental procurement where government buys from its own entities; procurement of research and development services; and procurement for the direct purpose of providing foreign assistance. Examples of Australia specific exclusions include: any form of preference to benefit small and medium enterprises (SMEs); measures to protect national treasures of artistic, historic or archaeological value; measures for the health, welfare, or economic and social advancement of indigenous people; and Plasma fractionation services. Examples of Queensland specific exclusions include: procurement by agencies covered by the agreement on behalf of non-covered agencies; health and welfare services; education services; government advertising; motor vehicles; and measures necessary to protect intellectual property.
Queensland Government policies	
Economic, social or environmental objectives	The Queensland Procurement Policy permits economic, environmental and social objectives to be taken into account where guidance is provided by government. This introduces a potential conflict between the value for money principle and other principles which might result in the provision of industry assistance.
Local content	The Queensland Charter for Local Content encourages agencies to maximise local industry participation in procurement projects, including focusing on the promotion of regional development. While the value for money principle is intended to be maintained, local content requirements may lead to the rejection of supply offers that offer the best quality–price combination, and, over time, have the potential to increase public sector input costs.
ICTs and local content	Under the ICT SME Participation Scheme, local content participation is specifically taken into account in the scheme's evaluation criteria and formula for awarding contracts.

Schemes that use procurement to attain socio-economic objectives and preference some local businesses can be classified as:

- reservation schemes — reserve contracts or portions thereof for contractors who satisfy certain prescribed criteria, for example:
  - are owned, managed and controlled by a target population group
  - are classified as being a small business enterprise
  - have equity ownership by companies with prescribed characteristics
  - are joint ventures between non-targeted and targeted joint ventures
- preferencing schemes — grant tender evaluation points to those contractors who satisfy prescribed criteria or who undertake to attain specific goals in the performance of the contract

- indirect schemes — constrain the manner in which the procurement is delivered or require offsets in parallel to the procurement. For example, specifications that require work is undertaken in a manner that supports policy objectives or offsets such as the provision of bursaries, participation in an economy, the provisions of community centres etc that are unrelated to the procurement itself.
- supply side schemes — help enterprises to overcome barriers to competing for tenders. For instance, access to bridging finance and/or securities, mentorship, and capacity/capability workshops (Watermeyer 2004a).

The Queensland Government's procurement expenditure measures outlined in Table 15.1 are examples of supply side schemes, while scoring under the ICT SME Participation Scheme is an example of preferencing using contract award criteria (Table 15.4). Reservation schemes, preferencing schemes and indirect schemes are all referred to in this chapter as local preference policies.

Table 15.4 Procurement methods to implement secondary objectives

Scheme type	*Methods*	*Actions associated with the method*
Reservation	Set asides	Allow only enterprises that have prescribed characteristics to compete for the contracts or portions thereof, which have been reserved for their exclusive execution
	Qualification criteria	Exclude firms that cannot meet a specified requirement, or norm, relating to the policy objective from participation in contracts other than those provided for in the law
	Contractual conditions	Make policy objectives a contractual condition, e.g. a fixed percentage of work must be subcontracted out to enterprises that have prescribed characteristics or a joint venture must be entered into
	Offering back	Offer tenderers that satisfy criteria relating to policy objectives an opportunity to undertake the whole or part of the contract if that tenderer is prepared to match the price and quality of the best tender received
Preferencing	Preferences at the short-listing stage	Limit the number of suppliers/service providers who are invited to tender on the basis of qualifications and give a weighting to policy objectives along with the usual commercial criteria, such as quality, at the short-listing stage
	Award criteria (tender evaluation criteria)	Give a weighting to policy objectives along with the usual commercial criteria, such as price and quality, at the award stage
Indirect	Product, service specification	State requirements in product or service specifications, e.g. by specifying labour-based construction methods
	Design of specifications, contract conditions and procurement processes to benefit particular contractors	Design specifications and/or set contract terms to facilitate participation by targeted groups of suppliers
Supply side	General assistance	Provide support for targeted groups to compete for business, without giving these parties any favourable treatment in the actual procurement

Sources: Watermeyer (2004a ,2004b).

15.2.1 Upward pressure on purchase prices

Local content and SME participation policies can lead to an increase in the prices paid to suppliers. There are a number of different mechanisms or drivers of increased prices (Table 15.5). An implicit price effect may also occur where prices are constant, but quality declines. Whether the effects result in industry assistance or not, they have the potential to result in significant economic costs given the scale of government procurement activities.

For preference policies to be effective they must alter the range of supply options available to agencies and, at least in many cases, alter the price–quality characteristics of the winning offer. Local preference policies can alter the 'menu' of supply offers by imposing various requirements on agencies and non-local suppliers. Within the constraints of the altered menu of offers, the decision of which supply offer to accept is intended to be based on the value for money principle. However, the procurement decision applies to a set of offers with different price–quality characteristics than would have existed in the absence of the preference policies.

Table 15.5 How local content policies can raise prices and procurement costs

Price raising effect	***Description***
Supplier compliance costs	Where policies raise the costs of doing business with the procuring agency, businesses will have incentives to recoup these costs through higher offer prices. The incentives will be constrained to the extent that raising prices reduces the probability of winning a tender.
Department compliance costs	The Charter imposes a number of compliance requirements on departments, such as, monitoring and reporting on local content outcomes from tenders, which raises departmental procurement costs.
Higher production and supply costs	Where local 'partners' are a more expensive supply option, the average price of supply offers to procuring agencies will be raised through the exclusion of cheaper alternatives. One of the reasons a local supplier may be less efficient is the existence of international supply chain efficiencies to which it is not a part.
Fewer or 'lagged' innovative solutions	Local content policies can restrict the ability of agencies to adopt innovative solutions or can delay their diffusion where local suppliers displace non-local suppliers in joint-bids and the displaced suppliers are closer to the technological frontier. This can raise prices and/or reduce the quality of offered goods and services.
Resources directed away from efficient local businesses	Local preference policies are likely to predominantly assist relatively inefficient local suppliers (efficient local suppliers are competitive in tender processes without preferential treatment). The policies result in higher public sector input costs and therefore taxation so that resources are directed from efficient local businesses to inefficient local businesses.
Prevention of local scale	Preferences towards SMEs can prevent larger local businesses from capturing scale economies, or discourage SMEs from expanding.
Increased risk for non-local suppliers	The preparation of supply offers can be costly. Local preference policies introduce a number of risks and uncertainties that can discourage non-local businesses from submitting supply offers. Non-local businesses may perceive that the probability of winning a tender is increased by participation in local partnerships, but there may be uncertainty about the capabilities, reliability and so on of potential local partners. Even where supply offers are submitted the offer prices may reflect the higher level or risk.
A local content 'mark-up'	Local suppliers are essentially granted a degree of market power relative to non-local suppliers who need to find a local partner. If the number of capable local suppliers is limited, then local suppliers will have some scope to mark-up their prices without it impacting on the probability of the joint bid being successful (as the costs of competing bids are also increased and/or local suppliers are able to capture a larger share of the profits of the joint bid).

DSD stated that it agreed that the above effects could have the potential to raise prices and procurement costs, but strategies for the implementation of the Charter have been put in place to ensure these consequences do not eventuate or their impacts are minimised, for example:

- *supplier compliance costs are minimised by the Charter's principles being built into an Agency's procedures and practices, alleviating additional cost of doing business with government agencies;*
- *the Charter supports innovation as it encourages Agencies to consider a broader field of suppliers and so helps to build a more competitive and innovative supply environment; and*
- *the Charter provides no preference to local suppliers and firms are engaged by prime contractors due to their price, capabilities and capacity as demonstrated in their tender documentation to meet the requirements of particular work packages, ensuring that resources are not directed away from efficient local businesses. (DSD, sub. 40, p. 6)*

The Charter and ICT policies are part of a broader procurement framework which has been subject to considerable and ongoing reform. It is possible that the net effect of procurement reforms in recent years (e.g. reforms under the Procurement Transformation Program) has been to improve value for money outcomes overall (an investigation which is outside the scope of this inquiry).[106]

Fiscal policy can provide an important constraint on procurement as a vehicle for industry assistance. Pressure on departmental budgets increase the onus on achieving value for money as the opportunity costs facing the department are higher (e.g. fewer resources are available for core service provision activities). Fiscal pressure can be expected to lead to a stricter adherence to the value for money principle. Even so, this argument is more applicable to businesses where there is a clear objective of generating profits than it is to public service organisations that may have multiple objectives and competing priorities.

15.3 Rationales for the policies and measures

15.3.1 Improving value for money

The policies and measures are primarily based on the view that certain impediments to local participation in government procurement exist that, if counteracted, would lead to better value for money being achieved in procurement. The argument is that local suppliers are or can be competitive with alternatives sources of supply, but how procurement is conducted and procurement decisions made, to some extent, disadvantage local suppliers. Where this is the case and local content policies are restricted to addressing these issues, then the rationale for the policies is not concerned with providing 'preferential access', but rather balancing advantages available to interstate or foreign suppliers. More often than not this appears to mean counteracting 'advantages' available to large businesses relative to SMEs.

Charter and ICT SME Participation Scheme policies might lower prices and improve value for money if the policies are successful in:

[106] The Queensland Procurement Policy underpins the government's Procurement Transformation Program (PTP). The Procurement Transformation Program (PTP) seeks to achieve greater value for money from the Queensland Government's procurement activities. It seeks to do this by better leveraging expenditure, putting smarter sourcing practices in place, taking an innovative, whole-of-government approach to how products are purchased, and developing procurement and contract management capability. Information on procurement reforms can be found at http://www.hpw.qld.gov.au/aboutus/BusinessAreas/ProcurementTransformation/Pages/default.aspx.

- increasing the competitiveness of government tender processes through information provision
- increasing the competitiveness of government tender processes by assisting in raising business capabilities
- creating incentives for increased linkages with overseas suppliers in bids which results in knowledge transfer, improved access to overseas markets, or other benefits.

However, the first two effects are related more to the potential benefits of the procurement expenditure measures than to other elements of the Charter and ICT policies.

Charter documentation states that the Charter provides benefits to Queensland Government agencies, local suppliers, local branches of international suppliers and wider economic benefits (Box 15.2). The benefits intend to include the achievement of better value for money through competition, increased leveraging of expenditure and better cost control.

Box 15.2 Stated benefits of the Charter for Local Content

Benefits to Queensland Government agencies

- Better value for money through competition, increased leverage of spend and better cost control
- Reduced costs, including logistics and maintenance
- Customised, dedicated supply
- Enhanced public perception and reputation
- Match best practice in the private sector
- Transparent reporting of benefits

Benefits for local suppliers

- Opportunities for growth
- Increased stability and diversity of markets
- Improved productivity and technology
- Improved capability and capacity
- Improved national and international reputation

Benefits for local branches of international suppliers

- Opportunities for customisation
- Industry growth
- 'Social' licence to operate

Wider economic benefits

- Increased employment and skills
- Increased competition and productivity
- SME development
- Wealth creation
- Provide greater certainty for investment
- Supply chain development
- Innovation
- Red tape reduction

Source: DSD (2014a).

15.3.2 Rationales for assisting local industry through procurement

There is significant interest internationally in using public procurement to leverage improved innovation performance and to drive technological change.[107] Current Queensland Government procurement policies also include some scope for using procurement to promote innovation, for example, 'innovative solution' procurements under the ICT SME Participation Scheme. And procurement for identified agency needs may require the delivery of innovative goods or services (new-to-the world, or adapted and new-to Australia).

A range of other rationales that have been drawn on to support the use of public procurement to assist local industry, including to:

- address information problems and biases in procurement processes

[107] See OECD (2010b); Aschhoff and Sofka (2008); and European Commission (2014b).

- develop infant industries
- stimulate local economic activity
- learn and build technological capability, and improve the competitiveness of local businesses
- offset similar policies overseas, or counter the dumping of cheap goods into Australia
- offset foreign supplier collusion
- capture economies of scale
- improve balance of payments.

A number of these rationales are discussed elsewhere in this inquiry report. Overall, previous studies[108] have been critical of many of these arguments finding that they generally do not provide sufficient support to justify the costs of distortionary procurement policies. The following sections focus on information problems, bias in procurement processes and capital investment decisions and procurement as an instrument to improve local business capabilities.

15.3.3 Information asymmetries and biases in procurement processes

Supporters of local preference policies tend to see the policies as providing an offset to certain information problems and biases against local suppliers, including:

- *Information gaps*: procurement officers may lack knowledge on local industry capabilities and maintain a general perception that untried local products are of inferior quality.
- *Bias towards aggregated contracts*: public sector agencies may aggregate (or bundle) contracts with the objective of achieving administrative efficiencies. However, the structure, scale and breadth of contracts can deter bids from local suppliers, particularly SMEs.
- *Complex and costly tender processes*: the complexity of public tender processes and contract documentation has been cited as a barrier to businesses participating in government procurement processes (FPARC 2014, p. 41). Procurement processes and requirements can increase the administrative costs of procurement for both businesses and public sector agencies, with the latter costs showing up not as increased purchase prices for goods and services, but in public sector wages and administration expenses. High costs can deter, in particular, local SMEs from lodging supply offers.
- *Investment myopia and announcement effects*: a bias has historically existed in public sectors favouring allocating resources to capital investments while not fully considering (or funding) the whole-of-life costs of projects.
- *Risk and risk averseness*: buyers and sellers may have different perceptions of project risk which can result in: attitudes of procuring agencies favouring overseas suppliers if they perceive greater risk from lesser known or unproven local alternatives; local suppliers perceiving unfair treatment where none may exist; and overly complex tender arrangements from attempts to control or mitigate risk.[109]

[108] See, for example, Bureau of Industry Economics (1988); Office of Economic and Statistical Research (2007); PC (1996); VCEC (2011b); White (1989); Industry Commission (1992a); and Ernst & Young (2011).

[109] The main sources of risk are: performance risk as the project may not meet performance expectations; commercial risk, including if a firm is not well placed to complete development of a product and follow through to manufacture; integration risk where a product is required to integrate with other technologies, systems or processes; timing risk including where the project may not be finished at the milestones where

Where legitimate information gaps and biases in procurement processes disadvantage local provision, actions to reduce those problems should support the value for money principle, as it supports increased competitive pressures between suppliers. In this case, actions to offset biases may result in a net increase in statewide industry output as they will not raise, and may lower, public sector input costs (assuming the cost of the actions are less than the cost of the biases).

In some circumstances, non-local suppliers may be able to raise their prices at the margin because of a competitive disadvantage placed on local suppliers by tender processes. Removing those disadvantages increases competitive pressure on the offers from non-local suppliers resulting in the public sector achieving greater value for money. A more competitive and transparent tendering process could result in an increase in domestic economic activity as local supply displaces non-local supply.

Information gaps

Some of the problems and arguments used to support procurement policies that seek to assist local industry are based on problems of information asymmetries or other information problems.

The Victorian Competition and Efficiency Commission (VCEC) found that information gaps on local supplier capabilities remained a problem in Victoria. It recommended:

> *To address information gaps relating to the existence and capabilities of local suppliers, the Victorian Government: retain the requirement for shortlisted bidders in applicable tenders to prepare a Victorian Industry Participation Policy (VIPP) Plan; and establish that Industry Capability Network Victoria (ICNV) will only certify a tenderer's VIPP Plan if the tenderer is assessed to have thoroughly considered the capabilities and value for money of relevant local suppliers. (VCEC 2011a)*

The Queensland Government has a number of policies which seek to address these problems.

In Queensland, the objective of contracting ICN Qld services is to increase the level of participation by Queensland companies in Queensland Government procurements and projects by creating an environment that encourages local firms to increase their capabilities, improve productivity and place a greater emphasis on design and innovative solutions. It is intended that 'capable' Queensland suppliers will benefit from improved access to market opportunities for their products and services. Project proponents benefit from access to a wider range of competitive suppliers than which they might otherwise be aware of.

The services provided by ICN Qld are designed to address a number of problems related to imperfect or asymmetric information. It is argued that project proponents and managing contractors do not necessarily have clear visibility of capable local suppliers that may add value to a project's supply chain. Likewise, suppliers seeking to access new market opportunities have very limited early visibility of major project and procurement opportunities and related market information.

The information deficiencies impact directly on project proponents' and suppliers' ability to invest in business innovation and capability development so they can best position themselves to access market opportunities. In addition, accurate supplier data and clearly identified

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critical strategic decisions need to be made by the purchaser; risks associated with the emergence of alternative solutions on projects with long lead times; and upgrade and post-sale risk where, for example, a seller is unable or unwilling to maintain product development to keep pace with technological developments or to provide necessary back-up service (IC 1992a, p. 46).

opportunities are critical aspects of suppliers having 'full, fair and reasonable' opportunity to access major project and procurement tender opportunities.

ICN Qld offers a range of services which address information deficiencies and help link project proponents with capable local suppliers (Box 15.3). This is done through:

- maintaining datasets and Queensland supplier registrations on ICN Gateway to better match project proponents with potential suppliers
- placing procurement specialists with project proponents or managing contractors
- communicating public sector procurement plans to industry through, for example, information sessions
- arranging networking opportunities between project proponents and suppliers.

Box 15.3 Industry Capability Network Qld services

ICN Gateway and Black Business Finder

Under the ICN services agreement, ICN Qld maintains Queensland supplier registrations on ICN Gateway (a national database) to support more effective and efficient matching of Queensland suppliers with project proponents. ICN Gateway is not a pre-qualification system, its primary purpose is to raise awareness of the capabilities of local suppliers and opportunities available for local suppliers.

The Black Business Finder operates in a similar manner. The Black Business Finder was established to give Aboriginal and Torres Strait Islander businesses an opportunity to be involved in major projects. The measure is a resource for major project owners to source Indigenous businesses to provide goods and services for major projects.

The ICN Gateway and Black Business Finder can be searched by buyers. Suppliers create their own profile (capability statement), including their product and services offerings, whether their products are manufactured locally or overseas, the company's ABN, certifications and accreditations. ICN Gateway is also used by project proponents to profile their projects and list procurement work packages when they are seeking suppliers.

Embedding staff in major/iconic procurement projects

ICN Qld co-locates an ICN Qld specialist in a project proponent's procurement office to undertake agreed services which will include, but are not limited to: initial supply analysis (identifying suppliers against proposed work packages); verified supply analysis (identifying suppliers against finalised work packages); gateway pages; project opportunity sessions; and reporting of outcomes. Embedments can be undertaken to a maximum of 40 days.

ICN gateway listings, registration and supply chain awareness sessions

These activities support project proponents to establish an ICN gateway listing including all work packages, specifications and pre-qualification criteria. The aim is to provide early visibility to suppliers of emerging opportunities. ICN delivers information sessions to lift local suppliers' awareness of procurement opportunities, and assist Queensland businesses to promote their capabilities and capacity to project proponents.

Business matching and project opportunity sessions

ICN delivers project opportunity sessions aimed at: connecting suppliers with project proponents through a 'meet the buyer' program; promoting major project and procurement opportunities; delivering supplier information sessions in partnership with defence prime contractors and/or supply chain proponents; and qualified business matching for one-on-one meetings with defence and other major contractors.

ICN also delivers specialist information sessions to: lift local supplier awareness of procurement opportunities; promote the value of local content services to Queensland businesses seeking to access emerging major procurement opportunities; and assist Queensland businesses to promote their capabilities and capacity to project proponents.

KPMG was engaged by DSDIP to conduct an independent review to evaluate and provide clarity in regards to the local content services that the Queensland Government may choose to deliver, and the possible pathways for delivery, including the engagement of ICN Qld or other third party providers. The review involved a survey of project proponents, suppliers and other stakeholders (such as Queensland Resources Council).

KPMG (2014) noted that ICN Qld is the state's primary service provider tasked with maximising opportunity for local suppliers to participate in major procurement projects. It was considered that ICN Gateway and Black Business Finder actively promote local industry and are well utilised by both project proponents and suppliers.

The Productivity Commission (2014b, p. 474) report into Public Infrastructure noted that ICN databases assisted in reducing search costs for contractors:

> *Contractors for major infrastructure projects have an incentive to minimise their costs. If a lower cost small to medium sized input supplier can reliably provide inputs during the construction of a piece of infrastructure, it would be in the interests of the contractor to make use of this supplier. The presence of the government maintained database and related services under the Industry Capability Network would reduce any search costs for contractors, and there would naturally exist incentives for them to seek lower cost suppliers in order for them to secure work.*

VCEC (2011a) considered that ICN Victoria played a key role in achieving local content outcomes through its efforts in the areas of identifying import replacement opportunities and enhancing information about local supplier capabilities. VCEC considered ICN Victoria should continue and recommended steps to enhance its role and performance.

Overall, the Department of State Development (DSD) considers that funding to ICN Qld is effective in achieving its objectives:

> *Overall, evidence indicates that through this measure, proponents and suppliers are increasing awareness of project opportunities and supplier capabilities and proponents are purchasing from local capable suppliers. (DSD Information Return)*

The Queensland ICT Directory also addresses a number of information problems. It identifies and promotes Queensland's ICT capability, identifies opportunities for local ICT businesses, and assists in addressing service needs of other Queensland businesses and organisations.

Complex and costly tender processes

Where procurement processes are more complex and costly than necessary this is likely to:

- result in disparities between businesses in terms of their understanding of procurement opportunities and requirements
- distort supply outcomes as some businesses will be better placed to absorb or minimise these costs than others
- reduce the effective level of competition to supply for some procurement tenders.

A number of submissions to the Harper Competition Policy Review raised issues about procurement, including complexity, risk, accessibility (particularly for small businesses trying to win government contracts) and competition. For example, the Chamber of Commerce and Industry Queensland (2014) said:

> *Queensland businesses have raised significant and ongoing issues with the pre-existing procurement framework in Queensland, namely that they are not able to easily assess, access or participate in procurement opportunities.*
>
> *The following aspects of the procurement process need improvement: support and assistance provided by the agency or project tender manager, fairness and equity of the tender selection process, delivery of project and procurement and reporting requirements; and the application process and documentation required.*

The Chamber of Commerce and Industry Queensland also observed:

> *… the tender process itself is highly onerous and often small businesses do not have the time and resources that large businesses do to effectively compete for local tenders.*

In a submission to the VCEC's inquiry into Victorian manufacturing, ICN Victoria considered a number of complexities were a barrier to local SMEs participating in public procurement processes, including: the procurement model; pre-qualification requirements; early notification of tenders; application of government policies; tendering costs; and technical specifications (some of which were not performance-based or reflected foreign standards) (VCEC 2011a, p. 235).

The Queensland Office of Best Practice Regulation (OBPR) report *Measuring and Reducing the Burden of Regulation* found that:

> *Government procurement regulations under the Queensland Industry Participation Policy Act 2011 places numerous constraints on who may provide services to government departments and imposes significant red tape on both vendors and departments. Reducing the burden of this regulation has the potential to reduce the costs of providing government services and increasing opportunities for small business. (QCA 2013b, p. 41)*

The Tendering for Government Business (T4GB) Workshops, Accessing Supply Chain Opportunity (ASCO) Workshops and Top 10 Tips for Tendering Success Webinar are intended to improve the ability of suppliers to tender and compete effectively for state government project and supply opportunities, and to support increased competition in the marketplace.

The T4GB Workshops and Top 10 Tips Webinar assist suppliers to be better informed on what is required for them to meet the Queensland Government requirements to be an eligible supplier and understand the fundamentals to submitting a conforming tender. Attending businesses gain knowledge of how to effectively identify project and supply opportunities as well as having a clear understanding of how to better align and maximise their chances of success in winning government contracts. Overall, it is intended that there will be broader benefits through more effective supply chains.

ASCO is designed to help strengthen, and address issues within, the proponents' supply chain and to help suppliers develop a strong customer focus and understanding so that they may respond better to the stringent requirements of project proponents. Participating businesses improve their understanding of how the proponent will procure and how best to win work. Project risk is reduced through having a better developed supply chain with greater competition.

DSITI indicated that SMEs from the Queensland ICT sector find government agencies (from all three levels of government), universities and corporations difficult to engage with to understand the information around ICT architecture and future procurement plans. ICT related tenders lodged by the ICT sector and the information provided in the majority of the tenders has often not been of sufficient quality and costs were either well over- or underestimated. Chief Information Officers and units were frequently bombarded by the ICT sector cold-calling for ICT procurement information or marketing their products irrelevant to the ICT issue at hand.

The Partners in Technology (PiT) and Queensland ICT Directory measures are intended to help address these problems and provide an opportunity for the ICT sector to network and discuss potential collaboration opportunities.

The objective of the PiT measure is to enable the ICT sector, particularly SMEs, to better understand and participate in major ICT purchasing processes occurring throughout Queensland, so that government agencies, universities and corporations receive more concise and competitive tenders from ICT businesses.

Capital investment myopia and announcement effects

A bias has historically existed in public sectors favouring allocating resources to capital investments while not fully considering (or funding) the whole-of-life costs of projects. A number of factors and incentives have supported this tendency, including: announcement effects in respect of political processes; previous budget cash accounting rules in the management of public finances; the fact that the life of capital assets extend beyond normal budget funding periods and overlap terms of government; and the incentive to avoid difficult funding decisions by shifting the costs of projects into the future. The problem may impact disproportionately on maintenance and refurbishment work and add-on services, which may impact disproportionately on local suppliers who can have comparative advantage in these services (relative to competing on initial capital purchases).

A recent example of this problem is cited in the Australian National Audit Office (ANAO) report on defence procurement. The Productivity Commission (2014b) stated:

> *...ANAO (2013) recognised that while better information on acquisition costs is now being provided, this was not assuring the affordability of planned projects because work on estimating the longer-term operating and personnel costs — costs that generally exceed the initial equipment costs — had typically not been undertaken. (PC 2014b, p. 22)*

One constraint against this behaviour is that the Queensland Government has clear guidelines setting out the meaning of value for money in procurement and practical advice on how to achieve value for money (DHPW 2014a). For example, the guidelines discuss the inclusion of consideration of whole-of-life costs, including: acquisition costs; operating costs, such as, energy, safety, performance monitoring, and cleaning costs; maintenance costs, such as, spare parts, repair labour, loss of productivity or revenue during maintenance; alteration/refurbishment costs, such as upgrade and modification costs; support costs, such as insurance, rates and taxes, and management fees; and disposal costs.

15.3.4 Improving local businesses capabilities

Procurement policies to assist local industry may incorporate the broader objective of improving the capabilities of local businesses to compete in government procurement processes.

Procurement policies may seek to reduce the proportion of local businesses who are not at modern best practice in terms of their ability to understand procurement requirements, respond to tender documentation requirements and best communicate their capabilities.

The Queensland Government funds the Building an Effective Capability Statement Workshop measure. The workshops assist businesses in completing an effective capability statement and, for those that have one, modifying the existing document to become more effective.

DSD provided information indicating that some businesses do not have a capability statement or the statement that they do have is ineffective in promoting and positioning their business to be successful in winning tenders. DSD considered that a capability statement is an essential element of doing business and a fundamental promotional statement that describes a company's capabilities and skills. Capability statements are a key requirement in the prequalification for government projects and opportunities, as well as for private sector major projects and subcontractor work.

Improved statements should assist businesses with the promotion of their capabilities and demonstration of their performance increasing their attractiveness to buyers and potential

supply partners. It should also increase competition in the marketplace and support improved local content outcomes.

15.4 Are local preference policies effective?

15.4.1 Evidence from Australian Government procurement

Based on an analysis of 2012–13 AusTender data, the Department of Finance (2013) concluded that Australian businesses were able to achieve a high share of Australian Government procurement business without any direct assistance from procurement policies (Box 15.4).

Box 15.4 Local content AusTender outcomes

120 Australian Government departments and agencies reported procurement contracts, valued at $10,000 or greater, on AusTender in 2012–13. Analysis of AusTender data indicates that Australian suppliers are competitive on their own merits in winning contracts:

- 67,854 contracts valued at $39.3 billion in total, were awarded
- of the 11,460 suppliers contracted, 10,212 (89.1 per cent) were SMEs
- SME participation was 31.7 per cent ($12.5 billion) of the total contracts by value and 60.5 per cent (41,032) of the total number of contracts
- goods accounted for 43.8 per cent by value ($17.2 billion)
- services accounted for 56.2 per cent by value ($22.1 billion)
- of the total number of contracts reported, 69.8 per cent were valued below $80,000 equating to 3.7 per cent of the total value of all contracts awarded.

Further, in 2012–13:

- 82.4 per cent of goods and services, by value purchased by the Commonwealth Government, are likely to have been sourced from Australian suppliers, or in the case of services, delivered by Australian suppliers
- 92.0 per cent of services are likely to have been sourced from Australian suppliers
- 70.1 per cent of goods are likely to have been sourced from Australian suppliers.

If large defence contracts were excluded, the Department of Finance stated that the percentages would be much higher.

Source: Department of Finance (2013).

Some of the local content AusTender outcomes may be due to local preference policies at the national level. However, similar results were found by the Bureau of Industry Economics in its 1988 review of the Commonwealth Procurement Preference Margin, that explicit preference policies at the time played almost no role in the high levels of Australian content.

The Bureau of Industry Economics found that the general preference margin (at 20 per cent) and the discretionary preference margin (at 10 per cent) had very little impact on the actual award of contracts. Over the period 1984–1987, only 107 contracts were identified where the outcome of the contract was changed by the preference margins. The total value of the contracts involved was just $51 million, or about 0.1 per cent of total Commonwealth purchasing expenditure in the period, with premiums paid amounting to only $3.4 million (Bureau of Industry Economics 1988).

The preference margin played a role in determining the eventual winner of Australian Government contracts in only an extremely small number of cases. As most contracts are awarded to local contractors, the corollary of this is that almost all domestic winners of Australian Government contracts did so on the basis of the price and nature of the product offered.

The fact that local businesses supply the vast majority of the goods and services to their respective governments is a common feature of public procurement globally. Government procurement markets are highly 'localised':

> *Access to international procurement markets is still a major challenge. Even in an integrated market such as the European Union, less than 4% of the value of contracts in the EU is awarded to firms from another member state. (OECD 2012)*

The Productivity Commission (2014b, p. 474) considered that local content rules and industry plans were not effective:

> *There is also limited evidence to suggest that the plans imposed on businesses through the tender process are effective. Instead, they are likely to represent an additional compliance burden on tenderers.*

15.4.2 Preliminary Queensland evidence

With the introduction of the Charter in April 2014, DSD has been working with agencies to collect data in ways that will benefit all parties while reducing administrative burden. One outcome is that agencies have started to capture data on the number of firms new to managing contractors' supply chains that have been able to win work packages. DSD considers that initial results show that the policy and the activities of ICN Qld may be helping to create the right environment to support business access to new market opportunities. Between 1 July 2014 and 22 June 2015, the Charter was applied to 28 Queensland Government projects comprising four Commonwealth Games and 24 other projects. The projects have a progressive spend value of over $1.66 billion over the period. Queensland-based firms won over $1.35 billion (81 per cent) worth of the contracts awarded (DSD sub. 40, p. 7).

However, no information was provided on the impact on government procurement costs, or the counterfactual (for example, for the types of procurement involved in the four projects, the normal rate of new firms to the managing contractors' supply chain).

15.4.3 Procurement, size of market and expansion of local industry

The Productivity Commission (1996) and Bureau of Industry Economics (1988) discussed the conditions under which local preference procurement policies might result in an expansion of local industry output.

The first case is where government demand for a product is larger than the quantity supplied domestically. Following the adoption of a local preference procurement policy, government demand filled by imports will be redirected towards local industry. Local industry must expand to meet the increased quantity demanded. Local industry supply is diverted from domestic private sector consumption (or exports) to government (as government offers high prices). The increase in demand from government is greater than the diverted supply, and results in a real increase in local industry output.

The second case is where government demand is small relative to the domestic market size. Assuming domestic and foreign suppliers of a product exist and are perfect substitutes, and government demand is met by a combination of supply from local and overseas suppliers, then,

following the introduction of a preference policy, a portion of existing government demand is switched from being filled by imports to being filled by local supply.

However, the effect of a local preference policy will be to divert local supply away from local private purchases (or exports) to government. Local private purchasers' demand will, in turn, be filled by increased imports. In other words, an increase in demand by government for domestic output will be exactly offset by increased private sector imports (rather than an expansion in local industry output). On a global market basis, supply shares between Australian and foreign firms remain unchanged.

Neither case takes into account the indirect effects on other industries resulting from higher public sector input costs, taxation and any resource allocation impacts from preferencing, and directing resources towards, some industries over others.

In the case of the Victorian economy and government procurement, the VCEC stated:

> *Victorian Government purchases of goods, though significant, represent less than ten per cent of total manufacturing output in the State. Accordingly, the impact of Victorian Government procurement on the manufacturing sector as a whole is necessarily limited. However, within specific sub-sectors, such as rolling stock, medical equipment, ICT systems and goods relating to emergency management, the Victorian Government can be a major customer, and its procurement decisions can have a large impact on these markets. (VCEC 2011b, p. 201)*

15.5 Are local preference policies efficient?

15.5.1 Broader economic impacts

Local preference policies can go beyond the 'offset of biases' to more of an active stance in favour of local suppliers based on the rationale of improving employment, investment or some similar objective. The problem is that the costs of such policies can be ignored. If the policies result in higher public sector input costs, then employment creation in one area or for one group of businesses may be more than offset by employment reductions elsewhere in the economy. The financial transfers to local suppliers through inflated contract prices induce real resource transfers away from other businesses. Resources may be directed towards businesses that are not internationally competitive.

While supporting requirements for market testing of local supply capabilities in tender documentation, the VCEC was highly critical of the local content requirements in procurement policies:

> *…local content, job retention and job creation should not be objectives of the VIPP, or of Victorian Government procurement policy in general. The real issue is the capacity of Victorian businesses to be, or to become, competitive, and to have the opportunity to be considered by lead tenderers and tendering agencies. The local content, job retention and job creation outcomes from this approach are likely to be sustainable, being based on high productivity and competitiveness. Accordingly, the Commission recommends that the Victorian Government remove the preferential aspects from the current procurement policy, and increase the stringency of the searching for competitive local manufacturing enterprises.*

The VCEC and Ernst & Young considered that the local content elements of Victorian procurement policy were unnecessary, potentially costly and a blunt policy instrument (Box 15.5).

Box 15.5 Local content and other requirements in VIPP evaluations

The VCEC and a report by Ernst & Young found that the preferential aspect of the VIPP was not justified by a clearly articulated problem, such as market failure. The VCEC concluded that the preferential element, namely the consideration of 'local content' and other VIPP-related information in the evaluation of tenders, is unnecessary, potentially costly and a blunt instrument:

- *Unnecessary:* commercial incentives generally favour the use of local content, if competitive, so that inclusion of local content considerations in tender evaluation is not essential for the VIPP to be effective (Ernst & Young 2011, p. 65). Local content levels in Victorian Government procurement are likely to be high irrespective of the influence of VIPP (p. 16). This is supported by analysis that found only about 20 per cent of all procurement activity is in genuinely trade-exposed sectors (p. 13). The VCEC's proposed strengthening of the role of ICN Victoria in ensuring information on local capabilities is available and considered, would strengthen commercial incentives. Most import-replacement activity achieved under the VIPP has been attributable to the role of ICN Victoria in identifying opportunities for bidders to use local suppliers through the VIPP Plan certification process (p. 14), not through the use of VIPP-related evaluation criteria.
- *Potentially costly:* preferential procurement policies can undermine the economic, social and environmental policy goals that first motivated the procurement (by trading off these goals for other objectives) and can require taxpayers to accept higher taxes, or fewer or lower-performing public sector goods and services. Preferential procurement policies can reduce productivity and per capita wealth by moving resources away from their best uses, protecting local businesses from international competition, and disadvantaging businesses with higher productivity. Other potential concerns with preferential policies relate to administrative and compliance costs, probity (the Victorian Government probity principles require agencies to pursue value for money and equal treatment of bidders) and the risk of retaliation from other jurisdictions.
- *A blunt instrument:* because 'local content' is defined under the VIPP to include all businesses based in Australia and New Zealand, the VIPP does not necessarily favour Victorian enterprises. The VIPP is applied to a broad range of projects, including some projects that lack opportunities for import replacement.

Source: VCEC (2011a); and Ernst & Young (2011).

Ernst & Young was highly critical of the use of procurement policy as a demand-side measure to provide preferential treatment to local industry:

> *Consistent with this conclusion, Ernst & Young found that there is no merit in broad-based demand-side policies that lead to preferential treatment for local suppliers in Victorian Government procurement processes to achieve government policy objectives concerning growth, productivity, efficiency or innovation. (VCEC 2011a, pp. 247–8)*

While the Bureau of Industry Economics' review of the Commonwealth Procurement Preference Margin was an evaluation of a preference price margin, and not the more indirect ways in which state governments presently preference local suppliers, it found that the policy did not result in many of the broader economic benefits that were hoped for (Box 15.6).

Box 15.6 The costs of preference margin schemes exceed the benefits

The Commonwealth Procurement Preference Margin was found to have had an insignificant impact on the development of internationally competitive local manufacturing industries, particularly in the area of high technology:

- Export development: there was little evidence that the preference margin policy had either directly or indirectly led to growth in exports. The reasons for this were that: the government had no market power in the industry; products were 'one-off', having no impact on the main area of production of firms; firms were totally dependent on Commonwealth purchasing, so that there was little incentive for further industry development; or the products were unique, with no application outside the requirements of government.
- Spin-offs of technological capability: evidence of significant spin-offs of technology was scarce. Views differed on the extent to which increased skill levels had been diffused throughout the firms concerned. Typically, however, firms were able to charge any outside beneficiaries of the new skills by imposing a fee for training involved.
- New products and increased R&D: new products arising directly from the contracts were scarce and usually resulted from a requirement of the Department of Defence. The products were generally too sophisticated for potential private sector market buyers. R&D flowing from the application of the preference margin appeared to have been minimal.
- Increased industry-wide local content: the extent to which the margin had increased local content was not clear, with opposing views advanced. With respect to the computer industry, the broad conclusion was that the existence of the preference margin might have caused a slight increase in the level of local content but that it had done little to increase the technological capacity, skill level or quality of goods produced by local industry.
- Attitudinal effects of the policy: many of those interviewed argued that the policy provided an incentive for local industry to tender for contracts where it would not otherwise have done so, and were generally surprised at the small percentage of contract outcomes influenced by the margin policy. If local firms believe that one of the reasons for their success was the application of the margin policy, then they are less likely to consider the winning of the contract as a stepping stone to success in internationally competitive markets.
- Significance of the preference margin: there were indications that price, and, therefore, the preference margin, was not always the critical factor in tender evaluations. It was claimed that biased specifications, inappropriate testing and packaging requirements, attitudes of purchasing officers and a lack of information flows were also important constraints on the ability of local firms to win contracts.

Limitations to the use of a preference margin to assist industries occur as a result of: the costs to the economy arising from the protective nature of the margin; the discriminatory nature of the margin which acts to give most assistance to industries fortuitously, on the basis of their sales to the government; off-budget authorities being required to become more commercially oriented; and the considerable administrative and compliance costs involved.

Overall, the benefits of the preference margin were likely to be exceeded by its costs.

Source: Bureau of Industry Economics (1988).

In its review of public infrastructure procurement, the Productivity Commission (2014b) was highly critical of local content requirements:

> *Despite the many policies geared at assisting local industry in public procurement by all levels of government, there is little economic support for the existence of such policies. Further, as a means of promoting innovation and the adoption of better practices, such policies would seem a rather indirect way of achieving this. Indeed, most governments have more direct policies targeted at research and development in order to promote innovation. (p. 473)*

The Productivity Commission recommended:

> *Australian, State and Territory Governments should remove the requirement for local content plans, such as the Australian Industry Participation plans, from tenders. (p. 475)*

DSD noted that recent reforms have reduced requirements on agencies:

> *The Charter has already replaced the previous requirement for a mandatory Local Industry Participation Plan (LIPP) with a simplified Statement of Intent which encourages tenderers to think more comprehensively about local participation.*
>
> *In addition, recent amendments to Queensland's local industry policy removed mandatory outcome reporting. This was replaced with a more effective tracking and review process to identify local content outcomes.*
>
> *To provide clarity in relation to the implementation of the Charter, it is supported by best-practice guidelines to assist government agencies incorporate the Charter's principles into their existing procurement policies and procedures (specifically excluding ICT procurement...). The Charter does not impose a further layer of administrative burden on Agencies. (DSD sub. 40, pp. 5–6)*

15.5.2 Genuine preferential treatment comes at an overall cost

The same model used to estimate the aggregate impact of industry assistance on the Queensland economy (Section 6.2) was used to provide estimates of the economic impacts of a theoretical preferential ICT procurement policy. The impacts of the policy were analysed by comparing the model's base case with a policy scenario whereby an additional $100 million of ICT product is sourced from Queensland rather than from the rest of Australia or overseas.[110]

It is assumed that local preferences result in locally sourced ICT costing 10 per cent more than the ICT previously sourced from interstate and overseas. These costs relate to higher search costs, training requirements, purchase prices and higher levels of risk. Higher costs are simulated via a shock to the labour productivity of the Queensland Government that is equivalent to an increase in costs of $10 million (that is, 10 per cent of $100 million).

The purpose of the modelling exercise is to provide an example of the types of economy-wide effects that occur when public sector input costs are increased. The modelling is illustrative and is not an evaluation of current ICT procurement policies. The results should be seen as indicative of the economic impacts likely to eventuate from genuine preferences. Similar impacts would eventuate should public sector input costs be raised in other areas of public procurement.

[110] The impacts of the policy are estimated in reference to changes occurring in the base case scenario, and are provided for the period 2013–14 to 2025–26. The base case is a 'no-policy change' scenario, against which the impacts of a policy change can be estimated. The base case used is the same base case used for the aggregate industry assistance modelling presented earlier in this report. Shocks were implemented using a similar methodology to the former Office of Economic and Statistical Research's modelling of Economic impacts of preferential procurement of ICT by the Queensland Government report (Office of Economic and Statistical Research 2006a).

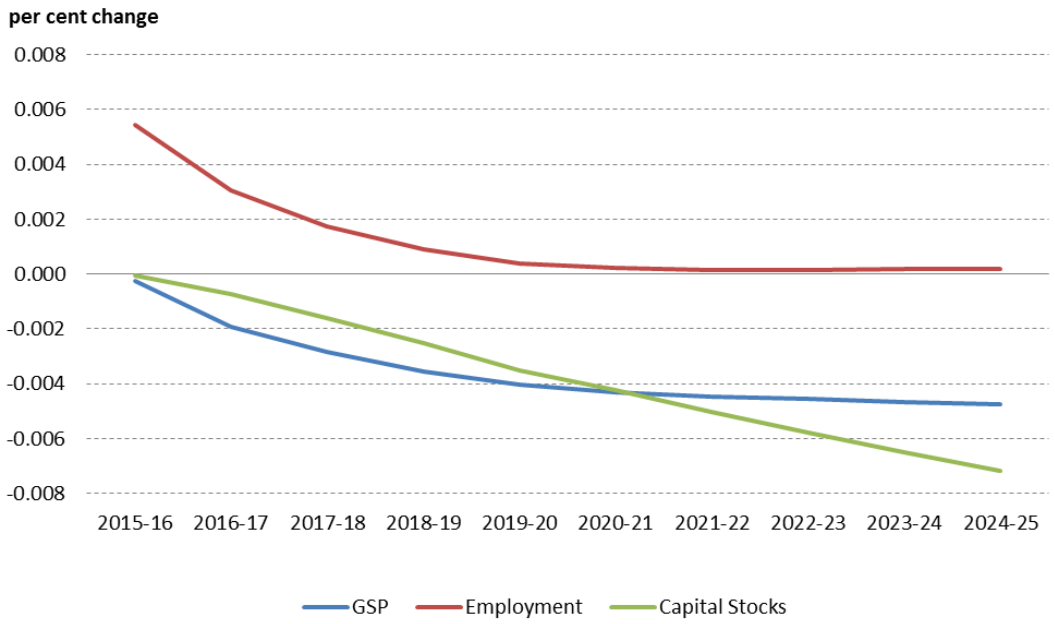
In practice, the potential to increase the overall level of Queensland-sourced ICT services would be limited by the extent to which ICT services are already procured from Queensland and by the degree of state government involvement in the relevant industries compared with federal government and private sector involvement in these industries.

Queensland-wide impacts

The change in government procurement policy has no significant impact on gross state product (GSP) in the short run but reduces GSP by around $26 million in the long run relative to the base case.

Two shocks are applied in the first period of the simulation — an increase in demand for domestically produced ICT and a small decline in the labour productivity of the Queensland Government. The shocks have the effect of increasing aggregate demand for labour (Figure 15.2).

Figure 15.2 Projected changes to real GSP, employment and capital stocks ($2014–15, millions)



Notes: The modelling results are presented as cumulative deviations from the base case for the short run (2015–16) and the long run (2024–25).

Source: Modelling results.

In the short run, employment is assumed to be flexible and wages sticky (that is, unresponsive to changes in demand). With wages held fixed and demand increasing, employment in the first year of the simulation increases by 0.005% relative to the base case (equivalent to 130 jobs). Capital stocks are assumed to be fixed in the short run.

In subsequent years of the simulation, employment, capital stocks and GSP decline relative to the base case. There are two main reasons for this. Firstly, workers respond to the higher level

of demand by bidding up wage rates. Secondly, taxation is increased through a transfer from households in order to maintain the base case budget position in the face of rising ICT costs.[111]

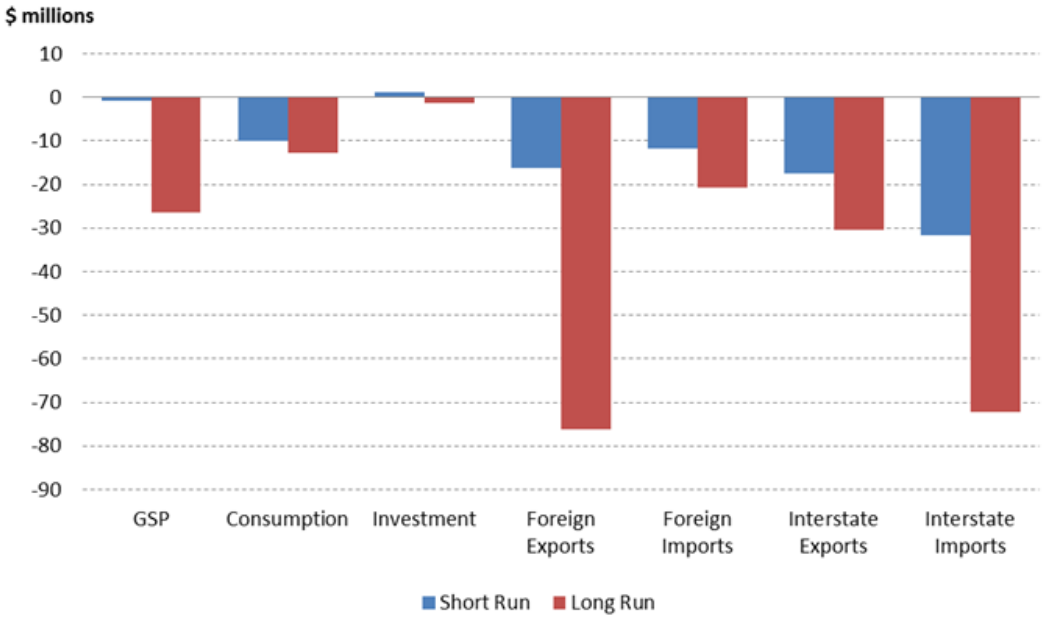
Higher wage rates impose costs on firms other than those directly affected by the change in procurement preferences. Adding to these costs are higher local ICT prices. For those firms that compete with foreign and interstate rivals, these additional costs represent a decline in competitiveness and result in a reduction in their output.

The reduction in output reduces firms' requirements for labour. Consequently employment begins to fall. The reduction in output also reduces the returns on capital (profits). In the long run, employment returns to base case levels and capital stocks are $15 million below base case levels.

The decline in employment and capital reduces the real income (wages, profits and production taxes) accruing to these factors of production and GSP also declines relative to the base case. By 2024–25, GSP is approximately 0.004% below base case ($26 million).

On the expenditure side of GSP (Figure 15.3), the largest impacts are seen in the changes to trade. Consumption is also negatively impacted and there are minor impacts on investment.

Figure 15.3 Projected changes to the expenditure side of GSP ($2014–15, millions)



Source: Modelling results.

The decline in international competitiveness of Queensland's export oriented industries results in a relatively significant decline in exports. Foreign exports decline by $16 million in the short run and by $76 million in the long run, while interstate exports fall by $17 million in the short run and $30 million in the long run. Import volumes also decline; largely as a result of reduced ICT imports; however, a small proportion of the change is also due to a decline in (import intensive) aggregate investment and household consumption. Partially offsetting this is a slight increase in demand for imported commodities, resulting from a fall in the relative price of

[111] The ICT costs of the Queensland government are higher because of the assumed higher costs associated with the change to purchasing policy and also because the increased demand by government increases the price of locally produced ICT.

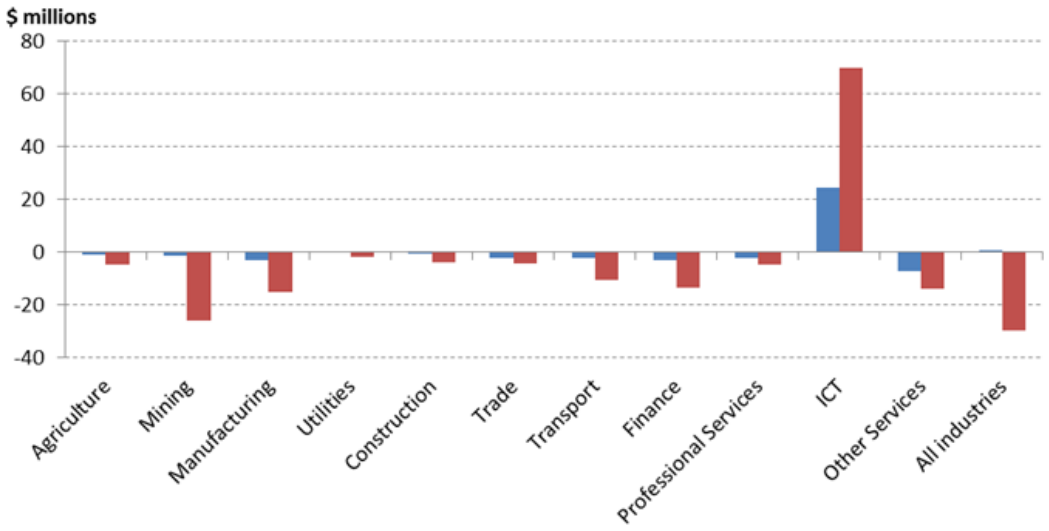
imports.[112] Overall, foreign imports fall by $12 million in the short run and $21 million in the long run while interstate imports fall by $32 million in the short run and by $72 million in the long run.

The reduction in real public and private consumption represents a permanent decline in the welfare[113] of the Queensland population. Real household consumption declines relative to the base case as real income from wages and profits fall and as money is transferred from households to balance their budget. Government consumption also declines with the reduction in the size of the economy.

Industry impacts

The domestic ICT industries are projected to do well from the higher demand created by the procurement policy (Figure 15.4). However, these positive effects are largely offset by a decline in ICT exports (foreign and interstate), particularly in the early years of the simulation when the industry is adapting to meet the additional demand. The additional $100 million in demand by the state government leads to an increase in the gross value added (GVA) of the ICT industry of just $24 million in the short run, increasing to $70 million in the long run.

Figure 15.4 Industry level changes to value added, main scenario ($2014–15, millions)



Source: Modelling results.

The increased activity of the ICT industries is more than offset by a projected decline in the activity of other industries. Those industries that compete with foreign and interstate firms are worst affected (particularly mining, manufacturing and finance) as (projected) higher labour and ICT costs reduce their competitiveness.

Those firms that do not compete with foreign and interstate firms are less adversely affected; however, their activity tends to decline in proportion with aggregate economic activity.

[112] The change to wages results in an increase in domestic prices. As foreign prices are assumed unaffected by domestic policy, the relative price of imports falls.

[113] The total of private and public consumption can be considered to be a measurement of welfare since it is assumed that the population maximises utility through their consumption decisions. Since we assume no population change (from base case levels), a change in total consumption changes the consumption, or utility, per capita.

Overall, the additional $100 million procurement of Queensland produced ICT services results in an expansion of the Queensland ICT industry, but a reduction in GSP. The fall in GSP is driven by reduced competitiveness of other Queensland industries due to higher wage and ICT costs resulting from the policy and the additional cost of sourcing ICT from Queensland. Household consumption and welfare falls due to reduced income from wages and profits and higher taxes required to pay for the procurement policy.

The impacts are very small in percentage terms when compared with overall GSP, but this reflects the fact that government consumption of ICT comprises only a small share of GSP. The long-run impact of a $26 million decrease in GSP is relatively significant given the assumption underpinning the modelling is the procurement of additional Queensland sourced ICT services of just $100 million.

The modelling also illustrates the types of gains which could occur if procurement policies are able to achieve reductions in the prices paid for goods and services and capital purchases. The results highlight the importance of achieving value for money in procurement.

15.5.3 Restrictions on trade and welfare impacts

Trade has long been recognised as an important source of wealth creation. Trade allows for the division of labour and for resources to be used more appropriately and effectively in production. Trade cuts the cost of living, increases both consumer choice and business's choice of inputs to production, and contributes to economic growth and rising real incomes (Box 15.7).

Box 15.7 Benefits of international trade

International trade helps promote peace: Peace is partly an outcome of two of the most fundamental principles of the trading system — helping trade to flow smoothly, and providing countries with a constructive and fair outlet for dealing with disputes over trade issues. It is also an outcome of the international confidence and cooperation that the system creates and reinforces.

Freer trade cuts the costs of living: Protectionism is expensive — it raises prices. Lowering trade barriers reduces the costs of production (because imports used in production are cheaper) and reduces the prices of finished goods and services, and ultimately results in a lower cost of living.

Trade provides more choice of products and qualities: Imports provide more choice—both more goods and services to choose from, and a wider range of qualities. Even the quality of locally produced goods can improve because of the competition from imports. The wider choice is not simply a question of consumers buying foreign finished products. Imports are used as materials, components and equipment for local production. This expands the range of final products and services that are made by domestic producers, and it increases the range of technologies they can use.

Trade raises incomes: Trade allows a division of labour between countries. It allows resources to be used more appropriately and effectively for production. Lowering trade barriers allows trade to increase, which adds to incomes — national as well as personal incomes.

Trade stimulates economic growth: There is strong evidence that trade boosts economic growth, and that economic growth means more jobs. It is also true that some jobs are lost even when trade is expanding. While trade clearly boosts national income (and prosperity), this is not always translated into new employment for workers who lost their jobs as a result of competition from imports. Some countries are better at managing these challenges than others. The facts also show how protectionism hurts employment.

Source: World Trade Organisation n.d. (a).

Policies that restrict trade, including local preference policies, can have severe economic impacts:

> *An extensive literature analyses the impact of [local preference policies] on domestic production, trade, and investment, with an eye toward price and welfare effects. As a non-tariff barrier, [local preference policies] distort the input decisions of producers and increase the costs for importers (Deardorff and Stern 1997). But measuring their net effects is seldom straightforward. Research suggests that the impacts depend on market conditions. Moreover, [local preference policies] can not only lead to inefficient outcomes but also fail to achieve policy objectives—whether to increase industry-wide domestic value added, promote competitive indigenous industries, or shield domestic suppliers through procurement favoritism. (Peterson Institute for International Economics 2014, p. 7)*

Local preference policies can impose large economic costs and have uncertain impacts. The policies:

- can confer highly variable support on domestic producers (in contrast to an explicit tariff or subsidy), and government officials usually have little understanding of the effective rate of protection. For a given measure, protection could easily range from 20 per cent to 100 per cent ad valorem tariff equivalent

- lack transparency. In nearly all instances, no cost entry shows up in budget accounts. The price impact on downstream producers may be all but impossible to calculate, especially for people not intimately familiar with the industry. Consequently, it is difficult or impossible for responsible legislators and officials to assess the cost and benefits of local preference policies. This helps insulate the policies from both domestic reform and international surveillance
- increase delays and costs, especially in infrastructure projects. These impacts are often unknown but highly variable, because they depend on supply and demand conditions in the local economy
- are susceptible to corruption and playing favourites, especially when local producers and investors are few in number
- seldom contain a 'sunset' provision, and, with the exception of the World Trade Organisation Government Procurement Agreement and parallel provisions in some regional trade agreements, many of them are never subject to removal through international negotiations. This leads to long-lasting market distortions (Hufbauer *et al.* 2013 and Peterson Institute for International Economics 2014).

15.5.4 Procurement as fiscal stimulus

The post-Global Financial Crisis expansion in local preference policies globally has been motivated by the belief that the policies could be used to stimulate domestic economic activity and employment, and the political imperative to be seen to be doing something to address poor economic performance. However, the short-run effects of stimulus measures are heatedly debated, while the long-run impacts are invariably counterproductive. It is argued that stimulus policies fail to achieve what they are intended to achieve because they are based on incorrect assumptions about how the economy operates (Box 15.8).

The use of local preference policies in procurement does not target the stated problem well in that they take time to implement, longer to realise substantial resource allocation changes, and persist well past the time justified by the original rationale of the policies.

Any short-term relief to some domestic producers is offset by damage to other businesses, including exporters through higher costs (for example, if there is substitution of low cost imports for higher cost domestic products raising public sector input costs and the revenue required to be raised through taxation). Preference policies also risk retaliation from other countries. Economic policies should focus on longer-term structural, supply-side issues:

> *Instead of demand management, discretionary fiscal policy should focus on boosting the long-run growth potential of the economy through tax and expenditure reform. Any future discretionary fiscal consolidation should have a long-term, supply-side focus. The criteria for good public policy are also independent of the business cycle. Unfortunately, governments all too often lose their appetite for reform in the context of an economic downturn in favour of short-term stimulus efforts. (Kirchner 2009, p. 6)*

Box 15.8 Problems with fiscal stimulus policies

Some of the economic arguments against fiscal stimulus expenditure policies include:[114]

- *No free lunch*: if money is not going to be printed, it has to come from somewhere. If the government borrows a dollar, that is a dollar that households do not spend, or that is not lent to a company to spend on new investment. Every dollar of increased government spending must correspond to one less dollar of private spending. Jobs created by stimulus spending are offset by jobs lost from the decline in private spending. Moreover, government will need to raise future taxes to pay back the debt caused by fiscal stimulus policies (Cochrane 2009).
- *Spending must be value-adding*: stimulus programs may not spend money carefully. If supply is not value-adding then it will not create jobs and strong growth. Every dollar of spending draws down on existing resources. Even producing paperclips uses up resources. Paperclip production may create value, but the resources that were used up also had value. The labour, capital and other inputs required were used in this way and not some other way. Only if the value of what was produced was greater than the value of the resources used up could it be said production had been value-adding (Kates 2014).
- *Private investment is crowded out*: private investment falls to offset extra debt funded public spending because interest rates increase when governments start borrowing more. Future downgrades to the creditworthiness of state and federal governments by international credit rating agencies will add further to borrowing costs and become more likely the greater the public sector borrows (Makin 2009).

15.6 Local preference policies as a risk to good governance

Local preference policies can undermine primary procurement (good governance) objectives. The risks typically relate to one or more of:

- loss of efficiency in procurement
- exclusion of certain eligible tenderers from competing for contracts
- reduction in competition
- unfair and inequitable treatment of contractors
- lack of integrity or fairness
- lack of transparency in procurement procedures
- failure to achieve secondary procurement objectives through the procurement itself (Watermeyer 2004b).

A focus on value for money is the most objective criterion for awarding public sector supply contracts. Under the value for money criterion, corruption is made more difficult (Box 15.9).

[114] See also Alesina &Ropes (2013); Hutt (1980); Kates (2011); Mitchell (2015); Reidal (2010); Taylor (2011) and von Hayek (1974, 2010).

Box 15.9 Local preference policies can increase the risk of corruption in procurement

The NSW Independent Commission Against Corruption (ICAC) found that local preference policies increased the risks of corrupt procurement practices.

Some local councils adopt policies that favour giving council work to businesses and contractors who are located in the council area, often on the basis that this directly helps develop and promote local businesses and industry, and indirectly, creates healthier social infrastructure.

Councils adopt local preference policies for a variety of reasons. However, many councils also recognise the problems with local preference policies and do not advocate their use.

However, such practices conflict with competitive tendering requirements and raise doubts about whether best value for money solutions are achieved by local preference arrangements. Additionally, such arrangements can create negative perceptions about the probity of council practices and conflicts of interests for council employees and councillors. In some circumstances, local preference practices have created situations where corruption has flourished.

ICAC considers that local preference policies present a moderate to high corruption risk. The policies can be anti-competitive in application, create circumstances for conflicts of interest to arise and may result in the council being captured into using the same service provider. In addition, some councils have 'informal' local preference practices that are not captured in their procurement policies and for which there are no established protocols.

Source: ICAC (2001).

Attempting to take account of broader economic, social or environmental objectives introduces uncertainty into the decision-making process for the award of supply contracts. The costs and benefits of these broader objectives may not be identifiable, and will often not be quantifiable. There will often be significant disagreement on whether intended impacts will eventuate and what their valuation should be. The uncertainty introduced then requires significant discretion be given in the awarding of contracts, thereby increasing the risks of poor decisions and corruption.

Including non-value for money objectives in procurement reduces the transparency for contract award decisions. It also reduces the transparency of the policies designed to achieve broader objectives. Policy interventions through procurement are more difficult to identify and monitor which means that they are less subject to evaluation compared with budgetary processes that seek to allocate resources to their highest value uses.

Introducing significant complexities into the procurement function is unlikely to improve the quality of procurement processes and their outcomes, nor the quality of policy interventions.

15.7 Reducing risks and achieving improved value for money

15.7.1 A clearer focus on value for money

Public sector procurement should operate to a single principle of achieving value for money. Multiple objectives, combined with incentives created through the centralised monitoring of tender outcomes, provide incentives for contracts to be accepted which are not in the best interests of Queensland taxpayers.

The VCEC recommended that the focus on value for money be significantly strengthened:

> *To strengthen the focus of public procurement on value for money, that the Victorian Government remove the preferential aspects of the Victorian Industry Participation Policy. This would include removing local content as an evaluation criteria in government procurement, while strengthening the requirement for tenderers to test the relevant capability of local manufacturers. (VCEC 2011a, Recommendation 12.9)*

Williams (2004, p. 6) notes that economic development objectives would be better pursued through an alternative policy instrument compared to preferential procurement:

> *The standard welfare economics of using government procurement is that an economic development objective could be achieved at a lower cost using a targeted subsidy. Therefore, when governments choose procurement policies that prefer Australian suppliers, they inflict a net loss of wealth on the Australian community as a whole, which is greater than that which is necessary to achieve the economic development objective. They could avoid that loss and still achieve the economic development objective by buying from the lowest cost supplier (regardless of which country that supplier came from) and using a targeted subsidy to achieve the economic development objective.*

The Department of Finance (2013, p. 9) stated:

> *While government procurement is commonly considered as a means to deliver the objectives of other policies, the true extent of its effectiveness is often overstated. Direct program delivery mechanisms tend to achieve more measurable outcomes for those non-procurement policies of the Government.*

Where there are broader economic, social or environmental policy objectives, these should be addressed directly, generally through targeted expenditure programs. An example of this approach are the Charter related procurement expenditure measures which provide information and seek to improve the capabilities of businesses to win government procurement tenders, rather than giving guidance to procurement officers to alter their procurement decisions by accepting local supply offers on a preferential basis.

If secondary objectives are maintained in procurement policies, then processes should ensure that: the complexities of incorporating secondary objectives are dealt with at a high level and clear guidelines are given to those making decentralised purchasing decisions; risks are addressed; transparency to suppliers and the public are enhanced; and deviations from best value for money are monitored and information collected to support quantification of the cost of incorporating secondary objectives into procurement.

Government policies need to take care not to displace private market provision. While the expenditure measures provide information to suppliers of government procurement plans and requirements, and this may improve the competitiveness of the tender process, aspects of the policies go further in improving the 'capabilities' of businesses. It is not clear why services that extend beyond the provision of information should be provided free of charge — paid under contractual arrangements by the government — when numerous alternatives exist in the marketplace.

Recommendation

15.1 The Queensland Government should strengthen the value for money principle in procurement:

- **(a) Public sector procurement decisions should be guided by a single objective — achieving value for money in procurement.**
- **(b) Broader economic, social and environmental objectives should be addressed through other policy instruments.**
- **(c) The Government should resist pressures for explicit preference margins to be applied to local content, and should consider the removal of the present preference margin applying to information and communication technology procurement in respect of small and medium-sized enterprises.**

15.7.2 Improving the procurement process

The VCEC made a number of recommendations which it viewed as complimentary and necessary for its recommendations on removing local content requirements from Victorian procurement policy and focusing the objective of public procurement policy solely on achieving value for money:

> *The Commission identified four critical issues to be addressed in a new approach to Victorian procurement policy as it relates to manufacturing: removing impediments to local businesses accessing government procurement opportunities, particularly impediments relating to the structure, size and breadth of projects; improving the provision of information about the capability of local suppliers and the pipeline of government projects; a stronger focus on whole-of-life value for money, correctly defined, as the sole objective of public procurement, and improving the capability of procuring agencies and the extent and consistency of their compliance with procurement rules and policies. (VCEC 2011a, p. 254)*

The Queensland Government should continue to improve procurement processes with the objective of simplifying processes, including requirements concerning the structure, breadth, scale and complexity of procurement contracts. Simplification should include removal of the many local content oriented requirements in procurement processes, including industry plans, from procurement policy.

Recommendation

15.2 The Queensland Government should continue to improve procurement processes with the objective of simplifying processes.

16 REGULATORY RESTRICTIONS ON COMPETITION

Key points

- A regulatory restriction on competition can provide industry assistance by, for example, creating barriers to entry, reducing the ability or incentive for suppliers to compete, or limiting the choice or information about product characteristics available to consumers.
- This inquiry identified 153 pieces of Queensland legislation that contain restrictions on competition. A raft of subordinate legislation and other statutory instruments also contain restrictions.
- Some restrictions provide significant assistance to industry with limited evidence of offsetting benefits for the community.
- Other restrictions place an overall cost on industry, part of which may flow through to consumers in the form of higher prices and/or reduced choice. Governments need to ensure that regulation produces sufficient economic, social or environmental benefits to outweigh these costs.
- Subjecting regulation to objective, transparent and rigorous review provides the best opportunity to ensure that an overall benefit to the community is delivered. Such reviews should consider whether the regulation is the minimum required to achieve objectives and if alternative options could produce better outcomes.

A wide range of regulatory provisions may restrict competition. Examples are legal provisions that grant exclusive rights for a business to provide goods and services, limit businesses' ability to set prices, or require a licence, permit or authorisation as a requirement of operation (see Box 16.1).

The Catalogue of Industry Assistance Measures lists 153 pieces of Queensland legislation that contain restrictions on competition. It includes legislation such as:

- consumer protection provisions in the *Fair Trading Act 1989*, *Property Occupations Act 2014* and *Second Hand Dealers and Pawnbrokers Act 2003*
- natural resource management and environmental protection through the issue of licences and permits in the *Environmental Protection Act 1994* and *Fisheries Act 1994*
- occupational licensing of health professionals, builders and tradespeople.

There are also a large number of regulatory restrictions in subordinate legislation and other statutory instruments which were not included in the catalogue.

Box 16.1 The Organisation for Economic Co-operation and Development (OECD) Competition Checklist

The OECD has compiled a competition checklist to assess if a regulation contains restrictions on competition.

Does the regulation restrict or reduce the number or range of suppliers by:

- granting exclusive rights for a supplier to provide goods or services?
- establishing a licence, permit or authorisation process as a requirement of operation?
- limiting the ability of some types of suppliers to provide a good or service?
- significantly raising cost of entry or exit by a supplier?
- creating a geographical barrier to businesses supplying goods, services or labour, or investing in capital?

Does the regulation restrict or reduce the ability of suppliers to compete by:

- limiting suppliers' ability to set the prices for goods or services?
- limiting the freedom of suppliers to advertise or market their goods or services?
- setting standards for product quality?
- significantly raising costs of production for some suppliers relative to others (especially by treating incumbents differently from new entrants)?

Does the regulation restrict or reduce the incentive for suppliers to compete by:

- creating a self-regulatory or co-regulatory regime?
- requiring or encouraging information on supplier outputs, prices, sales or costs to be published?
- exempting the activity of a particular industry or group of suppliers from the operation of general competition law?

Does the regulation limit the choice and information available to consumers by:

- limiting the ability of consumers to decide from whom they can purchase goods and services?
- reducing mobility of customers to move between suppliers of goods or services by increasing the explicit or implicit costs of changing suppliers?
- limiting information required by consumers to shop effectively?

16.1 How regulatory restrictions can provide industry assistance

Few regulatory restrictions are expressly designed to directly assist industry. However, many do so in the pursuit of other economic, social and environmental objectives because they may restrict competition or limit consumer choice. For example, while mandatory water and/or energy efficiency requirements for particular products are aimed at improving the efficiency of water and energy use, they may reduce competition as international manufacturers may not be prepared to manufacture a specific product for the comparatively small Australian market.

Regulatory restrictions on competition can provide assistance to industry by creating barriers to entry, reducing the ability or incentive for suppliers to compete and limiting the choice or information available to consumers. That said, many restrictions on competition may provide minor or negligible assistance but impose substantial compliance costs on businesses.

Whether a regulatory restriction provides assistance to industry overall will depend on the nature and impact of the individual regulation.

16.2 Assessing regulatory restrictions in Queensland

Some regulation is essential for a well-functioning society. Regulation creates the institutional architecture for markets to function efficiently by establishing property rights and enforcing contracts. Regulation can also address health and safety issues and protect the environment against overuse and degradation.

But regulation has costs as well as benefits for society. Where regulation restricts competition, it can raise prices, reduce the variety and quality of products offered to consumers, distort resource allocation decisions and impose compliance costs on business, government and the wider community.

Regulation is not always an effective, or cost-effective, way of achieving objectives. For example, restrictions on when retail businesses can open in Queensland reduces competition between retailers and restricts the retail industry's ability to adapt and compete with online competitors and provide the convenience for consumers. These restrictions were found to be redundant in protecting employees' interests, given that workers are already protected by workplace relations laws, minimum wage and penalty rates. Deregulating trading hours could generate a potential benefit of $200 million as a result of an increase in retail productivity, lower prices and greater convenience for the community (QCA 2013b, CIE 2012, PC 2011e).

Even regulation that was initially sound may not continue to be so due to changes in technology, demographics or preferences. In some cases alternatives to regulation may be able to achieve objectives at lower costs.

As a result, a regulatory restriction on competition should be introduced or retained only when it can pass the net benefit (public interest) test, to demonstrate that the economic, environmental or social benefits to the community of restricting competition outweigh the costs. This principle is enshrined in the 1995 Competition Principles Agreement, signed by all Australian, state and territory governments, which states that legislation, including both Acts and subordinate legislation such as enactments, by-laws, ordinances or regulations, should not restrict competition unless it can be demonstrated that:

- the benefits of the restriction to the community as a whole outweigh the costs
- the objectives of the legislation can only be achieved by restricting competition.

To give effect to this principle, the Queensland Government committed to review legislative restrictions at least every ten years. Proposed legislation must also be assessed against the legislation review principle.

Restrictions on competition have not been individually reviewed as part of this inquiry. Such a review would necessitate a focus beyond this inquiry into industry assistance, and the large number of restrictions would require a review program in its own right.[115]

[115] The legislation review program under National Competition Policy ran from 1995–2005.

Even so, the process of cataloguing the restrictions has provided a comprehensive picture of the current stock of regulatory restrictions in Queensland. Some key themes drawn from this exercise are outlined below.

16.2.1 Some regulatory restrictions provide substantial assistance to industry

Some regulatory restrictions on competition confer significant assistance to certain sectors of industry. For example, based on Centre for International Economics (CIE) (2012) estimates, around $24–40 million is transferred from Queensland consumers to the 2881 taxi licence owners in Queensland each year due to the limit on the number of taxi licences.[116]

Restrictions on competition provide the greatest level of industry assistance where they:

- cap the number of suppliers (for example, through limits on the number of taxi licences) or output (for example, quotas in fisheries licences)
- limit the supply of goods and services to certain groups (for example, only a hotel can operate a bottle shop and only a pharmacist can own a pharmacy)
- grant an exclusive licence to supply a good or service (for example, casino and wagering licences).

In 2005, the National Competition Council's final assessment of state and territory legislation concluded that Queensland legislation for fisheries, taxis, pharmacies, health and liquor did not comply with the Competition Principles Agreement obligation to demonstrate that the restrictions on competition are in the public interest.

In addition, many of these restrictions have previously been found to have no net public benefit. Multiple external reviews, some dating back to the 1970s, have generally concluded that the anticompetitive restrictions confer significant benefits on industry participants at a cost to consumers and the wider community (see, for example, Ralph 1979, PC 2005a, OECD 2007c, CIE 2012, Fels 2012). The most recent, the Competition Policy Review (2015), recommended removing the protection of the taxi and pharmacy sectors, as well as restrictions on retail trading hours (Box 16.2).

[116] Transfers to taxi plate holders in Western Australia (WA) and New South Wales (NSW) have been estimated at $20 million and $51 million per annum respectively (see ERA 2014 and Abelson 2010). These studies estimate the benefit to the community of removing taxi number restrictions would be $70 million per annum in WA and $265 million per annum in NSW.

Box 16.2 The Competition Policy Review

Pharmacies: The current regulations preventing pharmacists from choosing freely where to locate their pharmacies, and limiting ownership to pharmacists and friendly societies, impose costs on consumers.

Current restrictions on ownership and location of pharmacies are not needed to ensure the quality of advice and care provided to patients. Such restrictions limit the ability of consumers to choose where to obtain pharmacy products and services, and the ability of providers to meet consumers' preferences.

Retail trading hours: The relevant policy question is whether the restrictions are in the public interest, not whether they are in the interest of particular competitors. No compelling evidence has been presented that, in the states and territories with deregulated retail trading hours, the benefits to the community are outweighed by the costs. Indeed, many have claimed that the restrictions inhibit the ability of retailers to meet the needs of consumers. And it is the needs of consumers, not of retailers, that drive the structure and diversity of the retail sector.

Restrictions on retail trading hours should be removed. To the extent that jurisdictions choose to retain restrictions, these should be strictly limited to Christmas Day, Good Friday and the morning of ANZAC Day, and should be applied broadly to avoid discriminating among different types of retailers.

Taxis: The taxi industry in most states and territories remains heavily regulated despite both being a priority reform area identified under the national competition policy regulation review program and most subsequent reviews recommending substantial reform.

The Independent Pricing and Regulatory Tribunal estimates that in New South Wales 15 to 20 per cent of the taxi fare arises as a result of restrictions on the number of licences and notes that the passengers who stand to benefit from reform include a significant number of lower income earners, many of whom have limited transport options due to age or disabilities.

The focus of reform in the taxi industry needs to be twofold: to reduce or eliminate restrictions on the supply of taxis that limit choice and increase prices for consumers; and to encourage technological change that can benefit consumers.

Liquor: Liquor retailing and gambling are two heavily regulated sectors of the economy. The risk of harm to individuals, families and communities from problem drinking and gambling provides a clear justification for regulation. However, such regulations also restrict competition and reduce consumer choice.

Some restrictions on the sale of alcohol (and on gambling) appear to favour certain classes of competitors to the detriment of consumers. All regulations must be assessed to determine whether there are other ways to achieve the desired policy objective that do not restrict competition. Several submissions cite the example of Queensland's liquor licensing regime, under which only premises with a hotel licence may operate detached bottle-shops, as an impediment to their ability to respond to consumers and compete with Coles and Woolworths.

Source: Competition Policy Review Panel (2015).

Given the substantial pecuniary benefits accruing to particular constituencies under these arrangements, and the corresponding costs imposed on consumers, it is important to continue

to evaluate these restrictions to determine if they provide a net benefit to the Queensland community. Such reviews should independently assess regulatory models in other countries, the relative costs and benefits of retaining the anticompetitive restrictions versus the alternatives and whether other regulatory tools could meet consumer and safety objectives without restricting competition.

16.2.2 Many regulatory restrictions relate to business and occupational licensing

In 2008, Queensland had the highest number of occupational licensing schemes in Australia, with around 70 schemes regulating occupations from health professionals to painters and introduction agents (PC 2008, p. 491). There has been an overall reduction since 2008, with some rationalisation taking place, for example licensing of travel agents was repealed in 2014, and only a small number of licensing provisions added such as tattoo parlours (Box 16.3). Further, a number of occupational licensing schemes have streamlined or simplified requirements. For instance, the Queensland Building and Construction Commission (DHPW sub. 39, pp. 2–3) noted it had introduced changes to offer a three yearly, rather than annual, licence renewal, remove duplication for plumbing and draining contractors and change the minimum financial requirements for licensing to reduce the regulatory burden on industry participants.

Even so, the coverage of occupational licensing in Queensland is still substantial. The Office of Fair Trading (OFT), which administers seven occupational licensing regimes, oversees some 81,462 licence holders — 42,506 property occupations, 7787 motor dealers, 1387 second-hand dealers and pawnbrokers, 29,379 security providers, 119 inbound tour operators and 284 tattoo parlours (OFT 2014).

Box 16.3 Occupational licensing in Queensland

An occupational licence imposes a range of conditions on service providers, often specifying: educational and professional qualification requirements; the tasks that a licensed provider can undertake; proscribed forms of conduct; and sanctions for breaches of the requirements. Occupations licensed in Queensland include:

- Apiaries and beekeepers
- Veterinarians
- Teachers
- Health practitioners
- Builders
- Plumbers and drainers
- Engineers
- Electrical workers
- Compulsory-third-party insurers
- Maritime pilots and masters
- Ship designers and builders
- Introduction agents
- Employment agents
- Real estate agents and auctioneers
- Motor dealers
- Debt collectors
- Brothels
- Second-hand dealers and pawnbrokers
- Pest management
- Legal services
- Tattoo parlours
- Tourism services
- Wine sellers
- Racing operators and bookmakers
- Surveyors
- Valuers
- Water bore drillers
- People movers
- Tow truck operators
- Taxi, limousine and bus services

Occupational licensing is primarily focused on achieving consumer protection, occupational health and safety and public safety objectives. For example, the difficulty for consumers of

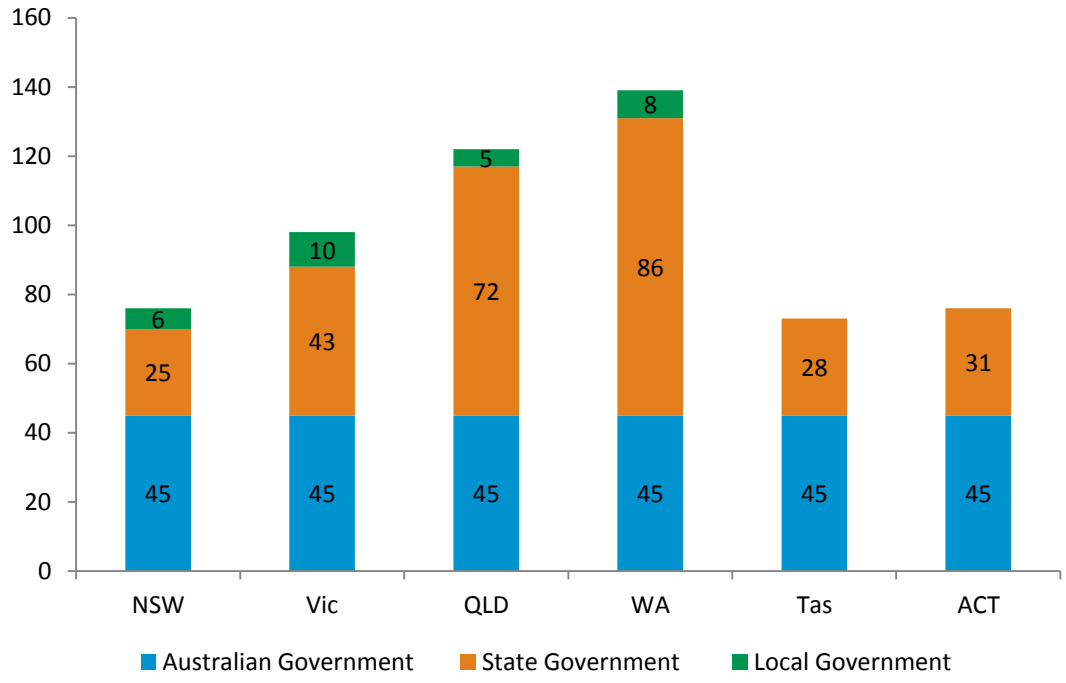
establishing the quality of medical services before and even after the event, and the potentially severe consequences of poor services, suggest that licensing medical providers is highly desirable.

However, by restricting entry to the market, licensing can limit competition and thereby assist or protect incumbent providers, which can reduce choice and raise prices for consumers.

The challenge is to get the balance right — a number of studies have found that that in many cases the benefits of occupational licensing are questionable or outweighed by the anticompetitive impact of barriers to entry (Bona 2011, Cox & Foster 1990, and Kleiner 2006).

Licensing also imposes compliance costs on all suppliers (including those who 'do the right thing' by consumers), with these imposts again at least partly passed on to consumers (PC 2008, p. 93). The cumulative compliance burden of licensing requirements can be substantial. For example, in Queensland a winery could require up to 122 different licences, approvals or other regulatory obligations to operate (Figure 16.1).

Figure 16.1 Potential number of licences and permits required to operate a winery



Source: PC (2013c).

Similarly, tourism operators in Queensland may need to comply with a large number of licence and permit obligations beyond the generic requirements that apply to all businesses (Box 16.4).

Box 16.4 Licensing obligations for Queensland tourism businesses

Inbound Tour Operators Licence

Liquor Licence

Food Business Licence (Local Government)

Radio communications Apparatus Licence (Commonwealth Government — Australian Communications and Media Authority)

Charter Fishing Licence

Fossicking Licence (Commercial Tour Operator)

Fossicking Camping Permit (Commercial Tour Operator)

Keeping of Animals other than Dogs and Cats Permit (Local Government)

Environmentally Relevant Activity Licence (Local Government)

Natural Environment

Commercial Activity Permit for National Parks, Recreational Areas and Forests

Commercial Activity Permit for Moreton Island, Fraser Island or Bribie Island

Permit to Conduct Commercial Activities in Commonwealth Parks and Reserves

Permit to Conduct Activities in the Great Barrier Reef Marine Park

Permit to carry out Activities in Queensland Marine Parks

Bathing Reserves Permit

Commercial Wildlife Licence and Interaction Plan

Whale Watching Permit

Transport

Vessel: Commercial Ship Registration, Certificate of Competency Recognition (Commercial), Certificate of Survey, Commercial Use of Jetties Permit

Permit to Operate a Sea Installation

Road: Passenger Transport Driver Authorisation, Operator Accreditation, Limousine Service Licence, Special Purpose Limousine Service Licence.

Source: Queensland Government n.d.(a).

In terms of consumer protection, licensing occupations and business activities are most likely to have benefits where there is a significant risk of detriment from making a poor choice and:

- the costs of obtaining product information are high
- verification of quality by the consumer or other third parties is difficult.

As a result, it is important that sector-specific licensing regimes are limited to activities where:

- there is a significant risk of detriment to consumers or the public
- generic legislation (e.g. fair trading, consumer protection, health and safety laws) are insufficient to achieve objectives.

Even where there is a case for action to protect the community, policymakers should consider a full range of options, including whether alternatives such as negative licensing (where no licence is required but suppliers can be fined or suspended from trading if they fail to comply with certain obligations), voluntary codes of conduct, co-regulation or self regulation would be sufficient to achieve objectives.

16.2.3 Beyond direct assistance, cumulative regulatory costs can create barriers to entry

Regulation imposes compliance costs on firms, community organisations and individuals. While it is expected that the burden of regulation will vary with the risk that activities pose (i.e. a high level of regulation could be justified for high-risk business activities), there is a broad recognition of the substantial compliance cost of regulation, and its cumulative burden, across Australian industry.

Beyond the direct assistance provided through restrictions on competition, high compliance costs imposed by the cumulative burden of multiple regulations can create a barrier to entry for new firms, particularly small firms, thereby affording incumbents some protection from competition (industry assistance).

For example, Suzuki (2013) found that more stringent land use regulation raises the costs of businesses considerably and hence discourages entry and lessens competition, with the costs of regulation ultimately borne by consumers in the form of higher prices. Moreover, the results indicate that larger established businesses are less deterred from entry by restrictive land use regulation because they anticipate less competition from smaller competitors. This suggests that the high costs of regulation can act as a barrier to entry, particularly for small business.

In the 2014–15 World Economic Forum Global Competitiveness Report, Australia was ranked 124th out of 148 countries for 'burden of government regulation'. The Productivity Commission (2011g) has estimated that 'red tape' reductions could be worth $12 billion in extra gross domestic product:

> *Regulation has grown at an unprecedented pace in Australia over recent decades. As in other advanced countries, this has been a response to the new needs and demands of an increasingly affluent and risk averse society and an increasingly complex (global) economy. This regulatory accretion has brought economic, social and environmental benefits. But it has also brought substantial costs. Some costs have been the unavoidable by-product of pursuing legitimate policy objectives. But a significant proportion has not. And in some cases the costs have exceeded the benefits. Moreover, regulations have not always been effective in addressing the objectives for which they were designed . . . . (PC 2011g, p. XI)*

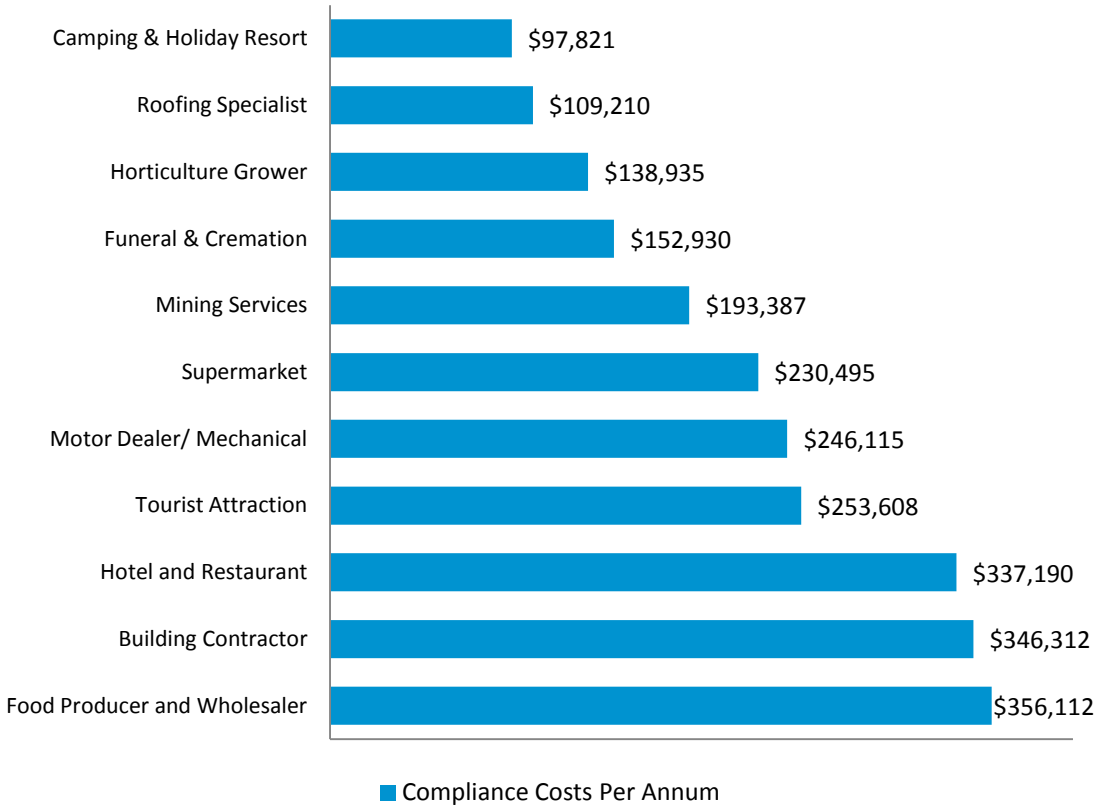
In Queensland, most firms are required to meet a myriad of Commonwealth and state regulatory obligations:

- taxation regulation (e.g. income tax, GST, fringe benefits tax, payroll tax)
- industrial relations legislation (e.g. *Fair Work Act 2009*, *Child Employment Act 2006*, superannuation, work health and safety)
- business registration and financial reporting regulation
- planning and development regulation
- competition, consumer protection and fair trading regulation.

In addition to the general regulation identified above, businesses must also comply with various industry specific and environmental regulatory regimes. The resulting cumulative 'burden' can be substantial.

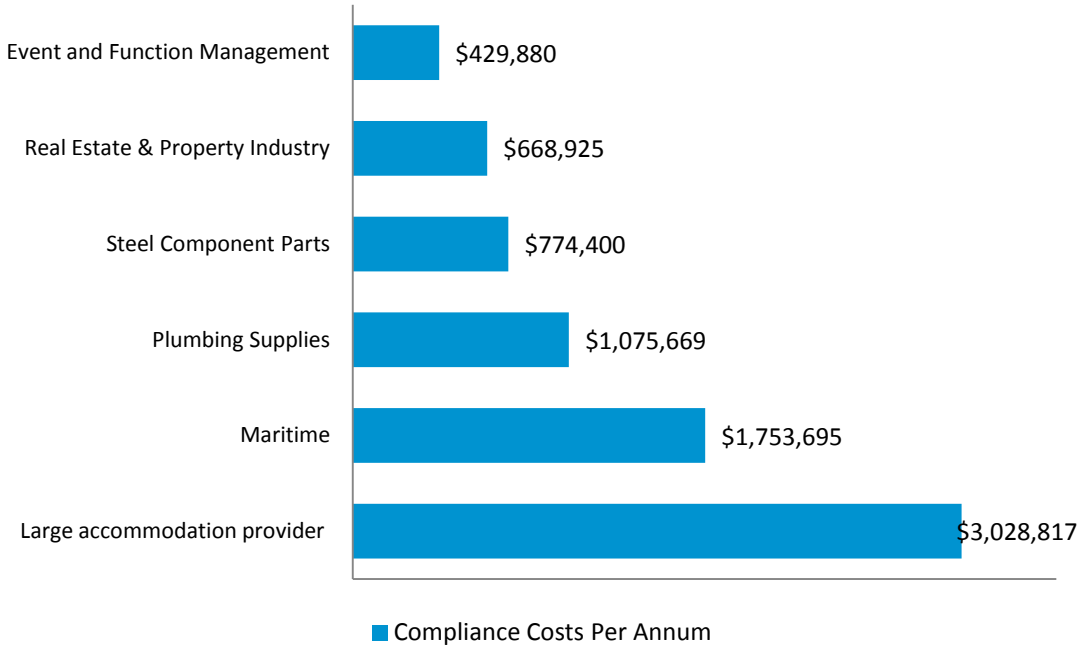
A series of case studies compiled by the Chamber of Commerce and Industry Queensland (2013) (Figures 16.2 and 16.3) found that businesses with 3–30 employees had an average annual regulatory compliance cost of $223,829, while larger businesses or those in more regulated sectors, for example, the maritime industry, had an average regulatory compliance cost of $1.28 million. The annual costs were in addition to upfront compliance costs which were, on average, $113,353 for small and medium businesses and $462,788 for large business or firms from more regulated sectors.

Figure 16.2 Annual regulatory compliance costs — small/medium businesses and/or businesses in less regulated sectors



Source: CCIQ (2013).

Figure 16.3 Annual regulatory compliance costs—large businesses and/or businesses in more regulated sectors



Source: CCIQ (2013).

The compliance costs quantified above include Commonwealth, state and local government regulation. At the Commonwealth level, taxation and workplace relations regulations were regarded as by far the most costly and complex for business. Of the state-based regulation, businesses reported the highest number of issues with workplace health and safety, planning and development, business and occupational licensing, and environmental permits. Chief concerns raised by business were ineffective regulation with unnecessary prescription or compliance costs (Box 16.5).

Box 16.5 Key concerns raised by Queensland firms: regulatory compliance

A failure to sufficiently target the problem and penalising those businesses 'doing the right thing':

> *This business does not have irrigation runoff as they have filtration irrigation systems to minimise water use and wastage. Regardless the business must still operate in accordance with the Reef Rescue Program as their area has been designated for inclusion. This business was also frustrated that despite the impact and compliance cost on the horticulture industry sector, there was very little dispensation for their industry sector, whilst other "politically active and sensitive" sectors such as the cane growers received significant funding/compensation. (Horticulture Grower)*

Undue cost, prescription or excessive reporting/paperwork requirements:

> *The business operates a free hourly shuttle bus service into town for their guests. The Transport Operations Act requires all drivers of courtesy bus services to hold a Restricted Driver Authorisation. … There are a number of costs and issues associated with compliance:*
>
> - *The manager must apply annually for an accredited operator's licence ($298.60). To obtain an accredited operator's licence the manager had to complete Operator Accreditation Training Program ($700 and approx. 50 hours over 4 weeks).*
> - *Develop an Incident Management Plan, retain a copy of the IMP and all associated reports for audit purposes, ensure a copy of the IMP is kept in each vehicle and include all items/details prescribed in the DoT Information Bulletin.*
> - *When issuing a Restricted Driver Authorisation, the manager must give consideration to all checks and requirements prescribed in the DoT Information Bulletin including criminal and driving history and submit required paperwork/forms (approx. 3 pages of personal information and reference checks) to department for approval. The Restricted Driver Authorisation is issued for a maximum period of 12 months and must be renewed annually (10 hours annually).*
> - *The manager must complete monthly DoT driving licence records for each staff member issued Restricted Driver Authorisation by logging into the DoT website and conducting individual searches to ensure that no driver has been issued any warrants, driving demerit points or other issues that may restrict the ability of this person to drive the courtesy vehicle. This process takes approximately 2-3 hours each month.*
> - *The staff member must carry with them at all times a copy of their Restricted Driver Authorisation certificate.*
> - *The manager must keep records of their driver's details and Restricted Driver Authorisation licence numbers and copies of relevant identification such that they can be easily produced during an audit.*
> - *For each trip undertaken, operators must keep records of the details of the driver and the trip, the period of time the vehicle was under the drivers control and vehicle details (30 mins/day).*
> - *The operator/manager must undertake a daily vehicle inspection and keep records of this check; and must also keep documentation regarding the serving and maintenance schedule for the vehicles (30 mins per day) (Caravan, Camping and Holiday Resort).*

Ineffective regulation that has unintended consequences:

> *Many businesses are implementing other "environmentally degrading" practices just to be compliant e.g. some businesses are running many litres of water constantly down/through the grease trap just to ensure the correct waste ratios.*
>
> *The business falls under the 'independent retail shops' exemption to operate outside of legislated hours. Under this requirement, the business is not allowed to have any more than 20 people engaged at any one time (including the business owner). The business owner feels that this number of staff operating is irrelevant to the trading laws and should be a business decision based on number of customers and profitability … it affects the level of customer service he can offer customers which is his key marketing advantage over the major retail chains. This restriction also means that he has to invest additional time into rostering and also manage staff attendance (e.g. monitor overtime or staff working back) to remain within conditions. (Independent supermarket)*

Source: CCIQ (2013).

A number of stakeholders to this inquiry suggested that some industry assistance in Queensland is justified to offset the high compliance burden costs of regulation. Countering regulatory costs with industry assistance is likely to be a high cost option (see Chapter 3). However, this does suggest that the Queensland Government can best assist industry by minimising selective assistance and instead focusing on ensuring the regulatory framework is efficient and effective for all businesses.

16.3 Ensuring regulation is effective and efficient

Over the last two decades, the Queensland Government has, along with other states and territories and the Commonwealth, implemented a range of processes to improve regulatory decision making. For instance, new regulatory proposals are subject to the regulatory impact analysis process, which requires a systematic assessment to ensure regulation is an efficient and effective way to achieve policy objectives.

Even so, the vast majority of restrictions on competition have not been independently reviewed for a decade — of the 153 pieces of legislation in the catalogue, only 27 have been formally reviewed since 2005.

Consequently, there would be merit in reinvigorating the review program for restrictions on competition in accordance with the Competition Principles Agreement. However, the review program should not be about review for the sake of review. Consistent with the Productivity Commission's recommendations in its report on National Competition Policy (PC 2005a) and the QCA's recommendations in Measuring and Reducing the Burden of Regulation (QCA 2013b) (see Box 16.6), the review program should target those areas of regulation where reform is most likely to produce significant benefits to the community. Regulations that only impose minor anticompetitive restrictions that would not justify a full review should be evaluated as part of the regular sunset or other review processes.

Box 16.6 Measuring and Reducing the Burden of Regulation

The Final Report, *Measuring and Reducing the Burden of Regulation* (QCA 2013b), suggested that a high priority be assigned to reforming regulatory schemes that meet the following criteria:

- it is clearly burdensome, complex, redundant or of questionable benefit
- there is significant 'reach' in terms of interaction between business, the community and government agencies
- there are potentially large net benefits from reform
- the need for reform is well understood or where changes are likely to receive community acceptance if they are made aware of the net benefits from reform.

Some areas identified review include land sale and property development regulations, mining development requirements, workers compensation legislation, trading hours restrictions, vegetation management regulation, government procurement regulations, health care legislation, pharmacy ownership legislation, taxi licensing and water use and trading restrictions.

Any review of regulatory restrictions should be consistent with the Queensland Government's Regulatory Impact Statement System Guidelines, which is broadly consistent with the performance assessment framework established for this review. It includes the Council of Australian Governments Best Practice Principles for Regulation Making:

- establish a case for action before addressing a problem
- consider a range of feasible policy options including self-regulatory, co-regulatory and non-regulatory approaches, and an assessment of their benefits and costs
- adopt the option that generates the greatest net benefit for the community
- ensure, in accordance with the Competition Principles Agreement, legislation should not restrict competition unless it can be demonstrated that:
  - the benefits of the restrictions to the community as a whole outweigh the costs
  - the objectives of the regulation can only be achieved by restricting competition
- provide effective guidance to relevant regulators and regulated parties in order to ensure that the policy intent and expected compliance requirements of the regulation are clear
- ensure that regulation remains relevant and effective over time
- consult effectively with affected stakeholders at all stages of the regulatory cycle
- ensure that government action is effective and proportional to the issue being addressed.

Recommendations

16.1 The Queensland Government should renew its commitment to a targeted legislation review program, focusing on restrictions on competition where:

(a) they impose material distortions or costs on the Queensland community

(b) reform is likely to produce a significant net benefit to the community

(c) circumstances have changed significantly since the regulation was introduced or last reviewed (e.g. due to technology or demographics).

16.2 Regulation should not restrict competition unless it can be demonstrated that:

(a) the benefits of the restriction to the community as a whole outweigh the costs

(b) the objectives of the legislation can only be achieved by restricting competition.

Other restrictions on competition should be reviewed as part of regular review processes in accordance with the Competition Principles Agreement.

17 THE WAY FORWARD

Key points

- The recommendations made in this inquiry aim to improve the effectiveness and economic contribution of industry assistance measures. However, these changes are a first step rather than a final destination for improving industry assistance.
- The ongoing review of both the existing 'stock' as well as any new proposals (the 'flow') is integral to ensuring appropriate, effective and efficient industry assistance measures over time.
- A robust monitoring and evaluation framework supported by the right institutional arrangements will be required:
  - An independent body should conduct further detailed reviews of a range of industry assistance measures as well as industry assistance that was not covered by the scope of this inquiry. It should also periodically update the industry assistance catalogue.
  - Government agencies should evaluate all new proposals for industry assistance using the performance assessment framework. An independent body or central agency should assess the evaluation. Both the evaluation and assessment should be submitted to the Government for decision.
  - All evaluations should be available and accessible by the public. This will help the community understand the costs and benefits of industry assistance and place a discipline on agencies and the government to ensure assistance is supported by rigorous evidence.
- Beyond good process and governance, there is significant scope to improve the evidence and evaluation culture in the Queensland Government by providing the right incentives for agencies to conduct evaluation and demonstrating a strong commitment to an evidenced-based framework.

The terms of reference for this inquiry asked the QCA to report on an appropriate monitoring and evaluation process that could be adopted by the Queensland Government to evaluate the performance of industry assistance measures over time.

Such a framework should incorporate both a process for further assessment of the existing 'stock' of industry assistance as well as any new proposals (the 'flow' of new assistance measures).

Better monitoring and evaluation processes do not guarantee better policy outcomes. However, better policy decisions are more likely when a robust and transparent assessment is undertaken to:

- help government agencies to identify the best policy option from the range of policy tools they have available
- improve the evidentiary base for governments to inform their decisions
- ensure the rationale for assistance is fully explained, and the evidence on which decisions are based are publicly accessible by industry and the wider community.

17.1 Improving the design and review of industry assistance

A recurring theme throughout this inquiry has been the almost universal absence of monitoring and evaluation of industry assistance measures. Sometimes this reflects the fact that policy monitoring and evaluation is difficult despite the best efforts of government agencies. However, in other cases, industry assistance measures have been developed as an ad hoc policy response to address a particular constituency concern, locked into budgets and policies and left to continue indefinitely without review. Whatever the cause, it is very difficult for the government and the community to determine whether scarce resources are being put to good use in this environment.

Ideally, a robust monitoring and evaluation framework would:

- build in monitoring and evaluation at the early stages of policy development, including determining who will be responsible, what data will be collected and how frequently, and how the information will be reported
- apply the performance assessment framework to both proposed new measures and existing assistance measures in a systematic and objective way.

Designing an effective monitoring and evaluation process requires more than simply establishing a rigorous approach to assessing assistance. An appropriate institutional framework is also required:

> *For evidence and evaluation to contribute materially to the selection of policies, it must be supported by institutional frameworks that incorporate evidence into the decision making process and encourage, disseminate and defend good evaluation. (PC 2010c, p. 47)*

Deciding who should be responsible for monitoring and evaluation generally involves a trade-off between greater technical knowledge versus independence. Options include the administering agency, a separate evaluation institution (e.g. the Auditor-General), parliamentary committees, specific review panels or an independent review body. The choice of evaluator will depend on the nature and purpose of the evaluation task.

A good monitoring and evaluation process also recognises that evaluation is not a costless or simple task. The main aim should be to design a monitoring and evaluation framework that assists government decision-making rather than evaluation for evaluation's sake. Just as the resources allocated to monitoring and evaluation should be commensurate with the benefits they produce, the process and governance arrangements for evaluation should be tailored to the task. The framework should also endeavour to draw on or complement the other assessment processes in place in Queensland.

Some principles for developing more rigorous policy evaluation frameworks are highlighted in Table 17.1.

Table 17.1 Principles for monitoring and evaluation frameworks

Principle	*Why?*
1. Design the most appropriate evaluation arrangements.	There are trade-offs between independent, 'in-house' review, or a standing external review process.
2. Maximise transparency — make data and evaluation public and provide for peer review and public consultation.	Provides quality assurance, improves credibility, aids government accountability and facilitates improved evaluation over time.
3. Establish a monitoring & evaluation program, including resourcing, at policy commencement.	Ensures data and evidence are available for evaluation.
4. Consider sequential policy roll-out, pilot studies, or randomised trials as appropriate.	Useful for policymaking under uncertainty, where there is little settled evidence, or where costs of failure are high.
5. Disseminate evaluation and pool results across jurisdictions.	Improves evaluation practices and increases links between researchers and government. Assists in translating vast amounts of 'research' into policy 'evidence'.
6. Ensure evidence is linked to the decision making process.	Provides an incentive for, and discipline on, government agencies to provide rigorous evidence to support policy proposals.

Source: PC (2010c).

17.1.1 Further review of existing industry assistance measures

Given the size and breadth of industry assistance provided in Queensland, the focus of this inquiry was on identifying and providing guidance across a wide range of assistance measures. As such, a number of measures would benefit from further review to determine the best policy solutions, particularly where measures had limited evidence on performance, are complex or have linkages with other policies. Measures recommended for further detailed review (Table 17.2) include tourism (Chapter 8), transport subsidies (Chapters 10 and 12), vocational education subsidies (Chapter 10), taxation (Chapter 11) and major regulatory restrictions on competition (Chapter 16).

In addition, several sectors or types of assistance that were not within the scope of this inquiry, but have an industry assistance component, should also be included for review as part of the future work program. Government and non-government stakeholders identified local government provided assistance, as well as health, education and community assistance as priorities for review:

- assistance provided by local government — through planning concessions, rate reductions, subsidised services, purchasing preferences and business support services. Some local governments have active investment attraction policies and programs
- assistance provided to the health, education and community sector — the Queensland Government provides industry assistance to the health, education and community sector by, for example, providing grants and subsidies for goods and services and funding for capability building and training. Moreover, health and education spending forms the bulk of budget outlays, much of which is used pay for health and education goods and services, but it may also have an industry assistance component. Given the size and impact of this sector, it would be useful to review the effectiveness of industry assistance to identify opportunities for improvement.

Table 17.2 Main industry assistance measures for further review

Measure	*Assistance 2013–18*	*Key issues*
Tourism and major events	$312m	• effectiveness of destination marketing • opportunities for a user-pays system • state vs. national responsibilities and funding
Transport subsidies • Infrastructure • Freight	$1.37b	• impacts, costs and benefits of existing subsidies • opportunities to improve the efficiency of transport system
Vocational education and training	$662.3m (2013–15)	• effectiveness and efficiency of government funding, regulation and planning of VET • assessing whether subsidies appropriately reflect public/private benefits from VET and provide the right incentives to students and providers
Tax concessions	$17.1b	• broad review of state taxes to analyse options for improving the tax system
Regulatory restrictions on competition	Unable to quantify	• certain industries are protected from competition through regulation • reviews should ensure that such restrictions are in the public interest
Health, education and community sector assistance	*	• significant government activity across health, education and community sectors. • review could identify and measure assistance and assess the effectiveness and efficiency of this assistance in achieving outcomes for the community
Local government	*	• review local government investment attraction, waivers, subsidies and underpricing and purchasing preferences

*Note: * Assistance not covered in this inquiry.*

Ideally, these reviews should be undertaken by an independent body through a public inquiry process. An independent inquiry can provide the Government with an objective assessment of the choices and trade-offs from different policy options as well as providing an opportunity for government, private and community stakeholders to inform assessments.

In conjunction with the ongoing review program there would be merit in periodically updating the industry assistance catalogue to provide government and the community with an overall picture of assistance provided.

This exercise would be broadly similar to that undertaken for this inquiry and by the Productivity Commission for Australian Government assistance, but could be carried out on a biennial or triennial basis.[117]

[117] The Australian Productivity Commission is required under its Act to report annually on industry assistance and its effects on the economy. The Trade & Assistance Review contains annual quantitative estimates of Australian Government assistance to industry. It also identifies recent developments in assistance for various industries and sectors of the economy, and international trade policy.

17.1.2 Appraising new proposals

While reviewing the stock of assistance is likely to uncover opportunities for improvement, maintaining gains over time will depend on new proposals being designed in such a way that they are likely to provide an overall public benefit, and not just support the private profitability of certain sectors.

Appraisal of new industry assistance proposals under existing arrangements appear to cover the broad spectrum from an in-depth assessment of the costs and benefits of several policy proposals (although such assessments almost always remain confidential) to zero analysis. Anecdotal evidence suggests that broad-based industry assistance is more likely to receive greater scrutiny compared to highly selective assistance, particularly where there is pressure to respond quickly to a constituency concern.

Requiring any new proposals for assistance to be supported by the best available evidence should inform the Government, industry and the community of the likely costs and benefits of providing assistance. All new industry assistance proposals should be subject to the performance assessment framework, including appropriate consultation, prior to being submitted to the Government for decision. The framework outlined in the QCA's Interim Report (2014a) and summarised in Chapter 4 would require slight modifications to shift from an ex post (retrospective) to an ex ante (prospective) assessment. The main change would be that all feasible options to address a policy problem should be considered upfront (Figure 17.1).

Establishing governance arrangements for the assessment of new proposals will depend on the balance of a number of factors. The Queensland Government has a range of existing assessment and evaluation processes in place with varying governance arrangements depending on the task.

- Cabinet and budget processes (for example, the Queensland Cabinet Handbook requires agencies to submit an assessment of the positive and negative impacts of a proposal on the government's objectives to Cabinet and the Cabinet Budget Review Committee).
- The Financial Management Framework and Performance Management Framework, which are administered by Treasury and the Department of Premier and Cabinet, require government agencies to report on financial and performance outcomes.
- The Queensland Audit Office supports the Auditor-General as an independent officer of Parliament. The Audit Office undertakes financial and performance audits of public sector entities to assess how efficiently and effectively their objectives are being met.
- Projects Queensland oversees the Infrastructure Procurement Framework to promote a rigorous approach to assessing projects at critical stages in their lifecycle, from the initial assessment of the service required through to delivery. Projects Queensland procures all high-risk and high-value (over $100 million) infrastructure and advises agencies on applying the procurement framework for other projects.
- The Regulatory Impact Statement (RIS) process aims to ensure that new regulation is necessary, efficient and effective. Under the RIS system, agencies are required to develop regulatory proposals in accordance with the Queensland Government's regulatory best practice principles overseen by the Office of Best Practice Regulation.

Figure 17.1 Ex post vs. Ex ante assessment of industry assistance

In this case, while independent review of industry assistance is highly desirable, it requires material resources, both in terms of cost and time, which may mean it is more suitable for broad-based stocktake evaluation rather than ex ante assessment of individual proposals. An alternative is a hybrid approach that draws on the key strengths of the main participants:

- agencies could evaluate the industry assistance proposal under the performance assessment framework and use their detailed understanding of policy issues and access to information and evidence
- an independent body could review the assessment made by agencies and judge whether it identifies the policy option that is likely to maximise the benefit to the community
- the agency evaluation and review body assessment could then be submitted to Cabinet for decision.

This model is broadly consistent with the best-practice approach adopted elsewhere, for example, under the RIS process[118] or the Council of Australian Government's process adopted for national competition policy. There was broad support for such a model in submissions:

> *CCIQ would support establishing an independent monitoring and performance evaluation system that will guide an ongoing best practice approach to industry assistance, similar to what is provided via the Office of Best Practice Regulation. CCIQ believes that accountability and transparency are key principles in providing industry assistance and periodic review promotes these principles. (CCIQ sub. 20, p. 1)*

Similarly, the Department of State Development (DSD) concluded:

> *... assessing, monitoring and evaluation should be a critical component in the development, implementation and refinement of industry assistance measures. This will ensure that the government is achieving value for money in its procurement, facilitation or delivery of these services. The proposed framework will assist Agencies to discern whether an industry assistance measure has or will provide and overall benefit to the Queensland community. (DSD sub. 40, p. 3)*

DSD also highlighted the importance of integrating genuine consultation into the performance assessment framework:

> *the responsible Agency should undertake appropriate consultation within the proposed Performance Assessment Framework, with industry and other relevant Government Agencies prior to designing new industry assistance measures. This will ensure that appropriate policy settings that maximise industry, regional and economic growth are able to be put in place in a timely fashion, meeting the emergent needs of industry. (DSD, sub. 40, p. 4)*

If this model is not considered feasible in the short term, a central agency could assess the evaluation prepared by an agency, and the evaluation along with the assessment could be submitted to Cabinet for consideration. This would essentially operate as a slight modification to existing Cabinet comment processes. While a central agency is not independent, it is well placed to make whole-of-government assessments with an appropriate consideration of the alternative use of resources.

If the assessment concludes that an industry assistance measure would provide net benefit to the community, it should also outline an evaluation and monitoring strategy to ensure the appropriate data and evidence are collected to verify this over time. All selective industry assistance should be time-bound with built-in sunsetting arrangements. Continuance should be conditional on submitting the results of the monitoring and evaluation to the Cabinet Budget Review Committee and/or Cabinet to secure approval.

Whichever governance model is adopted, the evaluation of industry assistance should be publicly released, preferably during the consultation process for major industry assistance measures. At a minimum, public release should occur at the same time the Government makes the decision to provide assistance. In many ways, transparency negates the need for formal governance arrangements and other checks and balances because it creates a discipline on agency evaluators and decision makers to ensure policy proposals are supported by rigorous evidence.

[118] Although under governance arrangements for RIS processes, the independent body sometimes has a 'gatekeeper' function, which is not envisaged here.

17.1.3 Embedding an evaluation culture for industry assistance

A rigorous assessment framework supported by the right institutional arrangements can improve industry assistance provided by the Queensland Government. However, frameworks alone are generally not sufficient to ensure this outcome. For instance, a House of Commons review of health policies in the United Kingdom found that after more than a decade of intensive investment in evaluation processes there was a significant gap between theory and practice:

> *The most damning criticisms of Government policies we have heard in this inquiry have not been of the policies themselves, but rather of the Government's approach to designing and introducing new policies which make meaningful evaluation impossible. Even where evaluation is carried out, it is usually "soft", amounting to little more than examining processes and asking those involved what they thought about them. All too often Governments rush in with insufficient thought, do not collect adequate data at the beginning about the health of the population which will be affected by the policies, do not have clear objectives, make numerous changes to the policies and its objectives and do not maintain the policy long enough to know whether it has worked. As a result, in the words of one witness, 'we have wasted huge opportunities to learn'. (House of Commons Health Committee UK 2009, p. 5)*

Similar findings have been made on regulatory impact statement processes:

> *[Regulatory Impact Analysis is seen] as merely a formal framework for consultation or, alternatively, as a requirement to be 'ticked-off' at the end of the policy development process in order to get legislation introduced. Some agencies considered adoption of RIA to have been forced on them by their central agency. In such an environment, RIA is seen as either an additional compliance burden for agencies or becomes little more than an ex post justification for a policy decision already taken. Where these circumstances prevail, the benefits of RIA for the decision making process have been lost. (PC 2012a, p. 6)*

During the course of this inquiry, certain areas of government have exhibited a strong commitment to evaluation (see for example, the monitoring and evaluation undertaken by the Department of State Development in Box 17.1 and the efforts to encourage evaluation through the Government's Program Evaluation Guidelines). Some agencies had well-established systems to facilitate an evidenced-based approach to policy development and a commitment to using them for policy development and evaluation. As an officer from the Department of Justice and Attorney General put it: 'It is difficult to justify expending taxpayer resources on programs and policies if we don't measure and monitor it to see if it's actually having a positive impact.'

A commitment to evaluation was more pervasive in the social policy areas. This may reflect a more ingrained evaluation tradition through various requirements such as the Report on Government Services managed by COAG to measure the equity, effectiveness and efficiency of government services in Australia. Such a commitment in the more traditional areas of industry assistance was the exception rather than the rule.

Box 17.1 Monitoring and evaluation by the Department of State Development (DSD)

Data on costs and performance related to DSD's industry assistance programs are captured by the Department. One example is the suite of local content services delivered by Industry Capability Network Queensland (ICN) where costs and performance are captured through:

- a monthly review to ascertain ongoing performance (and underperformance), identify changing industry requirements and adjust delivery method if necessary
- quarterly reports which provide updates on expenditure and performance against quarterly and annual targets
- annual measuring to identify performance (outcomes and outputs) against contract targets, client (both supplier and project proponent) satisfaction, the take-up by suppliers of a range of services including Tier Barometer, the Black Business Finder and the outcomes achieved by suppliers such as the number and value of contracts won
- identifying detailed performance outcomes by project, regional Queensland, South East Queensland and state-wide. This includes the number of suppliers put forward for project opportunities, the number of successful firms and the dollar value of the wins
- continual contact with project proponents to ensure the services are meeting their needs and to identify any emerging issues that require urgent attention and revision of the services.

In addition, DSD undertook an independent review of these services in early 2014 which recommended a more targeted suite of services, revised delivery pathways and a new funding model with implementation commencing in 2014-15.

Source: DSDIP (sub. 11, p. 3).

Establishing the right assessment and institutional processes is a necessary but not sufficient condition to support an evidence-based approach to industry assistance decisions. Even the most elaborate framework may be ineffectual, or at least less effectual, without genuine integration into the policy process.

A framework supported by a strong evaluation culture across the Government, Parliament and the public service is more likely to deliver better outcomes. This includes building the capability of the public service, committing resources to monitoring and evaluation, strengthening links with academic and other research bodies and encouraging robust and transparent policy evaluation.

A willingness to evaluate requires a willingness to admit that some things can be done better. Governments and the public service should be accountable for the performance of taxpayer resources consumed in the delivery of industry assistance. But that accountability should go beyond superficial judgment towards a well-informed, objective assessment of the policy successes as well as the failures. Accountability also extends to the effort governments apply towards identifying how improvements can be made to existing policies and the basis on which new policies are introduced.

Fundamentally, accountability also requires the Government to establish the right incentives for agencies and stakeholders by demanding a rigorous evidence base for decision making and demonstrating a commitment to the framework and process.

Recommendation

17.1 The Queensland Government should establish a framework for the assessment, monitoring and evaluation of industry assistance. This should include:

- **(a) further detailed reviews of existing industry assistance by an independent body. The industry assistance catalogue should also be periodically updated**
- **(b) a formal requirement for agencies to evaluate all new proposals for industry assistance using the performance assessment framework. The agency evaluation should be assessed by an independent body or central agency. Both the evaluation and assessment should be submitted to the Government for decision**
- **(c) all evaluations should be published to improve the transparency and accountability for providing industry assistance.**

GLOSSARY

A	
AAIF	Attracting Aviation Investment Fund
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
ACCI	Australian Chamber of Commerce and Industry
ACIFTA	Australia – Chile Free Trade Agreement
ACL	Australian Consumer Law
ACT	Australian Capital Territory
AEB	Average excess burden
AER	Australian Energy Regulator
AHA	Animal Health Australia
AIC	Australian Industry Capability
AIP	Australian Industry Participation
AMC	Australian Magnesium Corporation
AMPC	Australian Meat Processor Corporation
ANAO	Australian National Audit Office
ANZ	Australian and New Zealand
ANZGPA	Australia New Zealand Government Procurement Agreement
ANZPPM	Australia and New Zealand Price Preference Margin
ASCM	Agreement on Subsidies and Countervailing Measures
ASCO	Accessing Supply Chain Opportunities
ATO	Australian Taxation Office
AUSFTA	Australia – United States Free Trade Agreement
AUSTRADE	Australian Trade Commission
AWC	Australian Wool Corporation
AWI	Australian Wool Innovation Limited
B	
BERD	Business expenditure on research and development
BIE	Bureau of Industry Economics
BJD	Bovine Johne's Disease
BMP	Best Management Practice
BREE	Bureau of Resources and Energy Economics (former)
C	
CAA	Capital assistance authority

CAGR	Compound annual growth rate
CBA	Cost benefit analysis
CCIQ	Chamber of Commerce and Industry Queensland
CDI	Collaborative Drilling Initiative
CER	Closer Economic Relations
CGC	Commonwealth Grants Commission
CGE	Computable general equilibrium
CGT	Capital gains tax
CIE	Centre for International Economics
COAG	Council of Australian Governments
CPG	Commonwealth Procurement Guidelines
CPI	Consumer price index
CPR	Commonwealth Procurement Rules
CRC	Co-operative research centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSO	Community service obligation
CTP	Compulsory Third Party

D

DAF	Department of Agriculture and Fisheries (formerly the Department of Agriculture, Fisheries and Forestry (DAFF))
DATSIP	Department of Aboriginal and Torres Strait Islander Partnerships
DEHP	Department of Environment and Heritage Protection
DET	Department of Education and Training (formerly the Department of Education, Training and Employment (DETE))
DEWS	Department of Energy and Water Supply
DHPW	Department of Housing and Public Works
DILGP	Department of Infrastructure, Local Government and Planning (formerly the Department of State Development, Infrastructure and Planning (DSDIP))
DJAG	Department of Justice and Attorney-General
DNPSR	Department of National Parks, Sport and Racing
DNRM	Department of Natural Resources and Mines
DNSP	Distribution Network Service Provider
DSD	Department of State Development (formerly the Department of State Development, Infrastructure and Planning (DSDIP))
DSDIP	Department of State Development, Infrastructure and Planning (former)
DSITI	Department of Science, Information Technology and Innovation (formerly the Department of Science, Information Technology, Innovation and the Arts (DSITIA))
DTESB	Department of Tourism, Major Events, Small Business and the Commonwealth Games

DTMR	Department of Transport and Main Roads
E	
EAS	Essential Air Service (United States of America)
EEQ	Ergon Energy Queensland
EGM	Electronic gaming machine
F	
FATG	Fully automated table game
FEE-HELP	FEE – Higher Education Loan Programme
FHA	Farm Household Allowance
FHVL	First Home Vacant Land
FID	Financial Institutions Duty
FIT	Feed-in tariff
FMB	Farm Management Bonds
FMD	Farm Management Deposits
FRDC	Fisheries Research and Development Corporation
FTE	Fulltime equivalent
G	
GAO	Government Accountability Office (United States of America)
GATT	General Agreement on Tariffs and Trade
GBR	Great Barrier Reef
GDP	Gross domestic product
GERD	Gross expenditure on research and development
GHG	Greenhouse gas
GMO	Genetically modified organism
GOC	Government-Owned Corporation
GOVERD	Government expenditure on research and development
GSP	Gross state product
GST	Goods and Services Tax
GTO	Group training organisation
GVA	Gross value added
GVP	Gross value of production
GWh	Gigawatt-hour
H	
HDPR	Health (Drugs and Poisons) Regulation 1996
HERD	Higher education institution expenditure on research and development
I	
IANDPR	Intergovernmental Agreement on National Drought Program Reform

ICN Qld	Industry Capability Network Queensland
ICT	Information and communications technology
IDC	Inter-departmental committee
IED	Income Equalisation Deposits
IGA	Inter-governmental agreement
I-O	Input-Output
IOC	Industry-owned company
IP	Intellectual property
IPA	Institute of Public Affairs
IPAM	Injury Prevention and Management
IPART	Independent Pricing and Regulatory Tribunal
IT	Information technology
ITC	Input tax credit
J	
JCPAA	Joint Committee of Public Accounts and Audit
K	
KPI	Key performance indicator
kWh	Kilowatt-hour
L	
LCR	Local content requirement
LNG	Liquefied natural gas
LVA	Land Valuation Act 2010
M	
MCF	Marginal cost of public funds
MDL	Mineral Development Licence
MEB	Marginal excess burden
MFP	Multifactor productivity
MLA	Meat and Livestock Australia
MMRH	Monash Multi-Regional Forecasting Model
MW	Megawatt
MYFER	Mid Year Fiscal and Economic Review
N	
NAIRU	Non-accelerating inflation rate of unemployment
NCS	National Classification Scheme
NCP	National Competition Policy
NDRRA	Natural Disaster Relief and Recovery Arrangements
NEBRA	National Environmental Biosecurity Response Agreements

NEM	National Electricity Market
NFL	National Football League
NPA	National Preference Agreement
NRAS	National Rental Affordability Scheme
NSW	New South Wales
NSWTI	New South Wales Trade and Investment
NT	Northern Territory
NTB	Non-tariff barriers
NWC	National Water Commission
O	
OBPR	Office of Best Practice Regulation
OECD	Organisation for Economic Co-operation and Development
OESR	Office of Economic and Statistical Research
OFT	Office of Fair Trading
OSR	Office of State Revenue
P	
PAYE	Pay as you earn
PDA	Plumbing and Drainage Act 2002
PDI	Priority Development Infrastructure
PHA	Plant Health Australia
PIPES	Primary Industry Productivity Enhancement Scheme
PiT	Partners in Technology
PPE	Personal protective equipment
PTO	Principal training organisation
PV	Photovoltaic
Q	
QAS	Queensland Ambulance Service
QBCC	Queensland Building and Construction Commission
QCA	Queensland Competition Authority
QCoA	Queensland Commission of Audit
QFF	Queensland Farmers Federation
QH	Queensland Health
QIMR	QIMR Berghofer Medical Research Institute (formerly the Queensland Institute of Medical Research)
QOCS	Queensland Office of the Chief Scientist
QPP	Queensland Procurement Policy
QPWS	Queensland Parks and Wildlife Service

QR	Queensland Rail
QRAA	Queensland Rural Adjustment Authority
QSC	Queensland Sugar Corporation
QSL	Queensland Sugar Limited
QT	Queensland Treasury (formerly Queensland Treasury and Trade (QTT))
QTC	Queensland Treasury Corporation
QTT	Queensland Treasury and Trade (former)
R	
R&D	Research and development
RASS	Remote Air Services Scheme
RD&E	Research, development and extension
RDC	Research and development corporations
RFCS	Rural Financial Counselling Service
RICDS	Racing Industry Capital Development Scheme
RIF	Racing Infrastructure Fund
RIS	Regulatory Impact Statement
RNA	Royal National Agricultural and Industrial Association of Queensland
RoA	Rest of Australia
RPT	Regular passenger transport
RWUE – IF	Rural Water Use Efficiency—Irrigation Futures
S	
SEQ	South east Queensland
SME	Small and medium-sized enterprises
SNA	System of national accounts
SPA	Sustainable Planning Act 2009
STSA	State tourism satellite accounts
T	
T4GB	Tendering for Government Business
TAFE	Technical and further education
TEQ	Tourism and Events Queensland
TES	Tax Expenditure Statement
TIM	Tourism industry marketing
TIQ	Trade and Investment Queensland
TNSP	Transmission Network Service Provider
TRA	Tourism Research Australia
TRIM	Trade-related investment measure
TSA	Tourism satellite account

V	
VCEC	Victorian Competition and Efficiency Commission
VET	Vocational education and training
VIPP	Victorian Industry Participation Policy
W	
WELS	Water Efficiency Labelling and Standards
WHS	Workplace health and safety
WHSQ	Workplace Health and Safety Queensland
WTO	World Trade Organisation
WTOGPA	World Trade Organisation Government Procurement Agreement
WWII	World War II

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