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A regional economy: a case study of Tasmania

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A regional economy: a case study of Tasmania Report 116

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Foreword

The Department of Infrastructure, Transport, Regional Development and Local Government is committed to the prosperity of Australia's regions. In order to promote economic and social development it is important that we understand the environment in which regional economies operate. This study provides an analytical investigation of the challenges facing regional Australia.

BITRE's study takes a multifaceted and holistic approach. The underlying principle is that economies do not work in isolation and a complex mix of interacting drivers affects a region's economic performance.

Tasmania's economic performance has experienced changing fortunes over the past two decades. This development provided a unique opportunity to investigate the drivers of this change and to find out if there are lessons for regional policy.

This report was prepared by Dr Karen Wade, Leanne Johnson and Carolyn Brennan. Dr Gary Dolman provided executive supervision.

Phil Potterton Executive Director Bureau of Infrastructure, Transport and Regional Economics October 2008

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While BITRE is grateful for the assistance provided by these individuals and organisations, the views expressed in this report are those of BITRE and should not be attributed to any other organisation.

At a glance

- Tasmania's natural resources have been its economic foundation for the past two centuries. It is a small open economy reliant on trade as a major source of income.
- Throughout the 1990s, a vicious circle developed after the recession through declining employment, income, consumption, investment and business activity. No single causal explanation can explain the slowdown in Tasmania's economy throughout the 1990s.
- The renewal this decade demonstrates a virtuous circle of increases in income, consumption, wealth (primarily through housing) and population, which have all enhanced the growth of the Tasmanian economy.
- Tasmania is connected to the national economy with co-movements and common cycles but is subject to more idiosyncratic shocks.
- Migration has been an important driver and reflector of the state's economic performance. Out migration is influenced by the shape of the state's economy and in migration is influenced by the level of housing affordability in comparison to the mainland. Structural ageing will have economic consequences for the Tasmanian economy into the future.
- Tasmanian business confidence has mirrored the performance of the state's economy, with stronger growth in private investment this decade in both housing and the business sectors.
- Industry structure played an important role in the underperformance of Tasmania's economy during the 1990s. Tasmania's industry composition is heavily weighted towards traditional industries, such as manufacturing, agriculture, forestry and fishing.
- Tasmania's government has influenced the performance of the state's economy through its fiscal management and leadership role.
- Tasmania's Labour and Multi Factor Productivity is below the national level and grew more slowly over the entire study period. There are a number of possible explanations for Tasmania's lower levels of productivity, such as lack of economies of scale, human capital differences, industry mix and lower participation rates.

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Executive summary

After a long period of economic underperformance, in the last decade Tasmania has experienced a period of substantial economic growth, and a number of economic indicators have improved. This development in the state's economy provides a unique opportunity to investigate the drivers of this change. This motivated the Bureau of Infrastructure, Transport and Regional Economics (BITRE) to research Tasmania's economic performance to analyse the key drivers of this change and to find out if there are lessons for regional policy. It provides an ideal test bed to examine economic development and small economies because data at the regional level is usually difficult to obtain in Australia. However, it is available for the purposes of this report because Tasmania is also a state.

Previous inquiries into Tasmania have overwhelmingly concluded that Tasmania's economic performance has generally lagged behind other states. The Bureau of Industry Economics (1994) assessed Tasmania as one of the poorest performing states in the 1980s. By 1997, the situation had not improved with Nixon (1997:45) stating that 'it should be clear that the Tasmanian economy is in bad shape'.

Currently, however, Tasmania is experiencing some its best economic conditions in decades (Eslake 2005a). For example, Gross State Product (GSP) estimates have grown rapidly over the past five years with an average annual growth rate of 3.7 per cent since 2000–01, compared with 0.6 per cent over the preceding five year period. This report considers Tasmania's transition over two decades from a period of weak to stronger economic growth.

This report examines Tasmania economy from a regional perspective and aims to answer three questions, which are discussed below.

What has been the pattern of economic development in Tasmania from 1985, compared to Australian economic development as a whole?

Three key points are evident through the analysis. The first is the presence of a twospeed economy over time for Tasmania. The second is the general underperformance of Tasmania's economy relative to Australia. The third is the interconnection between the Tasmanian and Australian economies.

The economic data for the 1990s reveals a slow and poor performing economy. The Tasmanian proportion of the national economy declined from a high of 2.2 per cent in 1991–92 to a low of 1.8 per cent in 2000–01. However, Tasmania has improved its economic performance this decade by growing at an average annual rate of 3.7 per cent from 2000–01 to 2005–06, exceeding the national rate of 3.3 per cent.

A number of key factors have contributed to the differences in economic performance of Tasmania over the study period. Private consumption and investment follow the

pattern of the two-speed economy with slow growth during the 1990s and faster growth this decade. In particular, private investment displays a high level of volatility. In contrast, Tasmanian exports have been stable and have had little impact on the recent improvement in economic activity.

The economic performance of Tasmania is also affected by the performance of the national economy. Tasmania is linked to the performance of the national economy but is subject to greater idiosyncratic shocks.

Tasmania's regions displayed differences in their economic growth patterns. Hobart and Launceston displayed the strongest growth for the state, while Burnie and Devonport, and the Balance of Tasmania exhibited a weaker performance.

What have been the key drivers of Tasmania's economic development?

Previous investigations into the Tasmanian economy and the major government inquiries provide a series of key themes to consider in this investigation. These recurring themes are outlined below, with some relevant extracts from previous studies.

Population

Population has been an area of concern for Tasmania over a long time, particularly the structural ageing process and the period of population declines during the 1990s, which involved the loss of the young and educated to the mainland. All of these population changes impact on participation rates, productivity and economic activity.

The state's economy has impacted on the incentives of Tasmanians to migrate—this has been an important driver and reflector of the state's economic performance. For example, high levels of out migration were evident during the poor economic performance of the 1990s. In contrast, the current decade shows a positive net migration flow into the state. As one would expect, a region with higher levels of economic activity is attractive because of the greater economic opportunities.

Another factor for the positive flow is housing affordability. Tasmania's lower house prices in comparison to the mainland are an incentive to move there. Paradoxically however, the recent high in migration for Tasmania is contributing to increasing house prices, which in turn appear to be already reducing the number of arrivals.

The impact of the changes in population through migration and structural ageing will have consequences for the Tasmanian economy into the future.

Household activity

Clearly, households have been a strong source of the economic growth. The sources of the growth include household income, employment, consumption, wealth and growing confidence in the economy. The two contrasting periods of economic fortune for the state are illustrated by the growth and decline of these factors and the virtuous and vicious circles¹ they can create.

^{1.} A virtuous or vicious circle is a series of reinforced events through a feedback loop. A virtuous circle is a favourable result, while a vicious circle results in unfavourable outcomes.

A virtuous circle through increases in income, consumption, housing investment and population has provided part of the momentum to the growth in economic activity for Tasmania this century. However, the growth of household income, wealth and consumption has failed to provide a foundation for future economic growth. Declines or limited growth are already evident in income, consumption and dwelling construction. Moreover, population increases are unlikely to continue at the same magnitude, which will result in a dampening of domestic demand.

House prices and consumer demand alone do not explain the whole reason for Tasmania's growth. Similarly, if the economy starts to slump, household activity alone cannot maintain the economy.

Business activity

Business activity is an important driver of the Tasmanian economy. During the 1990s, Tasmanian industries grew slowly and in some cases declined, while this decade reveals a turnaround in the performance of some Tasmanian industries.

Several drivers are evident. Tasmania's industry structure contributed to the poor performance of the economy during the 1990s. Its industry composition was heavily slanted towards slow or declining industries, hampering economic growth. Fast growing industries at the national scale, such as *property and business services*, were only a very small part of the Tasmanian economy and did not provide the same rate of growth within Tasmania. In fact, this industry's share has remained constant over the study period.

Another factor behind the slow growth during the 1990s is far more difficult to quantify and relates to the level of business confidence and expectations for future economic growth. The local economy's description as a 'basket case' in the 1990s (Lennon 2006), illustrates the environment in which people were conducting business. This provides an understanding of why businesses would be very reluctant to invest in new projects or expand.

Large scale construction projects have also raised Tasmania's investment levels. These projects provided an injection into the local economy through the construction phase, both in terms of income and employment. However, a construction phase does come to an end and projects should be used to provide productivity improvements into the future.

Finally, the growth period in the 2000s illustrates the virtuous circle. The REDI (TDED 2006a) report survey of Tasmanian business classified domestic demand as the most important determinant of investment in the local economy. Hence, the growth in several economic indicators, such as population, income, housing investment and employment encouraged business activity and confidence for future economic pursuits.

Productivity

Productivity is a key driver for future economic prosperity and raising standards of living. Tasmania's productivity, however, remains below the national level, which will hinder the state's capacity for economic growth. A number of hypotheses have been

suggested for the lower levels of productivity, which include lower levels of human capital, lower work intensity and lack of economies of scale.

A number of policy levers are available to raise productivity but a long-term perspective is vital to provide a foundation for growth. Improving productivity can be generated through raising human capital, Research and Development (R&D), infrastructure improvements and microeconomic reforms.

Microeconomic reforms, instituted by both the State and Federal governments, have been found to have raised productivity at the national level. Labour productivity does not appear to be a driver for the recent economic growth. However, if these reforms were not implemented, Tasmania's economy may have continued to decline.

Government

Both the Federal and State governments have impacted on the performance of the State's economy. The Federal Government influences regional economies through both microeconomic and macroeconomic policies. An example of an important impact is the National Competition Policy (NCP) reforms. The Tasmanian Government's submission to the Productivity Commission's review of the NCP reforms state that over the longer term the 'NCP has assisted the State in meeting its objectives of attracting investment, generating employment and achieving higher levels of economic growth' (sub 109, p2 cited in Productivity Commission 2005:48).

Tasmania's government has influenced the performance of the state's economy through its fiscal management and leadership role. A clear difficulty during the 1990s was the high level of public debt. The result was the introduction of tight fiscal policies at a time of declining economic activity. The leadership shown by the Tasmanian Government is impossible to measure but they did institute a number of initiatives, such as *Tasmania Together 2020* and the Department of State Development, while major infrastructure projects, which appear to have potential, contributed to business confidence. As Skilling (2004:3) points out bad leadership or 'bad policies can destroy growth', while effective leadership is no guarantee of growth.

What can be learned for other regions in Australia?

The factors that have influenced the Tasmanian economy are equally applicable for many other Australian regions. Tasmania is not only a state, but also a regional economy, and shares many characteristics with non-metropolitan Australia. These characteristics include:

- lower levels of human capital
- traditional industry structure impacted through structural adjustment
- ageing population
- isolated economies
- out migration, particularly in the younger cohorts.

Regional and rural centres across the country have faced, and continue to face, the many challenges that confront small economies. Regional Victoria and subsets

of regions in various states have similar economic bases and industry structures, for example, inland New South Wales, southern Western Australia, south west Queensland and regional South Australia. Hence, lessons drawn from the Tasmanian experience can be applied to regional economies in many parts of the country, especially for regional centres and their surrounding regions. For these reasons, Tasmania provides lessons for economic development in other Australian regions.

Policy implications

The implications for government are that the drivers are interconnected and require a comprehensive and long-term approach to raising a region's living standard. A comprehensive strategic plan, which sets benchmarks and provides an evaluation and review process is the most appropriate. In fact, Rodriguez-Pose (2000) highlight that a tailor-made approach, with clear and viable objectives, that 'address the competitive advantages as well as the weaknesses of each region' was an effective model.

But while governments can be a leader of change, there are also significant limits to the extent they can influence economic activity. Importantly for regional economies, poor government policy choices can destroy growth, while effective policies are conducive to but do not guarantee economic growth. For example, government debt is not necessarily a problem but if it is used to finance non-performing assets or current expenditure it can place the state in a vulnerable financial situation.

Another important driver and reflector of economic activity is population and particularly migration flows. During the current period of economic growth, population growth has followed the improvements in the state's economic performance. In other words, economic growth and the state's attractive housing market have raised Tasmania's population, especially through migration. Thus, population has reinforced the economic growth and has become a part of the positive feedback mechanism in a virtuous circle.

However, during the 1990s, migration flows were primarily away from Tasmania, especially in the younger cohort. The economic performance of Tasmania was an influence for the out migration. This does not, however, necessitate the introduction of policies to retain people in a region. If the market works, the communities that receive immigration derive net gains and those migrating reveal themselves to be better off.

Productivity is an important driver of future economic activity and productivity improvements are necessary for raising future living standards. Enhanced productivity can be generated through a number of sources, such as microeconomic reforms. A number of policy levers are available to raise productivity but a long-term perspective is vital to provide a foundation for growth.

This study took advantage of an economy that has experienced shifting fortunes over time to identify the key drivers. Three questions were investigated and a number of lessons were drawn from the Tasmanian experience that are applicable for regional economies across the country, especially for regional centres and their surrounding regions.

Chapter 1

Introduction



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Chapter 1 Introduction

After a long period of economic underperformance, in the last decade Tasmania has experienced a period of substantial economic growth, and a number of economic indicators have improved. This development in the state's economy provides a unique opportunity to investigate the drivers of this change. Tasmania is not only a state, but also a regional economy, and shares many characteristics with non-metropolitan Australia. For this reason it may provide lessons for economic development in other Australian regions.

From Federation to the late 1990s, over 75 reports into Tasmania have been conducted with the overwhelming conclusion that Tasmania's economic performance has generally lagged behind the other states (Rae 2002a). The Bureau of Industry Economics (1994) assessed Tasmania as one of the poorest performing states in the 1980s. By 1997 the situation had not improved with Nixon (1997:45) stating that 'it should be clear that the Tasmanian economy is in bad shape'.

Tasmania is currently experiencing some its best economic conditions in decades (Eslake 2005a). For example, Gross State Product (GSP) estimates have grown rapidly over the past five years with an average annual growth rate of 3.7 per cent since 2000–01, compared with 0.6 per cent over the preceding five year period. This report considers Tasmania's transition over two decades from a period of weak to stronger economic growth.

A number of questions provide the objectives for this investigation into the Tasmanian economy:

- What has been the pattern of economic development in Tasmania from 1985, compared to Australian economic development as a whole?
- What have been the key drivers of Tasmania's economic development?
- What can be learned for other regions in Australia?

Therefore, this study focuses on Tasmania's economic development from 1985 (wherever data permits), and the factors that influenced its development path. This is a predominantly quantitative study, and the analysis is based on the latest data that was available at the time the research was undertaken, which was largely during 2006–07.

Previous investigations into the Tasmanian economy and major government inquiries provide a series of key themes to consider in this investigation. The key themes are population, household and business activity, productivity and government. These themes inform the structure of this study.

Population has been an issue for Tasmania for much of its history with slow growth, consistent out migration flows and demographic changes and is a driver and reflector of Tasmania's economy.

Tasmanian *households* impact on the level of economic activity through domestic demand, labour supply and investments. This is a major source of economic activity and can either generate or restrain economic growth. This is also the case for *business activity* which can influence the performance of an economy. For example, the confidence of businesses in the local economy influences their level of investment and potential economic growth.

Future economic growth is also reliant on the *productivity* of the local economy. In the case of Tasmania, it has consistently experienced lower levels of productivity in comparison to Australia, which appears to have hindered the economy. A number of hypotheses have been suggested for the lower levels of productivity, which are explored in this study.

Governments play an important role in the operation of an economy. The government's role is significant in Tasmania because of its relative size in the local economy, its leadership role, regulatory capacity, government institutions and policy agenda. Previously, investigations have highlighted government barriers to Tasmania's economic performance, but microeconomic reforms and development strategies may be having a positive influence in recent times.

Tasmania also provides an ideal test bed to examine economic development and small economies. Reliable data at the regional level is difficult to obtain, but information is available for Tasmania because it is also a state, albeit one with similar characteristics to Australian regional economies.

This report consists of 10 Chapters which investigate the three objectives of this project. Chapter 2 presents an overview of Tasmania's long-term economic history, to place the changing patterns of development that have occurred in Tasmania into context. A synopsis of previous conclusions that have been made from a number of inquiries into Tasmania is included in Chapter 2. Chapter 3 includes a broad description of the Tasmanian economy using Gross State Product (GSP) and BITRE's Taxable Income Database from 1984–85 to 2004–05.

This broad discussion of Tasmania's economy is followed by a number of Chapters covering the different themes highlighted above. Chapter 4 considers population as a driver for Tasmania's economy. Chapters 5 and 6 describe respectively household and business activity and aid in understanding these elements of the economy. Chapter 7 considers Tasmania's productivity in comparison to Australia and its relationship with education and investment. The role of the Federal and state governments is considered in Chapter 8, which covers the state government's financial position, legislative structure and policy formulation.

Chapter 9 discusses lessons drawn from the analysis into the Tasmanian economy, including the implications for policy formulation and how relevant the findings will be for other regional economies. Concluding remarks are contained in Chapter 10.

Chapter 2

The State of Tasmania



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Chapter 2 The State of Tasmania

This Chapter presents an overview of some of the investigations into the Tasmanian economy. A number of major reports have studied various factors that have had a significant impact on the performance of the state's economy. These studies highlight a number of key themes to investigate. These include population, household and business activity, productivity and government.

Section 2.1 provides a brief description of Tasmania's social and economic changes over its more than 200 year history. Section 2.2 presents a summary of four major reports into the state of the Tasmanian economy. Section 2.3 considers empirical economic investigations into Tasmania's economy interconnection with the national economy. Section 2.4 provides a guide to the key themes that have reoccurred over time, with concluding remarks in section 2.5.

2.1 Tasmania: a brief social and economic overview

Tasmania, separated from the mainland by Bass Strait, covers 67 941 square kilometres, which is 0.9 per cent of the total land area of Australia. The island is mountainous and covered by a system of lakes and rivers. Its temperate climate means it is relatively well watered and it is renowned for its beauty.

Some 12 000 years ago, rising sea levels separated Tasmania from mainland Australia, isolating the local Indigenous population, which may have comprised up to 10 distinct language groups (Robson 1985:2). The number of Indigenous Tasmanians prior to European arrivals has been estimated at between 4000 and 10 000 persons (ibid:1; ABS 1999). Very little is known about the lives of Indigenous Tasmanian's prior to the European arrival (Robson 1985).

In 1642, Abel Tasman, a Dutch explorer, reported the first European sighting of Tasmania. The island was named 'Van Diemen's Land' after the Governor General of the Dutch East India Company, Antony van Diemen (ABS 1999). The first European settlement began under the British Lieutenant John Bowen in 1803, at Risdon Cove on the Derwent River (ibid). In 1804 the camp was moved across the river to Sullivan's Cove, where Hobart town was then established (Robson 1985:13)

The early settlers were mostly convicts and the military, who cultivated the land to ensure the survival of the new colony. Numerous penal settlements were established at various sites around the island. Life was hard—during the first few years the settlers faced starvation several times (Robson 1985:13). Some settlements were besieged by bandit groups of escaped convicts until they were brought before the law. Public beatings and hangings were common (ibid:20-1).

There was also conflict with the Indigenous population which reached a peak in 1823–24 (Robson 1985:15). In addition, the removal of Aboriginal children and the effects of introduced diseases were devastating to Tasmania's Indigenous population (ABS 1999). In 1824, George Arthur was appointed Governor to Tasmania. At his command, Tasmania's remaining Aboriginal population was removed from the mainland and moved to Flinders Island, to a 'sort of concentration camp where most of them perished' (Robson:16). By 1847, only 47 full blood Aboriginal people remained (ibid).

Early economy

The immigrant population grew rapidly, from an estimated 5519 in 1820 to 24 279 a decade later (ABS 2007a). In 1830, men outnumbered women by almost three to one (ibid). During Arthur's governorship, convicts arrived in Van Diemen's Land at a rate of around 2000 per year (Robson 1985:17). Tasmania was also a destination for free settlers, who began to arrive in substantial numbers from 1816 and settled a number of towns. At the end of Arthur's term in 1836 the population had reached approximately 43 000. Seventy five per cent of them 'were convicts, had been convicts or were of convict ancestry' (ibid:24).

Convict labour was the cornerstone of the economy, with convicts used by both government—for infrastructure building and private enterprise—and as cheap labour on farms (Robson 1985). After serving their allotted sentence (or sometimes earlier if they had shown good behaviour) many convicts went on to become wealthy business owners in their own right (ibid). The early economy of Van Diemen's Land was dominated by wool, whaling, wheat and logging. George Arthur presided over a time of economic boom.

The island became its own colony with its severance from New South Wales in 1825 (ABS 1999). Tasmania's upper house, the Legislative Council, was founded the same year. However, a lower house—the Legislative Assembly—was not established until 1854 when the British Parliament passed the *Constitution Act*. An economic downturn in the 1840s, together with an increase in the rate of convict landings after NSW ceased transportation in 1840, raised opposition to the importation of convicts (Robson 1985). However, it was not until 1853 that the practice was ceased (ABS 1999). Seeking to distance itself from the island's convict past, the island was re-named Tasmania in 1856, in honour of the Dutch explorer (ABS 1999).

Although the economy had recovered by the mid 1840s, in the early 1850s many left Tasmania in search of wealth in Victoria's gold rush (ABS 1999), causing a reduction in the population growth rate. Yet, growth was again high by 1860. The industries of importance in the development of Tasmania were agriculture, forestry, manufacturing and mining. For example, the Huon valley became an apple growing region and the Mount Lyell Copper Mine was established in Queenstown in 1893. The establishment of these industries formed the backbone of the Tasmanian economy well into the 21st century.

In 1876, Truganini died. At the time, her death was widely believed to be that of the last Tasmanian Aboriginal, although this is now disputed (Onsman 2004) and it ignores descendants of mixed heritage who would later identify themselves as Indigenous Tasmanians. To complicate the picture, Indigenous people were not counted in Australian population census counts prior to 1966.

Federation and beyond

Of particular importance in the development of Tasmania's history is its support for the Federation of Australia, which was established in 1901. Tasmania then became a state within the Commonwealth of Australia, which meant a lessening of tariff barriers to trading with other states.

Figure 2.1 shows the performance of Tasmania's economy in relation to the other Australian states from 1861 to 1990–91. Cashin estimates the six colonies² and New Zealand's Gross Domestic Product (GDP) levels from monetary data using Fisher's Quantity Theory of Money. The stand outs are the dominance of New South Wales and Victoria in the Australian economy and the relatively slow growth of the Tasmanian economy, which consistently has the lowest per capita GDP (Cashin 1995). The depression period is clear between 1920–21 and 1932–33, after which all states show steady growth until the 1980s.



Figure 2.1 Real per capita GDP, Australian 'colonies', 1861 to 1990–91

Source: Cashin (1995:28).

Clearly, Tasmania's economy has experienced slower growth than the other colonies. As Callaghan (1977) observes, since Federation, there has been a persistent relative decline in Tasmania's population and economic activity, relative to Australia.

While Tasmanian population growth during the 19th century was solid, the population growth rate during the 20th century—with the exception of an influx after the end

^{2.} Only in this section will states be referred to as colonies because Cashin's paper studies the period before Federation and this is the term used throughout his paper.

of the Second World War—was generally lower than the rest of Australia. During the late 1990s the population diminished slightly (ABS 2007a).

The structure of industry that developed in the state was one that has been 'dominated by large mining and manufacturing enterprises' (Callaghan 1977:34). The state's natural resources have been a significant contributor with an export focus either internationally or to the mainland. In terms of manufacturing, Tasmanian industry development has differed from the mainland through 'size, location, marketing and specialisation' (Callaghan 1977:45). Essentially, the Tasmanian industry structure has been described as *traditional*.

2.2 Previous investigations into Tasmania

Tasmania's economic position has been the subject of much research. Nixon (1997: background 3) mentions that there were over 75 reports' of relevance to the Tasmanian economy.' Of these, four landmark government reports have analysed the state in some detail. These are:

- Sir Nicholas Lockyer (1926), Investigation into the financial position of Tasmania as affected by Federation.
- Sir Bede Callaghan (1977), Inquiry into the structure of industry and the employment situation in Tasmania.
- Charles Curran AO (1992), Independent Commission to review Tasmania's public sector finances, Tasmania in the nineties (Tasmanian Commission 1992).
- The Hon. Peter Nixon AO (1997), Tasmania in the 21st century.

These reports provide a good overview of the issues facing Tasmania's economy over a substantial period of time. This section notes the key findings of these reports.

Lockyer (1926)

Sir Nicholas Lockyer was requested by Prime Minister Stanley Melbourne Bruce to investigate the financial situation of Tasmania as shaped by Federation. Lockyer found that the 'financial position of Tasmania is one of serious moment, and calls for immediate attention'. The Lockyer report appears to have been commissioned partly in response to the State's request for the Federal Government to grant Tasmania £545 000 per year for a decade, to alleviate serious debt levels. The inquiry documents the problems that faced Tasmania and places substantial responsibility for Tasmania's financial position on the State Government. It therefore recommends against the 10 year bail out, and instead argues for a series of interest free loans.

Findings

The report listed a number of negative findings ranging from transportation, governance, population and industry issues. These include:

• Tasmania's level of administration and legislative capacity was too large for its population.
- In terms of fiscal management, the state had regularly resorted to financial recurrent spending through public debts, and worse, loans to public bodies had been extravagant because these bodies had not been made responsible for their own financial requirements.
- State taxation was the heaviest in the Commonwealth.
- Rail services were experiencing ongoing losses, with some lines unable to cover running costs.
- Roads were deteriorating and the state was unable to maintain them, and the shipping department was also suffering major losses.
- Industry was a more mixed picture. While Tasmania's manufacturing position was limited by a small labour base and small demand, Lockyer noted that many primary industries could be further developed.
- In relation to population, Lockyer found that—while the ratio of births over deaths was the highest in the country—there was substantial out migration of people of prime working age because of limited employment opportunities.

Recommendations

The report concluded with the following specific grant and loan-based recommendations:

- An interest free loan, not exceeding £1 million over 10 years, to be aimed at developing agricultural and horticultural resources.
- £300 000 per year grant for 10 years, provided that the state reduced income and land taxes.
- £50 000 per year for 'afforestation' of conifers in Tasmania.
- A £500 000 grant to offset the construction costs of the hydroelectric scheme, which had been inflated by post-war commodity prices.
- £20 000 per year for a decade to assist geological exploration for mining purposes.
- While no new roads should be built, a £25 000 per year grant would be issued to assist with maintenance of existing road infrastructure.

In addition, the report made the following more general recommendations in-text:

- Government administration should be made more efficient.
- A private shipping operator could be subsidised.
- Agriculture, pastoral, horticultural, mining and timber industries should be further developed.

Callaghan (1977)

Some 50 years later in 1977, Sir Bede Callaghan was requested by Prime Minister Malcolm Fraser to investigate the structure of industry and employment in Tasmania. In his conclusion, Callaghan states that, in the simplest of terms, 'Tasmania's major problem is Bass Strait' (Callaghan 1977:97). However, the inquiry discusses many factors which together comprise what Callaghan terms 'the Tasmanian Problem' (ibid:94).

Findings

In relation to industry, Callaghan noted the key issues faced by a small and dispersed economy. First, large mining and manufacturing enterprises were dispersed around the island. Communities were built up around individual sites, which left them vulnerable should economic conditions turn against the dominant industry in the area. Second, decentralisation of industry may also increase production costs. Third, as an island, Tasmania's relatively high rate of exports (and at the same time a limited export base) meant it was more exposed to international price fluctuations than Australia. Finally, Callaghan emphasises the economic costs of sea and air transport across Bass Strait, which was irregular and unreliable at that time.

In addition, manufacturing and many rural industries, such as dairying, apples and other fruits, were declining in importance. Tourism, while strong in summer, declined markedly over winter. The fishing industry was 'not fully developed' (Callaghan 1977:96). On the other hand, forestry was important and supported the manufacture of many products. Finally, Tasmania's tertiary sector was underdeveloped in comparison to Australia.

Like Lockyer, Callaghan was also critical of government. Specifically, this included noting: that Tasmania receives more Federal funding per capita than any other state; that both Federal and State Government initiatives and assistance had lacked a long term strategic approach; and that the island had a large number of local councils for its population size. Tasmania was also uncompetitive with other states in relation to grants, concessions, payroll tax rebates and so on, although the State Government had claimed it was unable to reduce these.

Finally, in relation to population, the report notes that Tasmanians were less well off than their mainland counterparts and unemployment over the previous decade had been higher than Australia's. Out-migration from Tasmania to the mainland was still an issue, although the rate had slowed since the Second World War. Tasmania's rate of natural increase had also declined to the national average. Tasmania's work force participation rate was the lowest of any state except Queensland.

Recommendations

The Callaghan report made many broad-ranging suggestions:

- Some municipalities could benefit from rationalisation and amalgamation.
- Regional economic planning and policy implementation should be better coordinated.

- Although Tasmania receives a high amount of funding per capita, the allocation of Federal money by the Commonwealth Grants Commission (CGC) should continue.
- Rather than focusing on 'unrealistic population and job creation targets' (Callaghan 1977:117), emphasis should be placed on increasing production of goods and services.
- Structural adjustment assistance should be implemented.
- In the long term, education should align with the needs of industry.
- There is growth potential in tourism and fishing.
- A hardwood re-afforestation program could be investigated.
- International migrants could be encouraged to live in Tasmania.

Tasmanian Commission (1992)

On 1 March 1992, the Premier of Tasmania established an independent Commission, which was headed by Charles Curran AO, to investigate the financial position of the Tasmanian State Government. The report was finalised one month later on 3 April.

Findings

Curran identified several major governance issues. First, Tasmania was overregulated, payroll and land tax rates were higher than in the other states, and inefficiencies existed within statutory trading authorities. Second, there was a lack of communication between levels of government in Tasmania, a very large number of municipalities, and an oversupply of services in some places. Third, public sector debt had increased since 1987, and debt servicing costs were more than 10 per cent of state revenue.

In terms of the economy, Curran stated that the pace of economic reform had been 'far too slow' (Tasmanian Commission 1992:190). Tasmania's economy had performed badly. Electricity was no longer cheap and abundant. A higher proportion of Tasmania's workforce was employed in the public sector than in other states.

Recommendations

Curran provided many specific recommendations, aimed at improving Government efficiency and overall economic performance, which included:

- The State Government should focus on core activities, and consider allowing the private sector to provide non-core services. In relation to this, Curran recommended the sale of 16 government assets.
- Guidelines on government capital expenditure to be developed to avoid further debt.
- State taxes and workers compensation costs should be reviewed, with the aim of lowering the impact on business.

- Overly burdensome legislation should be removed or reduced.
- The State Government must provide the means to fund its superannuation liabilities.
- Service provision between all three tiers of government in the state should be rationalised.
- Communication and cooperation between all levels of government could be increased.
- The number of local government municipalities should be reduced to 15.
- Municipalities' use of rates to recover costs should be replaced by a user charge system.
- Access to the Hydro Electric Commission (HEC) grid should be granted to private generators, and privatisation of the HEC should be considered.
- Enterprise bargaining should be introduced. Wage fixing, tariffs and so on should be reduced in line with actions by the Federal Government.
- Education should be focused on emerging skills requirements.
- Aspects of the transport industry, such as taxis, passenger and freight transport, should be deregulated, and ports should be fully commercial.
- A 'Basslink' power cable joining Tasmania to the mainland, could be funded with federal government compensation after the Gordon-below-Franklin dam project did not proceed.

Nixon (1997)

The 1990s was a difficult decade for Tasmania. While Australia recovered quickly from the recession in the early 1990s, economic conditions remained poor in Tasmania during much of that decade, with high unemployment, low economic growth, and high population out migration. The Australian Government commissioned the Hon. Peter Nixon AO to write a report recommending measures which could be implemented to lift Tasmania's economic performance.

Findings

Like the other reports, Nixon makes strong criticisms of governance in the state. He found the overall parliamentary system inefficient, not fully accountable, and with the highest levels of representation in Australia. Poor government structure and a 'confusing mix of Ministerial responsibilities' (Nixon 1997:xiv) limited communication and efficiency, and the bureaucratic structure was also highly inefficient. State debt per capita was the highest in Australia; however, the resulting high tax regime had constrained growth. While public sector employment had been reduced since the release of Curran's report, this had little impact on State Government outlays. Nixon also noted the high reliance on Commonwealth grants and also identified inefficiencies and confusion due to overlaps between Commonwealth grants and funding from the State Government for program delivery. Despite reforms in 1993, Nixon found local government still too small and fragmented to effectively deliver

services. Finally, only two Government assets had been privatised since 1992, despite Curran's recommendation to privatise 16.

Nixon also found that the large number of government agencies aimed at promoting industry development resulted in inefficiencies and lack of coordination. Payroll tax was still the highest in the country, and high workers' compensation rates were a disincentive to business investment in the State, particularly as there was a greater incidence of workplace injury in the state than elsewhere in Australia. Nixon also found that Tasmania's workforce was less skilled than Australia overall. Finally, there was a lack of access to finance for business.

In relation to transport, Nixon found the ports were inefficient, and that uncertainty about the Tasmanian Freight Equalisation Scheme impeded business development. On the positive side, the 'port and airport infrastructure linking Tasmania to the mainland is very good' (Nixon 1997:xxv). Similarly, the road network was found to be good, although transport services suffered under outdated and inefficient regulations.

Recommendations

- The parliamentary system must be fully accountable, and allow the government of the day to effectively pursue its mandate.
- The current two houses should be replaced by a new unicameral parliament.
- A simpler structure for Ministers and departments should be instigated, with a limit of seven departments.
- More Government Business Enterprises (GBE) should be privatised, subject to some price safeguards (the Government Prices Oversight Commission)
- The sale of the HEC should eliminate Tasmania's debt—this should be done by 2000.
- Increased State Government expenditure should not be funded from debt, but from efficiencies and savings.
- Local government authorities should be reduced to eight.
- Water and sewerage services should be outsourced to large regional water authorities.
- A five-year agreement between the Federal and Tasmanian governments would assist in pooling funds for programs in Tasmania.
- Payroll tax and land tax should be reduced.
- Workers compensation should be made competitive with other states.
- Education could be improved by removing the barriers to year 11 and 12 education in regional areas.
- The structure of the TAFE system across the state should also be improved.
- The four ports should be privatised.
- Hobart and Launceston airports should also be privatised, and owned separately.

The findings of these reports reveal a number of recurring factors that have hindered the Tasmanian economy. For example, the geography and population have influenced the development of Tasmania. Also, the role of government has been continually highlighted as a hindering influence on the economy. A number of recommendations have been implemented over time, which is explored further throughout this report.

2.3 Tasmania's connection to the Australian economy

Investigations into economic activity in Tasmania include studies into the comparative economic performance of Australia's states and territories. These studies highlight a number of key findings into the interconnection of Tasmania with the national economy.

A number of studies have investigated the divergence of Australian states and territories. Harris (1998) considers interstate disparities in GDP per head, from 1977–78 to 1994–95. He found that differentials in per capita GDP increased significantly for individual states. In the case of Tasmania, it was found to have had a 'major deterioration' and 'the magnitude of the differential increased from –12 per cent to –22 per cent' (ibid: 209).

A study into differences in per capita income across regions from 1976 to 1991 was completed by Cashin and Strappazzon (1998) at both the state and territory level and substate level (Statistical Divisions of SDs). They found that per capita incomes had widened at the state level but had changed little intrastate. In other words, this study suggests that per capita incomes within Tasmania are fairly uniform but have diverged from other Australian states and territories. A conclusion drawn from the study is that barriers between states restrict the flow of *factors of production* and limit the adjustment to state-specific shocks.

A more recent study by Dixon (2003) lengthens the timeframe from 1984–85 to 2000–01 to investigate states and territories in relation to real per capita GSP disparities. Overall, the results reveal that divergence increased during the 1990s because of differences in a states' employment to population ratios and labour productivity. Dixon (2003:64) concluded that these differences 'seem[ed] to play a major role in Tasmania's poor performance'. It should be noted that these studies into divergence did not include Tasmania's period of growing economic activity after 2001.

While these studies reveal that economic divergence is evident across Australia's states and territories, two studies that have investigated the reasons behind this development are Ramakrishnan and Cerisloa (2004) and Giesecke (2002). The study by Ramakrishnan and Cerisloa (2004) suggests that the wage awards system hindered adjustment of real wages to productivity, which contributed to higher unemployment rates in some states. Giesecke (2002) closely examined the drivers for Tasmania's economic divergence from 1992–93 to 1998–99. He argued that no simple or monocausal explanation for the divergence is evident but several factors have had influence. Some of the influences include lower technological improvements, shifts in domestic preferences away from Tasmanian produce and lower expected rates of return on capital.

The discussion about the negative divergence of the Tasmanian economy and the factors that have contributed towards the gap raises the question—to what extent is Tasmania's economy linked to the Australian economy?

There is limited literature investigating the link between Australia's state and territory economies (Norman and Walker 2004) because of the substantial lack of time series data and measures of economic activity at the subnational level. To address this, the report considers the extent and source of business cycle co-movements of Australian states to investigate common and idiosyncratic fluctuations that drive state cyclical activity across the country. It uses quarterly State Final Demand (SFD), and hours worked from 1984–1985 to 2003 for Australia's six states, to proxy for economic activity.

The Norman and Walker (2004) report found that co-movements exist for Australia's states, particularly for the larger states (NSW, VIC and QLD). The co-movements are mainly driven by a 'pronounced common cycle' affecting all states concurrently, presumably from macroeconomic shocks (ibid:24). Idiosyncratic shocks play a lesser role for all states, but their degree of influence is relatively greater for small states such as Tasmania. The spillover of shocks from one state to another is found to play a minor role. This is supported by a study by the Bureau of Transport and Regional Economics (BTRE) (2005), which investigated economic activity through taxable income. This study concluded that, for most regions, the dominant characteristic is its similarity with national trends. 'In other words, the key feature of most regional economies is that they are part of the greater Australian economy' (ibid:32).

Another study that investigates common trends and cycles was completed by Dixon and Shepherd (2001) on state unemployment rates and used 1978 to 1999 quarterly data. This report finds no common trend in unemployment rates for Australia's states and territories, and concludes that the lack of common trends resulted in each state following a different long-run unemployment rate equilibrium path.

This implies a case for region specific responses to unemployment. However, common cycles were present for larger states, with idiosyncratic behaviour by Tasmania and the two territories. The implication is that small states, such as Tasmania, would 'benefit far less' from 'national counter-cyclical policies' (Dixon and Shepherd 2001:267). But a case can be made for regional unemployment policy and Dixon and Shepherd argue that Tasmania would benefit from a regional policy that counters both temporary and permanent shocks in the state. However, they do not specify what these regional policies should be.

The key messages that come through the literature are the connection between Tasmania and the national economy, through common cycles and co-movement. However, divergence is present across the states. Tasmania experiences negative divergence while states such as Western Australia and Queensland are positive. Also, as a small economy, Tasmania is subject to greater volatility and idiosyncratic shocks.

To understand the negative divergence and poor economic performance of the Tasmanian economy a number of key themes have been considered in the literature. The following section presents an overview of the discussion and will form the foundation of the Chapters through the study.

2.4 The key themes

Broader investigations into the Tasmanian economy and the major government inquiries provide a series of key themes to consider in this investigation. These recurring themes are outlined below with some relevant extracts from previous studies.

A major feature of Tasmania's economic performance was that it has consistently lagged behind other states and territories over a long period. The underperformance was clear in a number of economic indicators, such as employment, participation rates, human capital and business investment.

One commentator put it bluntly:

'A slow-growing, government-burdened, pessimistic, Green economy, something like Tasmania ... Hobart can maintain certain standards thanks to a being a fiscal mendicant in the Australian federation ...' (Speech by Wolfgang Kasper 2002).

Kasper's comment, like the abovementioned reports, reflects a critical view of Tasmania's economy which was especially prevalent during the 1990s, when Tasmania experienced very difficult circumstances.

However, recently a number of economic indicators have improved, such as employment, private investment and consumer spending. In fact, Tasmania is currently experiencing its best economic conditions in decades (Eslake 2005a). The GSP average annual growth rate between 2002–03 and 2004–05 was 3.5 per cent, which exceeded the national rate of 3.2 per cent over the same time period. If Tasmania's economy has been associated with the characteristics that Kasper states in the above quote, then this begs the question—what happened to change the state of affairs in Tasmania?

It can be argued that the economic downturn and turnaround occurred because of the effects of several intersecting factors. The factors highlighted in the literature are briefly introduced below and form the bases for further investigation in this study.

Population

'[The] most significant feature indicative of the present unsatisfactory position of Tasmania is the increasing loss of population' (Lockyer 1926).

Tasmania's population developments have been identified as an issue for much of the last century. Indeed, the Callaghan Report (1977:56) states that, throughout the twentieth century, Tasmania's rate of total population growth has been the lowest or equal lowest of any state or territory. However, recently population has grown and net migration has returned to a positive position.

'By 2002 both migration and total population growth were again positive. Since then Tasmania's 'return to growth' has been loudly and 'satisfyingly' proclaimed' (Jackson 2005:2 citing Crean 2003).

Jackson suggests the recent population turnaround may partly be due to the growing economic activity in the state and the advertising of affordable housing as an incentive for people to move from interstate. However, the sustained levels of out

migration over time have resulted in 'structural ageing', resulting in Tasmania losing many young people and

'[t]he effect for Tasmania has been a significant 'premature' ageing, with the state shifting from being the nation's youngest to second-oldest in just three decades' (Jackson 2004:9 citing Jackson and Kippen 2001).

Chapter 4 will examine population as a driver and reflector of Tasmania's economy performance. Population also influences the level of household activity.

Household activity

Household activity is a vital component of an economy through the supply of labour, domestic demand and investment. An issue raised for Tasmania is the shape of the local labour market. Rae (2002b:19) points out that:

'[a]ny regional economy can have the misfortune to suffer serious job losses in any year but it looks like carelessness for it to continue to lose jobs over a whole decade'.

Rae's statement accords with the assessments made of Tasmania's labour market particularly during the 1990s. These include high unemployment rates, low participation rates, lower income levels and slow employment growth.

Although, these same labour market indicators have had positive turnarounds since 2001. Eslake (2005a:2) basically acknowledges that:

'[t]he improvement in Tasmania's economic growth performance has been broadly mirrored in an improvement in labour market outcomes'.

These improvements include a drop in the unemployment rate to 'the lowest recorded since the commencement of monthly labour force data', a '2.5 pc pts rise in Tasmania's traditionally-low participation rate' and 'Tasmania's employment-population ratio has continued to rise reaching a $15^{1}/_{2}$ -year high' (Eslake 2005a:2).

Household consumption has also risen in the state's economy. Access Economics (2005) has described the increase in activity as a 'virtuous circle' with strengthening in a number of key areas. However, Access Economics has also forecasted that:

'Tasmania's virtuous circle of strengthening population growth, rising house prices and strong retail spending is already starting to come a cropper' (Access Economics 2005:108).

Chapter 5 investigates further the shape of the labour market and household activity more broadly, and their influence on Tasmania's economic performance.

Business activity

'[T]he increasing globalisation of the world economy has rendered the operations of many Tasmanian businesses uncompetitive, due to high input costs and/or uneconomic scale. Those that could not respond with efficiency gains or some other strategy have fallen by the wayside' (Nixon 1997:46).

Past inquiries considered the investment opportunities in the economy and found that Tasmania imposed higher costs on business than other states. The high costs

impeded investment and so hindered the growth of the economy. The costs included an excessive reliance on business taxation, costly workers' compensation arrangements and the difficulty of obtaining financing. Yet:

'Tasmania has been the surprise performer of the past year, achieving a pace of economic growth to rival that of the booming mining states. And yet its industry composition is quite different, with a low contribution from mining, but the highest dependence on rural industries (including forestry and fishing), the highest dependence on utilities (hydro power), and also the equal highest proportion of manufacturing industries (boosted by businesses directly linked to forestry activities such as wood chipping)' (ANZ 2006:6).

The industry composition of Tasmania has changed over time and Eslake (2007) sees the success of the high-end premium value industries as playing an important role in Tasmania's economy, and further, that they are a vital direction for the future:

'There are Tasmanian producers—in the 'four W's'—wool, wine, wasabi and wagyu beef—as well as in cheese, onion and salmon, and that's only in the agricultural sector ... They (and other Tasmanian success stories such as InCat) have shown that it is possible for Tasmanian producers to establish a brand identity and to convince some of the world's most discerning buyers to pay high prices for their products and thereby overcome the disadvantages associated with small scale and great distance from markets' (Eslake 2007:11-12).

Chapter 6 investigates the business activity through factors such as trade, industry structure and contribution to GSP. A clear downside for Tasmania regardless of the recent improvements in business activity is that it is not matched by improvements in productivity.

Productivity

'The output and productivity of the Tasmanian economy is a matter of serious concern' (Nixon 1997:39).

Tasmania's productivity levels have been a source of concern for the economy because it is fundamental to sustaining economic growth into the future. This poor performance in productivity is in direct contrast to Tasmania's recent economic growth.

'For all of this good news about the recent performance of the Tasmanian economy, there is however one significant area of concern that goes to the heart of the question of whether this improvement is sustainable.

This is that there has been no apparent improvement in Tasmania's productivity performance—apart from a seemingly isolated spurt in 2001–02' (Eslake 2004:Slide 8).

Clearly, a mechanism to raise productivity is through human capital. But,

'[f]or many young Tasmanians, particularly young men, the end of Year 10 heralds the opportunity to leave school, find a job, and to be economically independent. However, their vision of economic independence is often marred by their lack of skills or qualifications' (Tasmanian Government 2007:7).

This issue of lower human capital skills or out migration of educated Tasmanian's has been repeatedly raised as hampering economic development. Again, despite

the economic growth, human capital remained low relative to the national average. Recently retention rates to Year 12 have 'slipped back sharply' (Eslake 2007:9). The State Government has acknowledged the continuing poor performance of the state's productivity levels, stating that:

'[i]mproving productivity is a key objective for Tasmania. There has been a long term and pronounced decline in Tasmania's productivity performance relative to Australia.

This has led to Tasmania's real income and living standards being lower than the national average. Furthermore, low productivity is a constraint on the state's capacity to attract investment' (Tasmanian Government 2006:6).

Chapter 7 illustrates the performance of Tasmania's productivity relative to the national and the underlying factors that influence it. Another avenue to improve productivity is through governments implementing microeconomic reforms and formulating policies to enhance the growth of the economy.

Government

'Tasmania is over-governed' (Nixon 1997:viii).

The argument that Tasmania has been overgoverned has been made consistently. For example, according to Rae (2002: 36), 'Tasmania has the highest level of political representation of any developed democracy'. This raises the issue of inefficiencies from overlapping, high expense and duplication.

An important consideration is whether Federal and State governments have helped to bring about part of the recent economy growth by addressing these influences. For example, Eslake argues that:

'[g]ood economic policy at the State level has played an important role in the improved performance of Tasmania's economy' (Eslake 2004: Slide 5).

And at both levels of government Banks states:

'it is apparent that considerable groundwork was laid over many years across different governments to create a climate of receptiveness to the need for change' (Banks 2003:8).

Also, State Government fiscal management is a recurrent theme in the literature, with most of the reports finding that successive State Governments did not effectively manage their finances.

'Tasmania is facing an extraordinarily difficult financial position as a result of the growth in spending and debt in recent years' (Tasmanian Commission 1992:144).

In more recent history, Tasmania's Government financial position has improved considerably—indeed net government debt has been eliminated. The issues for government highlighted above are examined in Chapter 8.

The themes highlighted above will be the springboard of the investigation into the Tasmanian economy, which aims to identify the key drivers for its economic underperformance and growth.

2.5 Conclusion

A number of notable authors have commented on and contributed to the debate about the Tasmanian economy. Each has highlighted various aspects of the Tasmanian economy that have either hindered or promoted economic growth.

A key message that comes through the literature is the interconnection between Tasmania's and Australia's economies, through common cycles and co-movement. However, the pattern that emerges from the literature is that Australia's states and territories are experiencing divergence, with Tasmania having a negative drift. This negative divergence, as pointed out by Giesecke (2002), has no single causal influence and a number of interacting factors are impacting on the economy.

The previous inquiries into Tasmania provide an avenue for investigation through the identification of a number of recurring themes. The themes are population, household and business activity, productivity and government. This report will use these themes and the issues rose to examine the Tasmanian economy over the past two decades. In the following Chapter the pattern of economic development in Tasmania will be charted from 1985, in comparison to the Australian economy.

Box 2.1 Key points

- Tasmania's natural resources have been its economic foundation for the past two centuries.
- Tasmania's underperformance relative to the national economy has been long established.
- Tasmania is connected to the national economy with co-movements and common cycles but is subject to more idiosyncratic shocks.
- Tasmania has negatively diverged from the national economy.
- No single causal explanation can explain the slow down in Tasmania's economy during the 1990s.
- A number of themes have previously been identified as key drivers of the Tasmanian economy: population, household and business activity, productivity and government.

Chapter 3

Crisis and renewal



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Chapter 3 Crisis and renewal

From the early 1990s, Tasmania's economy has grown slowly in comparison to Australia. In fact, a government inquiry into Tasmania's economy, the Nixon Report (1997:45), states that '[i]t should be clear that the Tasmanian economy is in bad shape'. In contrast, the GSP average annual growth rate was 3.7 per cent from 2000–01 to 2005–06, which exceeds the national rate of 3.3 per cent over the same period.³ Hence, Tasmania can be characterised as having a two-speed economy in two separate time periods, which raises interesting questions about the drivers that created this outcome.

This Chapter provides a broad overview of the Tasmanian economy. Its objective is to chart the pattern of economic activity from 1985⁴ in comparison to Australia's economy, and to identify the key features of Tasmania's performance. The emphasis is on GSP and its comparison to the national economy. Box 3.1 discusses this concept. Box 3.2 discusses another indicator of economic activity, Aggregate Real Taxable Income (ARTI), to be used as a point of comparison with GSP estimates.

Section 3.1 provides an overview of Tasmania's GSP, in comparison to the national economy. section 3.2 explores the various components of GSP. Section 3.3 looks at ARTI as an alternative indicator of calculating economic activity. Concluding remarks are presented in section 3.4. The conclusions drawn in this Chapter are examined further in later Chapters.

This Chapter is largely based on estimates of GSP from the 2005–06 Australian National Accounts: State Accounts publication (ABS 2006a). It should be noted that ABS revise their estimates of GSP annually, and so more recent data may present a somewhat different picture of Tasmania's economic performance than the 2005–06 publication on which this Chapter relies. These GSP estimates were considered experimental by ABS at the time of release. However, ABS now considers 'the volume estimates to be sufficiently robust, enabling the experimental status to be dropped' (ABS 2007n:3).

It should be noted that the Tasmanian Department of Treasury and Finance have reservations concerning the measurement of GSP for Tasmania. These arise from volatility in estimates for small economies, lack of data on interstate trade and the substantial revisions the ABS applies to Tasmania's GSP estimates. The ABS acknowledges the difficulties of using survey data for smaller states and territories because of volatility (ABS 2006a). This is why an alternative indicator ARTI, has also been included.

^{3.} GSP chain volume measures were used.

GSP data is available only back to 1989–90, but State Final Demand data back to 1984–85 is presented later in this Chapter.

Box 3.1 Calculating Gross State Product

Gross State Product

Gross State Product (GSP) is the most commonly used measure of economic growth at the state level; it is the state level equivalent of Gross Domestic Product (GDP). GSP is a measure of the total market value of goods and services produced in a state after deducting the costs of goods and services used up in the process of production (intermediate consumption), but before deducting consumption of fixed capital. GSP can be derived using three different approaches, which should be equal to each other. These approaches are:

I. Income method

The income method of estimating GSP sums the incomes accruing from domestic production. These income components consist of compensation of employees, gross operating surplus, gross mixed income and net taxes on production and imports. Compensation of employees, gross operating surplus and gross mixed incomes are also known as factor incomes. This method of calculating GSP will be utilised in the investigation into business activity in Chapter 6.

2. Production method

The production method measures economic production and is usually applied to industries. The unduplicated value of industrial activity can be measured by taking the value of goods and services produced by an industry (i.e. output) and deducting the cost of goods and services used up by the industry in the production process (i.e. intermediate consumption). GSP is then obtained by summing the output of all industries.

3. Expenditure method

The final measure of economic activity is the sum of all final domestic expenditure on goods and services (i.e. expenditure on intermediate consumption are ignored), plus the value of net exports. This Chapter will use the expenditure method of estimating and decomposing Tasmania's GSP and Australia's GDP.

3.1 Tasmania Gross State Product

This section analyses Tasmania's GSP in comparison to the national Gross Domestic Product (GDP), over a 16 year timeframe.⁵ The annual estimates of real GSP for Tasmania are shown in Figure 3.1. It shows the slow and at times negative growth of Tasmania's real GSP until the beginning of this decade (except for 1998–99). However, GSP estimates have grown rapidly over the past five years with an average annual growth rate of 3.7 per cent since 2000–01, compared with 0.6 per cent over the preceding five year period, which indicates a two-speed economy.



Figure 3.1 Real GSP levels, Tasmania, 1989–90 to 2005–06

Further evidence of the two-speeds of economic activity in Tasmania is shown by Tasmania's contribution to the national economy. Figure 3.2 demonstrates the decrease in Tasmania's contribution to national GDP from 1989–90 to 2005–06. The decrease is particularly evident from 1991–92 to 2000–01. After 2000–01, Tasmania's share of real GSP slightly improved for the Tasmanian economy.⁶ It should be noted that the national economy experienced a recession in the early 1990s, but recovered much more quickly than Tasmania.

An alternative method of showing the decline and improvement in Tasmania's GSP is by calculating it on a per capita basis, as presented in Figure 3.3. This shows that Tasmania's GSP per capita consistently lies well below the national figure. The movements of Tasmania's GSP per capita show the decline during the 1990s and confirm the improvement of the Tasmanian economy after the 2000–01 financial year. A feature is the similarity between Figures 3.2 and 3.3, which illustrate that the decline of Tasmania's economy has had direct consequences for the standard of living of Tasmanians.

A break in GSP estimates occurred with the introduction of the System of National Accounts 1993 (SNA93) principles (ABS 2000). Hence, the ABS backcasted from 1989–90 and so the time series considered is from 1989–90 to 2005–06.

^{6.} The contributions to real GDP for the financial year 2005–06 for all states and territories are as follows: NSW 33.6 per cent; VIC 24.8 per cent; QLD 18.3 per cent; SA 6.6 per cent; WA 11.7 per cent; TAS 1.8 per cent; NT 1.2 per cent; and ACT 2.1 per cent.



Figure 3.2 Real GSP contributions to the national GDP, Tasmania, 1989–90 to 2005–06

Note: Revised estimates of GSP per capita from the 2006–07 issue of ABS Cat. 5220 differ from the data presented here. Firstly, the ratio of Tasmanian to Australian GSP per capita is consistently higher (although it remains below 85 per cent). Secondly, the decline in GSP per capita in the late 1990s is less evident.

Source: ABS Cat. 5220.0.

Figure 3.4 presents an index of GDP and GSP from 1989–90 to 2004–05 for the national economy and the states and territories respectively. The recession in the early 1990s is clearly evident for a number of states, particularly Victoria and South Australia. This has been followed by a long period of sustained growth. Queensland and Western Australia have had the strongest growth of all states. By the end of the study period, a growing gap is apparent across the states, which points to a divergence in economic activity. Tasmania's GSP did not drop as far as Victoria and South Australia during the 1991 recession but exhibits the slowest economic activity during the 1990s. Tasmania's economic activity begins to improve after 2001 with strong growth evident, matching the performance of several states.



Figure 3.4 GSP and GDP indices for Australia and its states, 1989–90 to 2005–06

Finally, Figure 3.5 presents the annual per capita GSP and GDP growth rates, from 1990–91 to 2005–06. It clearly shows the slower and occasionally negative growth of the Tasmanian economy, in comparison to the national economy during the 1990s. Conversely, 'ABS has estimated that from 2001–02 Tasmania's economy has grown at a rate that is either better than, or close to, the growth rate of the Australian economy' (TDTF 2006a). In the financial year 2005–06, Tasmania's annual growth rate of 3.1 per cent was still higher than the national rate of 2.8 per cent. Figure 3.3 also illustrates the greater volatility often observed within smaller economies.

Source: ABS Cat. 5220.0.



Figure 3.5 GSP/GDP annual growth rates, Tasmania and Australia, 1990–91 to 2005–06

Source: ABS Cat. 5220.0.

In summary, the Tasmanian economy performed poorly during the 1990s, especially in comparison to the national economy, which quickly recovered from the recession in the early 1990s. On the other hand, the Tasmanian economy grew during the early 2000s, exceeding the national growth rate. The next section disaggregates GSP into its components, to provide a more detailed understanding of Tasmania's economic performance, relative to that of the national economy.

3.2 Components of Gross State Product

GSP can be separated into seven components that sum to the total value of a state's GSP:

- private consumption
- public consumption
- private investment
- public investment
- exports of goods and services (international)
- imports of goods and services (international)
- balancing item.

An important component of GSP is State Final Demand (SFD), which is the sum of all consumption and investment in the economy (i.e. components 1–4 of GSP). GSP further incorporates the total goods and services produced for export minus the total value of goods and services imported. Finally, the balancing item comprises changes in inventories, total net interstate trade and a statistical discrepancy element. The statistical discrepancy is an item applied by the ABS to ensure that the GSP calculated under the expenditure method is equal to the income method estimates.

Figure 3.6 presents the values of each GSP component for Tasmania. Private consumption is the largest component. This is followed by, in declining order: public consumption, private investment, exports and public investment. Imports are subtracted from the calculation of GSP because production occurred overseas. The balancing item for Tasmania stands at minus \$5 537m, which represents minus 33.5 per cent of the final total and constitutes a substantial proportion of GSP.⁷



Figure 3.6 Components of real GSP, Tasmania, 1989–90 and 2005–06

Note: Exports and imports of goods and services refer to international expenditure Source: ABS Cat. 5220.0.

Table 3.1 presents the percentage contribution of each component over three time periods, and includes a comparison to the national economy. Following the methodology of the Tasmanian Department of Treasury and Finance, three years are combined to reduce volatility and skewed results. Therefore, the time period 1990–93 refers to three financial years (1990–91, 1991–92 and 1992–93) and 2003–06 estimates are the summation of 2003–04, 2004–05 and 2005–06.

The other states and territories have the following portions of their GSP altered by the balancing item: NSW 13 per cent; VIC 10 per cent; QLD minus 11 per cent; SA minus 12 per cent; WA minus 16 per cent; NT minus 20 per cent; and ACT minus 61 per cent.

The table shows the slower performance of the Tasmanian economy over the longer term against the national economy but the contribution of each component towards GSP/GDP varies greatly over the two smaller time periods. Private consumption and investment are lower contributors to the growth in Tasmania's GSP, in comparison to Australia, from 1990–93 to 2003–06. Over the more recent growth period, the percentage contribution of these components was greater for the Tasmanian economy than the national economy. This suggests that these components are an important source of the recent growth.

Large variations between Tasmania and Australia in relation to the international trade components, particularly for imports, are most probably due to difficulties of measurement. This point is explained further in Chapter 6.

GSP/GDP components	Tasmania	Australia	Difference	
	(per cent)			
(1990–93 to 2003–06)				
Private consumption	25.8	34.8	-9.0	
Private investment	14.0	20.8	-6.8	
Public consumption	10.1	9.4	0.7	
Public investment	2.3	1.9	0.4	
Exports	5.7	13.9	-8.2	
Imports	-2.4	-20.9	18.5	
(1990–93 to 1999–02)				
Private consumption	12.3	21.6	-9.4	
Private investment	3.5	11.0	-7.5	
Public consumption	5.9	5.9	0.0	
Public investment	0.5	0.5	0.0	
Exports	5.3	12.4	-7.1	
Imports	-1.1	-10.9	9.9	
(1999–02 to 2003–06)				
Private consumption	1.7	9.3	2.4	
Private investment	9.0	6.9	2.1	
Public consumption	3.7	2.5	1.2	
Public investment	1.5	1.0	0.5	
Exports	0.3	1.1	-0.8	
Imports	-1.2	-1.7	0.5	

Table 3.1Percentage point contributions to real GSP and real GDP, Tasmania
and Australia

Source: ABS Cat. 5220.0.

The following section discusses each component of GSP in turn, to further examine the two-speed Tasmanian economy.

State Final Demand

State Final Demand (SFD) captures the level of spending in the local economy by both the public and private sectors. The four components are: private consumption, public consumption, private investment, and public investment. ABS has produced quarterly data for these SFD components since September 1985.

Figure 3.7 presents an index of the SFD components, with the base period set at September 1985 to capture the beginning of the national recession during the early 1990s. The figure shows the difference in volatility of the four components. Consumption is a very stable source of economic activity and represents the largest component of SFD. Investment, in contrast, displays the most instability and illustrates a substantial increase from 1998. These components of SFD are explored further below.



Figure 3.7 Index of real SFD, Tasmania, September 1985 to September 2006 guarter

I. Private consumption

Private or household consumption represents the purchase of goods and services by individuals. It is known as *Household Final Consumption Expenditure* (HFCE) and includes items such as food, financial services, rent payments and vehicles. Household demand is a major source of economic activity and can serve either to promote or to restrain economic growth.

Figure 3.8 presents two aspects of private consumption for Tasmania and Australia, from September 1985 to September 2006. The index of household expenditure is presented in Figure 3.8(a). The figure illustrates the steady nature of private consumption growth but it also shows a widening gap emerging between Tasmania and Australia. The gap begins to expand during the mid-1990s. Tasmania's private consumption improves against the Australian growth rate after 2001 but falls off again in 2005. To illustrate the point, consider the following average annual growth rates for Tasmania and Australia:

• The average annual growth rate from 1990–91 to 2000–01 for Tasmania was 1.8 per cent, compared with the national rate of 3.4 per cent.

• The average annual growth rate from 2000–01 to 2005–06 for Tasmania was 4.4 per cent, compared with the national rate of 3.7 per cent.

The changes that occur in private consumption can be sourced from numerous consumer expenditure items. For example, *Recreation and Culture*⁸ has increased 161 per cent from 1989–90 to 2005–06, which suggests a change in preferences by consumers. A decomposition of changes in private consumption is undertaken in Chapter 5.

The proportion of SFD made up by household consumption is shown in Figure 3.8(b). Private Consumption is the largest component of SFD and ranges between 56 per cent and 62 per cent for Tasmania over the period. In September 2006, the contribution stands at 58 per cent and 56 per cent for Tasmania and Australia respectively. The large fluctuations in the proportion of private consumption to GSP are primarily due to changes in private investment. Private investment and private consumption proportions are highly negatively correlated.⁹ Hence, a substantial increase in either of these components significantly changes the overall proportions of GSP and results in a decrease in the other component's contribution to GSP.

Figure 3.8 Index and proportion of real private consumption (trend), Tasmania and Australia, September 1985 to September 2006



^{8.} Recreation and culture includes items such as televisions, computers and music equipment.

^{9.} The correlations between Tasmania's and Australia's private consumption and private investment contribution to GSP/GDP are both minus 0.9.



2. Private investment

In economics, investment refers to the production of goods which are not consumed but are used as the foundation for future economic activity. That's why private investment is an important driver of an economy's ability to grow. It is a very volatile component of economic growth, particularly for small economies such as Tasmania. Private investment is divided into non-residential (such as machinery, livestock etc) and residential (new housing) investment. It is also known as *Private Gross Fixed Capital Formation* (PriGFCF).

Figure 3.9 presents two aspects of private investment for Tasmania and Australia. An index of private investment is presented in Figure 3.9(a), and shows the changes that occurred in the Tasmanian economy during the 1990s and early 2000s.

First, Tasmania's growth has consistently remained below the national level. The gap widened noticeably from the mid-1990s, with Tasmania failing to capture the national investment increase. Also, on a number of occasions the private investment for Tasmania lies below the index level of 100, which illustrates the prolonged reluctance of businesses and households to invest in the local economy.

Second, from 2001, private investment is shown to have had a substantial increase after the low investment outlays in the 1990s. To illustrate the point, consider the following average annual growth rates for Tasmania and Australia:

- The average annual growth rate from 1990–91 to 2000–01 for Tasmania was 1.7 per cent, compared with the national rate of 4.8 per cent.
- The average annual growth rate from 2000–01 to 2005–06 for Tasmania was 14.6 per cent, compared with the national rate of 9.7 per cent.







The contribution of private investment to the changes in GSP/GDP is generated from a number of sources. Table 3.2 divides private investment between business and household expenditure. The table shows that business investment has been the larger contributor to investment growth for Tasmania and Australia. It should be noted that during 2006 there was a decline in private business investment in Tasmania. Access Economics (2005) forecasted the decline because much of the 'energy investment is now largely in place, and it remains to be seen whether new projects take their place in the pipeline in matching numbers' (Access Economics 2005:108). Nevertheless, business investment has picked up again during 2007–08.

Region	1990–93 \$ million average	2003–06 \$ million average	Absolute change in average PriGFCF \$ million	Percentage change for PriGFCF
Tasmania				
Dwellings and ownership transfer costs	911	1 300	390	22.8
Private business investment	795	2 009	2 4	71.2
PriGFCF	I 706	3 310	I 604	94.0
Australia				
Dwellings and ownership transfer costs	44 722	75 211	30 489	34.0
Private business investment	42 550	123 894	81 345	93.2
PriGFCF	87 272	199 106	111 834	128.1

Table 3.2Private business and residential investment, Tasmania and Australia,
1990–93 and 2003–06

Source: ABS Cat. 5220.0.

Figure 3.9(b) presents the proportion of GSP made up by private investment. Private investment is not a large contributor to Tasmania's GSP, but being a volatile component, changes often have a significant impact on economic activity. A number of factors may explain the lower contribution of private investment to GSP for Tasmania, such as a smaller financial base, through income, wealth and access to credit, along with being a branch economy (Nixon 1997) for services, and lower domestic demand. Private investment has been shown to be a strong contributor to the recent growth and its role will be examined in further details in the household activity and business activity Chapters.

3. Public consumption

Government spending on goods and services in the economy adds directly to the level of demand, which in turn raises economic activity. In general, a government can utilise this component to achieve three main economic functions (Collier and Batty 1990:61):

- reallocation of resources
- redistribution of income
- control of fluctuations in the economy.

A government chiefly carries out this function through expenditure and taxation. This section considers the public consumption component of SFD and includes a number of elements, such as payment to employees, and consumption of goods and services in the economy (e.g. office supplies). Public consumption is also known as *General Government Final Consumption Expenditure* (GGFCE).



Figure 3.10 Index and proportion of real public consumption (trend), Tasmania and Australia, September 1985 to September 2006

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Figure 3.10 presents two facets of public consumption for Tasmania and Australia, from September 1985 to September 2006. An index of public expenditure is presented in Figure 3.10(a). It illustrates the stable nature of the growth and a widening gap between the national and state growth, with Tasmania consistently exhibiting lower growth over the entire period.

The proportion of SFD made up by public expenditure is shown in Figure 3.10(b). The chart reveals a number of differences between Australia and Tasmania:

- Tasmania consistently lies above Australia in its proportion of SFD attributed to public expenditure.
- The gap between Tasmania and Australia widened during the 1990s.
- This increase in public consumption is matched by the decrease in public investment, which is discussed in the next section.

As stated previously, governments use public expenditure as a mechanism to stabilise the business cycle and raise economic activity. If a government was following a policy of stabilisation it would be expected that the relationship between changes in output and public consumption would be negative. For example, at times when the economy is performing well, public expenditure is reduced to avoid *overheating* the economy. Figure 3.11 presents changes in output (GSP) and public consumption for Tasmania. Clearly a positive relationship exists which, perversely, may have accentuated the swings in the economic cycle.¹⁰ The factors that have contributed to public expenditure and the underlying policies are explored further in Chapter 8.



Figure 3.11 Change in public consumption and GSP, Tasmania, 1990–91 to 2005–06

^{10.} Correlation between public consumption and GSP is 0.5.

4. Public investment

A key consideration of public investment is its contribution to a government's economic objectives of high and sustainable rates of growth and employment. Moreover, public investment can add to potential productivity gains in the local economy. Public investment can be divided between public corporations (e.g. Hydro Tasmania) and general government (national, state and local). It is also known as *Public Gross Fixed Capital Formation* (PubGFCF).

Figure 3.12 presents two perspectives on public investment in Tasmania and Australia. An index of public investment is presented in Figure 3.12(a). The chart reveals the decline in government investment into the Tasmanian economy, in comparison to minimal growth for Australian public investment until 1997. An explanation for the large gap is the considerable investment by the Tasmanian Government in the early 1980s, distorting the index in the beginning period of 1985. This resulted in Tasmania having a higher index for public investment than Australia. A consequence of this high level of investment during the 1980s was the tight fiscal policy during the 1990s. This point is explored further in Chapter 8.

The drop in public investment in the most recent year (2006) is matched by a drop in private investment. This may be due to a drop off in the State Government's spending in the energy and tourism sectors to facilitate private investment and public-private partnerships (Access Economics 2005). An example of a recent public-private partnership is Basslink. A closer examination of public-private partnerships is included in Chapters 6 and 8 on Business Activity and Government respectively.

Figure 3.12 Index and proportion of real public investment (trend), Tasmania and Australia, September 1985 to September 2006





Source: ABS Cat. 5206.0. The high proportion of public investment in GSP is reflected in Figure 3.12(b). In 1985, Tasmania directed a higher proportion of GSP into public investment, in comparison to Australia. Over the longer term, the Tasmanian Government has had a generally higher public investment proportion than Australia.

Exports and imports

For a small economy like Tasmania, international trade has a significant impact. A high proportion of Tasmania's production is export-oriented, which results in external forces having a strong influence on Tasmania's economy. These external forces include the exchange rate and commodity price movements.

If the definition of exports is expanded to include the movement of goods interstate, the level of output for external consumption increases markedly. '[I]t has been estimated that approximately half of Tasmania's output is exported, with around 60 per cent of the total value of exports sent interstate and the balance to overseas destinations' (EMP Inquiry 2003:6). It should be noted that the Tasmanian Department of Treasury and Finance has raised concerns in regard to the measurement of international and interstate exports. Some of the uncertainty associated with the value of exports sent interstate is due to the ABS not publishing interstate trade data because it is difficult to accurately estimate production moving outside the state.

The calculation of imports for Tasmania also has serious limitations because overseas imports are often transshipped to Tasmania. The recording of imports is completed once the goods are released from customs' control, but not necessarily where they are sold. Imports of goods are dominated by NSW and Victoria, which account for '72 per cent of Australian merchandise imports' (DFAT 2006:vii). As a result, imports

into Tasmania are underestimated, as only imports directly offloaded in Tasmania are recorded (ABS 2006c).

Figure 3.13 presents the index and proportion of international imports and exports. As highlighted earlier, Tasmania's imports are substantially lower than the national rate. However, in the financial year of 2002–03 a substantial increase is evident. This rise in imports is largely due to the increase in the purchase of manufactured goods and Elaborately Transformed Manufactures (ETM), which increased by 81 per cent and 100 per cent respectively. The substantial growth in Australian imports can be attributed to the higher value of the Australian dollar and strong economic performance raising consumer demand.

Tasmania's exports have remained relatively constant since the substantial increase of 25 per cent in the 1997–98 financial year. Moreover, growth for Tasmania is still positioned below national growth. Interestingly, the expansion in Tasmania's economic activity since 2001 is not matched by a growth in exports, which suggests that exports have not been a driver for the improvement in Tasmania's economic performance. The analysis of Tasmania's trade is expanded in Chapter 6.

Figure 3.13 Index and proportion of real international exports and imports (trend), Tasmania and Australia, 1989–90 to 2005–06





Note:Calculation of exports and imports for Tasmania has limitations due to measurement restrictions.Source:ABS Cat. 5220.0.

Synopsis of observations

A summary of the GSP observations by component is listed below:

- The two-speed economy for Tasmania in two separate time periods is evident throughout the various GSP components. Slow growth is evident from 1990–91 to 2000–01 and the improving growth for the Tasmanian economy is evident after 2000–01.
- Consumption is a stable factor in GSP, while investment is volatile.
- Private consumption is the largest component of GSP.
- Private investment in Tasmania is consistently lower than the national level, but has increased substantially since 1998.
- Private consumption and investment has been a primary driver for the economic growth this decade.
- Public consumption per capita for Tasmania is above the national level but has grown at a slower rate.
- Tasmanian Government investment was at relatively high levels during the 1980s and at lower levels thereafter.
- Tasmanian exports have been stable in recent years, suggesting that it has had little impact on the recent improvement in economic activity.

3.3 BITRE's taxable income database

An alternative method to consider an economy's activity is through the taxable income data from the ATO. The BTRE *Focus on Regions 3: Taxable Income* (2005) considered the relative performance of *Aggregate Real Taxable Income* (ARTI), GSP and GDP for the states and territories. ARTI enables us to test the pattern of economic activity in Tasmania and Australia from 1985 to 2005, and also enables the examination of regional economic differences both within Tasmania and Australia. The conclusions drawn from the relationship between ARTI and Tasmania's GSP are as follows:

- A strong correlation between the raw data of ARTI and Tasmania's GSP.
- No correlation between the percentage change in ARTI and Tasmania's GSP.¹¹

Therefore, using taxable income as a source of understanding changes in economic activity for smaller states raises the question—if GSP is not the driver of changes in ARTI in small states, then what is? BTRE (2005) argues that for most regions, the overriding characteristic is the similarity with national trends. In other words, the key feature of most regional economies is that they are part of the greater Australian economy. This suggests that, for most jurisdictions, changes in ARTI result from changes in both local and national production, which is consistent with the findings of Norman and Walker (2004).

In the following sections a more detailed analysis of the *Taxable Income Database* is presented. First, a comparison between Tasmania and Australia is presented, followed by an analysis of Tasmania's regions. Taxable income divides into three distinctive components, namely ARTI, *Number of Taxable Individuals* (NTI) and *Real Income per Taxpayer* (RIPT). Each of these components captures different aspects of economic activity. The components will be presented independently, then drawn together to understand the relationship between them.

 $^{{\}sf II}.$ This may be due to problems with measuring GSP for smaller states or differences in the scope of the two measures.

Box 3.2 Taxable income

Taxable income

Economic activity at the regional level is difficult to measure. Because of this, BTRE (2005) proposed the use of regional Aggregate Real Taxable Income (ARTI) as an indicator of economic activity at the substate level. BTRE argues that ARTI is a theoretically and practically superior indicator of changes in economic activity at the regional level compared to both population and employment numbers. ARTI is related to GDP, which is the accepted measure of national economic activity. ARTI provides an indicator of changes in regional economic activity, which is soundly based on taxation statistics. This improves our current understanding of regional economic activity over both spatial and time dimensions.

ARTI may also address some of the concerns raised by the Tasmanian Department of Treasury and Finance in relation to the calculation of GSP. The ABS's Australian State Accounts, drawn upon in the previous analysis, are estimates using concepts and conventions applicable to GDP. However, these measurements are less reliable below the national level, particularly where economic activity crosses borders.¹² So ARTI may provide a useful tool to consider economic activity at a state and regional level, in conjunction with GSP estimates.

I. Aggregate Real Taxable Income (ARTI)

ARTI is an indicator of economic activity at the substate level. ARTI is the sum of individuals taxable income recorded for all individuals that reside in a region (BTRE 2005). It is a good indicator of the amount of income received by residents and in turn a measure of the overall size of the economy. Moreover, it provides a measure of economic activity in a region.

A clear limitation of ARTI relates to the mobility of factors of production. For example, place of residence may not reflect the actual location of economic activity. But this constraint is less relevant in the case of Tasmania because of the natural limitations of movement over the state's border. It will, however, be relevant for using ARTI to analyse changes in economic activity across Tasmania's regions later in this section. Also, the ATO takes several years to publish data, so it does not provide a timely indicator of economic activity.

2. Number of Taxable Individuals (NTI)

NTI is the number of people who have submitted tax returns on which tax is payable (BTRE 2005). Changes in NTI reflect variations in the population of a region, but it is a measure of the number of people actively participating in the economy (through provision of labour, land or capital) rather than population overall.

(continued)

^{12.} For a discussion of difficulties of calculating estmates for GSP, refer to ABS (2000).

Box 3.2 Taxable income (continued)

3. Real Income Per Taxpayer (RIPT)

RIPT is an indicator of economic wellbeing because it reveals the average income an individual taxpayer of a region receives. It should be noted that RIPT is only an indicator of average income because people who do not submit a tax return or are below the taxation threshold are not included. Hence, RIPT may overestimate the actual average income of residents in a region. The main advantage of RIPT as an indicator is that it is independent of a region's population size; thus it can be used to compare incomes across regions, as well as over time.

Relationship between ARTI, NTI and RIPT

The relationship between the three can be summarised as follows:

ARTI = RIPT*NTI

Thus, an increase in ARTI can occur through an increase in both RIPT and NTI.

Taxable income: Tasmania and Australia

ARTI

ARTI is the sum of income accrued by individuals that live in a region.¹³ It is a good indicator of the amount of income received by residents and in turn provides a measure of the overall size of the economy and changes to total economic activity in a region.

Changes in ARTI are driven by two factors: changes in the number of taxable individuals in a region, and changes in the income of those individuals. These changes can occur individually or simultaneously.

Figure 3.14 presents the percentage changes in ARTI for Tasmania and Australia from 1984–85 to 2004–05. For comparison the percentage change of GSP and GDP are included as lighter lines. The ARTI estimates for Tasmania reveal lower growth than Australia, especially during the 1990s. Another important change is the growth in the economy after 2000–01, with Tasmania closely matching the Australian economy.

A clear connection between the Tasmanian and Australian economies is shown in Figure 3.15. The chart plots the index of ARTI over the entire study period. The figure illustrates the similar movements in economic activity between Tasmania and Australia, although Tasmania lies continuously below Australia. The stagnating economy for Tasmania during the 1990s is also clearly evident, which widened the gap between the two economies.

^{13.} The sum of taxable income includes income derived from salary and wages, net business income, distributions from partnerships and trusts, interest and dividends, eligible termination payments, some government pensions and allowances, superannuation payments and reportable fringe benefit amounts less any allowable deductions (BTRE 2005:2).




Figure 3.15 Index of ARTI for Tasmania and Australia, 1984–85 to 2004–05



Source: BITRE Taxable Income Database.

Source: BITRE Taxable Income Database and ABS Cat. 5220.0.

NTI

NTI is the number of people who have submitted tax returns on which tax is payable (BTRE 2005:3). Changes in NTI reflect variations in the population of a region, but it is strictly a measure of the number of people actively participating in the economy rather than population overall.

Figure 3.16 presents the index of NTI for Tasmania and Australia. The graph illustrates two features. First, Tasmania and Australia have a positive correlation (r = 0.61), with both moving in similar directions. Second, Tasmania has had slower growth of people participating in the economy. A number of drivers can produce this result, such as: lower participation rates, higher unemployment rates, and a loss of population. These points will be explored further in Chapters 4 and 5.



Figure 3.16 Index of NTI for Tasmania and Australia, 1984-85 to 2004-05

Source: BITRE Taxable Income Database.

RIPT

RIPT is an indicator of economic wellbeing because it reveals the average income an individual taxpayer of a region receives. Figure 3.17 presents the RIPT indicator for Tasmania and Australia, over the period 1984–85 to 2004–05. Three distinguishing features are present:

- Tasmania consistently lies below the Australian RIPT values.
- The gap between Tasmania and Australia has increased over the 20 year time period. This is illustrated by the slope of the linear equation, with Australia's positive slope twice as large.
- Tasmanian and Australian RIPT movements are strongly positively correlated (r = 0.94), which suggests a close connection between the state and the national economy.



Figure 3.17 RIPT, Tasmania and Australia, 1984-85 to 2004-05

Relationship between ARTI, NTI and RIPT

The ARTI measure of economic activity incorporates both the number of people receiving income in the region and the amount they receive. This interconnection enables the separation of the two sources, namely if economic activity has occurred through increases in income, population or both.

Table 3.3 presents the levels and growth of the three indicators, from 1984–85 to 2004–05 to examine the sources of changes in the ARTI estimates. The three indicators' (ARTI, RIPT and NTI) average annual growth rates for Tasmania have risen. However, each indicator for Tasmania lies below the national rate. The largest gap appears in ARTI, which illustrates the lower level in the Tasmanian economy.

Table 3.3NTI, RIPT and ARTI levels and growth, Tasmania and Australia,1984–85 to 2004–05

Indicator	Tasmania			Australia			
	Number (1984–85)	Number (2004–05)	Average annual growth (per cent)	Number (1984–85)	Number (2004–05)	Average annual growth (per cent)	
NTI	180 763	208 825	0.72	6 547 399	9 099 080	1.67	
RIPT (\$2006–07)	\$38 267	\$41 912	0.46	\$39 677	\$48 029	0.96	
ARTI (\$ million)	\$6 917	\$8 752	1.18	\$259 782	\$437 023	2.63	

Source: BITRE Taxable Income Database.

Because the fortunes of the Tasmanian economy have changed over the 20 year study period, the three indicators are broken down into three different time periods in Table 3.4. The striking feature for Tasmania are the two-speeds between the two alternative time periods, 1990–91 to 2000–01 and 2000–01 to 2004–05, which supports

the GSP/GDP analysis earlier in the Chapter. The following observations can be made regarding the interrelationship between the three indicators:

- Tasmania experienced negative growth in the number of taxpayers during the period between 1990–91 and 2000–01, in comparison to Australia's positive growth.
- The growth in ARTI for Tasmania is substantially below Australia's over the period as a whole.
- The growth in Australia's ARTI indicator during the 1990s is primarily sourced through RIPT. Thus, the number of taxpayers has not substantially increased but the amount of income of existing taxpayers has risen.
- In the current decade, a reversal in Tasmania's indicators is revealed, with NTI and ARTI growing at faster rates than the national rates.
- The growth in NTI is the primary source of Tasmania's increase in economic activity in the 2000s, similar to the national economy.

Table 3.4NTI, RIPT and ARTI average annual growth, Tasmania and Australia,
three different time periods

Indicator		Tasmania		Australia			
	1984–85 to 2004–05	1990–91 to 2000–01	2000–01 to 2004–05	1984–85 to 2004–05	1990–91 to 2000–01	2000–01 to 2004–05	
NTI (per cent)	0.72	-0.68	2.65	1.66	0.69	2.17	
RIPT (per cent)	0.46	1.26	1.38	0.96	1.96	1.36	
ARTI (per cent)	1.18	0.58	4.06	2.63	2.66	3.55	

Source: BTRE Taxable Income Database.

Taxable income for Tasmania and Australia's regions

An advantage of ARTI is that it is available at a lower geographical scale. Below are two investigations of the differences in Tasmania's economic activity both against other states and within the state itself.

Taxable income for Australian states

ARTI

This section uses the BITRE *Taxable Income Database* to explore the differences in state, capital cities and balances of states economic activity. Figure 3.18 presents the ARTI index for the Australian states, from 1984–85 to 2004–05. Three distinct features are evident. First, over the period as a whole, Tasmania experienced the least growth in ARTI for all states. Second, the index shows ARTI growth in the late 1980s, followed by the subsequent decline in the 1990s, when Victoria was hit particularly hard hit by the recession. The third feature is the marked difference between the states economic activity growth and the resultant divergence across the states.

The pattern of ARTI is also similar to NTI, an indicator of economically active population levels. Again, Queensland and Western Australia have had substantial increases in their NTI, in complete contrast to the low growth for Tasmania and South Australia.



Figure 3.18 ARTI index, Australian states, 1984-85 to 2004-05

However, looking at economic growth only at the state level hides any variations. Garlick *et al* (2007:7) explored patterns of regional economic growth in Australia over the period 1984 to 2002 in order to identify the drivers of variation in regional growth. They found that '[n]ational growth over the last two decades has not been equally spread. Key metropolitan regions have been the main beneficiaries of national growth, while other regions generally have had declining growth'. Figure 3.19 illustrates the differences in economic activity by showing the capital city and balance of state for selected states, from 1984–85 to 2004–05. Victoria and South Australia were chosen as a comparison point to Tasmania because these three states were positioned below the Australian ARTI index. A number of characteristics are evident, these include:

- Melbourne has had the strongest growth after the initial shock of the recession. This is closely followed by the balance of Victoria, which clearly outperformed the non-metropolitan regions of South Australia and Tasmania.
- The balance of South Australia was severely hit by the recession but was able to achieve higher levels of economic activity than the stagnating activity in the balance of Tasmania.
- The performance of the Tasmanian economy dissects the economic activity growth between Hobart and the balance of Tasmania. Clearly, both the metropolitan and non-metropolitan regions of Tasmania exhibit slow growth during the 1990s, followed by the strong growth after 2000–01.

Source: BITRE Taxable Income Database.





NTI

Figure 3.20 presents the NTI index for various capital cities and balance of states, from 1984–85 to 2004–05. The figure illustrates that, overall, NTI moves together for the capital cities and balance of states but the degree of movement varies. Melbourne and the balance of Victoria exhibit closer index patterns, in comparison to the capital and balance of state for South Australia and Tasmania. The region with the slowest growth has been the balance of South Australia. In fact, for a few periods, NTI has fallen below the 1984–85 level.

RIPT

Figure 3.21 presents RIPT for the selected capital cities and balance of states, from 1984–85 to 2004–05. It shows the differences evident between capital cities and balance of states, even though they move together. Overall RIPT is fairly even for the Balances of Tasmania, South Australia and Victoria. As expected, Melbourne has a greater level of RIPT, with Hobart and Adelaide positioned below the Australian level at similar levels. This relationship between ARTI, NTI and RIPT is explained in the following section.

Source: BITRE Taxable Income Database



Figure 3.20 NTI index, capital cities and balance of state, 1984–85 to 2004–05

Source: BITRE Taxable Income Database.

Figure 3.21 RIPT, capital cities and balance of state, 1984–85 to 2004–05 $_{\rm 50\ 000}$



Source: BITRE Taxable Income Database.

Relationship between ARTI, NTI and RIPT

Table 3.5 presents the average annual growth rates for Victoria, South Australia, Tasmania and Australia for the three indicators. Both South Australia and Tasmania have had similar experiences, with the presence of a two-speed economy between the two alternative time periods, 1990–91 to 2000–01, and 2000–01 to 2004–05, with the gap between the two periods more pronounced for Tasmania. The following observations can be made regarding the interrelationship between the three indicators:

- Both South Australia and Tasmania experienced negative growth in the number of taxpayers during the period between 1990–01 and 2000–01, in comparison to Victoria's and Australia's positive growth.
- RIPT is the primary source for the growth in ARTI during the 1990s. Thus, the number of taxpayers has not substantially increased, but the amount of income of existing taxpayers has risen.
- In the current decade, a reversal in Tasmania's and South Australia's relative performance is revealed, with NTI and ARTI growing at or better than the Australian rates.
- The growth in NTI is the primary source for all three states' increases in economic activity in the 2000s, similar to the national economy.

	1984-85 to 2004-05	1990–91 to 2000–01	2000-01 to 2004-05
	(per cent)	(per cent)	(per cent)
ARTI average annual growth			
Victoria	2.15	2.32	3.01
South Australia	1.65	1.46	3.54
Tasmania	1.18	0.58	4.06
Australia	2.63	2.66	3.55
NTI average annual growth			
Victoria	1.25	0.31	1.92
South Australia	0.86	-0.26	2.06
Tasmania	0.72	-0.68	2.65
Australia	1.66	0.69	2.17
RIPT average annual growth			
Victoria	0.89	2.00	1.07
South Australia	0.79	1.73	1.45
Tasmania	0.46	1.26	1.38
Australia	0.96	1.96	1.36

Table 3.5Average annual growth rates for ARTI, NTI and RIPT, Tasmania,
South Australia and Victoria

Source: BITRE Taxable Income Database.

Taxable income for Tasmania's regions

This section uses the BITRE *Taxable Income Database* to explore the differences in Tasmania's regional economic activity. In order to look at regional differences in economic activity, Tasmania is divided into 12 Labour Market Regions¹⁴ (LMRs). However, these regions have very different levels of economic activity. Hobart has a vastly bigger population, and hence more economic activity, than Flinders Island for example. Further, small regions exhibit greater volatility, thus making it difficult to meaningfully chart any trends. Consequently we have analysed four regions: Hobart, Launceston, Burnie and Devonport and Balance of Tasmania (which represent an aggregation of smaller LMRs into a single category). Appendix G defines BITRE LMRs for Tasmania.

Tasmania's economic structure is governed by the three major BITRE labour market (LM) hubs¹⁵ using ARTI as the measure. The three major regions of Hobart, Launceston, and Burnie and Devonport, represent 92 per cent of economic activity for Tasmania.¹⁶ The following discussion presents the three indicators, namely ARTI, NTI, and RIPT.

ARTI

Figure 3.22 presents the percentage change in ARTI covering four regions in the state, from 1985–86 to 2004–05. Overall, it reveals a consistent pattern for labour market regions in Tasmania. However, several points of differentiation are evident:

- Hobart is consistently above or close to the Tasmania line, illustrating its importance to the Tasmanian economy.
- The period from 1989–90 to 1992–93 is very unstable and covers the national recession. At this point a gap appears between Hobart and the northern regions of Launceston, Burnie and Devonport. This suggests that these regions were harder hit by the recession, with Burnie and Devonport taking longer to recover.
- The Balance of Tasmania category has the greatest volatility in the chart, as expected, even through this category is an aggregate, each of the LMRs in it is very small.
- In the period since 2000–01 there has been similar growth for all regions and they are all experiencing strong growth in economic activity.

^{14.} The LMRs include the city and surrounding Statistical Local Area (SLAs) from which people commute. For convenience, LMR names have been abbreviated to just the city name.

^{15.} BITRE LMRs are based on the commuting patterns of workers, which attempt to capture a functional economic area rather than utilising an administrative boundary.

^{16.} The shares of ARTI for the identified regions were Hobart and surrounds at 50.4 per cent, Launceston and surrounds 23.7 per cent, Burnie and Devonport 17.6 per cent and all other regions constituting 8.2 per cent.



Figure 3.22 Percentage change in ARTI, selected Tasmanian regions, 1985–86 to 2004–05

Source: BITRE Taxable Income Database.

NTI

Figure 3.23 presents an index of NTI for various Tasmanian regions, from 1984–85 to 2004–05. It shows the substantial increase in the number of taxpayers from 1984–85 until the recession in 1990–91, except for Balance of Tasmania. The largest drop in the number of taxpayers, for all regions, occurs after 1995–96, which matches the period of Tasmania's large net migration losses. In contrast, after 2001–02 all regions have a positive increase reflecting greater participation in the labour markets. In addition,

- Hobart has maintained a stronger growth over most of the period than Tasmania.
- Launceston had strong growth during the 1980s but after the recession it closely matched the fortunes of the state overall.
- After the recession, Burnie and Devonport had consistently slower growth. In fact, the number of taxpayers in 1998–99 and 2001–02 fell below its level in 1984–85. This suggests that the changing fortunes for this region resulted in a lower number of people in employment. This situation has improved a little over more recent years.
- The fortunes of Balance of Tasmania reveal loss of employment and population in these regions.

RIPT

Figure 3.24 presents RIPT within Tasmania, from 1984–85 to 2004–05. It illustrates that the various regions within Tasmania move together, but Hobart consistently has a higher income than the state's overall average. Interestingly, two periods of growth occur for RIPT; after the recession in 1990–91, and after 1995–96. This relationship between ARTI, NTI and RIPT is explained in the following section.



Figure 3.23 NTI index, selected Tasmanian regions, 1984–85 to 2004–05

Source: BITRE Taxable Income Database.





Source: BITRE Taxable Income Database.

Relationship between ARTI, NTI and RIPT

Table 3.6 presents average annual growth rates for ARTI, NTI and RIPT over three periods. It clearly illustrates the differences over the study period and the differences between the regions. The slow growth for Tasmania is evident during the 1990s for all regions, especially for Burnie and Devonport and Balance of Tasmania. Hobart maintains its position as the stronger local economy but is still below the national average for all three indicators. In terms of the relationship between the three variables for Tasmania, NTI is the strongest driver for the changes in ARTI.

	1984-85 to 2004-05	1990–91 to 2000–01	2000-01 to 2004-05
	(per cent)	(per cent)	(per cent)
ARTI average annual growth			
Hobart	1.60	1.19	4.00
Launceston	1.45	0.84	4.49
Burnie and Devonport	0.72	-0.34	4.31
Balance of Tasmania	0.08	-0.64	2.98
Tasmania	1.18	0.58	4.06
Australia	2.63	2.66	3.55
NTI average annual growth			
Hobart	1.07	-0.21	2.72
Launceston	0.87	-0.49	2.62
Burnie and Devonport	0.49	-1.28	2.89
Balance of Tasmania	-0.02	-1.45	2.25
Tasmania	0.72	-0.68	2.65
Australia	1.66	0.69	2.17
RIPT average annual growth			
Hobart	0.53	1.41	1.25
Launceston	0.58	1.34	1.82
Burnie and Devonport	0.24	0.96	1.38
Balance of Tasmania	0.10	0.83	0.72
Tasmania	0.46	1.26	1.38
Australia	0.96	1.96	1.36

Table 3.6Average annual growth rates for ARTI, NTI and RIPT, selected
Tasmanian regions

Source: Analysis of BITRE Taxable Income Database.

The average annual growth rates for all of the LMRs are presented in Map 3.1 to illustrate geographically the differences in ARTI over the slow growth period from 1990–91 to 2000–01. It exposes the differences between regions and highlights the three regions, which experienced the strongest slowdown, namely, the West Coast, Central Highlands and George Town.



Map 3.1 ARTI average annual growth, LM regions, 1990–91 to 2000–01

Source: Analysis of BITRE Taxable Income Database.

All regions experienced strong growth in both ARTI and NTI during the current decade for Tasmania; only Balance of Tasmania had a slower annual average growth in ARTI in comparison to the national. Also, Hobart no longer dominates the growth pattern across the state. In terms of ARTI, the national and Tasmanian economies have very similar growth rates and are driven by strong growth in NTI.

Tasmania's economic activity has noticeably changed over time, from the decline during the 1990s and the rise this decade. This analysis reveals that variation is evident across the state. Hobart was the primary contributor to the changes in economic activity over the whole period. Regions such as Burnie and Devonport and Balance of Tasmania, especially the West Coast, had a larger and longer decline in economic activity during the 1990s. Also, changes in NTI have been the main driver for both study periods presented, and reflect changes in the number of taxpayers.

A conclusion drawn from analysing the *Taxable Income Database* is that Tasmania is connected to the national economy but its growth over the longer term is slower. The two-speed economy for Tasmania within the study timeframe is evident. Between 1990–91 and 2000–01, ARTI experienced very slow growth compared to Australia. In the current decade, Tasmanian ARTI growth improved beyond the rate achieved in the national economy, mainly sourced from NTI growth.

3.4 Conclusion

This Chapter compares Tasmania's economic performance to that of the rest of Australia. It uses a common measure of economic performance, GSP, and a complementary measure, ARTI.

Three key points are evident through the analysis. First, the presence of a twospeed economy in Tasmania is highlighted. Second, it illustrates the general underperformance of Tasmania's economy relative to Australia. Third, it reveals the interconnection between the Tasmanian and Australian economies. The economic data for the 1990s reveals a slow and poor performing economy. The Tasmanian proportion of the national economy declined from a high of 2.2 per cent in 1991–92 to a low of 1.8 per cent in 2000–01. However, Tasmania has improved its economic performance this decade by growing at an average annual rate of 3.7 per cent from 2000–01 to 2005–06, exceeding the national rate of 3.3 per cent.

A number of key factors, between Tasmania and Australia, have contributed to the differences in their economic performance. Private consumption and investment follow the pattern of the two-speed economy with slow growth during the 1990s and faster growth this decade. Private investment in particular shows substantial changes over the entire study period. In contrast, Tasmanian exports have been stable, suggesting that it has had little impact on the recent improvement in economic activity.

The economic performance of Tasmania is also affected by the performance of the national economy. ARTI reveals that Tasmania is linked to the national economy but grows at a slower rate. Changes in the number of taxpayers was the major driver the changes in ARTI.

Tasmania's regions displayed differences in their economic growth patterns. Hobart and Launceston displayed the strongest growth for the state, while Burnie and Devonport, and Balance of Tasmania exhibited a weaker performance.

This Chapter charts the economic performance of Tasmania relative to the national economy and other regions in the country. It reveals that the pattern of economic activity was influenced by population. The next Chapter explores this aspect in greater detail.

Box 3.3 Key points

- General underperformance of the Tasmanian economy over the study period.
- The presence of a two-speed economy in Tasmania during the 1990s and 2000s.
- The interconnection of the Tasmanian economy to the national economy.
- Private consumption and investment were major contributors to the increase in economic activity this decade. Exports have played little role in the improvement.

Chapter 4

Population



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Chapter 4 Population

This Chapter considers Tasmania's population changes and the impact this has had on the economy. Changes in population and its components, such as age structure and migration, are also explored. Therefore, this Chapter attempts to assess the importance of population as a driver of the Tasmanian economy. This is the first of the Chapters which investigate the key themes highlighted in the literature.

Section 4.1 outlines the population growth rates for Tasmania and Australia, along with a discussion on migration. Section 4.2 provides an overview of the age profile of the Tasmanian population. Section 4.3 examines the economic implications for Tasmania from population change, with concluding remarks in Section 4.4.

4.1 Population and growth

Tasmania's rate of total population growth has been the lowest or equal lowest of any state or territory throughout the twentieth century and this has been recognised as a critical issue for Tasmania. Figure 4.1 presents a comparison between Tasmanian and Australian population growth rates from 1901 to 2004. The graph shows the state's population growth rate has not only been generally lower in comparison with Australia, but that it has dipped into negative territory several times over the past century. The most recent of these occurred at the end of the 20th century, concluding an overall trend of declining population growth rates that began in the early 1990s.



Figure 4.1 Population growth rates, Tasmania and Australia, 1901 to 2004

Source: ABS Cat. 3105.0.65.001.

In 2001 the Tasmanian population growth rate became positive after several years of decline. The *turnaround* drew comment from the former Tasmanian Treasurer Dr David Crean in the 2003–04 budget speech:

'Mr Speaker, all of us will remember the hot topic of two years ago on population. The pessimists said Tasmania would never see population growth again. Mr Speaker, Tasmania's population is growing again as more and more people arrive in Tasmania to take up residence, and less leave the State' (TDTF 2003a).

Figure 4.2 presents the actual population levels of Tasmania from 1985 to 2006. It illustrates the stagnating and declining population levels of Tasmania during the 1990s and the growth period after this time. This situation is similar to the situation described in the overview of the Tasmania economy. The economic implications of population are explored later in the Chapter, but the initial focus is to analyse the changes that have occurred in the Tasmanian population.



Figure 4.2 Population levels, Tasmania, 1984–85 to 2005–06

Population change in regions

Tasmania's regions have experienced different fortunes in their levels of population. For example, while Tasmania's average annual growth rate from 1991 to 2006 was 0.3 per cent, the growth was mainly in Hobart (0.5 per cent) and Launceston (0.4 per cent). In contrast, Burnie and Devonport (0.0 per cent) and Balance of Tasmania (minus 0.5 per cent) were not growing. However, within the Balance of Tasmania differences in growth are evident with Break O'Day experiencing stronger growth than Tasmania at 0.9 per cent, while the West Coast, Central Highlands and King Island declined by minus 2.9 per cent, minus 1.7 per cent and minus 1.3 per cent, respectively.

Strong Tasmanian population growth is evident after 2000. Map 4.1 presents the average annual growth rates for population by Labour Market Regions¹⁷ (LMRs), from 2001 to 2006. It shows strong population growth on the east coast of Tasmania and strong declines along the West Coast and King Island.



Map 4.1 Population average annual growth rates, LM regions, 2001 to 2006

Components of population change

To analyse the changes in the population growth rate over time, the various components must be considered. Population growth has three components (TDTF 2003b:3):

- **Natural increase**—the difference between births and deaths
- Net interstate migration the difference between interstate arrivals and interstate departures
- Net overseas migration—the difference between permanent and long-term overseas arrivals and departures.

Jackson (2005) calculates the contribution made by each component to population growth for the Australian states and territories, and her findings are presented in Figure 4.3. The striking feature of these results is that the *natural increase* contributed 119 per cent towards Tasmania's population change over the period, in sharp contrast to 59 per cent for the national rate (Jackson 2005). Tasmania's birth rates are comparatively high, thus declining birth rates are not the reason for the population decrease. Indeed, the Tasmanian fertility rate¹⁸ in 1985 and 2004 was 2.01 per cent and 1.97 per cent respectively, the second highest in the country (Jackson 2005).

Source: BITRE analysis of ABS Cat. 3218.0.

^{17.} Definition of LMRs is available from BTRE (2003a).

^{18.} Fertility rate refers to the ratio of births to Tasmanian population.



Figure 4.3 Components of population change (percentage contribution), Australian states and territories, 1972 to 2004

Source: Replication of a table presented in Jackson (2005:8).

The other striking feature is the high loss of people from Tasmania to interstate locations. The loss stands at 37 per cent, which is the largest for any state or territory. Compounding this issue, as Jackson (2005) points out, is that Tasmania's ability to cover the loss through natural increase is declining, because of the age composition and migration patterns within the state. In fact, as Felmington *et al* (2002:3) notes, the source of the population decline for Tasmania in the 1990s was not due to a low natural increase, but net interstate out migration 'ushering in a *premature* shift to natural decline'. This point will be explored further in the next section, followed by an analysis of the migration flows for the state.

Interstate migration

The common denominator in the literature for Tasmania has been the constant loss of people to other states. Callaghan (1977:27) states that 'at least since 1881, out migration to other states from Tasmania has been a persistent demographic feature of the state'. Figure 4.4 presents the net interstate and overseas migration for Tasmania from 1991 to 2006. The interstate migration flows are ABS calculations from the movements of people from their Medicare records and intercensus estimation, so they provide a guide to the overall trend in the flow of people between states. The figure illustrates clearly that the source of population losses during the 1990s is migration to other states, as highlighted by Felmington et al (2002). This is compounded by the very low proportion of net overseas migration into Tasmania. In fact, Tasmania's gain from net overseas migration into Australia is less than 1 per cent.¹⁹ This is reflected in the

^{19.} The other states and territories have the following portions of net overseas migration: NSW 33 per cent;VIC 29 per cent; QLD 16 per cent; SA 6 per cent; WA 15 per cent; NT 0.7 per cent; and ACT minus 0.3 per cent.

lower level of persons born overseas living in Tasmania in comparison to Australia, which stands at 10 per cent and 23 per cent respectively as at June 2006 (ABS 2006g). One explanation for the low level of overseas migration into Tasmania is the lack of *chain migration* (DASU 2007). This phenomenon refers to the increased likelihood of new immigrants moving into areas by virtue of previous immigrants from their country of origin. Thus, it could be argued that Tasmania requires a *critical mass* to encourage new migrants.

Both net overseas and interstate migration have had a reversal in their trend during the 2000s. Two years stands out as having high net interstate migration for Tasmania—the years 2003 and 2004. This period corresponds to the rise in the State's GSP. However, while interstate migration has remained positive, a clear decline has occurred from 2005. The growth in net overseas migration has remained relatively strong.





Source: ABS Cat. 3101.0.

Overseas migration remains a very small proportion of the Tasmanian population increase and Box 4.1 presents various descriptive statistics for Tasmania's overseas migrants.

Indicator	Reference point	Tasmania	Australia	
		(per cent)		
Proportion of persons born overseas	Census 2001	10.8	23.1	
Settler arrivals migration stream—DIAC				
Skill stream	2005–06	36.1	45.2	
	1995–96	12.7	20.2	
Family stream	2005–06	29.2	26.4	
	1995–96	37.3	46.9	
Humanitarian program	2005–06	22.8	9.2	
	1995–96	17.0	13.9	
New Zealand	2005–06	9.0	18.1	
	1995–96	24.1	16.4	
Special and other	2005–06	3.0	1.1	
	1995–96	8.9	2.6	
Settler arrivals by major country—DIAC				
United Kingdom	2005–06	20.1	17.7	
Sudan	2005–06	9.3	2.9	
New Zealand	2005–06	9.0	14.5	
India	2005–06	5.3	8.6	
South Africa	2005–06	3.9	3.0	
USA	2005–06	3.8	1.3	
Philippines	2005–06	3.8	3.7	
Settler arrivals by major ASCO group—DIAC				
Managers, administration and professionals	2005–06	21.3	25.5	
Associate professionals	2005–06	7.2	5.6	
Tradespersons, advanced clerical and service workers	2005–06	5.3	7.2	
Intermediate and elementary workers	2005–06	2005–06 7.7		
Labourers and related workers	2005–06	0.2	0.8	
Not stated and inadequately described	2005–06	7.7	7.0	
Not in workforce or employment	2005–06	50.5	44.9	

The loss of people from interstate migration is also evident for South Australia. Figure 4.5 presents the net interstate and overseas migration for South Australia from 1991 to 2005. Similar to Tasmania, South Australia is losing people to other states, particularly after the recession in 1991. In contrast between South Australia and Tasmania is the strong positive flow from overseas migration into South Australia.

The major losses for Tasmanian net interstate migration between 1992 and 2002 were exacerbated by the age profile of the migrants. Figure 4.6 reveals the age breakdown of net interstate Tasmanian migrants over a seven year period. The figure shows the recent reversal in the 0-14, 35-54 and over 55 age groups. Also, importantly within the 15-34 cohort, net interstate migration remains negative but has slowed markedly. Jackson and Kippen (2001) state the loss of the 18 to 38 age cohort stood at 12.5 per cent over the 1990s. Jackson (2005) claims that the age distribution of Tasmania's migrants is accelerating the structural ageing process, adding weight to her earlier prediction (Jackson 2002:17) that between 2010 and 2020, Tasmania's 'population over the age of 65 will substantially outnumber children; and the number of 65 to 74 years olds will increase by around 40 per cent'.



Figure 4.5 Net interstate and overseas migration, South Australia, 1991 to 2005

Source: ABS Cat. 3101.0.





Source: ABS Cat. 3412.0.

The substantial loss of persons aged 15–34 affects the labour force and the participation rate in the economy. Figure 4.7 presents the age and labour force status of interstate arrivals and departures. As expected, Tasmania has a higher proportion in the labour force leaving the state than arriving. The loss is nearly twice as large as those entering the state. A striking feature of those departing the state is the high proportion of people in the 15 to 34 age cohort, which stands at 63 per cent. In contrast, the number of people not in the labour force migrating towards Tasmania is 30 per cent larger than

those moving out. This large turnover will have implications for future participation rates and the dependency ratio.



Figure 4.7 Interstate arrivals and departures in the labour force broken down by age, Tasmania, 1991 to 2001

Source: ABS special request data from the Census of Population and Housing.

Another important aspect of Tasmania's migration is through churning. Churning migration refers to the sum of immigration and out migration relative to the total population. In the case of Tasmania, the churning migration rate is higher than the national level, (6 per cent and 4 per cent, respectively²⁰). High levels of churning generate additional economic activity. Jackson (2005:9) states that '[g]iven that most movers are adults, that is a sizeable number of people selling, buying or renting homes, purchasing household goods, requiring local services and so on', this represents a large economic impact. Hence, Tasmania may slightly benefit from having a higher churning rate to the national rate due to increased economic activity. The drawback is that it may also create uncertainty and volatility and, in the case of Tasmania, accentuate the structural ageing phenomenon.

^{20.} The Australian Capital Territory and the Northern Territory have significantly higher rates of churning migration, at 11 per cent and 16 per cent, respectively.

Interstate migration by occupation

Table 4.1 presents interstate migration by occupation for Tasmania for the period 1991 to 2001. The table illustrates that Tasmania has lost people to the mainland within each occupation category. An aspect to consider is the high proportion of professionals moving out of Tasmania. While the migration literature clearly indicates that people with higher levels of human capital have high propensities to migrate, Tasmania is losing a large component of its human capital to the mainland.

Occupation	Arrive 1991–01	Share of arrivals (per cent)	Depart 1991–01	Share of departures (per cent)	Net migration 1991–01	Share of net migration (per cent)
Managers, administration and professionals	7 561	44	578	31	-4017	20
Associate professionals	2 830	16	4 357	12	-1 527	8
Tradespersons, advanced clerical and service workers	2 469	14	5 619	15	-3 150	16
Intermediate and elementary workers	2 842	16	12 112	33	-9 270	47
Labourers and related workers	I 286	7	2 773	7	-l 487	8
Not stated and inadequately described	345	2	559	2	-214	I
Total	17 333		36 998		-19 665	

Table 4.1 Interstate migration by occupation, Tasmania, 1991 to 2001

Source: ABS special request data from the Census of Population and Housing.

Out-migration in regard to Tasmania's regions is summarised in Table 4.2. It presents the breakdown of net migration by age and region from 1991 to 2001. The regions are broken down by the cities, Hobart and Launceston, followed by the rest of the state. Two age categories stand out as driving the population shift between the 1991 and 2001 censuses. First, the only positive net migration flow for Tasmania is in the age category above 55 and, importantly, they are moving to the Balance of Tasmania. This flow of older people into Tasmania is contributing to the rapid structural ageing of the state. Second, young people aged 15 to 34 are leaving the state in large numbers. This age category represents 76 per cent of the total share of people leaving and it is across the state. Unfortunately, migration analysis at the regional level is restricted because the 2006 Census migration data was not available at the time of analysis.

Age	Greater H	Greater Hobart		Greater Launceston		Other Regions		Total	
	Net migration	Share (per cent)							
0-14	-958	-5	-532	-3	-1 107	-6	-2 597	-13	
15-34	-6 9	-32	-2 230	-12	-6 206	-32	-14 627	-76	
35–54	-1 728	-9	-785	_4	-914	-5	-3 427	-18	
55+	25	0	0	0	1320	7	1345	7	
Total	-8 852	-46	-3 547	-18	-6 907	-36	-19 306	-100	

Table 4.2Net migration, various regions, 1991–2001

Source: ABS special request data from the Census of Population and Housing.

The Tasmanian Department of Treasury and Finance analysed the drivers of interstate migration between 1985 and 2002 and found that 'relative employment opportunities are important for many people in choosing to leave Tasmania' (TDTF 2003b:vi).²¹ The Nation Centre for Social Applications of Geographic Information Systems (GISCA) National Migration Survey in 2005 supports this conclusion because it reveals a higher proportion of people moving away from Tasmania because of employment- related issues, while people moving into the state cite family, environment and climate as reasons for the move. It should be noted, however, that the numbers of respondents for Tasmania was small and may not be representative.

4.2 Age profile

In the 1977 Callaghan Inquiry, an assessment of the age composition of Tasmania showed a high proportion of young people (aged 0 to 19 years) with little difference to the national average in all other age groups. This age structure has changed over three decades to make Tasmania the fastest ageing state in the country (Jackson 2002:3). Figure 4.8 presents the population pyramid of Tasmania and Australia for two time periods, 1985 and 2005. The 1985 Figure illustrates the similarities between the Tasmanian and Australian age profiles. Importantly, the baby boomers (persons born from 1946 to 1964, ages 21 to 39) are represented in the lower half of the pyramid. The population pyramid for 2005 shows the movement of the baby boomers up the pyramid. Furthermore, a clear distinction can be made between the Tasmanian and Australian pyramids. The age demographic for Tasmania is beginning to resemble an 'apple core' (Jackson and Kippen 2001:28). The proportion of persons aged from 20 to 39 is substantially lower for Tasmania than for Australia. This distortion in the pyramid is compounded by the higher share of older people in Tasmania.

This presents an emerging structural ageing problem in Tasmania. Structural ageing refers to an increase in the *proportion* of older people in the population. The Tasmanian population is characterised by being slightly older than the Australian average. The national average age stands at 37.8²² years in 2006, while Tasmania is 38.9, the second oldest mean age after South Australia (39.4 years) (ABS 2006e).

Jackson (2002) states that the changes that have occurred in the age profile have made Tasmania the fastest ageing state in the country. Tasmania has experienced the largest rise in 'median age²³ over the last 20 years, increasing by 8.5 years from 30.5 in 1986 to 39.0 in 2006' (ABS 2006e). In comparison, the national median age stands at 36.9 years for 2006. The rise in the median is expected to continue with the ABS projecting the Tasmanian median age to increase to between 44 and 45 years by 2021. In comparison, the national median age is projected to be between 40 and 42 years (ABS 2001a).

(National number employed) / (Number of Tasmanians employed) Tasmanian population

^{21.} Relative employment refers to the relative percentage of the population employed, calculated as follows:

Relative employment above one means that the 'proportion of people employed nationally is higher than the proportion employed in Tasmania' (TDTF 2003:42)

^{22.} Mean age estimates are subject to revisions because they are preliminary findings.

^{23.} Median age refers to the age at which the population splits between equal proportions of older and younger halves.



Figure 4.8 Population pyramid, Tasmania and Australia, 1985 and 2005

Figure 4.9 presents an index of four age categories in Tasmania from 1985 to 2006 and reveals two clear differences in the growth rates.

- The two older age categories (35–54 and 55+) have had strong positive growth. In the latter years the growth in persons aged over 55 has been faster.
- The younger age categories (0–14 and 15–34) display negative growth rates. This age group represents two important aspects of population change. First, this group strongly influences the current fertility rates. Second, this age category strongly influences future fertility rates because of the reduction in the number of children.

Source: ABS Cat. 3201.0.



Figure 4.9 Index of persons by age category, Tasmania, 1984–85 to 2005–06

Source: ABS Cat. 3201.0.





Source: ABS Cat. 3201.0.

The trends for persons between 15 to 34 and over 55 years have been more pronounced for the Tasmanian population, as illustrated in Figure 4.10. Older Tasmanians have become a greater proportion of the overall population in the state, in comparison to the national percentage. This is compounded by the decline in the proportion of persons in the young age group, even though Tasmania and Australia began the period with similar proportions of their overall population aged between 15 and 34. Moreover, in the case of Tasmania, the proportions of young and older individuals have crossed for the state. This means that Tasmania now has a higher proportion of people over 55 in comparison to persons aged 15 to 34.

The changes illustrated in the age profile for Tasmania have been influenced by fertility rates. However, migration has also had a major influence on the changes in the demography of Tasmania.

4.3 Economic implications

Population is economically important because of its influence on the economies of scale for production, consumer demand and the ability of government to finance expenditure (Lockyer 1926; Callaghan 1977; Jackson and Kippen 2001). A number of explanations exist for a positive connection between population growth and economic growth, such as Verdoorn's Law. This hypothesis suggests that a positive association exists between population, employment and output. Population growth may raise incentives in terms of improving production techniques, technological processes, productivity and economies of scale, which in turn raises the standard of living.

In the case of Tasmania, the population levels and components of population change have impacted on the state's economy. However, the connection between Tasmania's population and regional development is complex. For example, does economic growth precede population growth or is population growth required for economic development?

During the current period of economic growth, population growth has followed the improvements in the state's economic performance. In other words, economic growth has raised Tasmania's population, especially through migration. Thus, population has reinforced the economic growth and has become a part of the positive feedback mechanism in a virtuous circle.

The economic implications of population are evident through the migration patterns that exist in the state. In 1885, Ravenstein wrote 'The Laws of Migration' presenting the first attempt to analyse the movement of people in terms of regional economic disparities. Kerr *et al* (2001) specifies that migration can be used as a key indicator for understanding the fortunes of a region because people choose to move depending on the relative attractiveness of a region. The determinants of migration can fit into two categories:

- 1. The differences in economic opportunities and amenities available in the origin and destination regions.
- 2. The differences in the personal characteristics of individuals or families that in turn influence the migration decision through variation in preferences.

Both of these determinants have an impact on the migration rate in the case of Tasmania, which is primarily interstate and reflects differences in the incentives for people regarding the local and national economy.

The high rates of out migration for Tasmania in the young age group occur for several reasons, such as investment in education, change of family status and entering the labour market.

Higher education plays a significant role in the migration decision. Education is an investment in an individual's human capital in the expectation of obtaining higher future earnings. A consequence of individuals' raising their human capital is a higher propensity for migration (Greenwood 1997). In fact, Greenwood (1997:655) states that 'for the group with five or more years of college relative to that with 0–8 years of elementary school, migration propensities range from 4.6 times as high (25–29 years) to 2.0 times as high (45–64 years old). Although the precise magnitude of these variables is no doubt somewhat different for other developed countries, the qualitative relationships are almost certainly similar to those for the US.

The economic literature presents a number of hypotheses for the positive relationship between education and migration.²⁴ First, professionals receive higher wage returns, enabling a greater capacity to cover costs of moving. Second, educated people have greater information about opportunities through social networks and the ability to respond to prospects. Finally, highly professional employment allows for long distance moves, because demand for specialised skills is concentrated in major metropolitan centres.²⁵ In the case of Tasmania, the number of interstate departures from Tasmania was greater than arrivals for *managers, administrators and professionals*, from 1991 to 2001. However, *managers, administrators and professionals* are also a significant proportion of arrivals into Tasmania.

The state of local economic opportunities provides an incentive to migrate as a higher relative unemployment rate would encourage out migration. The Tasmanian Department of Treasury and Finance's investigation into drivers of outward interstate migration found a strong link between employment trends and departures. Periods of low relative employment in Tasmania tend to be associated with increased interstate departures. The better performance of the local economy during the current decade corresponds with the slowing of the number of people departing the state. Figure 4.11 illustrates the close relationship between interstate departures for Tasmania with the relative percentage employed.²⁶ It clearly shows similar negative and positive movements between relative employment ratio and interstate departures.

The Tasmanian Department of Treasury and Finance further found that housing affordability was an important determinant of interstate arrivals. People are attracted to Tasmania, particularly young families and retirees, because of the availability of

^{24.} Examples include Flood et al 1991; Goss and Paul, 1986, 1990; Fox et al 1989.

^{25.} Examples include Bogue 1969; Long 1973, 1988.

^{26.} The relative percentage employed refers to the relative percentage of the population employed and is calculated as follows:

 $[\]left(\frac{\text{National number employed}}{\text{National population}}\right) / \left(\frac{\text{Number of Tasmanians employed}}{\text{Tasmanian population}}\right)$

^{&#}x27;The annual figure for the number employed is calculated as the average of the monthly figures and the annual population figure is calculated as the average of the quarterly figures. A figure greater than one for the relative percentage of the population employed means that proportion of people employed nationally is higher than the proportion employed in Tasmania' (TDTF 2003:42).

affordable housing. The factors that affect housing affordability include housing prices, interest rates and average annual disposable income (TDTF 2003). However, a likely effect of recent house price increases would be a reduction in arrivals from the mainland, curtailing the positive net migration flows. This appears to be already happening. Housing prices and wealth effects are explored further in Chapter 5.



Figure 4.11 Interstate departures and relative percentage of the population employed, 1984–85 to 2005–06

Population changes in Tasmania can also have indirect consequences, through changing expectations and age structure. Population has been a consistent source of concern for the Tasmanian economy. Thus, population growth, as experienced this decade for Tasmania, influences the general confidence in the economy, which, in turn, improves the economic fortunes of the state by raising demand, investment, and employment. A virtuous circle is created but it is unclear if it is sustainable. Population growth is just one source of economic growth. Other sources include technological progress, human capital, capital formation, productivity and new markets, which are explored in later Chapters.

Another area of interest for Tasmania is the higher proportion of older people (those over 65) choosing to migrate into the state, particularly in this decade. Migration in the over 65 age group has an amenity-driven focus, as retirees are less concerned with employment opportunities. Attractive regions for retirees are areas with amenities such as mild weather (Bures 1997; Walters 1995; Wilson 1996), coastal contact (Dresher, 1993), low crime rates (McLeod *et al* 1985; Cebula 1974) and a high concentration of other older people (Newbold 1996; Meyer 1987). The elderly also avoid regions that have high taxes and housing costs (Duncombe *et al* 2001; Cebula 1974; Dresher 1993; Voss *et al* 1990).

Note: Relative percentage employed refers to the relative percentage of the population employed.

The higher migration rates into the state from an older age group will have implications for the local economy. While an analysis of the ageing of Tasmania's population is beyond the scope of this paper, a number of points should be made regarding its future consequences. Areas to consider include:

- Different age groups have different economic requirements and a region's economic characteristics may be expected to change as its population ages.
- Behavioural adjustment and changing lifecycle demands, involving labour supply and saving, may influence the economic consequences of ageing.
- Labour shortages may alter incentives over a range of factors, such as wages, unemployment, education, immigration and the movement of factors of production to capital intensive technologies.
- Health care and community services (e.g. aged care) may become a larger sector in the economy, and these are labour-intensive and non-tradeable.²⁷

4.4 Conclusion

Population has influence over a range of areas in the economy which include demand, employment, investment and confidence. Tasmania's population level has been a constant source of debate because of its impact on the local economy. The key areas of concern are the population declines during the 1990s, losing the young and educated to the mainland, and structural ageing. All of these population changes impact on participation rates, productivity and economic activity. An indirect impact of declining population levels occurs through changes in expectations and lower levels of confidence in the local economy.

The performance of the state's economy also impacts on the incentives to migrate. Migration has been an important driver and reflector of the state's economic performance. For example, the shape of the local economy influences the propensity of Tasmanian's to migrate. As one would expect, a region with higher levels of economic activity is attractive because of the greater economic opportunities.

The Tasmanian Department of Treasury and Finance's investigation into motivators for arrivals into Tasmania found housing affordability to be a strong driver (TDTF 2003). Tasmania's lower house prices in comparison to the mainland are an incentive to move. However, the current higher arrivals rate for Tasmania is contributing to raising house prices, which in turn appears to be already reducing the number of arrivals.

The impact of the changes in population through migration and structural ageing will have consequences for the Tasmanian economy into the future. A direct influence of population is also through household activity, which is examined further in the next Chapter.

^{27.} For a more detailed discussion refer to the Productivity Commission (2005a) and Department of Treasury (2002).

Box 4.2 Key points

- Population levels in Tasmania declined during the 1990s but in 2001, the Tasmanian population growth rate became positive again.
- Population has reinforced the economic growth and has become a part of the positive feedback mechanism in a virtuous circle.
- Migration has been an important driver and reflector of the state's economic performance. Out-migration is influenced by the shape of the state's economy and in migration is influenced by the level of housing affordability in comparison to the mainland.
- High fertility rates have balanced high emigration for at least a century, but currently falling fertility, continued emigration of the younger age group and immigration of an older age group, are leading to a structural ageing process.
- Structural ageing will have economic consequences for the Tasmanian economy into the future.

Chapter 5

Household activity



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Chapter 5 Household activity

Households form an important component of an economy. They provide labour in return for income payments and make investments into the economy to generate wealth. A household's income and wealth enables people in it to purchase goods and services, which in turn affect their economic wellbeing. The activities of households therefore reflect the economic climate of the local and national economies.

This Chapter explores the impact of household activity on the Tasmanian economy as suppliers of labour, receivers of income, household expenditure and investment into the housing market. Hence, this Chapter considers whether Tasmanian households have influenced economic activity in the state through a number of avenues.

The first four sections present descriptive statistics on household economic activity. Section 5.1 provides a description of the labour market. Section 5.2 outlines the sources and growth of household income. Section 5.3 considers how wealth impacts on household activities. Section 5.4 presents the expenditure patterns of households. This is followed by an investigation of the economic implications of household activity in section 5.5. Concluding remarks are presented in section 5.6.

5.1 Labour market

This section presents a description of Tasmania's labour market in comparison to Australia's. Three aspects are explored: employment, unemployment and participation rates.

Employment

The average number of Tasmanians employed at the beginning of the study period, in 1985, was 180 337, while in 2005 employment stood at 220 131. This is a growth of approximately 40 000 jobs. Figure 5.1 presents an employment index for Tasmania and Australia, from 1985 to 2005. The overall movement is illustrated by the trend line, which clearly indicates a steady increase in employment. In contrast to Australia, Tasmania's trend line shows substantially slower growth at around 6 per cent against 19 per cent. The strong growth for Tasmania occurs after 2002, matching Tasmania's stronger economic performance. This may also reflect the tightening of the national labour market, with demand for labour and strong economic activity at the national level raising economic opportunities in Tasmania.



Figure 5.1 Employed persons index, Tasmania and Australia, January 1985 to July 2007

Source: ABS Cat. 6202.0.55.001.

Following the work completed by Mitchell and Carlson (2003), Tasmanian quarterly employment data can be used to consider net state employment growth, which represents the difference between Tasmania's and Australia's employment growth rates. The methodology to calculate net state employment is presented in Appendix B. Figure 5.2 presents net employment growth between Tasmania and Australia. To interpret the figure, Australia is set to zero and the difference between Tasmania's and Australia's employment growth oscillates around this value. It shows that Tasmania's employment growth has generally been lower than Australia's. The importance of this difference in the employment opportunities was revealed through its impact on population. Out-migration is influenced by the shape of the local labour market, which is supported by Debelle and Vickery (1998:30) who found that 'the migration decisions are affected by relative labour market conditions between states, and, in particular, that individuals are more likely to migrate from a state with a high unemployment rate'.

Tasmanian regional employment does appear to have improved with the growth in economic activity this decade. Figure 5.3 presents an employment index for ABS Tasmanian dissemination regions,²⁸ from 1997 to 2007. As expected, Hobart, and to a lesser extent the Northern region, moves with the Tasmanian economy, with two distinct periods present. Firstly, there are stable employment patterns from 1997 to 2002. Secondly, after 2002 employment begins to rise, reflecting the increases in economic activity. Mersey-Lyell Statistical region illustrates greater volatility, but also displays the increase in employment with a lag. However, after 2006, employment growth has not maintained the previous levels of growth.

^{28.} ABS (2007e) produces the Labour Force Survey (LFS) monthly estimates by dissemination region, which has an average of 250 000 persons. This population size is the minimum required for releasing accurate estimates. However, high sampling errors are evident for many disseminated regions, thus these estimates have 'limit[ed] use for government policy development and program evaluation' (ABS 2007e:2).



Figure 5.2 Net state employment growth rate, 1985 to 2005

Source: ABS Cat. 6202.0.55.001.





Source: ABS Cat. 6291.0.55.003.

Unemployment

The unemployment rates, as of July 2007, for Tasmania and Australia stand at 4.8 per cent and 4.3 per cent respectively (ABS 2007d). Figure 5.4 presents the unemployment rate for Tasmania and Australia over more than two decades. Clearly, Tasmania's unemployment rate is consistently above Australia's, yet still follows a similar path. Three periods of interest are evident:

- Over the five year period from 1985 to 1990, Tasmania maintained a high unemployment rate, averaging 9 per cent, while Australia showed a steep decline.
- The recession in the early 1990s is plainly visible for both Tasmania and Australia, with each economy's unemployment rate rising sharply. The highest unemployment rates reached were 12.5 per cent and 10.7 per cent, for Tasmania and Australia respectively, in 1993.
- While the national unemployment rate declined fairly steadily from its 1993 peak, the Tasmanian unemployment rate experienced greater volatility and has had stalled periods.
- The declining unemployment rates do not necessarily represent an improvement in Tasmania's economy. As Cully (1999:209) points out regarding Tasmania's drop in the unemployment rate in 1998–99, the 'fall in unemployment rates is more a consequence of people leaving the labour force than through employment gains'.
- A feature of Tasmania's rate is the widening gap between the two economies in the late 1990s, but this gap has recently diminished, especially for the 2007 estimates.
- The growth in Tasmania's economic activity in the early 2000s is not evident in the unemployment rate until 2003. The rate averaged 9 per cent in 2003, similar to the unemployment rate before the shock of the recession. However, after 2003, a steep decline occurs with Tasmania's unemployment rate falling faster than the national rate, resulting in Tasmania almost reaching the national unemployment rate.

The length of time a person is unemployed is also an inhibiting factor on an individual and an economy. In 2001, the median duration of unemployment was substantially higher for Tasmania at 35.1 weeks compared with 18.0 weeks for Australia (Ramakrishnan and Cerisloa 2004:5). The impact of having extended periods of unemployment included:

- reduced levels of wellbeing
- greater difficulty of re-entering the labour force
- adverse consequences for household spending and financial solvency
- inefficiencies in the economy through under utilisation of labour, centralised wage setting, productivity and costs of seeking employment.



Figure 5.4 Unemployment rates (trend), Tasmania and Australia, January 1985 to January 2007

Figure 5.5 Unemployment rates, selected Tasmanian regions, 1998 to 2006



Source: DEWR Small Area Labour Markets (2007a), derived by BITRE.

Source: ABS Cat. 6202.0.55.001.

At the regional level differences appear across Tasmania. Figure 5.5 presents the unemployment rates for the LMRs,²⁹ from 1998 to 2006. Clearly, over this period all of Tasmania's regions have experienced declining unemployment rates, with most closing in on the state average. Only the Burnie and Devonport category has had a consistently higher unemployment rate but this still shows an overall fall, despite a rise in the final year.

Participation rates

Participation rates measure the proportion of the working age population either working or actively seeking employment in an economy. Figure 5.6 presents the participation rates for Tasmania and Australia by sex, from 1985 to 2007. Tasmania's participation rates are consistently below Australia's. An interesting feature is the decline in male participation rates, especially in Tasmania. An investigation by the Tasmanian Department of Treasury and Finance (2005a) may provide an explanation for this fall. By studying unemployment through cluster analysis, they found that the largest cluster of long-term unemployed were *low-skilled urban males*, within an older age group. They argued that these traits represent an older male traditional industry worker disconnected from an economy undergoing structural change. The transformation away from traditional industries (manufacturing) towards a service-based economy is resulting in a mismatch of skills for these potential employees. As a result, the fall in participation rates may be a result of men being discouraged from entering the labour market because of the prospect of long-term unemployment.

Dixon (2005) analysed disparities in male labour force participation rates across Australian states and territories, from 1980 to 2002. The study reveals an increasing divergence between the states for male participation rates, due to structural change and difference in the state's male age profile. Since the early 1990s, there has been an increase in males taking early retirement and obtaining the Invalid or Disability Support Pension. This phenomenon has been most pronounced in Tasmania and South Australia. Argyrous and Neale (2003:21) conclude that '[t]he disability support program has acted as an institutional mop for soaking up older males who have lost jobs'. As Courvisanos (1999:50) points out employees in the 'traditional sector' of the economy had 'very poor prospects of gaining re-employment somewhere else in Tasmania'. In fact, Argyrous and Neale (2003:22) state that '[i]t is the labour market that is 'disabled' and needs government attention, and not just individuals on DSP'.

On the other hand, female participation rates reveal a steady increase for Tasmania and Australia, with average annual growth around 1.0 per cent for both economies. A number of factors influencing female participation include: employment opportunities in service industries; changes in social and cultural factors; and movement towards part-time employment (Department of Treasury 1999).

^{29.} Definition of LMRs is available in Appendix G.



Figure 5.6 Participation rates by gender and total, Tasmania and Australia, 1985 to January 2007

A summary of the key features are:

- Tasmania and Australia have had steady increases in employment but Tasmania's has been at a lower rate.
- Strong growth in Tasmania's employment occurred after 2002.
- The recession in the early 1990s is plainly visible for both Tasmania and Australia in the high unemployment rates.
- While the national unemployment rate declined fairly steadily from its 1993 peak, the Tasmanian unemployment rate experienced greater volatility and has had stalled periods.
- A widening gap in the unemployment rate between Tasmania and Australia occurred in the late 1990s, but this gap has recently diminished, especially for the 2007 estimates.
- Tasmania's participation rates are persistently below Australia's.
- There has been strong growth in female labour participation rates for Tasmania and Australia.
- Tasmanian male participation rates have declined faster than the national rate.

Source: ABS Cat. 6202.0.55.001.

Box 5.1 presents a summary of labour market characteristics of Tasmania and Australia for the years 1985 and 2005.

DUX J.1	Labourn	larket select	ieu summ	iai y			
Description			Tasmania			Australia	
Employed		1985	2005	Per cent change	1985	2005	Per cent change
Male	Number	113 799	119 920	5	4 1 26 372	5 507 249	33
	Per cent	63	54		62	55	
Female	Number	66 538	100 211	51	2 571 052	4 480 040	74
	Per cent	37	46		38	45	
Total	Number	180 337	220 3	22	6 697 424	9 987 289	49
Employed ful	l-time as a number	and proportion o	of the labour	market			
Male	Number	108 175	99 621	8	3 870 396	4 695 696	21
	Per cent	95	83		94	85	
Female	Number	39 839	49 717	25	I 625 465	2 431 646	50
	Per cent	60	50		63	54	
Total	Number	148 014	149 338	I	5 495 861	7 127 342	30
	Per cent	82	68		82	71	
Employed pa	rt-time as a numbe	er and proportion	of the labour	market			
Male	Number	5 624	20 299	261	255 976	811 553	217
	Per cent	5	17		6	15	
Female	Number	26 699	50 494	89	945 587	2 048 394	117
	Per cent	40	50		37	46	
Total	Number	32 323	70 793	119	1 201 563	2 859 947	138
	Per cent	18	32		18	29	
Unemployed							
Male	Number	11 068	7 933	-28	355 934	286 227	-20
	Per cent	9	6		8	5	
Female	Number	6 823	6 425	-6	246 934	250 476	I
	Per cent	9	6		9	5	
Total	Number	17 891	14 358	-20	602 868	536 703	-11
	Per cent	9	6		8	5	
Participation	rate						
Male	Per cent	76	67		76	72	
Female	Per cent	43	54		46	57	
Total	Per cent	59	60		61	64	
Employment	to population ratio	o for civilian popu	lation aged 1	and over			
Male	Per cent	69	63		70	69	
Female	Per cent	39	50		42	54	
Total	Per cent	54	57		56	61	

5.2 Income

Income refers to the flow of money to a household in return for its supply of labour (Collier and Batty 1990), which enables the household to purchase goods and services in the economy. This section describes changes to income in Tasmania and Australia. Two areas of household income are examined, namely weekly earned income and income support.

Table 5.1 presents the main sources³⁰ of income for four periods between 1995 and 2004. Two main differences appear between Tasmania and Australia. Tasmanians receive a smaller proportion of income in the form of wages than Australia as a whole. In contrast, Tasmania has a higher proportion of its income sourced from government pensions and allowances. The gap between Tasmania and Australia was nearly nine percentage points in 2004 and had increased from 1995. Business income for both regions is similar but makes up a small proportion of average household income.

Table 5.1Main sources of income for all households, Tasmania and Australia,1995, 1998, 2001 and 2004

Main source of income for all households	Tasmania			Australia				
_	1995	1998	2001	2004	1995	1998	2001	2004
Proportion of total income				(þer cei				
Wages and salaries	48.8	51.6	52.0	52.I	57.6	56.8	56.9	57.5
Own business or partnership	6.2	4.1	5.1	5.0	6.1	6.0	6.4	6.0
Government pensions and allowance	35.8	36.7	36. I	36.6	28.5	28.5	28.3	27.7
Other	8.8	6.7	6.0	5.9	6.7	7.7	7.3	8.2
Other	8.8	6.7	6.0	5.9	6.7	7.7	7.3	

Source: ABS Cat. 4102.0.

The next two sections explore the two main sources of income for Tasmania and Australia, namely wages and salary income, and government pensions and allowances.

Earnings

Two sources of income are considered in this section. The first source of data is the ABS' average weekly earning estimates. This refers to the average gross (before tax) earnings, but does not relate to average award rates or to the earnings of the average person. The second dataset is Real Income Per Taxpayer (RIPT), which is an indicator of the average income of residents³¹—that is, how much on average an individual taxpayer of a region receives (BTRE 2005).

Figure 5.7 presents the growth of average weekly earnings for Tasmania and Australia. It shows an overall increasing trend. However, Australia has had a greater increase in average weekly earnings than Tasmania, particularly after the year 1994. In February

^{30.} Wages and salaries refer to the gross cash income received as a return to labour from an employer or from a person's own incorporated enterprise.

Own business or partnership income refers to the profit or loss that accrues to people as owners of, or partners in, unincorporated enterprises.

Government pensions and allowances refer to payments from government under social security and related government programs.All definitions are sourced from ABS (2007g).

^{31.} RIPT does not capture people who do not submit a tax return; as such RIPT is likely to overestimate the actual average income.

1985, average weekly earnings were \$320.60 and \$339.30 for Tasmania and Australia respectively, but they have drifted further apart. Another interesting aspect of average Tasmanian earnings is the growth period after 2001 (although a levelling off is evident from 2005). The changes that occur in average earnings are affected by two components: changes in the level of earnings of employees and changes in the overall composition of the wage and salary earner segment of the labour force.





Figure 5.8 separates *Total average weekly earnings*³² for Tasmania and Australia by gender and shows the general increase over time. However, the graph illustrates a widening gap between Australia and Tasmania for both genders, although this is larger for Tasmanian males. The gap may be due to differences in human capital skills, and/or industry structure, which are explored further in Chapters 6 and 7.

The conclusions previously drawn from investigating RIPT match the findings in regard to average weekly earnings. These conclusions include the fact that Tasmania is consistently below the Australian RIPT values and the gap between Tasmania and Australia has increased over the twenty year time period.

A comparison between Tasmania's and Australia's RIPT estimates reveals a close connection in the movement of income. Figure 5.9 considers the percentage change in RIPT for Tasmania and Australia. The movements are similar but Tasmania appears to have had longer and deeper periods in the negative and shorter growth periods. This supports the observation that Tasmania's income has grown more slowly than the national rate.

Source: ABS Cat. 6302.0.

^{32.} Total average weekly earnings are equal to weekly ordinary time earnings plus weekly overtime earnings (ABS 2007g).



Figure 5.8 Average weekly earnings by gender (trend), Tasmania and Australia, February 1985 to August 2006

Figure 5.9 Percentage change in RIPT, Tasmania and Australia, 1985–86 to 2003–04



Source: BITRE Taxable Income Database.

A summary of the features revealed by the two separate sources of income estimates for Tasmania and Australia include:

- The gap in average weekly earnings between Tasmania and Australia has increased over the twenty year time period.
- A divergence has occurred between Tasmania and Australia for both male and female average weekly earnings.
- Tasmania experienced a growth in earnings at the beginning of the 21st century, but this has since leveled off.
- Tasmania consistently lies below Australian RIPT and average weekly earnings.
- The Tasmanian and Australian RIPT movements are similar.

Income support

Alternative sources of income for households are the income support payments provided by government. Payments include the Age Pension, Youth Allowance, Parenting Payment, Newstart Allowance and Disability Pension.³³

Table 5.2 presents the aforementioned support payments for Tasmania and Australia for 1995–96 and 2001–02. The table reveals that, on a per capita basis, Tasmania is consistently paid a higher value than Australia in all categories. This corresponds to the fact that a higher proportion of Tasmanian households receive support payments. Overall, a comparison between Tasmania and Australia on per recipient bases is very similar, as would be expected for fixed rate payments. However, a difference occurs in the Newstart and Youth Allowance. Possible explanations include longer periods of unemployment or fewer people subject to the means test, due to lower incomes and wealth in Tasmania.

The low average income and high proportion of Tasmanian people on government payments may be reflected in households living in poverty. National Centre for Social and Economic Modelling (NATSEM) (2001 refer Lloyd *et al* 2001) estimated the experimental poverty rates in Australia at the postcode level, which was used by Kryger (2005) to consider poverty at the state and electorate level. Poverty was based on a relative measure. That is, 'persons are defined to be in poverty if they are living below some community standard' (ibid). Table 5.3 presents Kryger's (2005) results based on the NATSEM estimates and found that poverty rates for both adults and children are higher in Tasmania than Australia. While these estimates should be regarded as indicative only, the NATSEM report, at the postcode level, made a number of conclusions in relation to the characteristics of a region with high poverty rate. These include:

- Many household heads are unemployed or not in the labour force.
- Many household heads are in a younger age group.
- Many are renters, particularly public renters.
- The main income source is typically from government cash benefits.

^{33.} Definitions of each of these income support payments are provided in ABS (2005a).

Pension type	Indicator	1995–9	6	2001–02		
		Tasmania	Australia	Tasmania	Australia	
Age Pension	Number	45 440	68 647	51 670	1 900 242	
	\$ million	322	11 981	450	16 5 47	
	Average	7 106	7 25	8 701	8 708	
	\$ per capita	681	654	951	842	
Disability Support Pension	Number	17 241	509 729	23 362	672 827	
	\$ million	131	3 984	229	6 696	
	Average	7614	7817	9 809	9 952	
	\$ per capita	277	218	485	341	
Newstart Allowance	Number	na	na	30 634	I 006 336	
	\$ million	na	na	175	5 238	
	Average	na	na	5 729	5 205	
	\$ per capita	na	na	371	267	
Parenting Payment	Number	21 187	663 712	22 571	728 527	
	\$ million	205	6 366	333	10 765	
	Average	9 687	9 593	14 755	14 777	
	\$ per capita	433	348	705	548	
Youth Allowance	Number	na	na	16 5 1 9	557 273	
	\$ million	na	na	75	2 7	
	Average	na	na	4 510	3 896	
	\$ per capita	na	na	158	111	

Table 5.2Support payments, Tasmania and Australia, 1995–96 and 2001–02

Source: ABS Cat. 6524.0.55.001.

na: not available.

Table 5.3 NATSEM estimated poverty rates, Tasmania and Australia, 2001

	Num	Number in poverty			Poverty rates (per cent of population in poverty)		
	Adults	Children	Persons	Adults	Children	Persons	
Tasmania	39 363	16 418	55 781	12.2	4.	12.7	
Australia	6 486	504 145	665 63	8.8	10.6	9.3	

Source: Kryger (2005)—derived from data supplied by NATSEM.

However, Eslake (2005b) argues that the low income levels of Tasmanians may be misleading. The level of income and wealth of Tasmanians at the bottom end of the scale are comparable to the estimates at the national level. The lower incomes in Tasmania are 'not because the poorest Tasmanians are poorer than mainlanders, but rather because the richest Tasmanians are less well off than their counterparts in other states' (ibid:9). For example, Tasmania's top income quintile is 8 per cent below the national level. Eslake (2005b) argues that the divergence is primarily due to human capital differences, and this is explored in Chapter 7.

Hence, while income and wealth are positively correlated, they can potentially provide quite a different picture of regional economic wellbeing than from measuring income alone. Figure 5.10 illustrates the positive relationship between income and wealth at the capital city and state balance scale. The figure illustrates the lower level of income, and especially household wealth, for Tasmania in comparison to Australia. Regional Tasmania has the lowest average wealth and income in the country.



Figure 5.10 Relationship between household wealth and income across capital and state balance categories, 2003–04

Source: BTRE analysis of ABS SIH 2003-04.

Income is not the only method for households to purchase goods and services in the market. The next section looks more closely at wealth, particularly in the housing market.

5.3 Wealth and housing

Wealth is a key component of a household's, region's or nation's economic wellbeing. The ABS (2006i:18) regards national wealth to be central to economic progress:

'Economic progress equates to enhancing the nation's income (broadly Australian's real per capita levels of consumption) while at least maintaining (or possibly enhancing) the national wealth that will support future consumption'.

This definition of economic progress stresses the ability of wealth to create a future income source and support future consumption. Wealth provides economic security and a pool of savings available to capitalise new and existing businesses. The links between wealth and consumption are well established. For example, the recent growth in capital gains on housing assets has raised consumer spending (Tan and Voss 2000; Dvornak and Kohler 2003).

A common definition for household wealth is the 'net worth of the household, which equates to the value of household assets minus the value of household liabilities' (Podder and Kakwani 1973; ABS 1995). Household assets may include:

- financial assets-shares, trusts, superannuation, bank accounts, bonds, etc
- non-financial assets—owner occupied dwellings, other property assets, contents of dwelling, vehicles, etc.

A number of comparisons can be made between Tasmania and Australia regarding wealth in reference to financial and property assets³⁴ for 2003–04:

- The average household wealth for Tasmania stands at \$324 000, in comparison to the national average at \$467 600.
- Total financial assets of Tasmanian households are much lower than Australian households as a whole, at \$94 500 and \$136 500 respectively. This reflects lower holdings of most types of financial assets. For example, the average value of shares held by Tasmanians and Australians overall are \$5600 and \$18 200 respectively.
- Tasmanian average liabilities are relatively low at \$35 400, compared with the national average of \$69 400.
- Property assets are the single largest component of household wealth. The national average (net of property debts) is \$260 000 which is much higher than the Tasmanian average of \$155 100. This gap is largely attributable to owner occupied housing, but Tasmanians also have lower holdings of other property assets.

Given that property assets form the largest component of a household's wealth and have experienced rapid growth, the focus of this study will be in this area.

The Productivity Commission (2004) calculated that since 1970 the real prices for (detached) houses in Australia had grown at around 2.3 per cent³⁵ per annum until 2003. In reference to Tasmania, utilising capital city data (Hobart), a lower trend growth rate of 1.5 per cent was estimated³⁶ (ibid). The slower growth of property assets for Tasmania in comparison to Australia is illustrated by the *Housing Price Index* (HPI).³⁷ Figure 5.11 presents the HPI from 1986 to 2005. The figure illustrates the stagnating and negative growth of Hobart's HPI during the latter part of the 1990s, while national housing prices were growing at a higher rate. Rapid growth in Hobart's housing market is evident after 2002, matching the rise in the national economy. Noticeably, Australia's and Hobart's HPI have slowed markedly since 2004, representing a stabilisation of the market.

The Tasmanian Department of Development states that even with the growth in housing prices for Tasmania, 'whether you are renting or buying, [housing prices are] amongst the lowest in Australia. Houses in Tasmania's capital, Hobart, are on average half the price of a home in Sydney' (TDED 2007a). However, Tasmania is experiencing a decrease in housing affordability (TDHHS 2007) which prompted the introduction of the *Affordable Housing Strategy* (AHS) by the state government in 2003.

^{34.} These estimates are based on ABS (2006j).

^{35.} The trend growth is based on a log regression of real prices with a constant and a time trend. The prices were deflated by the CPI (Productivity Commission 2004).

^{36.} The highest real annual growth rate in housing prices was Darwin at 3.4 per cent and the lowest was Adelaide at 1.2 per cent (Productivity Commission 2004). The Tasmanian data was calculated over a shorter timeframe however, from 1991 to 2003.

^{37.} The HPI refers only to Hobart.



Figure 5.11 Housing Price Index (HPI), Hobart and Australia, June 1986 to June 2005

Table 5.4 presents the average annual growth of private housing investment and its contribution to GSP.³⁸ Clearly, the level of investment in housing in Tasmania was low during the 1990s, especially in comparison to the positive growth on the mainland. In fact, dwelling investment was having a negative impact on the growth of Tasmania's GSP. This reflects the slow growth (and at times negative growth) in housing prices in the state, which reduced the rate of return for the investor. This made Tasmanian housing a less profitable form of investment.

However, since 2001, Tasmanian investment in housing has substantially increased, notwithstanding that Tasmanian investment started from a very low level. To understand the impact of this growth in dwelling investment, its contribution to GSP growth must be considered. Dwelling investment contributed 18.5 per cent to the growth in GSP since 2000–01. Narrowing the timeframe, the period from 2001–02 to 2003–04, further demonstrates the dramatic rise in dwelling investment, raising its contribution rate to 34.8 per cent. This increase is considerably higher than the national rate of growth and thus has had a higher impact on the state's output.

Table 5.5 presents the average house prices (AHP) for Tasmania in 2003 and 2005, along with median prices, in brackets where available, and percentage changes in AHP at the Statistical Sub Division (SSD) scale for Tasmania. It shows a lot of variation across the regions but overall a general increase is evident, which is also applicable across Australia. The largest increase in Tasmanian house prices was in greater Hobart. This was followed by smaller rises evident for Burnie and Devonport and Greater Launceston from 2003 to 2005. Population growth has been found to have a significant positive effect on Hobart's house prices (Otto 2007). Hence the recent improvement in the migration flows can be linked to the recent increase in house prices.

^{38.} Dwelling investment estimates exclude ownership transfer costs.

Housing investment	Tasmania	Australia
	(þer	cent)
Average annual growth		
1990–91 to 2005–06	3.3	4.2
1990–91 to 2000–01	-1.0	3.1
2000–01 to 2005–06	12.7	6.3
2001–02 to 2003–04	21.2	12.9
Contribution to GSP/GDP growth		
1990–91 to 2005–06	9.6	7.1
1990–91 to 2000–01	-3.7	4.8
2000–01 to 2005–06	18.5	11.0
2001–02 to 2003–04	34.8	16.9
Source: ABS Cat. 5220.0.		

Table 5.4Housing investment average annual growth and contribution to
GSP/GDP, Tasmania and Australia, from 1990–91 to 2005–06

Table 5.5Average and median house prices, selected Tasmanian regions,
2003 and 2005

Tasmania Statistical Sub Division	Average house price (AHP) \$ and (median price \$) 12 months to June 2003	Average House Price (AHP) \$ and (median price \$) 12 months to June 2005	Percentage change in AHP
Greater Hobart	166 233 (128 750)	244 979 (200 000)	47
Greater Launceston	170 818 (101 000)	177 455 (160 000)	4
Burnie-Devonport	167 234 (85 000)	183 856 (145 000)	10

Source: Australian Property Monitors (APM) unpublished data.

Housing construction

The construction industry is a major driver of economic activity in Australia and can be used as a barometer of the overall confidence in the economy. Construction can be separated into three components, namely residential (houses, flats and renovations), non-residential (shops, offices factories, hospitals, etc) and engineering (roads and energy, etc). Figure 5.12 presents an index of the total value of building work in Tasmania and Australia, from 1985 to 2006. Three different periods are evident. From 1985 to 1997, Tasmania and Australia tracked each other, although Tasmania's values were lower for most of the period. After 1997, Tasmania experienced a sustained period of negative growth, in contrast to Australia's positive growth. This pattern continued until 1999. The strong performance of the Tasmania, with Tasmania's and Australia's building growth rates moving together again, and Tasmania having a slightly higher rate of growth. A drop in Tasmania is evident in 2005, which corresponds with the slowing down of Tasmania's domestic economy.



Figure 5.12 Total value of building work done index (trend), Tasmania and

Source: ABS Cat. 8752.0.

Residential construction is a significant sector of the construction industry and is impacted by a number of key factors. These include population, interest rates, the level of expectations in regard to the economy's performance, and return to capital for housing. Figure 5.13 shows the total value of residential and non-residential work done for Tasmania, from 1985 to 2006. Clearly, the construction of residential dwelling has a greater impact on the economic activity of the Tasmanian economy. Residential dwelling values increased until 1994, after which the value of work done declined until 2001. Again, the turnaround in the Tasmanian economy is evident with the substantial increase in the value of residential work over a very short period and a sharp rise in non-residential work. As previously described, the Tasmanian economy is beginning to slow from 2005 which is reflected in the stabilising of the value of work done.

Figure 5.14 reveals the real total value of residential components for Tasmania, from 1987 to 2006. Clearly, housing is the significant contributor. During the slow period for the Tasmanian economy, people were reluctant to enter the housing market. However, there was a spike to housing construction in 2000, corresponding with the introduction of the GST in June 2000, and this is the reason for the substantial drop in September 2000. From 2001, Tasmania experienced a sustained growth in the total value of residential housing. A number of factors may have contributed to the change, these include:

- low interest rates
- low price of similar quality Tasmanian housing relative to Australia, which attracted investment
- improvements in Tasmania's population growth rates and a positive net migration pattern
- positive growth in the Tasmanian economy raising the overall level of economic . activity.



Figure 5.13 Total value of residential and non-residential work done, Tasmania, March 1985 to December 2006

Source: ABS Cat. 8752.0.

Figure 5.14 Real total value of residential housing work done, other residential and alterations/additions, Tasmania, September 1987 to December 2006



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5.4 Expenditure

As previously stated, both income and wealth are sources of funds to finance current and future consumption. Income enables the purchase of goods and services directly, while wealth can be stored or liquidated to purchase assets which are unaffordable through income alone.

Household consumption is the largest component of GSP or GDP and is a barometer of economic confidence. Figure 5.15 presents a Consumer Sentiment Index (CSI) for both Tasmania and Australia from 1996 to 2005. The index is an evaluation of consumers' attitudes to five different aspects of their economic wellbeing.³⁹

The figure reveals a number of features:

- The volatility of Tasmania's CSI in comparison to Australia. This may reflect variance due to a smaller sample size.
- Two periods are evident for Tasmanian consumers, separated by a red line. First, from 1996 to 2000, Tasmanian consumers had a lower sentiment index than Australia customers as a whole. Second, after 2000 the CSI for Tasmania oscillates around a similar index level to Australia, illustrating an improvement in their expectations.
- Overall, Tasmania's CSI index is positioned below that of Australia the majority of the time; Tasmania's CSI had an especially high period in September 2003.
- No apparent seasonal fluctuations are evident.

The CSI illustrates the observations from Chapter 3, that shows a two-speed economy operating in Tasmania; namely, slow growth during the 1990s and stronger growth in the 2000s. The differences in the consumer sentiment for Tasmania should also be evident in expenditure patterns for the state. Expenditure patterns were analysed from two sources: *final household expenditure* from GSP estimates; and *Perspectives on regional Australia: household expenditure throughout Australia, 2003–04* (ABS 2006k). These datasets break down items consumed by households into common areas of expenditure. Presented is an analysis of *final household expenditure* only. A comparison between Tasmania and Australia found the two datasets to be similar and did not provide additional insight.

Figure 5.16 presents the composition of final household expenditure for 2003–06. The quarterly data was aggregated for a three year period to reduce volatility. The figure shows the similarities between Australia and Tasmania in the composition of expenditure by households. Only four categories show differences between Tasmania and Australia: *food; operation of vehicles; recreation and culture;* and *rent and other dwelling services*. The high consumer demand for *recreation and culture* items reflects increasing demand for electronic consumer items, such as televisions, radios, personal computers, cameras and telecommunications equipment.

^{39.} CSI is an average of five indexes, which include:

[·] a family's evaluation of their past and future finances

[·] expectations about one and five year economic conditions

[•] current buying conditions for major household items.

[•] assessment of future unemployment.

surveyed perception of buying conditions for cars, dwellings, savings and news about economic conditions (MI and Westpac 2007a).





Figure 5.16 Composition of final household expenditure, Tasmania and Australia, 2003–2006



Source: ABS Cat. 5206.0.

Source: MI and Westpac (2007b).

The contribution to the growth of *final household expenditure* from 1986–88 to 2003–05, for Tasmania and Australia, is presented in Figure 5.17. *Recreation and culture* has contributed the greatest increase in household expenditure for Tasmania. The other large contributors for Tasmania include: *rent and other dwelling services;* and *furnishings and household equipment*. Household expenditure items that grew more rapidly in the national economy than Tasmania include: *rent and other dwelling services;* and *insurance and other financial services*.





Source: ABS Cat. 5206.0.

As revealed in the changes in the consumer sentiment index, Tasmania's household spending has differed in its performance over the twenty year period. Figure 5.18 separates the expenditure items into three time periods, namely 1986 to 2005, 1990 to 2000 and 2000 to 2005, and presents their average annual growth rates. A number of features can be drawn about Tasmania:

- Over the longer time period, *communications* has had the greatest growth, with both the 1990s and 2000s having strong increases. Consumer demand for communications reveals an increase in preferences for items such as mobile phones and internet access.
- Three expenditure items with strong growth during the early 2000s are: *purchase* of vehicles; furnishings and household equipment; recreation and culture; and clothing and footwear. These items reveal a strong preference change by consumers towards discretionary expenditure, notwithstanding the fact that Tasmania's consumption began from a lower base.
- *Cigarettes and tobacco* have declined over all three periods.



Figure 5.18 Average annual expenditure growth, Tasmania, 1986 to 2005, 1990 to 2000 and 2000 to 2005

Source: ABS Cat. 5206.0.

Table 5.6 presents the contribution to GSP/GDP growth by household expenditure. Tasmanian household demand provides a greater contribution to GSP growth, especially in comparison to the national economy. It is a stable contributor in both economies. Two aspects of household expenditure for Tasmania that are different from Australia include:

- Household expenditure is a larger contributor to Tasmania's GSP/GDP than Australia's.
- Between the years 2001–02 and 2003–04, household expenditure for Tasmania contributed over 100 per cent to the growth in GSP. This is possible because of the negative impact of imports and the balancing item.
- Hence, household consumption has directly impacted on the recent growth of GSP, but remained a stable component over the slow growth period during the 1990s.

Table 5.6Final household expenditure contribution to GSP/GDP, Tasmania
and Australia

Final household expenditure	Tasmania Australia
	(per cent)
Contribution to GSP/GDP growth	
1990–91 to 2005–06	80.6 58.2
1990–91 to 2000–01	82.3 54.4
2000–01 to 2005–06	79.5 64.6
2001–02 to 2003–04	108.7 68.5
Sources: ABS Cat. 5220.0.	

5.5 Economic implications

The previous sections of this Chapter compared Tasmania and Australia in regard to four areas of household activity: income, employment, wealth and expenditure. This section investigates the economic implications of these potential drivers and their influence on the Tasmanian economy.

Household consumption is a very important determinant of economic activity. To understand the drivers of consumption in Tasmania and Australia, a large number of interrelated factors should be considered. Empirical investigations into the relationship between household expenditure and household disposable income have proposed the following generalisations:

- Over a long period of time the relationship between disposable income and consumption is stable.
- In the short run, changes in disposable income make consumption unstable and unpredictable.
- High income households spend a smaller proportion of their income on consumption than low income households (Collier and Batty 1990).
- Tasmania's household savings rate is lower than any state, except Queensland; its savings rate fell by 4.5 percentage points from 2000–01 to 2003–04, in comparison to 3.2 percentage points on the mainland (Eslake 2004).

In the case of Tasmania, consumption is a stable component of the growth in GSP and is the largest contributor (greater than the contribution of consumption to the national economy). Between the years 2001–02 and 2003–04 the household expenditure contribution to GSP increased substantially. This was particularly due to spending on discretionary items such as: *purchase of vehicles; furnishings and household equipment; recreation and culture; and clothing and footwear*. An indication of the changing willingness of Tasmanian households to spend was through the improvement in the Consumer Sentiment Index (CSI). Thus, Tasmanians have changed their spending patterns during the recent economic upturn, growing confidence in the economy and matching the patterns of household consumption in the national economy.

Consumption by households is further influenced by employment and wealth. Employment levels have improved in the Tasmanian labour market. In fact, employment started to increase from 1998, which could have provided a stimulus for the local economy until it slowed again. However, employment has again risen, which can be attributed to the increase in economic activity locally and nationally.

A household's level of consumption cannot be exclusively related to its income as wealth also plays an important role. A number of reasons have been proposed to explain this connection. First, wealthy households have a greater ability to borrow by using their existing assets as collateral. Second, wealthy households have access to a larger savings pool to support extra consumption. Third, wealthy households are able to spend a larger amount because they expect to have a relatively secured future. Moreover, increased financial security is an important determinant for households. In fact, Marks (2005) indicates that wealth is a more important determinant than income of whether a household is experiencing financial stress.⁴⁰

Housing prices have risen sharply for Tasmania, which directly impacts on the composition of wealth and on a household's consumption pattern. Empirical literature into the relationship between wealth and consumption shows a positive connection. Maclennan and Tu (1998) found that perceived declines in wealth (due to falling house prices) were significantly associated with declining consumption by individuals in the United Kingdom.

In Australia, two papers have found an association between wealth and consumption. Tan and Voss (2000:i) found that the '[a]bove-trend growth of wealth in recent years has contributed significantly to growth in consumption over this time'. Dvornak and Kohler (2003) state that a \$1 increase in per capita stock market wealth is eventually associated with an annual consumption increase of 6 to 9 cents, while a \$1 increase in housing wealth is associated with an annual consumption increase of about 3 cents. Hence, with Hobart average house prices increasing by \$78 746, from 2003 to 2005, would result in a \$2 362 increase in consumption.

Nevertheless, the rate of consumption growth in the Tasmanian economy may be slowing. As household consumption is a major contributor to the recent growth, this decline will directly and significantly impact on the Tasmanian economy.

Housing investment also directly affects economic activity. Property assets of households are the largest component of wealth and a connection has been made between economic activity and wealth. A connection of the construction market (both residential and non-residential dwelling approvals) with economic growth has been found in a number of studies. An early study by Boeham and Moore (1984) listed nine reliable indicators of economic activity, which include the All Ordinaries, manufacturing materials and dwelling approvals (cited in Smith 2005). The OECD (2002) conducted an update of the OECD composite leading indicators and found that, for Australia, dwelling approvals (dwelling permits issued) and the All Ordinaries (share price index) have consistently led Australian economic activity. Further, Smith (2005) found that dwelling approvals enhanced the forecasting of real GDP. Dwelling approvals for Tasmania are presented in Figure 5.19. The pattern of dwelling approvals mirrors the level of Tasmania's contribution to the national economy, with the declining period during the 1990s and the growth in the economy in the 2000s.

It is clear that the level of investment in housing in Tasmania was low during the 1990s and that dwelling investment had a negative impact on the growth of Tasmania's GSP. However, since 2001, Tasmanian investment into housing has substantially increased. Interestingly, following the literature by using dwelling approvals as an indicator of future economic activity, the drop in 2005 may foreshadow a decline in Tasmania's economic activity.

^{40.} Individuals were defined as being in financial stress if they experienced two or more types of cash flow problem since the beginning of the year, such as going without meals, not being able to pay mortgage or rent on time, asking for help from welfare/community organisations etc.



Figure 5.19 Tasmanian dwelling approvals, 1985 to 2005

Source: ABS Cat. 8731.0.

While income, employment, wealth and consumption affect household activity, other factors also impact upon them.

- Population is an important contributor to Tasmania's economic performance. The decrease and recent increase in population levels for the state is consistent with the changing fortunes in economic activity. Population directly influences household demand and investment. For example, Neukirchen and Lange (2005) found that strong growth in population and economic prosperity, along with decreases in interest rates, have driven the increases in the HPI. It should be noted that, for Tasmania, a causal relationship is difficult to disentangle, but a strong connection does exist.
- The low housing prices in Tasmania are appealing for mainlanders, which is the major source of the migration to Tasmania.
- Tourism has risen substantially for Tasmania since 2000–01, with interstate visitor numbers rising 65 per cent to 2006.⁴¹ Visitor expenditure is included in Tasmania's final consumption component, even though it can be interpreted as an *export*. Thus the increase in this consumption may overestimate the state's domestic demand. The tourism industry is investigated further in Chapter 6.
- An increase in consumption directly impacts on a business's decision to invest. REDI (TDED 2006a), a survey of Tasmanian businesses, shows that domestic demand is a primary consideration before choosing to invest. Thus a vicious or virtuous circle is created. This point is explored further below. It should be noted however, that the survey was dominated by non-exporting firms.

^{41.} Calculations are based on the Tasmanian Visitor Survey (Tourism Tasmania 2005 and 2007). A break in the time series exists between 2003–04 and 2005. The change is through Tourism Tasmania moving from a financial to a yearly calendar.

The factors of economic growth attributed to a household's economic activity, such as income, employment, consumer confidence, wealth and consumption, have all contributed to the recent growth and provide an understanding of the poor performance of the economy during the 1990s. These factors of economic growth are in turn influenced by the changes in population and investment.

The growth period illustrates a virtuous circle through increases in income, employment, expectations, consumption, investment and population. These factors have raised the level of economic activity in Tasmania, providing a momentum to the growth. Access Economics (May 2006a:13) describes the virtuous circle in Tasmania as follows: 'strengthening population growth fed rising housing prices, which fed strong retail spending, which boosted job growth, which in turn boosted population growth'.

Conversely, this pattern can also be a vicious circle as illustrated by the declining Tasmanian economy during the 1990s. After the recession, employment declines, this in turn lowered household income that flowed through to reductions in consumption. This lowered consumer demand that affected business activity and reduced confidence in the economy, which flows back to businesses unwilling to employ workers.

However, the growth of household income, wealth and consumption has failed to provide a foundation for future economic growth, even though they stimulate the economy. In the short term, declines or reduced growth are already evident for income, consumption and dwelling construction. Moreover, population increases are unlikely to continue at the same magnitude, which will result in a dampening of domestic demand.

5.6 Conclusion

This Chapter explored the activities of households and their effect on the Tasmanian economy. Clearly, households have been a strong source of the economic growth. The sources of the growth include household income, employment, consumption, wealth and growing confidence in the economy. The two contrasting periods of economic fortune for the state are illustrated by the growth and decline of these factors and the virtuous and vicious circles they can create.

Virtuous circles, of increases in income, consumption, wealth (primarily through housing) and population have all enhanced the improvement in the Tasmanian economy. However, this pattern can also be a vicious circle as illustrated by the declining Tasmanian economy during the 1990s. Households were discouraged to invest in housing because of uncertainty and declining value, which in turn lowers consumption, expectations and economic activity. Unfortunately, the growth of these factors, unlike productivity, does not provide a base for future economic growth, even though they do stimulate the economy.

House prices and consumer demand alone clearly cannot explain the whole reason for Tasmania's growth. Consequently, when the economy starts to slump, household activity alone cannot maintain the economy and an investigation into business activity is vital. This is examined in the next Chapter.

Box 5.2 Key points

- Household spending has been a vital component of Tasmania's recovery but also the low levels of household demand contributed to the underperformance during the 1990s.
- A vicious circle after the recession developed through declining employment, income, consumption, investment and business activity. A virtuous circle of increases in income, consumption, wealth (primarily through housing) and population have all enhanced the improvement in the Tasmanian economy subsequently.
- Improvements have occurred in Tasmania's labour market, through decreases in the unemployment rate, growth in employment and increases in households' incomes.

Chapter 6

Business activity



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Chapter 6 Business activity

Tasmania has experienced changing economic fortunes over the past two decades, which have influenced the behaviour of Tasmanian businesses. This Chapter explores the activities of Tasmanian businesses to provide an insight into their effect on the local economy.

The importance of business activity on Tasmania's economic development is examined from a number of angles. These include the state's industry structure, the introduction of large scale construction projects, the changing levels of business confidence and household demand.

Tasmania's business environment is outlined in section 6.1. Section 6.2 investigates the contribution of Tasmania's industries to economic activity. Section 6.3 discusses business investment. Section 6.4 covers selected industry developments. Section 6.5 considers the economic implications of Tasmania's business activity, with concluding remarks in section 6.6.

6.1 An island economy

As Tasmania is a small open economy, it is exposed to shocks occurring in the international arena. This exposure directly impacts on the local economy and can be both beneficial and detrimental to economic activity.

Tasmania is reliant on trade as a major source of income. Thus, changes in both domestic and international economies can alter the fortunes of the state. Tasmania's exports are primarily natural resources, in which it has a comparative advantage and long established industries. International exports represented 18 per cent of Tasmania's GSP in 2005–06, which is comparable to Australia's export share of GDP per cent. In addition, around 30 per cent of Tasmania's output is sent interstate (TDTF 2007a). Thus, nearly half of Tasmania's total output is for non-Tasmanian consumption, which means the small economy is substantially exposed in the event of any shocks.

Tasmania's image is of a very picturesque, 'clean and green' island and the state promotes itself to the world through a number of initiatives, covering immigration, investment and tourism. Tasmania's business credentials were to market foreign and domestic investors through the *Tasmanian Prospectus*, with former Premier Paul Lennon stating, 'Tasmania is open for business' (TDED 2006b:1). The prospectus promotes a number of features to distinguish Tasmania as a competitive globalised economy. The features identified as the key strengths of Tasmania's economy include infrastructure, investment opportunities and lifestyle.

Export industries are an important component of the small economy and are a great potential source of economic growth. Demand for exports provides a stimulus for an economy through increased economic activity by widening the total market for producers. Larger markets provide further potential access to capital. Tim Harcourt (2002), from the Australian Trade Commission, states that 'much of Tasmania's future prosperity will depend on exports and globalisation'.

However, as noted in the Tasmanian Government *Competition Index*, the state faces challenges by being a small island economy. Essentially:

'[a] major hindrance to Tasmanian businesses is the relative isolation of the State. For some businesses, such as those that rely primarily on overseas markets, the relative isolation of Tasmania may not be a problem. It is a constraint, however, on the establishment and growth of many businesses in the State. Tasmania's relative isolation causes problems in relation to the marketing of goods and services, reduced access to business and financial services, increased freight and air travel costs and, in some cases, difficulty in attracting skilled labour to the State' (TDTF 2005b:iv).

Small domestic demand

The business environment faced by Tasmanian firms can be characterised as similar to that faced by other small island economies: economic growth is influenced by the size of its domestic market and distance from major markets. A small domestic market is a particular challenge for local economic growth, because it limits the ability of industries or firms to take advantage of economies of scale, especially in the manufacturing and service sectors (Armstrong and Read 2004a).

Small domestic markets can also result in weaker levels of competition. Nixon (1997:163) states that many industries in Tasmania display 'lower levels of competition' than their mainland counterparts. This is compounded by a *branch economy*, with major employers controlled by interstate or overseas interests. Supermarkets, clothing and other retail chains are an example (ibid: 163). A consequence of this structure is that many key decisions are made outside the state.

Nixon (1997:163) further points out the 'archaic regulation which protects and entrenches the status quo position of particular industries'. Parts of this problem have been addressed through the *National Competition Policy* reforms introduced by the Federal Government, with cooperation from the state governments. The reforms resulted in state governments progressively removing anti-competitive legislation. For example, in 1999, a review of shop trading hours was established. This review resulted in the 2002 State Government deregulation of trading hours to enable traders to open 'when they choose, except for Christmas Day, Good Friday and the morning of Anzac Day' (TDTF 2007b). Regarding the implementation of the National Competition Policy (NCP) the State Government's performance in comparison with other jurisdictions has been described as 'excellent' (NCC 2004:xxiii).

Economies of scale

Tasmania faces the challenge of economies of scale because of its lower population levels and the dispersal of people across the state. In fact, the Commonwealth Grants Commission (CGC) (2004:34) has assessed Tasmania as having above average costs of providing services due to the 'diseconomies of small scale in service provision'.

A number of initiatives have been implemented to overcome Tasmania's lack of economies of scale through promoting and acknowledging the importance of the

interconnection between businesses, government and academia (DETYA 2000). For example, the Federal Government has a network of Cooperative Research Centres (CRC), which are designed to connect researchers with industry. The CRC for forestry has been established in Tasmania, to focus 'upon supporting environmentally sustainable, cost competitive, eucalypt plantation forestry' (CRC 2007). An example, of a Tasmanian Government initiative is the *Research Partnership Program* to encourage growth in technology, by fostering innovation and commercialising products, processes and services (TDED 2007b).

The benefits of promoting this connection include increasing the knowledge base, raising productivity and overcoming the lack of economies of scale by focusing on niche markets for exploitation. For example, Tasmania has a strong marine biotechnology base, along with world class aquaculture technologies and systems. This is supported by Johnson's (2003) study into agglomeration, which found Tasmania's marine industry was a cluster.⁴² His study also lists a gourmet food cluster in the Tamar Valley and King Island (Johnson 2003).

Wickham (2005) investigated Tasmania's shipbuilding cluster in Hobart to explore the role of State Government policies within Porter's Industrial Cluster Theory. The study covers various stages of the life cycle, particularly the development of Incat. A number of important points were raised for the role of government in promoting clusters. Wickham argued that the State Government should enhance the reputation of Tasmania, both domestically and internationally, as a centre for world class research and products. He also stated that the State Government should ensure that the development of innovative advancements remain the sole responsibility of the private sector firms that existed during the industrial cluster's initial formation (i.e. Clifford and his maritime friendship network).

Cluster promotion has become an integrated feature of the economic development programs across the country. However, as Rainnie and Grant (2005:15) point out, it is the current 'silver bullet' of regional development. The authors cite Kevin Morgan's study that clustering 'has moved from marginality to banality without encountering reality'. Fulop (2005:223), sourcing the Bureau of Industry Economics (BIE) report, states that the resource-based, export dominated, Australian economy 'was not a sector Porter saw as having the potential to create competitive advantage'.

Business climate

Over the whole study period, Tasmania has experienced changing economic fortunes. After the recession in the early 1990s, Tasmanian businesses did not recover as quickly as their national counterparts. Former Minister for Economic Development, Lara Giddings, describes this period as the worst economic performance in Tasmania's history (TDED 2005:5). This poor economic performance directly influenced the confidence of Tasmanian business, which affected their decisions to invest and their confidence in future demand and the State Government's ability to manage the economy. Rae (2002:33) provided a summation of Nixon's report as representing 'widespread despair about the poor prospects for the State, as well as a sense of inertia and lack of leadership on turning the State around'.

^{42.} A description of Porter's diamond and the theory of clustering in provided in Appendix A.

The poor confidence of businesses to invest was creating a vicious circle. The Tasmanian and Australian Chambers of Commerce and Industry conduct a time series survey into business expectations in relation to future economic growth. An index above 50 indicates stronger growth prospects for the economy; conversely a score below 50 indicates declining growth prospects (TCCI 2007a:2). Figure 6.1 presents the expectations index for Tasmania and Australia, from December 1995 to December 2006. Tasmanian businesses have typically had lower expectations in comparison to Australia. As expected, Tasmania's businesses expressed greater optimism for future economic growth from 2002 to 2004, which corresponds with Tasmania's improvement in economic activity. This is matched by the improvement in Profit Expectations surveyed by the ABS (2001b), with a minus 6.9 per cent Profit Expectation in the December guarter 2001, increasing to 15.3 per cent in March guarter 2002. This is comparable with the national economy, which increased from minus 1.1 per cent to 6.7 per cent. Tasmanian businesses clearly had a more favourable outlook. An indication of possible changing fortunes for the Tasmanian economy is present with the sharp decline in 2005 and 2006, a time of slowing economic growth.



Figure 6.1 Expectations index, Tasmania and Australia, 1995 to 2006

Source: TCCI Tasmanian Survey of Business Expectations, 2007a.

To expand on the various constraints confronted by businesses, Table 6.1 presents the results of two surveys, namely the Regional Economic Development and Investment (REDI) report (TDED 2006a) and the Tasmanian Survey of Business Expectations (TCCI 2006). These surveys questioned Tasmanian businesses on what they considered constrained their investment and future economic growth. The surveys identified two pressing constraints. First, labour costs were considered to be impediments for future economic activity, despite the fact that Tasmania has lower labour costs in comparison to other states. Second, a common constraint across Australia is also present in the Tasmanian economy—the availability of skilled employees. Skill shortages are well documented in Australia and impact on an organisation's ability to meet demand and can reduce production (BTRE 2006a; Shah and Burke 2003; Richardson 2005). Another

aspect is the difference between Tasmania's and Australia's level of human capital and its further impact on productivity. This latter point is explored in the next Chapter.

Table 6.1Five most important constraints to investment and business growth
for Tasmanian businesses

Redi report survey 2004–05		TCCI s	TCCI survey Dec–06			
Rank	Constraint	Rank	Constraint			
Ι.	Labour costs	Ι.	Availability of suitable qualified employees			
2.	Economic climate	2.	Wage costs			
3.	Availability of skilled labour	3.	Non-wage labour costs (super and workers comp etc)			
4.	Level of debt	4.	Insurance			
5.	Transport costs	5.	Business taxes and Government charges—State and Local			
-						

Source: TCCI Tasmanian Survey of Business Expectations 2007b and Redi report 2006.

Parochialism and the lack of a shared vision have been identified as a limiting factor in Tasmania's business environment. Three major regions have been identified as part of the parochial system: the South, the North and the North-West. The impact can range from non-cooperation, to duplication of services and lack of common goals. A clear disadvantage of operating in this environment is the lack of economies of scale to achieve an adequate level of efficiency, which is compounded by the fact that Tasmania is already a small economy. The State Government has attempted to address some of these impacts through local government partnerships.

The business environment faced by Tasmanian firms, like Australia, is constantly changing because of both international and domestic factors. Generally, Tasmanian firms have been negative about the state's economic performance but have grown in confidence in the early 2000s. Tasmania is presenting itself as an attractive destination for investment from both foreign and domestic investors. State Governments (the Bacon government particularly) have promoted Tasmania through a number of initiatives to outline what they perceive as the advantages of conducting business in the state. These initiatives also included the attraction of migrants, entrepreneurial expertise, tourists and innovative investment.

A State Government initiative for developing business activity in the state was the *Industry Development Plan* (IDP) in 1998. The plan was designed to be a 'structured and systematic approach' to strong economic growth (TDTF 2000). An example of the structured approach was the completion of industry audits covering 16 sectors, which was the first time in Australian history this was done (TDSD 2000a).

Exposure to international shocks

Tasmania has also become increasingly linked to the global economy through the actions of the Federal Government. Australia has pursued an opening up of the domestic economy, which has included reducing import barriers. In 1973, a 25 per cent universal reduction in tariffs occurred (Molnar 2003). This initial change was followed by various timetables for different sectors but the upshot was a substantial change in the economic environment for Tasmania's businesses. For example, the average manufacturing tariff in 1970 was 23 per cent, compared with an average of 2.4 per cent in 2000 (ibid 2003). The economic policy changes from the Federal Government directly impacted on Tasmania's relationship with the global economy.

Hill and McKern (1997) state that Australia transformed 'from one of the most inward-looking and protectionist countries, to one in which the liberal policy agenda is in the ascendancy' (cited in Molnar 2003: 13).

With exports representing a large component of its GSP, Tasmania as an open economy is subject to international economic shocks. For example, Tasmania was relatively more exposed to the Asian financial crisis, because around 8 per cent of Tasmania's GSP in 1998 were exports to the 'troubled Asian economies', in contrast to '4 per cent in NSW and Victoria' (Courvisanos 1999:49). Another example is movements in the Australian dollar. In 2001 the Australian dropped to a low of \$US 0.4833. This fall would make Tasmanian goods more competitive internationally, while making imports more expensive and possibly shifting domestic demand (RBA 2008).

Exports have ranged, as a share of GSP, from 13 per cent in 1989–90 to 18 per cent in 2004–05. This is comparable with Australia's export share of 19 per cent in 2004–05. Tasmania's share of Australia's exports in 2004–05 was 2 per cent (DFAT 2007:3). In contrast to Tasmania's substantially higher level of exports to imports, Australia consistently has a higher proportion of imports over exports.

It should be noted that the measures of exports and imports for Tasmania have a number of limitations. The import statistics, particularly, have severe restrictions, because overseas imports are often transhipped⁴³ to Tasmania. The recording of imports is completed once the goods are released from customs' control, but not necessarily where they are sold. Imports of goods are dominated by NSW and Victoria, which account for 68 per cent of Australian imported goods (DFAT 2007:vii). As a result, imports into Tasmania are underestimated, as only imports directly offloaded in Tasmania are recorded on the Tasmanian import statistics (ABS 2006c). The result is that an analysis of imports into Tasmania could be severely compromised.

Exports, on the other hand, are an important component of Tasmania's economy for which there are available data of good quality. Figure 6.2 presents the real income of exports for Tasmania, from 1989–90 to 2005–06 (2004–05 prices).⁴⁴ Changes in real exports can be interpreted as a change in the volume of goods exported. Clearly, goods provide the major source of income from exports. For Tasmania, services account for only 12 per cent of exports, in comparison to Australian services which comprised 24 per cent of total exports, in 2005–06. A striking feature of exports for Tasmania is their relatively stable nature when set in real prices, suggesting stability in volume, especially during Tasmania's growth period this century. Another feature is the jump in exports for the financial year 1997–98. This corresponds with the *Regional Forestry Agreement* for woodchips, which allowed unlimited export of woodchips and resulted in an increase of both volume and income (previously this amount had been capped).

^{43.} Transhipped refers to the transfer from one ship to another.

^{44.} The export statistics here are referred to as income but are from GSP calculated using the expenditure method.


Figure 6.2 Real export income by goods and services, Tasmania, 1989–90 to 2005–06

Figure 6.3 presents indices of unadjusted⁴⁵ and real exports (\$2004–05) of goods for Tasmania and Australia. A comparison of the real and unadjusted values of exported goods reveals two features. First, over most of the period the movement of the unadjusted and real values track for both Tasmania and Australia, but Tasmania has had slower export growth. Second, after 2003–04, the unadjusted values of exports increase for Tasmania in comparison to exports at real values. In the case of Australia, differences between real and unadjusted values are evident from 1999.

The rise in the Australian market corresponds with the rise in demand for service exports, particularly due to the Sydney Olympics, and minerals (ABS 2003). The rise after 2003–04 partly reflects the rise in commodity prices (especially in the case of Tasmania's commodity export mix in base metals). Figure 6.4 presents the index prices for base metals from the Reserve Bank of Australia. Clearly, the base metal index has increased sharply since 2002–03, due to increased demand from foreign markets, particularly China. This index comprises five base metals which include zinc, aluminium, lead, nickel and copper. Three of these base metals⁴⁶ represent a substantial proportion of Tasmania's exports (refer Table 6.2).

It should be noted that this increase has occurred after the strongest growth period for Tasmania, but it may be keeping the Tasmanian economy moving ahead.

Source: ABS Cat. 5220.0.

^{45.} Unadjusted values refer to current prices.

^{46.} Aluminium, copper and zinc.



Figure 6.3 Index of current and real export of goods, Tasmania and Australia, 1989–90 to 2005–06

Figure 6.4 Base metals commodity price index, 1990–91 to 2005–06



Source: Reserve Bank of Australia Index of Commodity Prices, May 2007.

Tasmania's international exports are chiefly raw materials and their processed products (ABS 2006c). Table 6.2 presents the major commodities exported for 2004–05. The two highest FOB⁴⁷ valued exports for Tasmania are zinc and aluminium, which have remained important commodities for Tasmania over many years. Other important minerals include copper and iron ore. Primary products from the agriculture, forestry and fishing industries represent the remaining top ten. These major exports, including the combined confidential items,⁴⁸ represent 82 per cent of FOB value for Tasmanian exports.

Tasmania's comparative advantage over a long period has been in the natural resources sector. Therefore, changes in these industries have a significant impact on Tasmania's economy. As previously highlighted in Figure 6.4, the base metals price index has substantially increased in the past three years. Conversely, during the slow period of Tasmania's economy during the 1990s, base metals had periods of falling prices.

Table 6.2Major Tasmanian overseas exports by commodity and FOB value,
2004–05

Commodity	2004–05
	Value (FOB) (\$ million)
Zinc	391.7
Aluminium	382.7
Copper ores and concentrates; copper mattes, cement copper	150.0
Meat of bovine animals, fresh, chilled or frozen	133.0
Crustaceans, molluscs, aquatic invertebrates, live, chilled, frozen, dried, salted; crustaceans, cooked	88.9
Wood in chips or particles and wood waste	76.8
Cheese and curd	62.2
Ores and concentrates of base metal (excl. iron, copper, nickel, aluminium, uranium and thorium)	48.9
Iron ore and concentrates	46.8
Veneers, plywood, particle board, and other wood	43.8
Combined confidential items	796.1
All other commodities	418.8
Source: Unpublished ABS data.	

A consequence of this exposure to global markets, however, is the reliance on the economic performance of its trading partners and on the prices of key commodities. For example, the prices available for Australia's exports will influence the level of economic activity. Figure 6.5 presents the chain price index for Australia's exports of goods and services, from 1985–86 to 2005–06.⁴⁹ The price index from 1989–90 to 1999–2000 was very stable, with movement in prices occurring after 2000–01. These stable prices did not assist in stimulating the Tasmanian economy.

In contrast, as identified previously in the commodity price index, the export price index rose from 2000–01. This increase in commodity prices corresponds with the Tasmania's growth this decade. The question then arises: did the increase in export prices drive Tasmania's economy recovery?

^{47.} Free on Board (FOB) refers to production and other costs incurred to the point where goods are loaded for international carrier export.

^{48.} Confidential items are exports (or imports) where a restriction has been placed on a commodity. An example of a restriction is when an individual or organisation requests the protection of the data confidentiality.

^{49.} The price index measures changes in the prices of all exports of merchandise from Australia.



Figure 6.5 Chain price indexes for exports of goods and services, Australia, 1985–86 and 2005–06

Source: Reserve Bank of Australia Price Index GO4 other price indicators.

Figure 6.6 presents Tasmania's GSP (nominal) index, Tasmania's total exports index and the value of Japanese purchases of Tasmania's exports.

Tasmania's two-speed economy is evident with the steady increase from 1989–90, through to the higher level of economic activity from 2000–01. Generally, Tasmania's exports correspond with the performance of the local economy except for the growth in exports in 1997–98, and to the slowing period after 2003–04. This is significant because of the importance of exports for Tasmania, especially in an environment where there is downward pressure on State Final Demand resulting from a declining population in the 1990s (TDTF 2001).

The changes in Tasmania's exports match the changes in the export price index, especially the slow period from 2000–01 to 2003–04. This slowing in Tasmania's exports is in contrast to the increase in Tasmania's GSP. This suggests that exports have not played a substantial role in Tasmania's recent economic performance, but growth in commodity prices are helping to maintain the growth of the Tasmanian economy in the face of little change in export volumes. The increases in exports for Tasmania from 2003 have come from economies such as China, to which exports have increased 203 per cent, from 2002–03 to 2005–06.

Another factor is the economic performance of Tasmania's trading partners, particularly Japan. In 2005–06, the three largest export markets for Tasmania include Japan (19.4 per cent), Hong Kong (15.3 per cent) and Republic of Korea (11.3 per cent). Japan has been Tasmania's major trading partner over a long period. This trading partner has had a poor performing economy over an extended period of time and Japan could not maintain its consumption of Tasmanian exports. In 1988–89, Japan represented 38 per cent of Tasmania's export share and this has fallen to 19.4 per cent in 2005–06. This drop in Japanese consumption of Tasmanian products impacted on the performance of Tasmania's economy through loss of income and costs of locating new markets.



Figure 6.6 Tasmania's exports, exports to Japan, and GSP growth rates, 1989–90 to 2005–06

Transport

Callaghan (1977:3) states that as 'Tasmania is an island, sea and air transport is indispensable' and separation from the mainland was a 'major economic disability'. As Tasmania is heavily reliant on exports and access to foreign markets, shipping links are vital for the state. Tasports (2007) states that exports represent about 65 per cent of Tasmania's freight trade.

Tasmania's access to markets is via Bass Strait. The operation of Tasmania's ports is controlled by the Tasmanian Government through the Tasmanian Ports Corporation Pty Ltd (Tasport). This corporation emerged through the amalgamation of four authorities (Hobart, Launceston, Burnie and Devonport) in 2006. Twelve ports are scattered around the state, with each port generally having their own specialisation. For example, Devonport accommodates interstate passenger ferries, cement and wheat grain, while Triabunna ships woodchips and timber products.

To ensure Tasmania is not disadvantaged by Bass Strait, the Tasmanian Freight Equalisation Scheme (TFES) was introduced in 1976, and has undergone a number of changes over time. Its intention was to ease the freight costs of moving 'eligible' nonbulk goods between mainland Australia and Tasmania.⁵⁰ The Productivity Commission (2006:XIV) reports that Tasmania's producers are heavily reliant on shipping to the mainland and the cost of shipping a container across Bass Strait 'can be more than double the cost of road transport for a similar distance on the mainland'. However, the Productivity Commission (2006:XIV) argues that 'there is no sound underlying

^{50.} The subsidy does not apply to the shipment of consumer goods, bulk freight, imports and exports. Productivity Commission (2006) measures about 40 per cent of containers receive TFES assistance.

economic rationale for the scheme'. They suggest that the sea freight subsidy may not be economically efficient for broader regional development objectives.

While the majority of freight is by sea, an increasing but small proportion is moved by air. These items include pharmaceuticals, salmon, rock lobsters, cheese and other specialist foodstuffs (ABS 2006c). Air freight movements are used for just-in-time stock control, perishable commodities and, especially, high value to weight ratio products.

Synopsis of observations

The section covered a range of features for businesses in Tasmania's economy such as:

- Tasmania is a small open economy reliant on trade as a major source of income.
- It faces challenges relevant for small island economies, such as small domestic demand, volatility and lack of economies of scale.
- Tasmanian business confidence has mirrored the performance of the state's economy.
- Tasmanian goods are the major source of income from exports, while Tasmanian services account for a small proportion.
- Tasmanian exports have been relatively stable, especially during Tasmania's growth period this century.
- Sea fright between Tasmania and the mainland is subsidised through the Tasmanian Freight Equalisation Scheme (TFES).

6.2 Industry income

Industry structure directly impacts on a region's economic performance. The changing fortune of industries influences composition and speed of economic growth. To consider the changing nature of industry an alternative calculation of GSP is used: Total Factor Income (TFI) by industry. TFI is derived by summing factor incomes⁵¹ and adding taxes less subsides to obtain GSP at market prices (ABS 2000).

Listed below are a number of broad descriptive statistics of TFI for the Tasmanian economy.

- Tasmania's TFI stands at \$15.5 billion, as at 2005–06.
- The average annual growth rates, from 1990–91 to 2005–06, were 4.8 per cent and 5.9 per cent for Tasmania and Australia respectively.
- The average annual growth rates, from 1990–91 to 1999–00, for the slow growth period were, 3.5 per cent and 5.2 per cent for Tasmania and Australia respectively.
- The average annual growth rates, from 2000–01 to 2005–06, for the strong growth period were, 7.9 per cent and 7.1 per cent for Tasmania and Australia respectively.

^{51.} Factor income includes compensation of employees, gross operating surplus and gross mixed income (ABS 2000).

Figure 6.7 presents the overall TFI growth rates for Tasmania and Australia, from 1989–90 to 2005–06. Clearly, Tasmania has had a slower increase, with a number of periods having negative growth. As expected, the TFI reflects the changes that occurred in the expenditure based measure of GSP outlined in Chapter 3, and the two-speed economy is evident. Noticeably, a large drop occurs for Tasmania from 1998–99 to 2000–01. This drop was primarily due to four industries: *manufacturing, construction, mining* and *retail trade*.



Figure 6.7 Index of Real Total Factor Income (TFI), Tasmania and Australia, 1989–90 to 2005–06

TFI can be separated by industries and the following section considers changes from 1989 to 2006. To reduce yearly variability, three year averages will be taken, as described previously in Chapter 4. As such, 1990–93 refers to the average of three yearly estimates (1990–91, 1991–92 and 1992–93). Figure 6.8 presents each industry's share of TFI for Tasmania and Australia, for 1990–93 and 2003–06. Overall, industries in Tasmania and Australia are similar in their proportions of TFI. Four industries with obvious differences between Tasmania and Australia include:

- *Property and business services* for Australia grew to represent 13 per cent of TFI in 2003–06 from 10 per cent in 1990–93, while the Tasmanian industry remained at 6 per cent for both periods.
- *Manufacturing* is the largest component of Tasmania's TFI, but like Australia this industry has declined from a high of 17 per cent in 1990–93 to 15 per cent in 2003–06.
- *Agriculture, forestry and fishing* increased its proportion of Tasmania's economy by two percentage points, while the TFI share for Australia declined.
- *Mining* represents a greater proportion of the national economy than the Tasmanian economy.

Source: ABS Cats. 5220.0 and 5204.0.

Figure 6.8 Industry proportion of real TFI, Tasmania and Australia, 1990–93 and 2003–06



Source: ABS Cats. 5220.0 and 5204.0 (a) Ownership transfer costs comprises stamp duty, real estate fee etc; (b) Government administration and defence refers only to the compensation of employees; and (c) General government represents the gross operating surplus of all general government operations in all industries.

The following section considers the percentage contribution of each industry to the growth in TFI⁵² over two separate time periods. These are the recession and slow recovery period (1990–93 to 1997–00) and the growth period (1999–02 to 2003–06). Figure 6.9 presents the contribution to growth by industry for Tasmania and Australia, from 1990–93 to 1997–00. This figure demonstrates the differences in the fortunes of industries in Tasmania and Australia.

Four of the strongest contributors for Tasmania (*Agriculture, forestry and fishing, Health and community services, Manufacturing* and Ownership of dwellings) provided a substantially lower contributing level for Australia. Of particular note is the *Agricultural, forestry and fishing* industry because of its greater significance for Tasmania both in terms of size and growth.

Government administration and defence and industries with a high level of government presence (*Health and community services* and *Education*) are both higher for Tasmania than their contribution to the Australian economy. This may reflect the stronger presence of government in the provision of services for the state. For example, health expenditure may be higher because of an increasingly ageing demographic and a dispersed population. General government is lower but is very small overall in comparison to the above mentioned industries.

^{52.} Contribution is calculated as the change in industry factor income divided by the change in TFI.

Figure 6.9 Contribution to real TFI growth by industry, Tasmania and Australia, 1990–93 to 1997–2000



Source: ABS Cats. 5220.0 and 5204.0.

Several industries which contribute very little towards Tasmania's TFI growth in comparison to Australia are *Property and business services, Finance and insurance, Construction, Wholesale trade* and *Transport and storage*. The significant gap in *Property and business services* reflects the state's slow recovery from the recession in the early 1990s. This industry in particular provided the stimulus for the national economy through increased employment and reflects the international transition towards services industries.

However, Figure 6.9 hides a fundamental difference between Tasmania's and Australia's industry growth; that is, individual industry's growth rates are very different between Tasmania and Australia. For example, the average annual growth from 1990–91 to 1999–00 for:

- *Agriculture, forestry and fishing* was 7.4 per cent and 3.1 per cent for Tasmania and Australia respectively.
- *Property and business services* was 0.0 per cent and 6.2 per cent for Tasmania and Australia respectively.
- *Construction* was minus 1.2 per cent and 3.4 per cent for Tasmania and Australia respectively.

The recent increase in economic activity in the Tasmanian economy is evident for most Tasmanian industries. Figure 6.10 presents the contribution to growth by industry for Tasmania and Australia, from 1999–02 and 2003–06.

A number of industries stand out as having changing fortunes. First, *Agriculture, forestry and fishing* was the main growth contributor in Tasmania's slow 1990s' growth period. But in the latter period it is the only industry with a negative effect on TFI growth. Second, *Construction* had a negative effect on growth during the 1990s, while

in the 2000s it contributed 11 per cent towards TFI growth. This may be due to the large construction projects undertaken during this period and increases in housing construction. The large construction projects are discussed in section 6.3. Third, *Property and business services* and *Finance and insurance* were poor performers for the Tasmanian economy in the earlier period, especially in comparison to Australia. However, these industries, while not as strong as the national economy, have contributed towards Tasmania's economic growth this decade. Fourth, *Manufacturing* has provided a strong contribution towards Tasmania's economic growth, particularly in comparison to Australia's. An investigation into Tasmania's manufacturing industry is presented in section 6.4.

Government administration and defence, Health and community services and *Education* have strong growth for both periods. These industries illustrate the continuing importance of government towards Tasmania's economy.

An industry with strong growth for the Australian economy is *Mining*. This industry has benefited from increasing demand and hence increasing prices. While Tasmania has a mining industry, the states of Western Australia and Queensland are dominating the contribution to Australia's TFI.





Source: ABS Cats. 5220.0 and 5204.0.

The analysis of industry structure reveals a number of differences between Tasmania and Australia. To further understand the impact of these differences, a shift-share analysis has been included.

Shift-share analysis

Shift-share analysis is used to examine the competitiveness of a region's industries and to analyse the local economic base. A number of factors can be used, such as output levels, employment levels and income levels. Two different datasets were considered for Tasmania in regard to industry structure: employment, and factor income at the industry level. Presented is the shift-share analysis for income (TFI), as the employment analysis revealed similar results.

The technique of shift-share analysis enables a comparison between a local and larger (usually national) economy to identify differences in the total shift. Basically, the total shift measures the region's changing economic position relative to the reference area (Dinc, Haynes and Qiangsheng 1998:277). In this study a dynamic shift share is presented and is defined in Appendix C. A dynamic shift-share analysis decomposes the total shift into three components:⁵³

National growth share refers to local employment growth that is attributed to national economic growth. Therefore, if the national economy is experiencing TFI growth, it would be expected to have a positive impact on the local economy.

Industrial mix⁵⁴ reflects differences in the industry *mix* between the local and national economies. It shows the degree to which local areas specialise in industries that are fast or slow growing nationally.

Local share⁵⁵ describes the extent that local factors aid a local economy's strength and improve a region's competitive position. It enables us to determine, by looking at the local share component, which industries are performing well locally. It is regarded as an important component because it is unique to the region and enables the focus to remain on the region in question (Harris., et al 1994).

Table 6.3 presents the results of a dynamic shift-share analysis for Tasmania's TFI by industry for two periods; the recession period covering 1989–90 to 1994–95, and the growth period from 1999–2000 to 2004–05. A summary of the results is presented below, which is followed by a closer analysis of particular industries.

- The national share shows that most of the change in Tasmania's TFI can be ascribed to the national rate of TFI growth. The growth in the national share is \$1 billion (1989–90 to 1994–95) and \$1.9 billion (1999–2000 to 2004–05) for the Tasmanian economy.
- The industry share illustrates the change in Tasmania's TFI if those industries had grown at the same rate as their national counterparts. Thus, as both periods are negative values, it illustrates that Tasmania contains a relatively large share of industries that are slow growing nationally. The industry mix estimate means that Tasmania has nearly minus \$194 million lower income than it would have had if its industry mix paralleled the national industry structure.
- The local share component for Tasmania reveals a change in the competitive position of the state. In the early period, covering the recession, the local share resulted in a loss of minus \$240 million. In contrast, the latter period shows the local share having a positive effect on TFI with a positive growth of \$350 million.
- 53. Dynamic shift-share components are identical to those used in a comparative or traditional shift-share analysis.

^{54.} Industrial mix is also known as composition shift or structural effect.

^{55.} Local share is also known as regional share, differential shift or competitive effect.

Overall the shift-share analysis reveals that Tasmania's TFI growth has been slowed by its industry mix, which supports the analysis of each industry's contribution to TFI growth. Interestingly, local share has changed from a negative effect to positive, suggesting an improvement in Tasmania's competitive position as local factors have benefited the state this decade.

Taking a closer look at the various industries a number of observations can be made:

- Agriculture, forestry and fishing is a large industry for Tasmania and the analysis reveals that this industry mix has slowed Tasmania's rate of TFI growth relative to the rest of Australia.
- Tasmania's large *manufacturing* industry is slowing the growth of Tasmania's TFI, but the positive local share reveals an improvement in the competitive position of Tasmania's manufacturers since 2000.
- Having a *mining* industry in Tasmania has raised Tasmania's TFI but has been slowed by local factors, such as underground versus open cut mining.
- Two industries, *finance and insurance* and *property and business services*, illustrate the changing nature of the local share with a transition from a negative to positive contribution to Tasmania's TFI.

In summary, a contributing factor for the state's slow recovery was its industry structure. Tasmania's industry composition was heavily weighted towards slow or declining industries, which hampered economic growth. However, during Tasmania's growth period most industries contributed positively towards Tasmania's TFI.

Regional shift-share

This section presents a shift-share analysis for employment at the regional level. Table 6.4 presents the results of a shift-share for four separate regions in Tasmania over two periods, from 1991 to 2006, in five year intervals. Overall, the state share component has had the greatest positive influence on Tasmania's regional economies. Clearly, the two-speed economy is evident at the regional level with total employment substantially lower during the 1990s, in contrast to strong positive growth in all regions this decade.

Hobart displays the strongest economy in terms of employment. It was the only region for which the three components were largely positive, with the exception of industry mix from 1996 to 2001, and local share from 2001 to 2006. Along with Hobart, Launceston experienced positive total employment growth for all periods but not to the same degree.

In contrast, Burnie and Devonport and Balance of Tasmania did not perform as well in relation to Tasmania's employment. During the 1990s, these regions had very small increases or negative employment changes. Strikingly, Burnie and Devonport's local share declined by 1197 jobs from 1996 to 2001, suggesting a poor competitive position for this region.

Industry division	1989–90 to 1994–95 (\$ million 2004–05 prices)					
,	National share	Industry mix	Local share	Total		
Agriculture, forestry and fishing	59	-247	154	-35		
Mining	22	20	-86	_44		
Manufacturing	189	-128	-170	-109		
Electricity, gas and water supply	63	-64	86	85		
Construction	72	-91	100	82		
Wholesale trade	46	8	6	33		
Retail trade	101	49	61	211		
Accommodation, cafes and restaurants	29	21	20	70		
Transport and storage	50	25	-54	21		
Communication services	33	14	-9	38		
Finance and insurance	55	51	-42	65		
Property and business services	63	49	-147	-35		
Government administration and defence	52	8	-6	55		
Education	55	38	-52	42		
Health and community services	79	78	-43	114		
Cultural and recreational services	13	17	-19	11		
Personal and other services	21	26	-27	20		
Total	1004	-141	-240	623		
Industry division	1999–2000 to 2004–05 (\$ million 2004–05 prices)					
	National share	Industry mix	Local share	Total		
Agriculture, forestry and fishing	167	-52	-80	36		
Mining	36	60	84	12		
Manufacturing	348	-268	81	160		
Electricity, gas and water supply	113	-26	29	116		
Construction	94	37	56	187		
Wholesale trade	78	-2	10	86		
Retail trade	162	-59	-11	91		
Accommodation, cafes and restaurants	60	-22	22	60		
Transport and storage	91	13	90	194		
Communication services	61	-56	2	7		
Finance and insurance	116	70	67	253		
Property and business services	124	10	69	204		
Government administration and defence	110	25	47	182		
Education	106	-15	53	144		
Health and community services	183	79	-7	255		
Cultural and recreational services	27	19	I	47		
Personal and other services	43	-9	4	39		
Total	1917	-194	350	2073		

Table 6.3 Dynamic shift-share analysis, 1989–90 to 1994–95 and 1999–2000 to 2004–05

Source: BITRE analysis of ABS Cats. 5220.0 and 5204.0.

However, the stronger performance of the Tasmanian economy this decade has lifted Burnie and Devonport and Balance of Tasmania employment. In conjunction with the state's share having a positive effect for Burnie and Devonport, the local share has played an important role in this regions employment gains.

This matches the findings of Mitchell and Carlson (2005), who conducted a dynamic shift-share analysis into employment growth across metropolitan and regional Australia at the state level, from 1985 to 2003. They found that national factors

dominated 'changing industry structure and unspecified local factors also play a significant role in explaining' outcomes (ibid:25). Three broad types of employment experience were specified, in which Tasmania was classified as a low growth region with a negative industry mix and regional share effects. Regions categorised as such 'would appear to require targeted regional industry, infrastructure and job creation strategies' (ibid: 39).

Shift share	State share	Industry mix	Local share	Total
1991 to 1996				
Hobart	2 136	796	775	3 707
Launceston	I 079	236	-109	I 206
Burnie and Devonport	841	-276	-481	84
Balance of Tasmania	448	-765	-184	-501
1996 to 2001				
Hobart	244	-436	I 485	292
Launceston	121	261	265	647
Burnie and Devonport	92	290	-1 197	-815
Balance of Tasmania	47	-116	-553	-621
2001 to 2006				
Hobart	10 139	I 489	-903	10 724
Launceston	5 053	-420	88	4 721
Burnie and Devonport	3 690	-371	1 039	4 358
Balance of Tasmania	I 893	-697	-224	972

Table 6.4Shift share analysis of Tasmania's regions, 1991 to 2006

Source: BTRE Industry Structure Database (2003a).

A closer examination of differences in industry employment is presented below; a summary of these results are in Appendix C.

- *Manufacturing employment* is the largest contributor to Burnie and Devonport's negative result for industry mix and local share from 1991 to 2001. In contrast, Burnie and Devonport's *manufacturing* employment has risen this decade from the state and local share, while the other Tasmania's region in the *manufacturing* sector experienced negative or slow employment growth.
- Hobart and Launceston's *retail trade and property and business services* provided strong growth in employment, particularly through the industry mix.
- *Construction* employment has risen for all regions this decade after slow growth during the 1990s.
- Government administration and defence for Hobart had changing fortunes. During the early 1990s, strong growth is evident with 1585 additional jobs, this is followed by a decline by 2184 jobs. Then this decade employment has grown again by 3383. Theses results are primarily driven by the industry mix result.
- In Balance of Tasmania, the industry mix had a strong influence on the negative growth from 1991 to 1996. These industries include *electricity, gas and water, mining, government administration and defence* and *manufacturing*. Growth industries included *accommodation, cafes and restaurants* in relation to local competitiveness and *property and business services* for industry mix.
- The contribution of local factors to Balance of Tasmania was the main driver of the loss of employment. However, the largest single decline in employment occurred in *mining* for industry mix.

Overall the shift-share analysis reveals the difference in the economic performance across the state. Hobart and Launceston had strong growth during both periods, while Burnie and Devonport and the balance of Tasmania were in a more difficult economic position during the 1990s.

6.3 Investment

Investment forms the foundation for future economic activity and is an important driver of growth. But investment is very volatile because it is based on the expectation of future returns for investors. Access Economics (2005:107) describes business investment as the simplest indicator of corporate confidence.

This decade reveals that Tasmania's *Total Private Business Investment* (TPBI) increased substantially and outpaced the national growth rate. The average annual growth rates from 2000–01 to 2005–06 were 17 per cent and 12 per cent for Tasmania and Australia respectively (ABS 2006a). In contrast, for the previous five years, TPBI stood at an average annual growth rate of 3 per cent and 6 per cent for Tasmania and Australia.

The two largest components of TPBI are *machinery and equipment* and *non-dwelling construction*, representing 90 per cent of expenditure. Figure 6.11 presents the *machinery and equipment* and *non-dwelling construction* indices for Tasmania and Australia, from 1989–90 to 2005–06. As expected, a clear difference is evident between Tasmania and Australia for *machinery and equipment*. This reflects the reluctance in the early and mid-1990s of Tasmanian businesses to invest in new assets. This may be due to a combination of the declining manufacturing industry, low consumer demand and pessimistic expectations of future economic activity.

Figure 6.11 Machinery and equipment and non-dwelling construction investment index, Tasmania and Australia, 1989–90 to 2005–06



As Tasmania is a small economy, it is common to have greater volatility in business investment than more functionally diversified economies. For example, large fluctuations in investment can result from the commencement and termination of large scale investment projects. For example, the gas pipeline and the Basslink electricity project construction commenced in October 2001 and July 2003 respectively. This is reflected in Figure 6.12, which presents non-dwelling construction for engineering projects and machinery and equipment investment. Clear spikes in new engineering construction projects are evident in both 2001–02 and 2004–05. A description of the two large projects is below. Investment in *machinery and equipment* was slow during the 1990s but begins to improve after 1998, which matches the improvement in business expectations.



Figure 6.12 Non-dwelling construction for engineering construction and machinery and equipment, Tasmania, 1989–90 to 2005–06

Source: ABS Cat. 5220.0.

A number of large construction projects were commissioned by government under public-private partnership agreements. Three projects of particular note are:

- In 1998, the State Government of Tasmania partnered a project with private industry to connect a gas pipeline between Tasmania and Victoria. Duke Energy Australia Pty Ltd was appointed preferred developer, with McConnell Dowell Corporation Ltd and Nacap completing the onshore section and Allseas Construction Contractors completing the Bass Strait submarine section. Pipeline construction commenced October 2001 and was completed in September 2002, at a cost of A\$440m (BlueScope Steel 2007).
- Included with the gas pipeline is the *Connect Tasmania* network, which involves 420km of fibre-optic connecting North, North West and Southern Tasmania (IRIS 2007a).

- In partnership with the State Government, Basslink Pty. Ltd. started construction of an electricity cable between Tasmania and Victoria in March 2003, to enable Tasmania to enter the National Electricity Market. The project was completed in April 2006 and according to National Grid (parent company of Basslink Pty Ltd) construction costs amounted to £323 million (\$702 million (1AUD = 0.46GBP)) in 2005–06 (National Grid 2006:55). In relation to employment it was estimated to employ up to 360 persons in Tasmania during the construction phase (TDED 2003).
- Simultaneously the Basslink project incorporated a fibre optic cable to provide greater telecommunication access.

The impact of investment into the Tasmania economy has been to boost economic activity. More particularly, investment into *machinery and equipment* started to improve in 1998, which have been supported by the large projects introduced after 2001. As such, these factors have contributed to the economic growth for Tasmania.

6.4 Industry developments

This section discusses a number of key developments in selected Tasmanian industries over the study period. The emphasis of this analysis is on changes and drivers of the Tasmanian economy, rather than providing a profile of the different industries.

Manufacturing

Key features

- Manufacturing represents 14 per cent of Tasmania's TFI as at 2005–06.
- Employment in manufacturing is just over 20 000 as of November 2006, or 9 per cent of the workforce.
- 29 per cent of manufacturing jobs are in food product manufacture (ABS 2007f).

Manufacturing has undergone significant restructuring but remains a substantial contributor to Tasmania's and Australia's economies. Yet, other sectors in the economy have grown faster, 'so that the share of manufacturing has fallen steeply' (Productivity Commission 2003:15). The manufacturing employment share has declined by an even greater amount than its output share for both Tasmania and Australia (Productivity Commission 2003:15). Productivity Commission (2003:XVIII) suggests a number of causes for the fall in the relative importance of manufacturing employment, which is applicable across Australia, namely:

- higher relative labour productivity
- strong job growth in the service sector
- import competition from lower wage developing economies.

To illustrate the shock that has occurred in Tasmania's manufacturing industry. Figure 6.13 presents employment in manufacturing for Tasmania, from 1985 to 2006. The recession in 1991 and 1992 resulted in a substantial loss of 8000 jobs, representing a percentage change of minus 26 per cent. After this drop, Tasmania's manufacturing employment has moved between 20 000 and 25 000 jobs. Courvisanos (1999:50) suggests 'traditional sector decline is everywhere in Tasmania, particularly closures of the Burnie pulp mill, Comalco aluminium wheels and Coats Paton wool processing'.



Figure 6.13 Manufacturing employment, Tasmania, 1985 to 2006

Decomposing manufacturing further reveals differences between Tasmania and Australia by activities. Figure 6.14 presents the share of Industry Value Added (IVA) of different manufacturing activities for Tasmania and Australia in 2004–05. IVA represents the value added by an industry to the intermediate inputs; in other words, the contribution by businesses to GSP. Three industries dominate the Tasmanian manufacturing sector, namely *metal products, wood and paper products* and *food, beverage and tobacco* manufacturing. As expected, at this more detailed level of decomposition Tasmania's manufacturing is less diverse than Australia's.

Wood and paper products have been long established in Tasmania. For example, in 1938 the Associated Pulp and Paper Mills Ltd (APPM) started production of 'fine paper' in Burnie (Robertson and Trace 1983). A pulp mill also operated in Wesley Vale, close to Devonport. This industry benefited from substantial protectionism but tariff controls started to be reduced in 1960 with a subsequent 25 per cent reduction in tariffs in 1973, which has been described as 'traumatic for the paper industry' (ibid:120).

During the 1980s APPM, attempted to construct a new mill in Wesley Vale, to replace the Burnie mill but became it 'a politico-emotional battleground' and was subsequently dropped (Barnett 1999). In 1993, APPM was sold to AMCOR, following strikes at the Burnie mill in 1992. The Burnie pulp mill was finally closed in 1998. In

Source: ABS Cat. 6291.0.55.003.

2001, *Australian Paper*, a subsidiary of Paperlinx, took over the operation of two mills in Tasmania, in Burnie and Wesley Vale (IRIS 2007b).

Figure 6.14 Manufacturing sector IVA proportions, Tasmania and Australia, 2004–05



Source: ABS Cat. 8221.0.

To illustrate the composition of the manufacturing sector in Tasmania, consider the IVA per person employed over time. Table 6.5 presents the IVA per employee for Tasmania and Australia for 1992–93 and 2004–05. Most sectors raised their level of IVA per employee over time for both Tasmania and Australia. Importantly, the three manufacturing industries that dominate in Tasmania have higher or comparable estimates to Australia. For example, the *metal product* sector has a 34 per cent higher IVA per employee for Tasmania in comparison to Australia. The lowest level of IVA per employee is clearly evident in Tasmania for the *textile, clothing, footwear and leather* sector. This sector has lost firms such as Blundstone, while others have required state government assistance such as Tascot Templeton Carpets (TDED 2006c).

While overall manufacturing numbers have declined, over the past 10 years,⁵⁶ differences appear in the fortunes of various manufacturing sectors (DEWR 2006). Textile, clothing and footwear has shed jobs, while the food and beverage manufacturing and wood and paper products manufacturing industries have been very stable over the past 10 years (ibid). Most of the job losses for pulp and paper manufacturing occurred from 1991 and 1995 (Green 2002:10).

Additionally, the decline in manufacturing employment may reflect improvements in productivity as 'factories invest in innovation and automation to remain competitive' (DEWR 2006:4). For example, technological changes in pulp and paper mills with 'newer, more efficient, more labour saving machines' have resulted in job losses

^{56.} The study's time period covered from 1996 to 2006

(Green 2002:10). Also, Doucouliagos and Parikh (2000) found state differences in technical change were evident for manufacturing.

Manufacturing industry	Tasmar	nia	Australia			
	IVA per person employed 2004–05 ei (\$ thousand)	IVA per person mployed 1992–93 (\$ thousand)	IVA per person employed 2004–05 (\$ thousand)	IVA per person employed 1992–93 (\$ thousand)		
Food, beverage and tobacco	95.2	76.2	97.3	83.8		
Textile, clothing, footwear and leather	· 38.1	47.6	54.4	50.9		
Wood and paper product	138.5	91.7	92.0	67.7		
Printing, publishing and recorded media	80.6	51.8	93.2	76.3		
Petroleum, coal, chemical and associated product	126.2	108.3	124.3	114.3		
Non-metallic mineral product	123.1	101.8	106.6	91.2		
Metal product	163.8	61.1	107.6	74.3		
Machinery and equipment	65.9	43.1	80.4	66.0		
Other manufacturing	41.1	30.9	55.0	43.6		
Total manufacturing	104.7	70.3	92.4	75.0		

Table 6.5Industry value added per person employed, Tasmania and
Australia, 1992–93 and 2004–05

While automation and innovation may have reduced employment, this was not the sole cause. Substantial falls in manufacturing employment during the 1990s occurred in other states, such as South Australia and Victoria. The recession was a contributing factor but other longer-term factors may have had a more significant impact (Kosturjak and Wilson-Smith 2004). Kosturjak and Wilson-Smith (2004) argue that the change in consumer preferences towards services, labour saving technological advances, reduction in subsidies and protection, combined with the improved competitiveness of international markets, all contributed to the decline in manufacturing. The recession was simply the trigger for these pent up forces that resulted in 'the scaling down and collapse of uncompetitive firms' (Kosturjak and Wilson-Smith 2004:2). Essentially, the decline in manufacturing is a long-term structural change occurring in developed countries.

Agriculture

Key features

- The gross value of agricultural production⁵⁷ for Tasmania as of 2005–06 was \$1.2 billion in current prices (ABS 2006a); and
- Tasmanian agriculture employs about 9500 persons as of November 2006, with 32 per cent in sheep, beef cattle and grain farming (ABS 2007f).

Agriculture is relatively more significant to Tasmania than the Australian economy and is geared towards the international market (ABARE 2006). Influences on Tasmania's agricultural industry are similar to the national industry, such as farm size, climate,

^{57.} Gross value is the value of production at the point of sale, i.e. where it passes out of the agriculture sector of the economy (ABS 2006a).

international demand and currency volatility (ibid 2006). These changes are influencing the structure of farms, the product mix and the labour market skills required.

Tasmanian farms are generally regarded as mixed farms as they combine a range of activities (ABARE 2006). A very high proportion of these farms are small, with 65 per cent having output valued at less than \$50 000 (ibid 2006). ABARE (2006) states that most of these small farms are likely to be reliant on off-farm income, as these farms only produce 6 per cent of Tasmania's value of agricultural output. In contrast, 30 per cent of output is generated by only the largest 1 per cent of farms.

The importance of farm size is relevant and is becoming apparent in the structure of the agricultural industry. TASTA (2004:7) states that the transition towards fewer producers is changing the traditional farm, with decisions based on 'return on investment, margins, rationalisation, economies of scale, diversification and niche markets'. This is supported by ABARE (2006) claims that a positive relationship between economic performance and size is evident. The ABS (2006o) finds that, in 2005, Tasmania had 3877 farms, with the number of farms declining 10 per cent from 2001.

Tasmania's product is also changing in the direction of diversification of produce through niche markets. For example, the growth in organic produce, although this is still a very small component of Tasmania's agricultural industry. Also, the industry is implementing a strategy of supplying out-of-season fresh produce to the northern hemisphere to capture a gap in the global market (TDPIW 2007).

Climate is of course an important influence on the fortunes of agricultural businesses. Table 6.6 presents Gross Farm Product (GFP)⁵⁸ for Tasmania from 2000-01 to 2004–05. Agriculture is an important contributor to the Tasmanian economy. GFP estimates follow a similar pattern to that of other states. However, in 2002–03, mainland states experienced a drought and the drop was significant for states such as New South Wales and Victoria (ABS 20060 and a). Adams et al (2002) simulates the impact of the 2002 drought on Australia's regional economies between 2001-02 and 2004–05. Utilising the MONASH model, they found that all mainland states were negatively affected with a significant reduction in their GSP. Tasmania, however, was 'the only state that is not negatively affected by the drought' (ibid:7). Tasmania was estimated to benefit from higher agricultural prices, without contractions in output. In fact, Australia's Real GDP was estimated to be lowered by 1.6 per cent because of the drought, while Tasmania's was estimated to increase by 0.3 per cent (ibid:6). To illustrate the point, Figure 6.15 presents the (GVA) for agriculture for Tasmania and Australia, from 1989-90 to 2005-06. Clearly, from 2001-02 to 2002-03, a substantial drop in Australia's GVA did occur. Tasmania's GVA also fell, but the decrease is not as severe.

Table 6.6Gross Farm Product, Tasmania, 2000–01 to 2004–05

	2000–01	2001–02	2002–03	2003–04	2004–05
Gross Farm Product (GFP) (\$ million)	561	712	672	662	661
Gross State Product (GSP) (\$ million)	6 9	12 557	13 502	14 794	16 14
GFP as per cent of GSP	4.8	5.7	5.0	4.5	4.1
Source: ABS Cat. 7123.6.55.001.					

^{58.} Agriculture's contribution to Tasmania's economy is measured through Gross Farm Product (GFP). It measures the value added in production by farm businesses (ABS 2006p).





Forestry

Key features

- Employment in the forestry industry stands at 2600 persons as of November 2006⁵⁹ (ABS 2007f).
- Forestry contributes about \$1 billion each year to Tasmania's economy (IRIS 2007c).

The Tasmanian forestry sector is an important industry for the local economy. IRIS (2007c) states that Tasmania's forestry, and associated processing, is the second largest economic sector in turns of turnover and value-adding. The Tasmanian industry accounts for 55 per cent of Australian newsprint production, 45 per cent of woodchip exports and 50 per cent of Australian-produced printing and writing paper for national processing production (ibid 2007c).⁶⁰

The Tasmanian forestry industry, like most industries, has experienced a number of changes in its economic environment, such as the acceleration of plantation establishments because of the reservation of native forest, a trend toward intensive forest management and identification of international market opportunities. This has occurred by using only 6 per cent of the land area of Northern Tasmania for Plantations in 2000 (Keenan *et al* (2006), citing the work by Wood *et al* (2001).

^{59.} This does not include employment in the manufacturing of wood products.

^{60.} Tasmania also produces hardwood timber and decorative veneers.

Another aspect is the changing regulatory environment in which the forestry industry operates greater environmental awareness and a great focus on forest management. The signing of the Regional Forest Agreement (RFA)⁶¹ in 1997 is an example of a legislative approach to the management of industry and conservation standards. The agreement outlines a number of rules under which the forestry industry must operate. In 2005 a supplementary agreement was signed, aimed at:

- 'Protection of old growth forest, bringing the total area of old growth forest protected to over 1 000 000 hectares (81 per cent)'.
- 'Reduction of clear felling of old growth forest on public land'.
- 'A phase out of clearing and conversion of native forest to retain at least 95 per cent of the 1996 Native Forest Estate'.
- 'Assistance for industry to retool to assist in transition to a changing resource' (FIATAS 2007)'.

An example of an economic impact through the RFA is the alteration in the export of woodchips. Previously, there was a cap on the amount of woodchips for the export market. After 1997, the agreement allowed an unlimited amount of woodchips per year. Table 6.7 presents the Australian exports of woodchips by volume and value, from 1996–97 to 2000–01. Clearly, the change from 1996–97 to 1997–98 reveals an increase in both the volume and value of woodchip exports. The volume of wood chips increased by 44 per cent from 1996–97 to 2000–01, despite a slight drop in 1998–99.

Table 6.7Volume and value of woodchips, Australia, 1995–96 to 2003–04

Woodchips	Financial year								
	1995–96	1996–97	1997–98	1998–99	1999–2000	2000–01	2001–02	2002–03	2003–04
Volume* (kilotonnes)	3 351	3 323	4315	3 885	4 628	4 994	4 721	5 437	5 264
Value (\$ million)	544	518	646	586	646	744	712	808	794

* in bone-dry tonnes. Source: ABARE 2007.

Mining

Key features

- Mining represents 2 per cent of Tasmania's TFI as at 2005–06 (ABS 2006a).
- Employment in the mining industry is just over 2100 as of November 2006, or 1 per cent of the workforce.
- Metal ore mining is the largest sector with 43 per cent of mining employment (ABS 2007f).

Mining is an important source of export income for Tasmania. In September 2005, 652 mines were registered in Tasmania. While it is not at the same scale as Western Australia or Queensland, it still provides a strong source of export income. The industry is centred in the west and north-west of the state, and minerals such as copper, iron, zinc and gold are extracted. IRIS (2007d) lists some of the largest operations in

^{61.} A supplementary RFA was signed in 2005, which covers a range of commitments such as a increases in reservation of old growth forests.

Tasmania as Rosebery (Zinifex Ltd.), Savage River Mine (Stemcor Holdings), and Mt Lyell (Copper Mines of Tasmania).

Figure 6.16 presents the value of production of minerals for the Tasmanian industry from 1989–90 to 2004–05. During the early 1990s, the value of production declined, which would have exacerbated the already stagnating Tasmanian economy. After 1995–96, the value of production improved but then remained stable for several years. The growth in the mining industry this decade is reflected in the value of mineral production after 2002–03, with metallic minerals increasing by 117 per cent. Iron ore pellets represent the largest component at 86 per cent of minerals mined. This increase is driven by growing demand, which in turn is raising prices of base metals.



Figure 6.16 Value of mineral production, Tasmania, 1989-90 to 2005-06

Source: Mineral Resources Tasmania (MRT) Annual Review (various years).

Retail trade

Key features

- Retail trade represents 8 per cent of Tasmania's TFI as at 2005–06 (ABS 2006a).
- Employment in retail is just over 36 000 as of November 2006, or 14 per cent of the workforce (ABS 2007f).

Retail trade has replaced manufacturing as the largest employer in the state. Retail employment for both Tasmania and Australia has moved towards parttime employment. Figure 6.17 presents the proportion of full-time and part-time employment in Tasmania and Australia, from 1994 to 2007. The proportion of full-time employment has steadily declined, which is combined with the growth of part-time. In fact, for Tasmania at the end of the period, part-time employment in the retail industry has overtaken full-time employees. Another feature is the greater volatility in the Tasmania data.





Another change for the retail industry is the introduction of increased trading hours. For example, in 1995, large retail shops had their trading hours extended and again in 2002, trading hours were extended to seven days a week. These changes are in line with changes occurring on the mainland and reflect changes in consumer preferences.

Property and business services

Key features

- Property and business services represented 6 per cent of Tasmania's TFI as at 2005–06, which is in contrast to Australia's 13 per cent (ABS 2006a).
- Employment in the property and business services sectors was over 19 000 as of 2006, or 8 per cent of the workforce. This sector represents 12 per cent of the Australian workforce (ABS 2007f).
- The *property and business services*⁶² industry is important for Tasmania but has had a lower impact in comparison to the national economy. In fact, the industry's share of GSP remained at 6 per cent from 1990–93 to 2003–06, while for Australia it grew from 8 per cent to 13 per cent.

The Tasmanian audit into *business and finance services* identifies the importance of business services because of its speed of growth, especially for Australia over the study period (TDED 2000:18). The ABS classification of *property and business services*

^{62.} Property and business services includes accounting, legal, computer and business services, scientific research, property operators, developers and real estate agents.

includes scientific, computer and technical sectors, which are an extremely important driver for growth and productivity and central to an economy's transition towards an information economy (ibid).

An explanation for the difference in growth may be due to lack of both scale and agglomeration benefits (McCann 2001) in the Tasmanian market. A strong centralisation process prompts these services to move into large centres. To illustrate the point, the registered business counts in business and property services as a share of total business counts for Tasmania is 12 per cent in comparison to Australia's 20 per cent in 2001 (ABS 2002a).⁶³ However, there is evidence that interstate firms are establishing local operations in the state (TDED 2000:19).

An industry that has entered the Tasmania market is call centres. A review completed by the Department of Economic Development identified 48 centres 'operating in Tasmania of which 54 per cent are small centres (under 50 seats), 29 per cent are medium (51–200 seats) and 17 per cent are large (over 200 seats)' (TDED 2006d). These call centres have been set up across the state, in Hobart, Devonport, Burnie, Triabunna and Launceston. They represent firms such as the Commonwealth Bank, Vodafone, Qantas and Telstra. The entry of these firms has been assisted through government policies. Dean and Rainnie (2005:105), citing Barrett (2001:2), state that 'the Tasmanian government was reported as offering considerable inducements for businesses to relocate including funding and constructing a call centre building for Vodafone'.

An advantage of call centres is that it is an important source of employment, especially for women, and contributes to raising labour force participation (Burgess *et al* 2005:82). For example, call centres, during the slow economic growth period in the late 1990s, created 1500 jobs within 15 months (Courvisanos 1999:57). A drawback is the restricted skills base, lack of promotional opportunities and the appearance of very little employment into other Information and Communication (ICT) related industries (Burgess *et al* 2005:83).

Tourism

Tourism consumption is discretionary and is essentially a demand side activity. The tourism industry is difficult to define; as such the ABS does not include tourism in the National Accounts. Its core activities can range over a number of different classifications, which make it difficult to directly assess its impact.⁶⁴

The Sustainable Tourism Cooperative Research Centre (STCRC) has undertaken an analysis of the tourism industry at state and territory levels in order to understand its impact. These estimates of the tourism industry are 'unique in the world' because of the difficulty of calculation at the state level (Spurr *et al* 2007:2).

Table 6.8 presents a number of different measures for calculating tourism's contribution towards the Tasmanian economy. It should be noted that these estimates reflect only the direct effects of tourism consumption in Tasmania. Tourism's share of Gross Value Added (GVA)⁶⁵ is higher for Tasmania in comparison to Australia, which suggests that

^{63.} The counts are based on single state registration rather than businesses operating in multiple sates.

^{64.} Industries incorporated into the Tourism Satellite Account include food manufacturing, retail trade, accommodation, transport, entertainment, cafes, restaurants etc.

^{65.} GVA refers to the total value of Tasmanian produced goods and services consumed by visitors (international, interstate, intrastate and outbound) after deducting the costs of goods and services used in the production process.

Tasmania is more exposed to shifts in tourism preferences. Tourism's high level of contribution to the state's economy is also evident through the employment share, at 6.7 per cent in Tasmania against 4.7 per cent nationally.

Table 6.8Tourism GVA, GSP/GDP and employment, Tasmania and Australia,
2003–04

Tourism	Value
Tourism GVA	\$783.6 million
Tasmanian tourism share of total state GVA (per cent)	5.7
Australian tourism share of total Australian GVA (per cent)	3.8
Tourism GSP	\$949.7 million
Tasmanian tourism share of total state GSP (per cent)	6.4
Australian tourism share of Australia's GDP (per cent)	4.2
Tourism employment	14 000
Tasmanian tourism share of total employment (per cent)	6.7
Australian tourism share of total employment (per cent)	4.7

The impact of tourism on the Tasmanian economy has also increased because of an increase in visitor numbers. A number of reasons may have contributed to the growth in tourism such as terrorist attacks overseas, Severe Acute Respiratory Syndrome (SARS) outbreak in Asia, fall in the Australian dollar and entry of budget airlines. Table 6.9 presents the number of visitors with and per visitor expenditure. Tasmania has had a substantial boost to its economy through a 61 per cent increase in interstate visitors, which corresponds with the strong growth period for Tasmania. Hence, while expenditure per person has remained similar over the period, the number of people visiting Tasmania has increased. However, a drop in the number of nights and a fall in numbers of Australians intending to travel to Tasmania will result in a damping of this industry's impact on the Tasmanian economy in the near future.

Table 6.9Number of Australian and overseas visitors to Tasmania, 1999–2000to 2006

Visitors	1999–2000	2000–01	2001–02	2002–03	2003–04	2005*	2006*
Overseas (thousands)	89	97	96	109	108	110	103
Australians (thousands)	442	430	422	544	632	648	710
Total (thousands)	53 I	527	518	653	740	758	813
\$ per visitor	1210	I 330	I 370	I 450	I 450	I 384	I 537

A break in the time series exists between 2003–04 and 2005. The change is through Tourism Tasmania moving from a financial to a yearly calendar.

Source: Tasmanian Visitor Survey (various years).

The higher level of activity in the tourism industry is reflected in the number of airline passengers. Figure 6.18 presents passenger numbers for domestic and regional airlines⁶⁶ for the Hobart and Launceston airports. An increase is evident from 2000–01 for both airports, particularly for Hobart. The increase can be attributed to two interconnected developments, the rise in tourist numbers and the entry of low budget airlines. Virgin Blue airlines entered the Tasmanian market in November 2001, followed by Jetstar in May 2004. The government has implemented a number

66. Domestic airlines include Qantas, Virgin Blue and Jetstar, all other airlines are classified as regional.

of programs to promote Tasmania and a more detailed discussion is contained in the government Chapter.



Figure 6.18 Revenue passenger numbers, Hobart and Launceston airports, 1995–96 to 2005–06

6.5 Economic implications

Like households, businesses are fundamental to a functioning economy through supplying, consuming and investing in the market. Hence, the performance of businesses has important economic implications for the local economy.

During the 1990s, Tasmanian industries had mixed economic fortunes but most were slow growing, especially in comparison to the national economy, or declining. Industry composition heavily weighed down the local economy because slow growing industries, such as Agriculture, were over represented in Tasmania's industry mix. Moreover, industries such as *property and business services* drove the Australian economy along this period, but had only a minimal presence in Tasmania. Courvisanos (1999:48) observed '[a]s growth is increasingly dependent on the information technology paradigm, a region like Tasmania that maintains the traditional economy is unable to take advantage of national growth impetus[es]'.

Only three industries had a higher average annual growth in the 1990s for Tasmania: *agriculture, forestry and fishing, electricity, gas and water supply,* and *government administration and defence. Agriculture, forestry and fishing* is an important industry for Tasmania, in which it has a clear comparative advantage. It clearly outperformed other Tasmanian industries in the 1990s, providing over 20 per cent of the contribution to TFI growth from 1990–91 to 1999–00.

The two remaining industries are led by government. In the case of *electricity, gas and water supply*, the Tasmanian Hydro-Electric Corporation dominated the supply of electricity and the state government's finances. Tasmanian Commission (1992:111) points out it represented 60 per cent of public trading revenue and 44 per cent of the State Government's debt in 1992.

The economic activity during the early nineties coming from the public sector highlights the lack of private activity in the economy. A factor inhibiting business activity was the lack of confidence in the local economy. Indicators were poor in regard to population, income, employment and demand. The term *The Tasmanian Problem* (Callaghan 1977:94) was used to describe the economy's performance, along with descriptives such as widespread despair, dismal, bad shape, a region in distress and basket case (Nixon 1997; Courvisanos 1999; Rae 2002; Lennon 2006). 'The tag of failure can be self-reinforcing if it encourages potential investors to look elsewhere' (Birrell *et al* 2000:1).

This economic environment would have directly impacted on investment decisions. Private investment was slow during the 1990s with businesses lacking confidence in the future economic growth. Nixon (1997) further points out a number of legislative hurdles hindered businesses. These included legislative inertia, planning uncertainty, cost of taxes (the highest of any state) and regulation stifling innovation. All of these factors contributed to the slow business activity and acknowledgment of the state's poor performance.

This acknowledgment of 'The Tasmanian Problem' led to the implementation of the Industry Development Plan in 1998 to create a competitive and efficient business environment. The policy was designed to promote a 'structured and systematic approach' to generate strong economic growth and raising business activity (TDTF 2000a). This policy, in conjunction with the removal of legislative barriers through the National Competition Policy (a Federal and State Government initiative), provided a measured approach to improving business confidence and raising economic activity. The introduction of these policies helped to build confidence again in the management of the economy.

A reflection of Tasmania's recent economic performance is through job growth. Access Economics (2006b) identifies two reasons. First, highly competitive housing prices attracted people to Tasmania, raising demand for dwelling investment and consumer goods, which in turn stimulated Tasmanian businesses. Second, the underemployed and unemployed workforce, on the back of strong Australian demand, enabled Tasmanian business to take 'up some of the national slack' (ibid:108).

The improvement in economic activity this decade has also been partly driven by the government's introduction of public and private partnerships to improve local infrastructure and productivity, namely Basslink and the gas pipeline. The impact of these projects can be major because of their size in relation to the overall economy. These types of projects can also be disruptive and result in greater fluctuations in the state's economic indicators, such as employment and income.

The downside of large scale projects is that they come to an end. The Basslink and gas pipeline projects are now complete, which will impact on the level of future business investment. Eslake (2006:4) adds that 'it is a little disappointing that there has not been any discernible increase in investment in other areas of the Tasmanian

economy, notwithstanding the foreshadowing of a number of projects'. Moreover, it is also tempting for governments to commission large scale projects because of the immediate impact on economic activity without proper consideration to their future impacts in terms of productivity and social benefits. As Eslake bluntly states:

'Tasmania should not be staking its economic future on its ability to attract one or two mega-projects' (Eslake 2007:11)

As previously stated, the growth period for Tasmania, as described by Access Economics, was a virtuous circle (Access Economics 2006b), with increases in income, consumption and population raising business activity through demand. For example, private investment growth is evident as early as 1998, which has continued to show strong growth this decade. This has had a multiplier effect throughout the economy, which has further raised the level of activity and confidence in future demand, after long periods of holding off investing in the local market.

6.6 Conclusion

Business activity in Tasmania is an important driver of the performance of the Tasmanian economy. During the 1990s, Tasmanian industries grew slowly and in some cases declined, while this decade reveals a turnaround in the performance of Tasmanian industries.

Several factors have driven the changes in Tasmania's business activity. Tasmania's industry structure contributed to the poor performance of the economy, during the 1990s. Tasmania's industry composition was heavily weighted towards slow or declining industries, which hampered economic growth, such as *agriculture, forestry and fishing*. In particular, *property and business services* was a very small part of the Tasmanian economy and did not provide the same level of growth that drove the Australian economy. This industry's share has remained constant over the study period.

Another factor behind the slow growth during the 1990s is far more difficult to quantify, and relates to the level of business confidence and expectations for future economic growth. The description of the local economy as a 'basket case' (Lennon 2006) illustrates the environment in which people were conducting business. This provides an understanding of why businesses would be very reluctant to invest in new projects or expand.

Large scale construction projects have raised Tasmania's investment levels. These projects provided an injection into the local economy through the construction phase, in terms of both income and employment. However, these projects do come to an end, and more importantly, these projects should be used to provide productivity improvements into the future.

Finally, the growth period in the 2000s illustrates the virtuous circle of increasing income, consumption and population, which in turn raises business activity. The REDI (TDED 2006a) report survey of Tasmanian business classified domestic demand as the most important determinant of investment in the local economy. Hence, the growth in several economic indicators, such as population, income, housing investment and employment encouraged business activity and their confidence for future economic pursuits.

Box 6.1 Key points

- Tasmania is a small open economy reliant on trade as a major source of income.
- Tasmanian business confidence has mirrored the performance of the State's economy.
- Tasmanian exports have been relatively stable, especially during Tasmania's growth period this century.
- Industry structure played an important role in the underperformance of Tasmania's economy during the 1990s. Tasmania's industry composition was heavily weighted towards traditional industries, such as *manufacturing* and *agriculture, forestry and fishing*, which hampered economic growth.
- Private investment has contributed towards Tasmania's economic growth, through large projects and housing construction.
- Like other economies, manufacturing is playing a smaller role in the local economy.
- Tasmania's economic growth, in the 2000s, illustrates a virtuous circle of increasing income, consumption and population, which has reinforced the growth in business activity.

Chapter 7

Productivity



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Chapter 7 Productivity

This Chapter considers Tasmania's productivity as a driver for its economic performance. Productivity is vital because it provides the foundation for future economic growth. Considered are different measures of productivity, such as labour and Multi Factor Productivity (MPF) and the factors that influence them.

This Chapter draws on estimates of GSP from the 2005–06 *Australian National Accounts: State Accounts* publication (ABS 2006a). It should be noted that ABS revise their estimates of GSP annually, and so more recent data may present a somewhat different picture of Tasmania's productivity than the 2005–06 publication on which this Chapter relies.⁶⁷

Labour productivity is explored in section 7.1. Section 7.2 covers multifactor productivity. Education levels in the Tasmanian and Australian labour markets are presented in section 7.3. A discussion of innovation and research and development (R&D) for Tasmania and Australia is provided in section 7.4. Section 7.5 presents an analysis of Tasmania's competitiveness. Section 7.6 considers the economic implications of Tasmania's productivity rates, with concluding remarks in Section 7.7.

7.1 Labour productivity

Labour is the most common measure of productivity due to its ease of calculation and the difficulty of obtaining capital estimates at a state level. Labour productivity can be defined as real output produced per person employed, or per hour worked. A major drawback in using output produced per person employed to measure productivity is that employment composition differs across regions and over time. For example, a shift from full-time to part-time employment may raise employment numbers, but it may have little influence on output or hours worked. Therefore, in this study, the number of hours worked is used to calculate labour productivity.

Figure 7.1 presents the levels of labour productivity for Tasmania and Australia, from 1989–90 to 2005–06. Tasmania's labour productivity has been consistently below Australia's and has increased over time. Tasmania's labour productivity is also more volatile than Australia's, with a large drop and recovery between 1999 and 2001.

^{67.} The 2006–07 issue of ABS. Cat 5220.0 revised estimates of Tasmania's GSP upwards, which impacts on productivity estimates for the state. The revised data continues to show Tasmanian labour productivity as lower than national productivity.



Figure 7.1 GSP/GDP per hour labour productivity, Tasmania and Australia, 1989–90 to 2004–05

An investigation into the growth rates of real GSP/GDP per capita and labour productivity was completed by Nguyen *et al* (2003) for six states, from 1984–85 to 1998–99. Following a similar methodology to Nguyen *et al* (2003), Table 7.1 presents the growth in real GSP per capita and labour productivity for Tasmania and Australia from 1989–90 to 2004–05. A clear difference emerges between Tasmania and Australia regarding their real GSP/GDP and GSP/GDP per capita growth rates. Nguyen *et al* (2003) suggest two interconnected reasons for the difference. First, variation in per capita growth between states can be explained through population growth, especially for states such as Queensland and Western Australia. Second, states with strong increases in population also experienced an increase in the working age group. In the case of Tasmania, the loss in population and working age individuals, Tasmania experienced lower growth in per capita GSP. In fact, Nguyen *et al* (2003:45) suspect divergence rather than convergence emerging for Tasmania in comparison to other states.

Adjusting GSP growth between states regarding hours worked reduces these differences (Nguyen *et al* 2003). The findings reveal that a large variation exists between Tasmania and Australia for real GSP per capita, but the gap closes slightly regarding real GSP per hour worked. They conclude that the divergence tendency for all states is less pronounced.

However, the slower growth in Tasmania's labour productivity still adversely impacts on Tasmania's economic performance. Figure 7.2 presents Tasmania's labour productivity as a proportion of Australia's, from 1990–91 to 2005–06. Overall, Tasmania's labour productivity has fallen further behind the Australian average. The growth period for the Tasmanian economy from 2001 to 2006 reveals that Tasmania's labour productivity fluctuated greatly and never rose above 90 per cent after the substantial drop (due mainly to an increase in hours worked) which occurred from 1999 to 2000.

Source: ABS Cats. 5220.0 and 6291.0.55.003.
Table 7.1Growth rates of Real GSP/GDP and hours worked, Tasmania and
Australia, 1989–90 to 2004–05

	Real GSP/GDP	Real GSP/GDP per capita	Population	Hours worked	Real GSP per hour worked		
		(Per cent)					
Tasmania	1.8	1.6	0.2	0.3	1.5		
Australia	3.6	2.4	1.2	1.5	2.1		

Note: Growth rates are measured as trend growth rates and represent the slope coefficient from a regression of logged dependent with simple trend and a constant.

Source: ABS Cats. 5220.0 and 6291.0.55.003.

Figure 7.2 Tasmania's labour productivity relative to Australia, 1989–90 to 2005–06



Source: ABS Cat. 5220.0 and 6291.0.55.003.

Tasmania's labour productivity is positioned below Australia regarding its growth rate and absolute level. The long-term implications for this are explored in section 7.6.

Industry level productivity

Breaking down labour productivity at the industry level for Tasmania and Australia reveals a number of differences, which are presented below. Four industries' labour productivity rates are considered below. These are *mining, manufacturing, property and business services* and *government administration and defence*. These industries were chosen because of their importance to the state's economy and variation with the national economy. Appendix C presents the remaining industries labour productivity rates.

Mining

Figure 7.3 presents *mining*'s labour productivity for Tasmania and Australia, from 1989–90 to 2004–05. Tasmania's labour productivity for mining is below Australia's. This may be at least partially due to the type of mining (open cut versus underground). Despite a

temporary improvement in the early 1990s, the gap between Tasmania and Australia is fairly similar. Among the states, Victoria was found to have the highest level of *mining* labour productivity, with Tasmania among the lowest (Nguyen *et al* 2003:51).

More recently productivity in Australia's mining industry has declined. This decline is partly due to the commodity boom, which has provided incentives for opening less productive mine sites and increasing the labour force. In relation to Tasmania, the mining industry is not as large as in Queensland and Western Australia.





Manufacturing

Figure 7.4 presents *manufacturing*'s labour productivity for Tasmania and Australia, from 1989–90 to 2004–05. Tasmania's labour productivity in *manufacturing* has been consistently above the Australian level but both have had an upward trend over time. As illustrated in the *business activity* Chapter, Tasmania's manufacturing industries have undergone structural change with a growth in sectors in which there is a comparative advantage, such as wood, metal and processing of agricultural products.

Property and business services

Figure 7.5 presents *property and business services* labour productivity for Tasmania and Australia, from 1989–90 to 2004–05. A gap is clearly evident between Tasmania and Australia, which supports a previous finding that the *property and business services* industry has not grown as quickly in Tasmania. Moreover, Tasmania's productivity has been declining over time.

Source: ABS Cat. 5204.0 and 6291.0.55.003.



Figure 7.4 Labour productivity in manufacturing, Tasmania and Australia, 1989–90 to 2004–05

Source: ABS Cats. 5204.0 and 6291.0.55.003.

Figure 7.5 Labour productivity in property and business services, Tasmania and Australia, 1989–90 to 2004–05



Source: ABS Cats. 5204.0 and 6291.0.55.003.

Government administration and defence

Figure 7.6 presents government administration and defence labour productivity for Tasmania and Australia, from 1989-90 to 2004-05. A striking feature of government administration and defence labour productivity is its changing nature in Tasmania. During the early 1990s, the Tasmanian and Australian governments began to decrease the level of public sector employment. This may have contributed to the decline then sharp increase during the 1990s, after which Tasmania became comparable to the national level. A discussion of the changes in government policies is presented in the next Chapter.



Figure 7.6 Labour productivity in government administration and defence,

7.2 Multifactor productivity

Labour productivity relates to a single input: labour. In contrast, multifactor productivity (MFP) measures relate to two or more inputs. This report will utilise two studies that have specifically calculated MFP at the state level, namely Louca (2003) and Nguyen and Smith (2006).

Louca (2003:102) utilises the Törnqvist methodology to estimate labour and capital contributions by 'weighting the growth of each input by its cost share in output, with MFP growth given as any unexplained residual'. Essentially, MFP growth is underpinned by growth in technology and efficiency. The timeframe for the study is 1985-86 to 2000-01. Louca (2003) covers fours aspects of multifactor productivity, which include:

MFP contribution to economic growth

- labour productivity decomposed between capital deepening⁶⁸ and MFP
- MFP contribution to living standards
- convergence in real incomes, labour productivity and MFP.

Table 7.2 presents Louca's (2003) estimates for Tasmania and Australia over a range of time periods. Louca (2003) describes the three subperiods as follows: Boom period (1985–86 to 1989–90); Recovery period (1990–91 to 1995–96); and New Economy period (1995–96 to 2000–01).

Tasmania's results are consistently below that of Australia, except in relation to capital estimates in the late 1980s. Tasmania's economic growth was two percentage points lower than Australia's from 1985–86 to 2000–01. The states that have contributed most to the strong economic growth in Australia are Western Australia and Queensland. Louca (2003) argues that high economic growth corresponded with high MFP contributions. In the case of Tasmania, the MFP contribution was 0.3 per cent, which is substantially below Australia's MFP contribution (1.2 per cent) over the entire study period and the lowest for all states.⁶⁹ The strong contributor to growth for Tasmania is capital, which is very similar to the Australian average. This makes changes in capital investment relatively more important in Tasmania. Labour, however, consistently has a lower contribution to output. This reflects lower participation rates and falling population growth during the 1990s, impacting on labour as an input to growth.

	Time period	Output growth	Contribution to output growth		
		(per cent)	Labour	Capital	MFP
Tasmania	1985–86 to 1989–90	1.7	1.5	1.5	-1.3
	1990–91 to 1994–95	1.4	-0.2	0.6	1.0
	1995–96 to 2000–01	1.4	0.1	0.2	1.1
	1985–86 to 2000–01	1.5	0.4	0.8	0.3
Australia	1985–86 to 1989–90	4.0	2.2	1.3	0.4
	1990–91 to 1994–95	2.4	0.5	0.7	1.1
	1995–96 to 2000–01	4.0	1.1	1.0	1.8
	1985–86 to 2000–01	3.5	1.3	1.0	1.2

Table 7.2Decomposition of economic growth (annual averages), Tasmania
and Australia

Note: 'As with all MFP estimates, the number should be taken as indicative of trends rather than precise estimates of productivity growth' (Louca 2003:104).

Source: Louca (2003:104).

Louca (2003) further decomposed labour productivity growth into MFP and capital deepening components and this is presented in Table 7.3. Clearly, Tasmania's labour productivity is below Australia's, except during the recovery period from 1990–91 to 1995–96. Separating the components that contribute to labour productivity shows very different results, for Tasmania and Australia. Over the longer study period, the primary contributor to Tasmania's labour productivity was through capital deepening rather than MFP, which is opposite to the national economy. He also concludes that divergence is present in labour productivity between the states.

^{68.} Capital deepening refers to a situation where capital per worker is increasing; in other words, an increase in capital intensity.

^{69.} The highest MFP contribution to output growth recorded was Queensland at 1.6 per cent and the second lowest was Victoria at 1.0. per cent

	Time period	ime period Labour productivity (per cent)		om
			Capital/Labour (per cent)	MFP (per cent)
Tasmania	1985–86 to 1989–90	-0.7	0.7	-1.3
	1990–91 to 1994–95	1.7	0.7	1.0
	1995–96 to 2000–01	1.3	0.2	1.1
	1985–86 to 2000–01	0.8	0.5	0.3
Australia	1985-86 to 1989-90	0.5	0.0	0.4
	1990-91 to 1994-95	1.6	0.5	1.1
	1995–96 to 2000–01	2.3	0.4	1.8
	1985–86 to 2000–01	1.5	0.3	1.2
Source:	Louca (2003:106).			

Table 7.3Labour productivity, capital deepening and MFP (annual averages),
Tasmania and Australia

MFP growth also contributes to real income per capita growth. Real income per capita was 1.0 per cent (average annual growth) for Tasmania over the entire study period, in comparison to the national growth rate at 2.2 per cent. Louca (2003) separates the impact of MFP from other influences (e.g. population growth, output etc) and found that, at 55 per cent, MFP was the primary contributor to the rise in average real incomes in Australia, while in Tasmania the MFP contribution stood at only 30 per cent.

Louca (2003) further investigated whether convergence of multifactor productivity occurred across the states. The paper reports the appearance of MFP convergence for five of the six major states; the sixth state was Tasmania. Louca (2003) suggests the convergence of MFP was due to smaller states with lower labour productivity experiencing strong growth through population and labour input relative to capital. The exception was Tasmania with lower productivity combined with slower population and labour inputs growth.

The paper by Nguyen and Smith (2006) explored the role played by capital in the performance differential of Australian states, from 1984–85 to 2003–04. Table 7.4 presents the contribution to per capita growth in output by component, which includes:

- Q/L Capital productivity—an increase in the ratio of capital-to-labour represents *capital intensity* of production
- K/L Capital-to-labour ratio—refers to the value of capital stock (in 2002–03 prices) utilised per average hour worked. An increase in the ratio represents *capital deepening*
- L/N Work time per employee—refers to the average hours worked per employed person
- N/P Employment to population ratio refers to the population portion participating in the workforce
- Q/P Annual per capita gross domestic (state) product-per capita output.
 - Where:
 - Q = GDP (or GSP) real gross domestic (state) product
 - P = estimated resident population
 - N = employed persons
 - L = total hours worked
 - K = net capital stock.

Compared to Australia, capital productivity in Tasmania has made a significantly lower contribution to output growth. In fact, this factor has negatively impacted on the Tasmanian economy. Nguyen and Smith (2006) state that the poor performance of capital productivity in Tasmania can be partially attributed to a decline in productivity from a decrease in traditional manufacturing, and a decrease in economic activity more generally.

The capital-to-labour ratio for Tasmania, taken in levels (rather than growth rates) reveals that Tasmania and South Australia consistently record low capital to labour ratios relative to other states. This is combined with Tasmania's capital-to-labour ratio (capital deepening) declining over time. The loss of traditional capital intensive industries and a shift to labour intensive industries may be behind this change. Another aspect is the different types of capital stock in relation to the capital to labour ratio. 'Public sector capital stock per hours worked is the highest in [Tasmania] ... [and] yet this is the state recording the lowest output growth, suggesting that the high level of public investment expenditure in this state has not been of the type conducive to generating long-term economic growth in private sector activity' (Nguyen and Smith 2006:11). A possible explanation is the crowding out of the private sector.

The average hours worked for both Tasmania and Australia are very similar regarding their growth rates and their contribution to output. The negative growth can be explained in two ways. First, an increase in prosperity permits a decrease in hours worked by substituting work for leisure. Second, a growth in part time employment can lower the average hours worked in the economy.

Finally, Tasmania has lower growth in its workforce participation rates. A contributor may be the ageing of the population and 'comparative reluctance of workers to migrate interstate in search of jobs' (Nguyen and Smith 2006:6).

Table 7.4Contribution to per capita output growth, Tasmania and Australia,
1984–85 to 2003–04 (per year)

	Q/K	K/L	L/N	N/P	Q/P
Contribution to per capita					
output growth (per cent)					
Tasmania	-0.23	1.13	-0.11	0.50	1.23
Australia	0.51	1.09	-0.18	0.70	2.11
Share of total contribution to					
per capita output growth					
(per cent of total)					
Tasmania	-18.82	91.94	-8.84	40.67	100.00
Australia	24.06	51.64	-8.53	33.24	100.00

Source: Nguyen and Smith (2006:5).

As stated by the authors these estimates are 'heavily dependent on the quality of the capital stock series' (Nguyen and Smith 2006:17), and as such they should be treated with caution.

7.3 Education

Barnes and Kennard (2002:X) state that since growth in skills has been low, other factors contributed to the *surge* in Australia's productivity during the 1990s, but that 'education and skills clearly remain important for long-run growth'. They argue that

skills influence productivity growth in two ways. First, output can increase with rising labour market skills. Second, a highly skilled workforce raises the rate of innovation through absorption and development of technologies.

Two characteristics that illustrate the lower level of human capital in the Tasmanian labour market are the number of people with a bachelor degree or higher qualification and the number of people with a High School Certificate.

- In 2001, the proportion of people with a Bachelor degree in Tasmania was 14 per cent, compared with the national average of 17 per cent.
- The proportion of people who have not completed Year 12 in Tasmania is the highest of any state or territory (BTRE 2004).

Breaking down human capital by region shows differences in educational attainment. Table 7.5 presents the proportion of persons that have obtained a specific level of education. Education is based on attainment of the Australian Qualifications Framework (AQF).⁷⁰ Clearly, major cities have the highest proportion of people with a higher level of educational attainment and (only marginally) the lowest level of people that have a basic vocational level of training and/or no post-school qualifications. Comparing Hobart with Adelaide and Melbourne illustrates the variation that exists in the capital cities. As expected, Melbourne has a higher proportion of persons with Ed-1 and Ed-2 (refer footnote 70) educational attainment, while Hobart and Adelaide have very similar proportions, matching Australia. The balance of South Australia has the lowest educational attainment followed by Balance of Tasmania but Balance of Victoria matches the Australian regional levels. This is important because it reveals the lower levels of educational attainment in regional areas, especially for South Australia and Tasmania.

Ed-1	Ed-2	Ed-3	Ed-4		
(per cent)					
15.4	6.5	12.3	42.I		
12.4	5.5	12.2	43.8		
12.0	5.8	13.3	45.2		
16.0	6.5	11.6	39.7		
9.8	5.0	12.8	43.4		
7.3	4.5	13.3	43.2		
5.4	3.7	13.2	45.3		
8.7	5.1	4.	39.6		
8.3	5.0	14.4	42.7		
12.9	6.0	13.0	42.3		
	Ed-1 15.4 12.4 12.0 16.0 9.8 7.3 5.4 8.7 8.3 12.9	Ed-1 Ed-2 (per column) 15.4 6.5 12.4 5.5 12.0 5.8 16.0 6.5 9.8 5.0 7.3 4.5 5.4 3.7 8.7 5.1 8.3 5.0 12.9 6.0	Ed-1 Ed-2 Ed-3 (per cent) 15.4 6.5 12.3 12.4 5.5 12.2 12.0 5.8 13.3 16.0 6.5 11.6 9.8 5.0 12.8 7.3 4.5 13.3 5.4 3.7 13.2 8.7 5.1 14.1 8.3 5.0 14.4 12.9 6.0 13.0		

Table 7.5Educational attainment, 2001

Note: Regions are based on BITRE's Labour Market Regions and proportions are based on total working population.

Source: BTRE Education Database.

70. Education is classified from the AQF skill level as follows:

Ed-I: Bachelor Degree or higher

Ed-2: Diploma or Advanced Diploma

Ed-3: Skilled Vocational

Ed-4: Basic Vocational and/or left school age 15 or higher (BTRE 2004:44).

Therefore, if education is the foundation of the development of an individual's human capital and his/her ability to obtain employment in a changing labour market, an understanding of the standard of learning in the state is very useful. Table 7.6 presents the literacy and numeracy levels of Years 3, 5 and 7 students in 2004. The results show that Tasmanian students perform well in the early years of education, but fall away at higher levels. For example, writing at the Year 7 level is significantly below the Australian average. This is combined with a decline in the performance of students meeting the benchmark between Years 3 and 7 for reading and numeracy. An additional factor to consider when interpreting these results is that, on average, Tasmanian students have the highest or equal highest time spent in school at the time of testing.

	Year	Year 3		Year 5		Year 7	
	Tasmania	Australia	Tasmania	Australia	Tasmania	Australia	
Reading	96.5 ± 0.7	93.0 ± 1.5	94.0 ± 1.0	88.7 ± 1.6	88.9 ± 1.0	91.0 ± 0.7	
Writing	91.4 ± 1.5	92.9 ± 1.5	91.6 ± 1.6	94.2 ± 1.1	86.5 ± 1.9	93.6 ± 1.3	
Numeracy	93.7 ± 1.4	93.7 ± 1.2	89.2 ± 1.5	91.2 ± 1.2	80.9 ± 1.3	82.1 ± 0.8	

Table 7.6Percentage of students achieving literacy and numeracy
benchmarks, Tasmania and Australia, 2004

Source: MCEETYA 2004 National Report on Schooling in Australia.

There has been a recent shift in the literature to investigate the returns achieved through a student's level of literacy and numeracy (Gleeson 2005). McIntosh and Vignoles (2000) found higher wage returns are coupled with greater literacy and numeracy skills. Ishikawa and Ryan (2002) found a positive impact for basic skills learned at school. In the case of Australia, Gleeson (2005) investigated numeracy and found that individuals with low numeracy are at a disadvantage in the workforce. Hence, the lower levels of literacy and numeracy for Tasmanian young people will flow through to the labour market.

An area of improvement in Tasmania has been the increase in education retention rates to Year 12. Table 7.7 presents the retention rates for all students for Tasmania and Australia for two time periods, 1990 and 2003. Tasmania has raised the number of students remaining until Year 12 and moved substantially closer to the national average. In a comparison between the regional and metropolitan areas, the table shows that Tasmanian students in regional areas still lag behind their mainland counterparts. However, the retention rates for metropolitan students in Tasmania are actually higher than the mainland. This may illustrate an aspiration to continue educational training or reflect the educational system in Tasmania, which encourages students from regional areas who want to pursue academic subjects in years 11 and 12 to travel to Hobart, Launceston or Devonport/Burnie. To illustrate the point, Godden (2007:24) completed a case study for Oatlands and found that '[n]early every student has relocated to Hobart for college, and most are living in hostel accommodation. There are eight colleges in Tasmania, located in Hobart, Devonport, Launceston and Burnie (ibid:24).

To improve human capital in the state, in 2005 the Tasmanian parliament passed the *Youth Participation in Education and Training (Guaranteeing Futures) Act, 2005.* This legislation requires people who complete Year 10 or turn 16 years of age to complete a further two years of training. The guiding principle of the Act is to 'develop practical

ways to improve the social, educational and employment outcomes for young people including, in particular, those who are at risk of disengaging from education and training' (Youth Participation Bill 2005).

All students	Tasmania	Australia
	(per ce	ent)
1990	45	64
2003	67	69
Other provincial and remote 2003	58	69
Provincial cities 2003	56	62
Metropolitan 2003	79	72

Table 7.7Retention rates, Tasmania and Australia, 1990 and 2003

Source: Mission Australia (2006) citing Productivity Commission (2005) and Resource, Planning and Development Commission (2006).

7.4 Research, development and innovation

The level of research, development and innovation is an important contributor to growing an economy. This section explores the influence of these factors on Tasmania's economy compared to Australia.

The ABS study into innovation found that the number of firms involved in innovation is 26 per cent for Tasmania compared to 35 per cent for the other states (ABS 2006q). To calculate this, the ABS defines innovation in three categories:

- New good or service—means any good or service or both which is new to the business. The item's characteristics or intended use differ from those formerly produced.
- New operational process—significant change in the methods of producing or delivering goods and services.
- New organisation/managerial process—significant change in the strategies, structures or routines which aim to improve performance (ABS 2006q).

Table 7.8 presents the different categories of innovation for business in Tasmania and Australia. Clearly, innovations for all three categories are lower for Tasmania. The lower level of innovation by businesses may reflect the lower number of multinationals in Tasmania, and consequently lower access to financial resources.

Table 7.8Innovation, Tasmania and Australia, 2003

Indicator	Tasmania	Australia
Number	2 553	135 836
Number	676	47 283
Per cent	26.5^	34.8
Per cent	10.1*	16.6
Per cent	17.5*	22.9
Per cent	17.0^	21.4
	Indicator Number Per cent Per cent Per cent Per cent Per cent	IndicatorTasmaniaNumber2 553Number676Per cent26.5^Per cent10.1*Per cent17.5*Per cent17.0^

Note: ^ estimate has a relative standard error of 10 per cent to less than 25 per cent and * estimate has a relative standard error of 25 to 50 per cent. Both should be used with caution.

Source: ABS Cat. 8158.0.

Figure 7.7 presents the importance of the known sources of research and development (R&D) in the Tasmanian and Australian economies. Three features stand out in relation to R&D over the two periods:

- Business R&D is substantially larger in Australia (at over 50 per cent of R&D), in comparison to Tasmania (27 per cent) in 2004–05.
- Commonwealth investment into R&D constitutes a significantly higher proportion of Tasmania's total R&D expenditure than Australia's.
- Non-profit organisations provide very little to Tasmania's R&D.



Figure 7.7 Proportion of research and development by source, Tasmania and Australia, 2002–03 and 2004–05

Louca (2003) investigated the importance of R&D to trends in MFP, economic growth and living standards.⁷¹ The conclusion drawn was that Tasmania may have faced impediments to business R&D growth, such as industry structure, lower human capital and isolation.

7.5 Factors of regional competitiveness

The variance in economic performance between regions can be affected by a number of factors. The OECD has developed a methodology which decomposes the variance in economic performance. This enables the identification of influences on the competitiveness of a region, which are listed below (OECD 2005:106):⁷²

• average labour productivity—proxy for the productivity of production systems

^{71.} In this study's investigation into R&D,Tasmania was combined with the Australian Capital Territory and the Northern Territory into a category called *other*. This was due to the ABS only making available these three regions summed together.

^{72.} Commuting has been removed from the estimates because Tasmania is an island and the proportion of people working interstate is minuscule.

- industry specialisation measures the effect of having an industry structure with high value added activities
- employment rates-measures the efficient functioning of the local labour market
- skills-measures the stock of human capital
- activity rates characteristics of the labour force
- ageing-proxy for the impact of ageing on participation rates.

The methodology and datasets used are outlined in Appendix E.

Table 7.9 presents the calculations of the factors for Tasmania, covering two time periods, 1995 and 2000 with Australia as the benchmark. The estimates reveal that Tasmania is below the national benchmark in terms of regional competitiveness for all elements and both time periods.

Labour productivity is an important determinant of the differences in the level of GSP/GDP per capita between Tasmania and Australia. Tasmania's labour productivity is significantly below Australia's in both 1995 and 2000.⁷³ The lower level of labour productivity for Tasmania is an important factor in the ability of Tasmania to grow in the future. It should be noted however, that Tasmania's level of skills and employment rate are not significantly different from the national rate, but they are slightly lower.

The industry specialisation estimates show that Tasmania has a lower competitive advantage.⁷⁴ This is because the state has a larger share of industries with a lower value added impact. The OECD (2005) report states that natural endowments and location are major reasons for differences in regional specialisation. Moreover, GSP/ GDP per worker tends to be higher in manufacturing and services than in agriculture (OECD 2005). For this reason, the difference in composition of the Tasmanian and national economies would be an important contributor to differences in regional competitiveness. These differences were considered in Chapters 6, which investigate Tasmania's industry structure both in terms of employment and its impact on economic activity.

Difference in labour force participation can be divided into two components: the activity rate, and ageing. Each factor for Tasmania is below the national benchmark. The activity rate represents the ratio of the labour force to the population. The lower activity rates may be due to lack of economic incentives to enter the labour market. The ageing factor captures the age profile of the state. As a result, a younger age profile would have higher activity rates. It should be noted however, that the OECD (1998) concludes that there is no suggestion that ageing substantially impairs the productive potential of older workers (Barnes and Kennard 2002: xvi).

These two components highlight an area of Tasmania's economy which is different from the national economy and has been explored in Chapters 5 and 6.

^{73.} This matches the OECD estimates for Tasmania for 2001, which state that Tasmania labour productivity is more than 18 per cent below Australia (OECD 2005:109).

^{74.} The OECD estimates are for three sectors only: agriculture, forestry and fishing; industry and construction; and services.

Table 7.9Factors of regional competitiveness, Tasmania in comparison to the
national benchmark, 1995 and 2000

GSP decomposition	1995	2000
	(Þ	er cent)
Difference in average labour productivity	-19.4	-19.6
Industry specialisation	-5.8	-4.4
Differences in the employment rate	-1.3	-1.8
Skills	-0.3	-0.5
Differences in the activity rates	-3.5	-3.3
Ageing	-1.2	-1.1

Source: Derived by the BITRE.

7.6 Economic implications

Productivity is a measure of the ability to create goods and services from a given amount of inputs. Productivity is vital for economic growth because it provides a foundation for long-term sustainable development and in turn improves living standards. Krugman (1994:13) emphasises this point when he states that 'productivity isn't everything, but in the long run it's nearly everything'. He continues by distinguishing between the impact of inputs and productivity on economic growth. Put simply, increasing inputs does not raise income while increasing productivity does (Krugman 1984).

Increasing productivity refers to the rate of transformation of inputs into outputs. Tasmania's productivity was found to be below Australia in terms of both labour productivity and MFP. This section explores implications of changes in productivity for Tasmania's economic growth.

Productivity and an understanding of its impact are important for maintaining the momentum of an economy to grow. At the international level, the OECD investigated divergence in the economic performance of national economies in the Growth Project (OECD 2001a). This study found that divergence in growth was due to several factors, such as increases in the labour market and their skills, capital deepening (especially ICTs) and MFP growth.

In the Australian literature, a number of investigations have been made into productivity. An important period of examination is the surge in productivity which occurred during the 1990s. This surge is credited as a major factor in Australia's economic growth, beginning from the recession in the early 1990s. Parham (2002a:1) identifies three possible explanations: microeconomic reform, labour market skills, and ICTs.

Banks (2002:1) states that microeconomic reforms were 'pivotal' to Australia's productivity improvements—increased efficiency and flexibility enabled the economy to be more competitive. The microeconomic reforms enabled firms to move towards best practice and shift resources to where they could be used more productively, which resulted in a productivity surge during the 1990s (Parham 2002a).

Parham (2002a) states that three important microeconomic 'themes' explain Australia's productivity growth. The first is lower barriers to trade and investments which sharpen

competition and lead to 'more value-adding products and new markets and reducing costs' (ibid:22). The second, openness of trade, fosters greater specialisation and absorption of new technologies. The third theme is increasing the flexibility of work practices, for example, by introducing enterprise bargaining.

A clear method of microeconomic reforms adopted by Tasmania to improve productivity is through competition. A report on the Tasmanian government's response to the National Competition Policy found that 'compared to other jurisdictions, Tasmania's performance has been excellent' (NCC 2004:xxiii). The report states that Tasmania has completed 89 per cent of its reviews and reforms of legislation (ibid:xxiii). This is combined with a number of initiatives by the State Government such as the *Competition Index* and an industry development plan in 1998. The OECD (2001a:9) considers competition as a positive effect on an economy's performance because it 'brings pressures to increase efficiency and explore new ways of doing business, including the adoption of new technologies'.

While microeconomic reforms have been found to have had a positive impact on productivity at the national level, this has not translated to the Tasmanian economy. In fact, Tasmanian labour productivity has declined over the study period against the national rate. However, if the Tasmanian government did not institute the microeconomic reform it may be in a far more disadvantaged position.

The effect of ICT industries on Australia's productivity growth has been through capital deepening and facilitating MFP increases. In 2002, Australian business investment into ICTs was ranked fourth among OECD countries (OECD 2007), which reflects the high level of utilisation by business. However, the growth in ICT did come at a cost to other capital investment (Parham *et al* 2001).

The overall effect of ICTs on Australia's productivity has been described as modest (Parham 2002b), but investment into ICTs improves MFP in two ways:

- 1. general purpose technology, which enables productivity changes
- 2. spillover effects, such as internet connections, which improve network economies (Gretton *et al* 2003).

Parham *et al* (2001:XII) showed that industries with stronger links between ICT and productivity were 'in distribution (wholesale and retail trades) and financial intermediation'. Gretton et al (2003) also includes *manufacturing* and *electricity, gas and water*. In relation to Tasmania, these industries grew slowly in comparison to Australia. As a result, industries benefiting from capital deepening through ICTs are under represented in the Tasmanian economy.

Another industry structure impact on productivity was investigated by Nguyen *et al* (2003). They found that states with large mining industries experienced above average labour productivity. They concluded that controlling for the mining industry results in a reduction of the closing productivity gap between states. In other words, the gap between Tasmania and states with large mining industries (WA and QLD) is reduced. This is against a backdrop of the recent lowering in productivity for the mining industry from the commodity boom, which has provided incentives for opening less productive mines sites and increasing the labour force.

Investigations of the impact of Australia's surge in productivity found that skills do not appear to have influenced productivity by a 'direct route' (Parham 2002a:21; Barnes and Kennard 2002); in other words, 'there was not an acceleration in skills to match the 1990s productivity acceleration' (Parham 2002a:21). So the productivity gap between Australia and Tasmania cannot be explained exclusively within the context of Tasmania's human capital.

On the other hand, education and skills are important for long-run growth and meeting future challenges (Barnes and Kennard 2002). The connection between skills and productivity comes from two sources. First, skills raise worker output. Second, a skilled workforce may increase the rate of innovation by improving the absorption and development of technologies (ibid). Coates and Warwick (1999) argue that knowledge is increasingly becoming the key to economic success. The knowledge driven economy has been defined as: 'one in which the generation and the exploitation of knowledge has come to play the predominant part in the creation of wealth. It is not simply about pushing back the frontiers of knowledge; it is also about the more effective use and exploitation of all types of knowledge in all manner of economic activity' (Vaitilingam 1999:5 cited the UK's Competitiveness White Paper). The importance of the knowledge economy is highlighted by Barnes and Kennard (2002:1) stating that the changing nature of work 'has increased the demand for skills and increased the need for individuals to have appropriate skills in order to access employment opportunities'.

In the case of Tasmania, the labour market can be characterised as having lower levels of human capital in comparison to other states. Tasmania has a lower proportion of people with Bachelor degrees, combined with a higher number of people without a High School Certificate. This impacts on Tasmania's ability to grow its economy, either through ICT's, rapid scientific and technological changes, increasing global competition, and shifting consumer demand.

An investigation into finding an avenue for raising human capital was completed by Garlick *et al* (2007). They constructed 94 functional regions in Australia, from 1984 to 2002, to identify the drivers of difference in regional growth, with particular reference to *enterprising*⁷⁵ human capital through the vocational education and training (VET) sector. They found four key mechanisms to driving economic growth, these included: stock of enterprising human capital, access to high technology and technology leadership, industry and specialisation and finally government intervention was seen as a restraint on growth. A key policy proposed was to use VET to build enterprising skills; basically, to equip people with entrepreneurial skills to enable them to succeed. Because '[e]nterprising regions are those that work together to build connectivity, to unleash local knowledge, to be strategic and to translate new ideas into meaningful outcome' (ibid:42).

Tasmania's productivity rate also impacts on business operating costs. The Competition Index 2005 ranks Tasmania as number one regarding labour costs compared to other states (New Zealand was ranked first). However it could be argued that the lower labour costs reflect lower productivity through lower skills. In the same study, Tasmania ranked fifth in unit labour costs.⁷⁶ As Eslake (2005a) points out, using *unit*

^{75.} Enterprising human capital 'in the regional development context as those who take an idea and turn it into an outcome using the regional attributes at their disposal' (Garlick et al 2007:20).

^{76.} A unit labour cost refers to the labour costs per unit of output.

labour costs reveals that Tasmania does not have lower costs but is aligned with the national average. For this reason, the advantage gained for regions with low wages is limited because firms would choose their location based on *efficiency wages* (wages/ productivity) (Camagni and Capello 2008).

Quiggin (2001; 2006:10) disputes the main hypothesis of the productivity surge and considers the possibility that it is a 'statistical illusion'. He argues that dividing business cycles into productivity cycles is likely to reveal contracting and expanding phases. For example, the growth in productivity after the recession may simply reflect increasing economic activity—an increase in demand results in an increase in output. In addition, transitory factors such as work intensity may have 'led to an overestimation of MFP growth for the mid-1990s cycle' (Quiggin 2006:10). 'Thus the benefits of increased output were achieved at the cost of increased effort by workers' (Quiggen 2001:804). This may partly explain the reason for the divergence of Tasmania's productivity.

Barnes and Kennard's (2002:31) investigation into the quantity and wage effects of skilled workers found that the main influence on labour services in the mid-1990s was a change in the 'composition of hours worked rather than changes in relative wages'. So, comparing total hours worked and participation rates between Tasmania and Australia reveals that Tasmania during the 1990s was consistently below Australia. Figure 7.8 presents the percentage change in total hours worked for Tasmania and Australia from 1990 to 2006. Clearly, Tasmania has had lower positive gains in hours worked combined with longer declining periods.



Figure 7.8 Change in total hours worked, Tasmania and Australia, 1990–01 to 2005–06

Source: ABS Cat. 6291.0.55.003.

Population and participation in the labour force has impacted on Tasmania's labour productivity compared to other states. Nguyen et al (2003) found that labour productivity has diverged, with Tasmania falling further from the pack. This finding for labour productivity is supported by Louca (2003), who also found that in terms of MFP, all other states were converging except Tasmania.

Productivity is also influenced by capital—Tasmania has among the lowest capital to labour levels and capital productivity. Nguyen and Smith's (2006) investigation into capital productivity reveals a negative impact on output growth. They claim the poor performance of capital productivity can be attributed to the decline in traditional manufacturing. Also, the decline in traditional industries has negatively affected the labour to capital growth ratio because of a shift to labour intensive industries, such as tourism.

The public sector also invests to raise productivity. In the case of Tasmania, public sector investment is amongst the highest in the country. Its impact on Tasmania's productivity is open to question. Nguyen and Smith (2006) argue that Tasmania's high level of public investment has not been conducive to generating long-term economic growth in the private sector. A salient point was further made by the OECD (2001a:11):

'Government support for innovation should focus on areas with high social and economic benefits that push out the technological frontier. Partnerships between the public and private sector, competitive funding mechanisms, and regular evaluation of support are some ways to make such funding more effective and help focus it on the right areas. Governments should be vigilant against serving vested interest[s], however, and should not crowd out new sources of private finance, such as venture capital.'

Size can be another source of productivity. Size is relevant regarding market size and economies of scale. In the case of Tasmania both of these factors may influence the state's productivity rate. Domestically, Tasmania's population is small and spatially dispersed; this would impact on the effectiveness of distributing goods and services around the state (excluding those industries focused primarily on export markets). The result would be a larger number of smaller firms spread across the state. This in turn could prevent those firms from taking advantage of economies of scale, whether due to a lack of financial capital, a smaller labour pool, or the market simply not being able to sustain a larger industry.

Overall Tasmania has a lower level of productivity than Australia which impacts on the economic performance of the state. The reasons for the gap are unclear but a number of hypotheses can be proposed from the discussion above. These include:

- lower work intensity of Tasmanian workers
- lower population growth combined with lower numbers of persons in the working age group
- industry structure which has lower requirements for ICT
- small domestic market may inhibit firms from taking advantage of economies of scale and these firms are dispersed more widely

- lower proportion of mining industries, which experienced above average productivity growth during the 1990s
- lower human capital in comparison to Australia.

For this reason, the divergence in labour and MFP productivity for Tasmania have hindered its recovery from the recession through the 1990s and seem to have played little role in the recent improvement. The recent growth has previously been described as a virtuous circle from increasing inputs. However, as Krugman (1984) points out, a rise in inputs does not raise income.

Consequently, while economic growth can be achieved through increasing inputs, namely labour and capital, the contribution of productivity is vital.

7.7 Conclusion

A feature of the Tasmanian economy is its lower level of productivity in relation to Australia, and this has declined further since the 1990s. A number of hypotheses have been suggested for the lower levels of productivity, which include lower levels of human capital, lower work intensity, and lack of economies of scale.

The growth in the Tasmanian economy is primarily driven by raising inputs and demand. Although this results in a virtuous circle it is not clear if recent improvements in economic indicators are indicative of a sustained trend.

Box 7.1 Key points

- Tasmania's labour and Multi Factor Productivity lie below the national level and have grown more slowly since 1990.
- The low productivity levels appear to have hindered Tasmania's recovery from the recession in the 1990s, and seems to have played little role in the recent improvement.
- Tasmania's education levels are below the national level in relation to retention rates and educational obtainment.
- Lower levels of R&D and innovation are evident in the Tasmanian economy. Also, government is the largest contributor to R&D in Tasmania, while Business is the largest for the national economy.
- While microeconomic reforms have been found to have had a positive impact on productivity, this has not translated to the Tasmanian economy, even though its performance of implementing its National Competition Policy reforms has been described as excellent. But it may now be at a far greater disadvantage without these reforms.
- There are a number of possible explanations for Tasmania's lower levels of productivity, such as lack of economies of scale, human capital differences, industry mix, and lower participation rates.

Chapter 8

Government



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Chapter 8 Government

Governments play an important role in the operation of the economy through regulation and intervention. In fact, '[f]or much of this century, economic activity in Australia has been dominated by the influence of government' (IC 1998:3). In the case of Tasmania, government becomes extremely important because of its relative size in the local economy, its leadership role, regulatory capacity, government institutions and policy agenda.

This Chapter examines the role of government, at both the federal⁷⁷ and state levels, as a driver for Tasmania's economic performance. The investigation includes a discussion of the State Government's financial position, governance reforms and policies covering aspects, such as microeconomic reforms, fiscal management and development strategies.

This Chapter divides into six sections. Section 8.1 covers the Commonwealth and State governments' contribution to Tasmania's Gross State Product (GSP). Section 8.2 presents an overview of the State Government's financial position. Section 8.3 considers governance reform in Tasmania. Section 8.4 analyses the policies of national and state governments, with concluding remarks in section 8.5.

8.1 Federal and state contributions to Tasmania's Gross State Product (GSP)

Within GSP, the Australian Bureau of Statistics separates government expenditure into two components, *Commonwealth* and *state and local*, to provide an indication of their respective contributions to an economy. These expenditure components are further separated into three categories:

- consumption
- public corporations—gross fixed capital formation
- general government-gross fixed capital formation.

While state and local expenditure estimates can be readily assigned to Tasmania, using the Commonwealth Government estimates is not as straightforward (ABS 2000) because of the difficulty of attributing expenditure to regions. For this reason, these estimates should only be considered indicative.

Consumption is the main way that government contributes to economic activity at the national and state level. The growth rates of government consumption are similar for Tasmania and Australia:

- Federal Government consumption average annual growth rates for Tasmania and Australia were 3.7 per cent and 3.5 per cent, respectively, from 1989–90 to 2005–06.
- *State and local* average annual growth rates were 2.0 per cent for Tasmania and 2.7 per cent for Australia, from 1989–90 to 2005–06.

^{77.} Federal Government refers to the Australian Government.

The striking difference is the contribution level made by the Tasmanian State and local governments. The State and local consumption share of GSP is 16 per cent for Tasmania, while the average of other states stands at 11 per cent. As highlighted in the *Business Activity* Chapter, this reflects the greater level of government activity in the local economy.

Figure 8.1 presents the public corporations capital expenditure index for *Commonwealth*, and *state and local*, from 1989–90 to 2005–06. It illustrates the strong similarity in Commonwealth public corporations' expenditure across the country. In terms of *state and local* public corporations, two features are evident. First, expenditure is comparable for both Tasmania and Australia, from 1989–90 to 2000–01. Second, strong growth is present after 2000–01, for both the Tasmanian and Australian state and local governments. In the case of Tasmania, the expenditure reflects the public-private partnership arrangements for two large projects, namely Basslink and the gas pipeline. It should be noted, however, that public corporations' capital expenditure represent a small share of GSP. For example, Tasmania's *State and local* public corporations Gross Fixed Capital Formation (GFCF) had an average share of 1.7 per cent of GSP, from 1989–90 to 2005–06.





General Government Gross Fixed Capital Formation expenditure constitutes a very small component of GSP (2.2 per cent in 2005–06) and is similar for both Tasmania and Australia as a whole.

8.2 Funding Tasmania

The financial position of the Tasmanian Government plays an important role within the state economy. The largest contribution to Tasmanian Government finances comes from the Federal Government but the state also benefits from Public Trading Enterprise (PTE) income and state taxes. This section divides into two parts: a brief overview of the Tasmanian Government's financial position, and a discussion of Federal Government funds directly entering Tasmania's economy.

State government finance

This section provides a brief outline of the main components that make up a state government's budget. A state budget provides details on the performance and fiscal operations of the General Government sector detailing revenue, expenses, receipts, payments, and assets and liabilities. Later in section 8.4 a discussion of the changing nature of the Tasmanian Government's financial position is presented along with its fiscal and policy strategies.

Figure 8.2 presents the total State Government revenue sources for the state's 2007–08 budget. As pointed out previously, grants and subsidies in the form of General Purpose Payments (GPPs) and Specific Purpose Payments (SPPs) are the single largest contributor. This is followed by state taxation revenue. State taxes include duties⁷⁸ (the largest contributor), payroll tax and land tax. The remaining sources include sales of goods and services, dividend, tax and rate equivalent income, interest income and other revenues. Expenses include the depreciation of assets, employee wages, interest payments and election commitments.



Figure 8.2 Total State Government revenue by category, 2007–08

Source: Tasmanian State Government Budget 2007-08.

^{78.} Examples include conveyances, insurances, mortgages, motor vehicles and sundry legal documents (TDTF 2007c).

An indicator of a government's financial strength is through the composition of assets and liabilities, such as net worth⁷⁹ and net debt.⁸⁰ In the 2007–08 Tasmanian budget, net worth was estimated 'to be \$9062.1 million at 30 June 2008, an increase of \$1109.6 million or 13.9 per cent above the 2006–07 Budget estimate of \$7952.5 million at 30 June 2007' (TDTF 2007c). While, the 'estimated Net Financial Liabilities of the General Government Sector is expected to decrease to \$3219.2 million as at 30 June 2008, a decrease of \$179.0 million from the 2006–07 Budget Estimate of \$3398.2 million as at 30 June 2007' (TDTF 2007c). An examination of government debt is explored later in state budget and strategy section. But two aspects of assets and liabilities for Tasmania are highlighted below.

First, Tasmania's large Public Trading Enterprises (PTEs) sector has a significant influence on the State Government revenue, with only New South Wales and Western Australia having a higher PTE impact (S&P 2005). Over the past few years they have had operating surpluses, but when government grants for non-commercial activities are excluded, small losses are evident (ibid).

Second, while net debt has been eliminated, 'when the State's other main financial obligations are included, such as unfunded superannuation (pension) liabilities and the stock of debt of the public trading enterprises (PTEs), Tasmania's net financial liabilities remain the largest of all the rated Australian states and territories at about 110 per cent of operating revenue' (S&P 2005:1).

Federal government funding to Tasmania

The Federal government has a number of avenues through which it can contribute towards a state's economy. This complex mix makes it very difficult to accurately calculate the level of contribution the Federal Government makes to Tasmania's economy.

State governments receive a large amount of their revenue from the Federal Government. According to Williams (2005:108), 'Federal government grants to the Australian states represent nearly one half of the total recurrent income of the states. As of the Tasmanian State Government 2007–08 budget, it is estimated that revenue transfers will total \$2391.4 million, which represents 63.8 per cent of Tasmania's total Government revenue' (TDTF 2007c).

The Federal Government obtains substantial revenue from taxes, such as the Goods and Services Tax and income tax, however, the role of state governments is to provide basic services, such as health care and education. Some of the central pool of funds must be redistributed to the states so that they can effectively carry out their responsibilities.

Outlined below are four avenues of Federal Government expenditure. These include General Purpose Payments (GPPs), Specific Purpose Payments (SPPs), Social Security Payments and Other sources. The distribution of the monies from the Federal Government to Australia's states and territories is through the Commonwealth Grants Commission (CGC). A discussion of the CGC is provided in Box 8.1.

^{79.} Net worth represents total assets less total liabilities; it includes financial and non-financial assets such as land and other infrastructure assets (TDTF 2007c).

Net debt represents the sum of advances received and borrowings less the sum of cash and deposits, advances paid and investments, loans and placements (TDTF 2007c)

Box 8.1 Commonwealth Grants Commission

The most significant source of funds for state governments is administered by the Commonwealth Grants Commission (CGC). This is a statutory authority operating under the Commonwealth Grants Commission Act 1973. Its main function is to make recommendations about the distribution of the Goods and Service Tax (GST) revenue and health care grants, which replaced Financial Assistance Grants and the revenue replacement payments for alcohol, petroleum and tobacco products, from 1 July 2000. The distribution of funds is based on achieving an outcome of fiscal equalisation among the states and territories.

It is recognised that there 'exists imbalances in the ability of states to raise revenue from their own sources [and t]he cost of delivering state services also varies between states' (Williams 2005a:108). This disparity between states and territories is termed horizontal fiscal imbalance. The CGC make recommendations which aim to redress this imbalance, according to the logic of horizontal fiscal equalisation. According to the CGC (2004:4), the rationale for this is as follows:

'[it is] often seen as an aspect of nationhood whereby better endowed states or regions contribute to the capacity of those states or regions whose resource bases are not as abundant or whose needs are greater for reasons beyond their control. ... state governments should receive funding from the pool of goods and services tax revenue and health care grants such that, if each made the same effort to raise revenue from its own sources and operated at the same level of efficiency, each would have the capacity to provide services at the same standard'.

What this means in practice is that some states require more funding per capita than others, so the allocation of funds from the Australian Government is not a simple return to each state of the amount of tax (particularly GST revenue) which was originally extracted from that state. The amount to fund each state is worked out by the CGC according to a calculation of relativities: essentially, those states requiring greater assistance according to the principle of horizontal fiscal equalisation are given a value higher than one, while those who need less assistance (those states which help out the others in greater need) are accorded a value lower than one.

The CGC rates Tasmania at 1.5594 (1998–99 to 2002–03 average), the second highest relativity after the Northern Territory. Tasmania therefore receives a greater amount of assistance from the Australian Government relative to more prosperous states. Why this is so can be partly explained by some of the characteristics already noted in this report: Tasmania lacks the economies of scale enjoyed by many other states, and with lower labour participation rates, lower than average wages and hence spending power, its population pays commensurately lower income tax and GST. In order that Tasmania's residents, as Australian citizens, can access a nationally agreed minimum standard of community services, a proportionately larger amount of federal funding is provided to the Tasmanian State to overcome this shortfall.

General purpose payments

General Purpose Payments (GPPs) are payments that can be used at a state government's discretion. These payments are the primary source of funding for Tasmania. Figure 8.3 presents the growth rate for GPPs from the Federal Government to the Tasmanian Government, from 1989–90 to 2005–06. It illustrates the changing nature of GPPs with restructuring of the Federal and state financial arrangements. Clearly, GPPs were fairly stable from 1990 through to 2000, with a slight increase after 1998. After 2000, with the introduction of the GST, the Tasmanian State Government received a substantial boost in GPPs, but these funds were to replace state tax revenue. In return for GST revenue, the State Government 'agreed to the abolition of financial institutions duty, stamp duty on quoted marketable securities, bed taxes, the wholesale sales tax, and payments from the Australian Government to replace revenue from previous state taxes on alcohol, tobacco and petroleum' (CGC 2004:16).

Figure 8.3 Growth rates of GPP from Federal Government to the Tasmanian State Government, 1989–90 to 2005–06



Source: Tasmanian Department of Treasury and Finance Budget 2005–06.

Together with the GPPs were National Competition Policy (NCP) payments, which were designed to 'reflect a share of the expected revenue gains to the Commonwealth arising from states' implementation' (TDTF 2005c). These payments have since stopped but were 'a significant source of general purpose revenue for Tasmania (Tasmania is expected to receive \$19.0 million in NCP payments in 2005–06)' (TDTF 2006b).

Specific purpose payments

Specific Purpose Payments are grants for a specific purpose from the Federal Government, either agreed by both governments or pre-determined by the Federal Government. These payments are separate from GPPs and cover a set period.

In 2007–08, SPPs totalled \$454.6m, which covered a range of programs (TDTF 2007c). The largest are the Health Care Grants (HCGs), which commenced in 2003 and to expire in 2008, which assist states to provide health care services. Other SPPs include Home and Community Care (HACC) and Commonwealth State Territory Disability Agreement (CSTDA). An example of a one-off SPP payment was part of the *Social Bonus* payment from the sale of Telstra in 1999. This payment included the *Intelligent Island* program (\$40 million) and *Connecting Tasmanian Schools* (\$48 million) (TDPAC 2002).

Figure 8.4 presents the changes in GPPs, SPPs and State Government taxes, from 1994– 95 to 2006–07. The rise in GPPs, from the Federal Government post 2000, is matched by a decline in state taxes. Additionally, SPPs have remained stable as negotiated in the initial agreement. Overall the revenue from these sources has resulted in a slight increase in Tasmania's budget revenue.



Figure 8.4 Changes in major sources of Tasmania's budget real revenue, 1993–94 to 2005–06

Social security payments

Income support recipients receive funds directly from Centrelink, a federal government agency. These funds are a source of income for the people of Tasmania from the Federal Government and are not normally administered by the state. Examples of income support payments include the Age Pension, Newstart Allowance, Disability Support Pension and Parenting Payment.

Table 8.1 presents total government cash benefits,⁸¹ for Tasmania and Australia, as a proportion of total income in 1995–96 and 2000–01. It illustrates that Tasmanians

^{81.} Government cash benefit refers to income support customers only but includes both their income support and non-income support payments if applicable.

have a higher proportion of government cash benefits relative to total income for both years, in comparison to Australia. In fact, Tasmania has the highest reliance on income support payments of any state and territory. Also, the gap between Australia and Tasmania is widening. This is partly explained by the age profile of Tasmania, which, as discussed in Chapter 4, is ageing more rapidly than any other state. For this reason its population is increasingly claiming aged pension payments.

Table 8.1Total government cash benefits as a percentage of the total source
of income, Tasmania and Australia, 1995–96 and 2000–01

Region		1995–96	2000–01
Tasmania		14.4	16.4
Australia		10.9	11.0
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Source: BITRE forthcoming Focus on Regions: Income Support.

Other sources

The Australian Government has its own direct expenditure in each of the states and territories, from direct national programs, employment and provision of services. Examples of Federal Government departments in the state include the Department of Defence, Centrelink and the Australian Taxation Office.

The scope and breadth of the Australian Government agencies and programs makes it very difficult to estimate the value of their contribution to the Tasmanian economy. To illustrate, outlined briefly below are two programs funded by the federal government to directly promote economic activity.

- Export hubs, initiatives from TradeStart and AusIndustry programs, have been established in eight locations around Tasmania. These hubs are to assist business by enabling them to become more innovative and competitive (AusIndustry 2005). The current government has announced a review of existing export policies and programs to ensure trade is a strong contributor to the national economy (Crean 2008).
- The Department of Education, Employment and Workplace Relation's Job Network program contracts private and community based organisations to help job seekers find employment (DEWR 2007b).

8.3 Tasmanian State and local government representation and reform

Tasmania's State Governments have instituted a number of reforms to improve overall efficiency of government. Outlined below is Tasmania's parliamentary representation at both the national and state level, along with a discussion of two major reforms introduced at the state level to promote greater efficiency and in turn improve economic outcomes.

Federal

Federally, Tasmania is represented by 12 senators and 5 members of the House of Representatives. 'The generosity of the state's federal representation' is, according to Rae (2002b:36) 'due to the fact that the Australian Constitution requires that all the

states have equal representation in the Senate and that no state may have fewer than five members in the House of Representatives'. Tasmania's population therefore has a comparatively higher level of representation per capita than the other states. Indeed, taking both State and Federal tiers of government together, Rae (2002b:36) observes that 'Tasmania has the highest level of political representation of any developed democracy'.

State and local

The Tasmanian State parliament consists of two houses: the House of Assembly (the lower house), and the Legislative Council. This is an independent upper house and is unique in that it is' the only House of Parliament in the Commonwealth ... that has never been controlled by any government or any political party' (Wing 2004). This situation came about because of the different voting methods. For the House of Assembly, statewide elections are called every three to four years, and the winning party or coalition forms Government. However, the Legislative Council elections are held each year for two or three members for a house of 15. This means, as Herr (2001:574[1]) observes, that 'the replacement cycle for the 15 MLCs [Members of the Legislative Council] takes six years'. This results in a high proportion of independents in the Legislative Council with no guarantee of the safe passage of bills. As noted on the Parliament of Tasmania website, '[a]lthough the Council does not reject a great number of Bills, it is not uncommon for Bills to be amended, some heavily' (Wing 2004). Rae (2002: 37) highlights a further issue: '[t]here are no constitutional provisions for the Legislative Council to be dissolved or for any impasse between it and the Legislative Assembly to be resolved'.

Although the functioning of the Legislative Council can be seen as the embodiment of a highly democratic ideal—it is 'a truly genuine House of Review' (Wing 2004) the problems of resolving stalemates between the houses, or major changes to bills before they could become legislation, were some of the reasons why the Nixon Report called for the Legislative Council to be abolished, replacing a bicameral parliamentary system with a unicameral one (Nixon 1997).

In addition to having a unique upper house arrangement, since 1909 Tasmania has used the Hare-Clark system of proportional representation in all House of Assembly elections. The specifics of Hare-Clark in Tasmania, Nixon (1997: background report 103) observes, tend to 'provide election outcomes where independents and minority parties achieve greater representation' than in other voting systems. Summing up the issue at the beginning of the report, he stated 'it is too easy for minority groups to use the system to actively oppose developments or changes which will progress the state, but which they believe will affect the tranquillity of their own local lifestyle' (Nixon 1997:ix). For example, new developments often meet strong environmental sentiments, especially those concerning old growth forests, which is a long standing and extremely divisive issue.

Together with greater representation for minorities, the Hare-Clark system can also result in minority governments in Tasmania (Rae 2002; Nixon 1997). There were two minority governments during the period under study as shown in Table 8.2 below, which lists all of the premiers of Tasmania during this time. In both cases, the minority government formed a coalition with the Greens.

Premier	Party	Term	Months
Gray, Robin T	Liberal	1982-89	85
Field, Michael W	ALP*	1989–92	32
Groom, Raymond J	Liberal	1992–96	49
Rundle, Anthony M	Liberal*	1996–98	30
Bacon, James A	ALP	1998-2004	65
Lennon, Paul A	ALP	2004-2008	50
Bartlett, David	ALP	Current	

Table 8.2Tasmanian state premiers 1982 to 2008

Indicates a minority government.
Source: Tasmanian Parliamentary Library.

Source: Tasmanian Parliamentary Library.

In spite of Hare-Clark's potential in Tasmania to deliver a greater variety of views in Parliament, Nixon (1997: background report 104) points out that: '[w]here the Government does not have a majority in the House of Assembly it is often unable to effect the politics it was elected to implement and is forced to compromise to get its measures through the House.' This, he says, means that 'the Government is not able to provide a clear leadership role' (ibid: 104).

Reforms to State Parliament 1998

The Nixon report recommended that '[b]oth existing houses of the Tasmanian Parliament should be abolished and a new unicameral Parliament established consisting of 9 electorates each having 3 members' (Nixon 1997:xiv). This would result in a 27 member house. The Premier of Tasmania, Anthony Rundle, had also advocated parliamentary reform in his 1997 *Directions Statement*, but it was a model based on a Labor proposal (McCall 1998) that was adopted in 1998.

The 1998 reforms to parliament did not go as far as to abolish the upper house, but reduced the total number of members of both houses to 40: 25 in the House of Assembly and 15 in the Legislative Council.⁸² There had been general public support for parliamentary reform, although as McCall (1999a:292[1]) observes, '[u]nder Tasmania's Hare-Clark proportional representation system this would effectively raise the quota for election from 12.5 per cent to 16.6 per cent, making it difficult for minority parties, such as the Greens, to retain their seats in parliament.' The Greens attempted to block the legislation, but the Labor and Liberal parties combined to ensure its passage (ibid).

Unicameralism, as advocated by Nixon, has not been implemented. If dissent in the upper house is a larger issue than minority government, then this has yet to be adequately addressed as there is still no provision for dissolution of both houses in the event of an impasse.

In order to ensure more effective legislative passage through the Upper House, the Bacon Government adopted a system of joint standing committees to manage reduced parliamentary numbers (Herr 2001). For example, the Environment, Resources and Development Committee and the Community Welfare Committee came into operation early in 2001. The government had a strong position in their joint standing committees because of their success at winning parliamentary seats (Herr 2001).

^{82.} Previously Tasmania's parliament was comprised of 35 members of the House of Assembly and 19 members of the Legislative Council.

One of the aims of these reforms was to reduce costs. It is unclear if this was achieved; according to Herr (2003a), claims were made that the increased numbers of ministerial support staff had more than absorbed these costs.

In summary, over the period of study there has been a substantial reform to the size of the Tasmanian State Parliament, although it is unclear if this has resulted in increased efficiency overall.

State Government reforms to local government

Before 1993, Tasmania had 46 local government municipalities. This situation was considered inefficient, as costs increase sharply in municipalities of fewer than 10 000 people (Haward and Zwart 2000). Further, the Local Government Advisory Board (1990:24) stated that 'Tasmania was often unable to provide the services it was required to do by law' (cited in Haward and Zwart 2000:36).

The issue of local government reform has been well documented. Between 1939 and 1990, five reports on local government were commissioned in Tasmania. All of these recommended some reduction in the number of municipalities and the reorganisation of boundaries (Haward and Zwart 2000). None achieved the desired outcome and the reports resulted in 'resentment and opposition from Councils and frustration from the state government' (Roodenrys 1995:28 cited in Haward and Zwart 2000:34).

In tackling this issue in the early 1990s, Michael Field's minority ALP government undertook an approach which was 'highly collaborative and co-operative' (Roodenrys 1995:28 cited in Haward and Zwart 2000:35), which set the stage for significant reforms. In 1993, after a two year consultative process, Raymond Groom's Liberal government⁸³ accepted the recommendations of the resulting report and the number of local councils was reduced to 29.⁸⁴

A sharp decline in local government employment followed the 1993 reforms, but over the longer term the trend has been slightly upwards. Haward and Zwart (2000) provide some insight into why, overall, local government employee numbers have not declined in Tasmania. Prior to the 1993 reforms, local government was not always able to provide the services it was required to, due to a lack of staff expertise. For example, the Huon Valley and Southern Midlands Council amalgamations resulted in the employment of additional professionals 'who had expertise previously not held by the council' (ibid:38). They point out that this arrangement improved planning and provided better management of emergency situations.

Despite the 1993 restructure, local government reform was again on the political agenda in 1997. In April 1997, Premier Rundle released his *Directions Statement*, in which he advocated the further reduction of the number of councils to 15 (ABS 2002a). A new Local Government Board (LGB) was set up to receive submissions and report on the recommendations in the *Directions Statement* within six months. The proposed reforms were extremely unpopular, with debates becoming 'bitter and personal' (McCall 1998:298[11]). There was also opposition to the proposed reforms within parliament from both the Greens and the ALP (Haward and Zwart 2000). The

^{83.} The changeover occurred in the February 1992 election.

Fourteen Local Government Areas (LGAs) (out of the 29) had populations below 10 000 persons in the 1996 census.

success of the ALP in the August 1998 state election saw the end of this proposed restructure.

The strong opposition to Rundle's proposed reforms made any direct local government restructuring difficult. Instead, in order to 'find better ways of serving Tasmanian communities,' (TDPAC 2007) the Bacon Government embarked on a series of partnership agreements with the local councils around the State. Two pilot agreements in 1999 began the process, between the State Government and Circular Head Council (in June) and Launceston City Council (in November).

Today there are four types of agreement in operation. The Department of Premier and Cabinet (2007) defines these as follows:

- 'bilateral-between the State Government and one council
- regional-between the State Government and a self-identifying group of councils
- statewide between the State Government and the Local Government Association of Tasmania, on behalf of all 29 Tasmanian councils
- tripartite—between the Australian Government, State Government and the Local Government Association of Tasmania, on behalf of all 29 Tasmanian councils'.

The agreements cover very varied issues, from tourism initiatives, to integrating infrastructure, to emergency management coordination.

In summary, the significant 1993 reforms were successful, and it has been argued by Haward and Zwart (2000), that this was because they included a two year consultative process. Subsequent attempts to further reduce the number of municipalities have been unsuccessful. However, the recent strategies under both the Bacon and Lennon governments have fostered greater cooperation between councils and other levels of government in service provision.

8.4 Federal and state economic reforms and initiatives

'Australia has undergone widespread and substantial structural reform and change over the past two decades' (de Brouwer 2003:1), which has been initiated by both the Federal and State governments.

These reforms were seen as important to turning around the 'economic malaise' of the Australian economy during the 1970s and 1980s, which was categorised by slow output growth, inflation, rising unemployment and slow productivity gains (Productivity Commission 2005b:XIII). Governments acknowledged the 'policy-related inhibitors on growth' and undertook a widespread program of economic reforms (ibid:XIII). These reforms ranged from financial and trade liberalisation, the introduction of greater flexibility in the labour market, to improving the competitiveness of the Australian economy.

The result was that the 'Australian economy has performed well over the past decade' (de Brouwer 2003:1). The OECD (2006) describes the current performance of Australia as follows. While benefiting from the recent commodities boom, Australia:

'has also made its own luck' through a series of structural reforms and the introduction of a robust macroeconomic framework which have bolstered resilience. This is illustrated by its macroeconomic stability in the face of a string of recent shocks, in stark contrast to the macroeconomic chaos which followed the commodities boom of the early 1970s'.

This is supported by Banks (2003:8), who states 'it is apparent that considerable groundwork was laid over many years across different governments to create a climate of receptiveness to the need for change'. However, these changes were not without difficulty in terms of transitional costs. The Productivity Commission (2005) acknowledges that some regional communities faced reduced income and employment opportunities. For example, the dairy deregulation substantially reduced returns for farmers reliant on protected drinking milk markets (ibid).

This raises the question of why Tasmania did not experience the strong economic growth in the 1990s, like its mainland counterparts, even with the microeconomic reforms. Tasmania's growth occurred this century, nearly a decade after the turnaround in the Australian economy. This point is explored in the following sections. First, an outline of some of the Federal Government's policies introduced to promote economic growth is provided. Second, the Tasmanian Government's policies are discussed along with their consequences for the local economy.

Federal Government policies

This section discusses a range of Federal policies that have impacted on the national and Tasmanian economies. In a number of the reforms, cooperation between the Federal and State governments was extensive. The objectives were to reduce overlapping responsibilities, restructure infrastructure services and decrease constraints to competition (IC 1998). Forums established to achieve these reforms included the Council of Australian Governments (COAG) in 1992 and the Mutual Recognition Agreement in 1993.

Monetary and fiscal policy reforms were introduced to improve government performance. These policies are mechanisms used by governments to influence economic activity. Monetary policy refers to the central bank (Reserve Bank of Australia—RBA) influencing the availability and cost of money to achieve the government's economic objectives. Fiscal policy refers to government spending and taxation to provide services and influence economic activities. The importance of these policies is illustrated by de Brouwer (2003:13), who claims that '[h]aving clear frameworks for the operation of monetary policy and fiscal policy are essential for ensuring macroeconomic stability'.

In Australia, the RBA is responsible for formulating and implementing monetary policy for the advantage of the Australian people. The RBA's responsibilities are to 'contribute to:

• the stability of the currency of Australia

- the maintenance of full employment in Australia
- the economic prosperity and welfare of the people of Australia' (RBA 2007b).

The RBA is independent from the political process to ensure that monetary policy focuses on long-term goals.

Since 1993, the Australian Government and the RBA introduced a 'practical expression' to target consumer price inflation, which followed New Zealand's introduction in 1990 (RBA 2007b). Inflation targeting involves the RBA setting interest rates to achieve an inflation rate of 2–3 per cent on average, over the business cycle (ibid).

However, monetary policy cannot achieve inflation objectives alone. The *Statement on the Conduct of Monetary Policy* (1996, 2003 and 2006) states 'the Government... emphasises the role that disciplined fiscal policy must play in achieving such an outcome'.

In 1998 the Federal Government introduced the *Charter of Budget Honesty Act 1998*, which defines a number of *principles*, such as acting by 'sound fiscal management and by facilitating public scrutiny of fiscal policy and performance' (CBHA 1998). Henry (2003) outlines that the principles covered in the Act are concerned with the 'management of financial risks; promoting national saving; appropriate counter-cyclical demand management; tax burden stability and predictability, and tax system integrity; and having regard to intergenerational equity'. Tasmania is currently following suit, with the introduction of the *Charter of Budget Responsibility Bill 2007*, to provide a framework for sustainable fiscal policies (TDTF 2007d).

To achieve these principles, the Federal Government has adopted a medium-term framework for macroeconomic policy that targets fiscal policy to achieve a 'budget balance, on average, over the course of the economic cycle' (Department of Treasury 2007). Aspromoutgos (2006) characterises the Howard government's fiscal budgets as 'very much more in the traditional mould of fiscal policy as the instrument of balance sheet management than as the pursuit [of] any wider purpose of balancing the economy as a whole'. However, it should be noted that these 'benign conditions' of sustained growth and the 'absence of any severe adverse supply shocks', enabled this fiscal policy option (ibid).

During the terms of the Hawke and Keating governments a number of policies were pursued that reflected the state of the economic conditions at the time. Listed below is a compendium of fiscal policies (Mathews and Grewal 1995):

- The Hawke Government's first two budgets followed an expansionary fiscal policy with an objective to reduce unemployment.
- Despite improvements in employment and economic growth, concerns were raised in relation to the budget deficits and increases in outlays. This resulted in the 'Hawke Government's trilogy of commitments not to increase spending and taxes, and to reduce the deficit' (Campos and Pradham 1997:437).
- A seven year reduction in general purpose payments, beginning in 1985–86, to states and the abandonment of expansionary policy (Mathews and Grewal 1995). Hence, a 'ruthlessly' pursued policy of decreasing public services and public sector borrowing was implemented (ibid:24).
• The tight fiscal policy continued in the 1990–91 budget during the recession, but was reversed in 1991–92 to stimulate the economy (Mathews and Grewal 1995). Expansionary budgets continued for a further two budgets in 1992–93 and 1993–94 (ibid).

Regarding the collection of taxes by the Federal and state governments, substantial change was implemented with the introduction of a broadly based Goods and Services Tax (GST), commencing from 1 July 2000. GST replaced the Wholesale Sales Tax (WST) and some state taxes. A factor for the introduction was the increase in service consumption, which was not covered by WST because of its narrow base. Importantly, as discussed in section 8.2, the introduction of the GST substantially altered the financial arrangements between the Federal, state and territory governments.

Combined with the implementation of the GST, the Federal Government introduced the First Home Owners' scheme on 1 July 2000 to compensate first home buyers for increases in building and housing costs associated with the implementation of the GST. The introduction of the GST resulted in a substantial increase in housing construction in the first half of 2000 and a subsequent drop, which is highlighted in Chapter 7.

International trade reforms were implemented to improve efficiency and Australia's competitiveness in the global market place. This involved a broad range of initiatives including tariff reform, assistance for various sectors and Free Trade Agreements (FTAs).

In 1973, the Whitlam Government reduced tariffs by 25 per cent across the board, which was the beginning of changing the nature of the Australian economy from a protectionist position to free market. Banks (2003:7) highlights the 'sharp increase in trade intensity, with the ratio of exports and imports to GDP rising from 27 to 44 per cent since the mid-1980s'. From this time, a number of changes have occurred for Australian industries, in particular clothing, footwear, manufacturing, textiles and motor vehicles. For example, by 1996, the average tariff was 5 per cent (de Brouwer 2003:4).

The Federal Government pursued Australia's commitment to opening up international trade through negotiation at a number of different levels. For example, at the global level (multilateral), discussions took place at the World Trade Organization (WTO). At the regional level, Hawke and Keating were involved in establishing the Asia-Pacific Economic Cooperation (APEC) in 1989. At a local level, Free Trade Agreements (FTAs) between Australia and individual countries are used to secure Australia's competitiveness with key trading partners. Examples include the FTAs negotiated between Thailand and the United States, which were signed in 2005.

Australian governments have assisted industry through the structural adjustment process generated by microeconomic reforms. However, while support has declined, the Productivity Commission states that it 'remains significant' (Productivity Commission 2007a:VIII). The support can range from assistance through Austrade to finalise export deals, or the Federal Government opening export hubs in regional locations (DFAT 2006).

Deregulation of the financial markets of Australia covered a range of reforms with both domestic and international components. Some of these include floating the Australian dollar, the removal of exchange controls, and liberalisation of interest rates

on loans, deposits and other financial instruments. The effect on Australia's financial market was dramatic and this sector became one of the fastest growing sectors after the deregulation (de Brouwer 2003).

An investigation by the Industry Commission into the impact of the financial deregulation concluded that the 'result is an extensive, sophisticated and competitive capital market' (IC 1991:223); however, there were substantial transitional problems.

The National Competition Policy (NCP),⁸⁵ approved by the Federal and all state and territory governments in 1995, formed the foundation to the microeconomic reforms for the Australia economy. The policy was based on the recommendations proposed by the independent committee of inquiry (Hilmer report) completed in 1993 and became the central microeconomic reform effort (IC 1998).

The extent of the policy was far-reaching because of the 'deteriorating performance' of the Australian economy (Productivity Commission 2005b:XIII). NCP scope was on a national scale and the underlying premise was the acknowledgment that competitive markets generally meet the demands of consumers in an efficient and price competitive way.

NCP covered general reforms and sector-specific reforms in the Australian economy. For example, public monopolies and other government businesses were required to follow competitive neutrality requirements (Productivity Commission 2005b). In the case of Tasmania, in 1997, its government enterprises⁸⁶ were operating to 'ensure that they compete with private firms on more equal terms' (Productivity Commission 1998a:3). Moreover, the Hydro Electric Corporation was separated into transmission, retail/distribution and generation (ibid).

While these economic reforms have had a positive effect at the national level, this did not occur to the same degree for the Tasmanian economy, especially during the 1990s. But if these reforms had not been implemented, the Tasmanian economy would have been in a far more difficult position and/or may not have been able to generate economic growth this century. In fact, the 2005 Tasmanian Government's submission to the Productivity Commission's review of the NCP reforms states that, over the longer term, the 'NCP has assisted the State in meeting its objectives of attracting investment, generating employment and achieving higher levels of economic growth' (sub 109, p2 cited in Productivity Commission 2005c: 48).

Regional development policies have changed over time due to microeconomic and macroeconomic influences, such as raising the competitiveness of Australian industries through the reduction of tariffs and financial deregulation. This prompted the development of regional policies in what has been termed the *pre-trade liberalisation era* (BTRE 2003b). These policies approached community development by stressing 'the importance of global competitiveness and market-oriented solutions to generating national and regional economic growth' (ibid 2003b:25).

In response to this new strategy, in the early 1990s, a bottom-up approach was introduced by the Keating government which shifted the focus to localised initiatives. A number of reports were released and provided the impetus for the *Working Nation* white paper on employment and growth in 1994. Primarily, the strategy was to ensure that 'the regions of Australia shared in the economic recovery' (Keating 1994:14). A

^{85.} For an extensive investigation of the NCP refer to the Productivity Commission (2005b).

^{86.} Except the Port Arthur Historic Site Management Authority.

part of the strategy was the establishment of 47 Regional Economic Development Organisations (REDOs) to create a network of smaller regions to provide local analysis and promote economic growth (Fulop and Brennan 2000). These were replaced with the Area Consultative Committees (ACCs).

In 1999, the Regional Australia Summit, attended by all levels of government, prioritised the need for greater collaboration and coordination across governments. The result was the establishment of the Regional Development Taskforce, which produced the Framework for Cooperation for Regional Development to minimise duplication and create cooperation. This was followed by a new regional policy called Stronger Regions, Stronger Australia. The policy covers a number of priorities, such as '[t]aking a planned, cooperative approach to dealing with the social and economic impacts of structural change' and '[i]mproving the business and investment environment and encouraging the growth of regional businesses and employment' (DOTARS 2007).

In 2008, Minister Albanese announced the introduction of *Regional Development Australia*, which is designed to encourage the engagement of regional communities, development organisations and local government.

Labour market reforms were implemented to achieve greater regulatory flexibility and decentralisation of the wage setting mechanisms. De Brouwer (2003:10) states that 'governments have progressively but slowly changed the structure of labour market regulation in Australia over past decades'.

Commonwealth Governments have supported 'initiatives towards award restructuring, certified agreements and enterprise bargaining' (IC 1998:18). Banks (2003:7) underscores this by 'the growth in enterprise agreements, involving substantial variations in previously prescribed employment conditions and work practices'. An example is the Commonwealth's Industrial Relations Act 1988, which introduced certified agreements while retaining conciliation and arbitration provisions. A more recent change was the new workplace reform package, WorkChoices, which took effect from 27 March 2006.

Ramakrishnan and Cerisola (2004) have argued that wage rigidity has been a hindering factor for income disparities in Australia's regions, especially for those states with relatively lower real per capita income and output. This has also been advanced by Rae (2002), specifically for Tasmania, who states that the inflexibility present in the wage structure disadvantaged Tasmania. For example, in Australia, 'the uniform wages policy has propelled the growth of its cities, and had the reverse effect on non-metropolitan areas' (McGrath-Champ 2005:208).

Differences are evident in the Tasmanian method of wage setting in comparison to Australia. Table 8.3 presents the 'method of setting pay' for May 2006. Tasmania has a higher proportion of people on award wages and is the highest of all states and territories. This is combined with lower levels of individual agreements.

Table 8.3 Method of pay setting in 2006, Tasmania and Australia

	Award only	Collective agreement	Individual arrangement
		(per cent)	, i i i i i i i i i i i i i i i i i i i
Tasmania	23.2	47.3	29.4
Australia	19.0	41.2	39.9
Noto:	Figures do not add up to 100 per cent due to rounding		

State Government policies

Eslake (2005c) separates Tasmania's policy performance into two timeframes. The economic performance of Tasmania, from the 1970s through most of the 1990s, 'was largely the result of bad economic policy'. Equally, the economic growth since 'the late 1990s is at least in part directly (though not entirely) attributable to good economic policy' (Eslake 2005c).

The economic policies leading to the poor performance of the Tasmanian economy are well documented. For example, Nixon (1997) and Rae (2002) list a number of factors from public policy that contributed to the 'dismal' performance of Tasmania's economy, these include:

- State Government spending and borrowing were excessive with poor returns on state-owned investments.
- Tasmania had the second most severe taxation system of the Australian states, which heavily burdened the business sector.
- The business sector was excessively regulated.
- Poor public policy choices from both the state and federal tiers of government.
- There was government inertia and lack of leadership.

Rae (2002:31) argues the political inertia is in part due to the Tasmanian electorate being 'cushioned' through the welfare system, which results in Tasmanians not fully feeling the effects of the state's poor economic performance. Hence, the electorate is less concerned about poor policy choices impacting on the state's economic performance.

However, microeconomic reforms have become part of the federal government, and states and territories reform agenda under the NCP. This policy placed requirements on states, which they were obligated to achieve to access further funding. In this regard the Tasmanian government's implementation has been described as excellent, in comparison with other jurisdictions (NCP 2004). These policies helped to change Tasmania's excessively regulated business environment. To further promote the attractiveness of Tasmania as a place to conduct business and identify areas in which Tasmania could improve, the State Government introduced *The Competition Index* in 2000. It provides a comparison of Tasmania with other states and New Zealand. For example, tax severity is a suggested contributor to Tasmania's previous poor performance. In 2005, Tasmania was ranked as having the second lowest taxation severity (TDTF 2006c).

A more detailed discussion of two important contributors to Tasmania's government policy is provided below. These include the state debt and budget strategies and economic development programs.

State debt and budget strategy

'Tasmania is facing an extraordinarily difficult financial position as a result of the growth in spending and debt in recent years' (Tasmanian Commission 1992:144).

This statement illustrates the position of the State Government's finances at the beginning of the 1990s. This position came about through substantial deficit spending and Hydro-Electric Corporation (HEC) developments. Figure 8.5 presents Tasmania's state public sector net debt, from 1980 to 1996. Both general government and Public Trading Enterprises (PTE) show dramatic increases throughout the 1980s. The further development of HEC led to a substantial increase of PTE debt. The rise in general government expenditure was from 'recurrent and capital outlays' through deficit spending, particularly from 1985 to 1991 (Nixon 1997; Background Report 73). This was compounded by the following factors:

- reductions in the real level of Commonwealth assistance for Tasmania from 1986–87 (Nixon 1997)
- the 1980s was a period of high interest rates
- Tasmania had a poor credit rating (Nixon 1997).





Source: Nixon Background Report (1997:72).

A consequence of following this fiscal strategy was a substantial increase in debt. While debt is not necessarily a *bad* policy, in the case of Tasmania it hindered the State Government's financial position because of the servicing costs and 'by continuing to fund its budget requirement through non-performing debt' (Tasmanian Comission. 1992:145). To illustrate the point, in June 1991, Tasmanian Commission (1992:144) states that Tasmania's net debt stood at 41 per cent of GSP, in comparison to 17.2 per cent as an average of the other states. Net debt represents the difference between gross debt and financial assets.

This large debt burden curtailed policy options for subsequent Tasmanian Governments and required the implementation of tight fiscal management from 1990, instituted by the Field Government. The aim was, according to McCall (1998:298) 'to reach a sustainable domestic level of borrowing of about \$35 million a year, and reduce

interest payments on debt to less than 10 per cent of state revenue'. Importantly, the tight fiscal policy followed was implemented during a national recession. Thus as Tasmania's economy already had a large government sector, which provided services and employment, following a tight fiscal strategy would have exacerbated the already slowing economy. Also, in an era of tight fiscal policy it was not surprising that the Groom Government's decision to grant state members of Parliament a 40 per cent pay rise in 1993 was a very unpopular decision among the electorate.

These tight fiscal strategies covered several year timeframes with defined targets. For example, the Rundle Government's 1994–95 budget targeted 'reducing general government net debt to GSP from 14.9 to 10.5 per cent by June 2000' (NCOA 1996). Over time, as circumstances changed different targets evolved. The Bacon Government revised the general government net debt target as a proportion of GSP to below 10 per cent by 2003–04. Following these strategies the current position includes:

- the proportion of general government net debt to GSP in 1993–94 was 18 per cent, in comparison to minus 2 per cent in 2005–06
- the proportion of total public sector net debt to GSP in 1993–94 was 33 per cent, in comparison to 6 per cent in 2005–06.

Figure 8.6 presents general government and public trading enterprises net debt, from 1993–94 to 2005–06. The chart begins in 1993–94, due to the transition to the accrual Uniform Presentation Framework (UPF) in 2002–03 only backcasted to this time period. Net general government debt has declined along with total public sector debt. However, PTE's net debt has remained fairly stable over a long period. Also, after inclusion of other main financial obligations such as unfunded superannuation liabilities, 'Tasmania's net financial liabilities remain the largest of all the rated Australian states and territories at about 110 per cent of operating revenue' (S&P 2005:1).

An illustration of the changing financial position of Tasmania's State Government is evident in its credit rating. In 1991, Tasmania received its first credit rating, which has since been annually reviewed. Table 8.4 presents Moody's and Standard & Poor's (S&P) credit ratings covering several years. Both institutions have improved Tasmania's rating over time with the improvements in the State Government's financial position. These credit ratings are important because they influence the interest rate paid by the government and hence impact on the amount of debt servicing required. The improvement in Tasmania's credit rating became a part of the State Government policy strategy and was specifically defined in Goal 10 of the *Tasmania Together 2020* statement.



Figure 8.6 Tasmanian general Government and public trading enterprises net debt (nominal prices), 1993–94 to 2005–06

Table 8.4Tasmanian Government credit rating increases, 1992 to 2006

Year	Moody's	Standard & Poor's
1992	Aa2	AA-
2001		AA
2003	Aal	
2004		AA+
2006	Aaa	

Sources: Tas Com 1992, Tasmanian Budget Papers (various) and for Standard and Poor's rating, see: http://www.tascorp. com.au/linkedfiles/spreporttas(stateof).pdf.

A reduction in government debt and expenditure can be also be achieved by reducing public sector employment. Table 8.5 presents the average annual growth rates for Commonwealth and State Government employees. The trend has been a reduction in public sector employment over the study period. During the 1990s, all levels of government reduced their employee numbers, particularly the Commonwealth. In relation to Tasmania's State Government a redundancy program was implemented in 1991 (Tasmanian Commission 1992), resulting in a large budget deficit in 1991 (Nixon 1997). This strategy was followed by the Rundle government, with 300 positions shed in the 1996 budget, and up to 500 positions to go in the 1997 budget, many from the health area (McCall 1998). But as can be seen from the table, this trend was reversed from 2000 onwards: the Bacon government claimed that the Rundle government's public sector redundancies had not resulted in many savings (McCall 1999b:596[1]), and went on to rehire some staff.

Table 8.5Public sector wages and salary earners employment (trend),
Federal and state governments, various timeframes

Public sector employment type	Average annual growth rate (per cent)		
	1985–2006	1990–2000	2000–2006
Tasmania's State Government	-0.4	-1.9	2.5
Australia's State Governments	0.4	-0.9	2.3
Federal Government in Tasmania	-2.5	-5.0	0.9
Federal Government throughout Australia	-2.4	-4.7	0.8
Source: ABS Cat. 6248.0.55.001.			

Adriving factor for reducing State Government employment was the higher proportion of public sector employment than other states (Tasmanian Commission 1992). Figure 8.7 presents the State Government's employment per 1000 population. It illustrates the higher number of State Government employees to provide services, which has declined over most of the study period with a slight increase after 2000. However, a gap has remained between Tasmania and Australia. A hypothesis for the continued difference in public sector employment in Tasmania is through lack of economies of scale and the dispersed population, resulting in duplication and smaller service providers across the state.

Figure 8.7 State Government public sector employment per 1000 population, Tasmania and Australia, 1989 to 2005 quarterly



Source: ABS Cat. 6248.0.55.001 and 3201.0.

The reduction in public sector employment was also seen as a way to increase the private sector provision of services. Cully (1999:211) states that '[d]uring the 1980s and 1990s Australian governments at federal and state level embraced a number of policy changes which are usually referred to as 'neo-liberal'. However, Cully (1999) makes an interesting point. Cuts to public sector employment (of all tiers) do not necessarily result in a commensurate increase in private sector employment, and may even serve to reduce private sector employment in some contexts. Referring to the period between 1992 and 1999 he states:

'It does appear to be the case ... that the smaller States of South Australia and Tasmania have been relatively dependent on public sector employment and the substantial cuts experienced there have largely served to dampen overall employment growth rather than promoting private sector employment growth, as may have been intended' (Cully 1999:214).

The improvement in the financial position of the state did enable greater flexibility for the State Government to address government priorities. For example, the 2006 deficit was largely incurred by increased capital expenditure into physical assets such as schools, hospitals and roads (Standard & Poor's 2005)

Economic development

A factor for the malaise of the Tasmanian economy was the lack of coherent direction. In fact, Callaghan (1977) commented that both Federal and State Government initiatives and assistance had lacked a long term strategic approach back into the 1970s, and this was still relevant into the 1990s. Rae (2002) categorised the Nixon report as highlighting a sense of despair, along with an impression of inertia and lack of leadership in Tasmania.

Stimson *et al* (2005:23) argue that a virtuous circle towards sustainable development for a region can be realised 'through a process whereby proactive and strong leadership and effective institutions enhance the capacity and capability of a place to better use its resource endowments and gain an improved market fit in becoming competitive and being entrepreneurial'.

A policy mechanism governments use to promote economic activity is through their economic development programs. The State Government's economic development programs during the 1990s were severely limited because of the priority of reducing debt. However, a number of development strategies were implemented such as Groom's Decade of Growth (DOG) 1994 and Rundle's The Directions Statement 1997.

The DOG strategy outlined a number of targets to lay the foundation for future economic growth. Some of the key targets included lifting exports by \$3.5 billion each year and replacing imports by \$150 million per year. Nixon (1997) regards this economic development strategy as having limited success because it did not outline how the Government was to achieve these targets and it was not accepted by the broader community. In contrast, the *Directions Statement* did not specify targets but nominated key areas critical for development. Several of the key areas were education, energy, primary industry and tourism.

The more recent economic development strategy, the *Industry Development Plan* (IDP), is focused on in the remaining analysis. This plan was introduced by the Bacon Government after winning election in 1998. The plan contained four key components. Figure 8.8 presents the four strategies of the IDP. First, the Tasmanian Department of State Development (TDSD) was established to identify economic opportunities for growth. The second strategy was the delivery of industry programs to reduce barriers for business. The third strategy was to conduct state wide industry audits of 16 industries. Finally, the IDP involved the formulation of partnership agreements with local government to improve economic of scale and reduce parochialism.



Figure 8.8 Tasmanian Government's industry development plan

Source: Industry Development Plan (TDSD 2000).

The new TDSD, established with Bacon as Minister, 'became the contact point and implementation facilitator for major development projects as well as initiating and coordinating the State Industry Policy' (McCall 1999b:596[3]). The creation of a large central agency like this was one of Nixon's (1997) recommendations. This is supported by Blakely and Bradshaw (2002) who points out that economic development is an institution-building process that requires management of the development process over the long term.

Audits were carried out on the State's main industries, and funding was granted where a business provided a strong case for how the funding would enable them to become more profitable. However, there was disgruntlement in some quarters of industry that 'it was not the role of government to "pick winners"'(McCall 1999b:596[5]).

Public-private partnerships in the provision of infrastructure were part of the philosophy of the Bacon government (Kelly 2006), in line with recent trends in government service provision. In Tasmania there were two large projects carried out which received a mixture of private and public funding. The first of these was Basslink, an underwater electricity line connecting Tasmania with the Australian mainland, and the longest of its type in the world. This project was not the brainchild of the Bacon government, however, having been conceived of much earlier. But it was only in 1999 that the project was endorsed as a Project of State Significance, meaning it would [only] be 'subjected to an eleven-month independent environmental, social, economic and community impact assessment' (McCall 1999b:596[5]), before it went ahead, which highlights the importance of the development approval process. The aim of Basslink was to enable Tasmanian access to the National Electricity Market. This would have two key results: first, Tasmania would be able to sell electricity in times of excess to the mainland; second, it would ensure an electricity supply to Tasmania when hydro dams were low under drought conditions. Basslink was managed by the British company National Grid, and cost over £300 million (over \$750 million Australian). In 1997 the Rundle government had announced support of \$350-450 million for the project (McCall 1998).

The other major project was the Duke Energy Gas pipeline, another undersea pipeline connecting Tasmania to the mainland to enable mains gas supplies to business and residential customers in the state. This project was completed in 2003, however, protracted negotiations with the company which was to distribute the gas to industry and households within the state meant that the first households would not receive supply until 2007 (Herr 2004a).

Both projects provided an economic boost to Tasmania during their construction phases. A further description of these projects is provided in Chapter 7.

Another strategy was the rebranding of Tasmania. Bacon's aim was to attract more diverse and entrepreneurial people to Tasmania, in the belief that this would be a stimulant to the economy. His ambition was to create more optimism in the business environment and the population more widely. A change in mood, and pushes by the State Government to have Tasmania recognised as reformed, less beset with internal struggle, bureaucracy and oppositional politics were rewarded with increased business investment in the state. He also saw potential in high value produce, in line with the state's 'clean and green' image, and the importance of tourism to the state. Although he was not familiar at the time with the ideas of Richard Florida, commentators have subsequently highlighted Florida in relation to Tasmania's brief economic renaissance (Eslake 2005b). Florida saw creativity as fundamental to economic performance (Collits 2005). That is, population centres benefit from a creative class of people: highly educated, technologically savvy, diverse, ideas driven, and entrepreneurial.

Bacon was also a strong believer in 'taking the people with him' (McCall 1999b:596[7]). *Tasmania Together 2020* was one example: a collaborative process in which community leaders worked together to produce a vision of Tasmania in 2020. Although the 2000 draft was criticised for its 'astonishing fluffiness', its 24 goals derided as bland (McCall 2001:288[4]), the first report of the process was released in 2001, and all but three of its 212 benchmarks for improving the State were unanimously agreed (Herr 2002: 281[3]).

A good example of how the creation of a 'New Tasmania' is linked to economic performance is in the tourism industry. It has been argued by Eslake (2005c) that social reforms have helped create an image of the New Tasmania as an openminded and ethical destination. Indeed, Tourism Tasmania has been overt in trying to attract new visitors to the island, including those who may have been uninterested previously. Part of Tourism Tasmania's strategy was to encourage the hitherto untapped markets.

Tasmania was being rebranded into a quality destination, and high value produce was to become part of that package. In 2001, the first '10 Days on the Island Festival' was held, which 'included over 120 ticketed performances, 30 free events and exhibitions, 15 Australian debut performances with some 130 artists from 12 countries [and] injected in excess of \$1 million directly into the Tasmanian economy' (Herr 2001:574[4]). The aim was to establish this as 'Tasmania's premier cultural event to draw tourists to the State from across Australia and beyond' (ibid:574[4]). The biennial festival may also have been designed to encourage visitors to stay longer on the island.

To accommodate visitors to Tasmania, two ferries were purchased in 2002 to replace the old Spirit of Tasmania vessel and the Devil Cat. These proved successful in attracting tourists from Victoria; however, the purchase of a third ferry direct from Sydney to Tasmania was not a success and was sold in 2006. Other issues were the collapse of Ansett airlines in 2001, which meant little competition to Qantas for a time before Virgin Blue entered the Hobart market.

While the New Tasmania may have been marketed as an ethical destination for the conscientious traveller, in the forestry debate the Bacon and Lennon governments have been strong supporters of the development cause. Shortly after winning office, the Bacon Government dropped 'compromise agreements to ban logging in over 49 000 hectares of sensitive forests' which the Greens had previously negotiated with the Rundle Government (McCall 1999a:292[8]). The forestry company Gunns Ltd

announced a preferred site for a new pulp mill in the Tamar Valley in 2005. There was vocal opposition to this mill from the environmental movement and beyond. Nonetheless, the Bacon Government provided support to the development, allowing exemptions to limits of certain chemicals for this mill, and more recently, former Premier Lennon fasttracked the approval process for the mill after lobbying by Gunns that the approval process was too long. The project has recently been approved by the (Federal) Department of Environment and Water Resources.

As noted previously, the strength of environmental opposition in Tasmania is significant, and fears that projects will eventually not go ahead or deadlines will blow out due to protracted negotiations between relevant parties, make potential business investors wary. Indeed, according to Jeff Kelly, former head of the Department of State Development, winning back confidence in the business sector was a key to the success of the Bacon years: business and financial institutions had to be persuaded to take a chance and back new investments, and the government was keen to prove that they indeed had the mandate to be able to approve new developments.

The upshot of instituting a development strategy is that while a government that is operating effectively does not necessarily achieve positive economic outcomes, these policies are more conducive to creating a positive business environment. Governments have gradually moved towards less direct intervention. These economic development programs are focused on providing a framework to encourage economic activity.

Hence, government leadership is an important component of the economy. The lack of effective government leadership during the 1980s and 1990s, was a hindrance to the implementation of effective policy. In contrast, the Bacon Government's introduction of *Tasmania Together 2020*, a consultative process, provided a foundation for the development of core *visions* for the state, and importantly set measurable benchmarks. It is impossible to measure the economic benefit gained through government leadership. But as Skilling (2004:3) points out that '[w]hereas bad policies can destroy growth, improving already good policy settings is unlikely to generate much economic upside'.

8.5 Conclusion

Tasmania's government has played an important role in the fortunes of the state's economy. Good and bad policies have impacted on the financial position and the leadership role of government over the study period. Poor policy choices and high government debt during the 1980s set in train the restricted policy options available to subsequent governments during the 1990s. Alternatively, the implementation of a structured economic strategic plan, with a collaborative approach, provided confidence in the local economy for both the household and business sectors.

Tasmania's State Parliament reduced the numbers of both houses in 1998 to move towards a smaller government. In addition, the upper house system of voting was viewed as a problem because of the difficulty governments faced in pursuing their mandates. This is combined with a recognition that the number of local governments resulted in inefficiency through duplication and lack of economies of scale. At the state and federal level there has been increasing awareness of the importance of implementing microeconomic reforms to meet the challenges of increasing international competition. Raising productivity, competition and efficiency were seen as vital to lift the 'economic malaise' of the Australian economy during the 1970s and 1980s, and in turn the state's economy (Productivity Commission 2005b:XII). Tasmania's benefit from these changes was not as evident, especially in comparison to the national economy. But it may now be at a far greater disadvantage if they did not institute the reforms.

The slower growth of the Tasmania economy during the 1990s relates to the poor policy choices, particularly government financing, because it severely restricted the available policy options to generate recovery from the national recession and stimulate the economy. On the other hand, the tight fiscal policies during this period enabled later governments to implement structured economic development programs and large infrastructure investments.

This structured approach resulted in a development strategy that was more conducive to creating a positive business environment. These policies include the Industry Development Plan, *Tasmania Together 2020* and fiscal responsibility. They provide clear benchmarks to meet policy objectives.

The upshot is that government development strategies may not achieve positive economic outcomes, but are more to create an environment more conducive to businesses and hence the potential for future economic growth.

Box 8.2 Key points

- Both the Federal and State governments have played a role in the performance of the Tasmanian economy.
- The Federal Government has driven Tasmania's economy through its macroeconomic and microeconomic reform agendas at the national scale, such as financial deregulation, monetary and fiscal policies, national competition policy and labour market flexibility.
- Tasmania's Government has impacted on the state through its fiscal management and leadership. Poor policy choices and high government debt during the 1980s set in train the restricted policy options available to subsequent governments during the 1990s. From the late 1990s, a more structured approach to economic growth and introduction of large investment projects provided a level of confidence in the leadership of the State Government.
- While poor policy choices can destroy growth. Good policies may not necessarily achieve positive economic outcomes but do make it more conducive to a positive business environment.

Chapter 9

Observations



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Chapter 9 Observations

Geography, industry structure, social and demographic structures, skills, institutions, and market competitiveness are just some of the influences that can shape a region's economic development and the success of policy responses by government. This study considers a number of the drivers identified in the literature which have influenced the Tasmanian economy. Three basic questions are raised in the beginning of this study:

- What has been the pattern of economic development in Tasmania from 1985, compared to Australian economic development as a whole?
- What have been the key drivers of Tasmania's economic development?
- What can be learned for other regions in Australia?

This Chapter brings together the conclusions drawn from the investigation into these questions and considers the policy implications for future economic development, not only in Tasmania but for other regions in Australia. Section 9.1 identifies the key drivers with an investigation into their interaction and timing. Section 9.2 considers the policy implications for Australia's regions, with concluding remarks in section 9.3.

9.1 Key drivers

The changes that have occurred in Tasmania's economy over the past two decades reveal a complex mix of interacting drivers with no single or simple explanation sufficient. The state's economy can be described as running at two different speeds during the 1990s and 2000s. In the 1990s, Tasmania's economy grew slowly in comparison to the national economy, while the state is experiencing stronger growth this century. But, while the Tasmanian economy has contrasted with the national economy in terms of growth, it is still very connected to Australia's overall performance. Importantly, common cycles exist between the states; however, Tasmania is subject to more idiosyncratic shocks and volatility.

The investigation into Tasmania reveals a number of important drivers for its economic growth. It highlights the applicability of these drivers for other regions in Australia, especially in relation to industry structure and the national economy. Below is a description of the key drivers identified by BITRE for the underperformance period and the renewal period.

Underperformance

A key reason for the slow growth of the Tasmanian economy was the impact of the national recession in the early 1990s. This shock was the initial trigger for the structural

changes in industries across the country. The result for Tasmania was a prolonged slow down in economic activity because of its traditional industry structure.

Agriculture provided the largest contribution to economic growth in the 1990s for Tasmania. Similar to regional economies on the mainland, this industry has increasingly operated in a highly competitive world market. Industries established in decentralised locations across the state, such as manufacturing, were also hard hit. The result was a traditionally dominated industry structure which found it difficult to quickly adjust to the changing business environment. Regions that benefited from employment growth during the 1990s were large metropolitan areas. For example, Birrell et al (2000) investigating job growth in Victoria during the 1990s, found that metropolitan Melbourne outperformed regional Victoria, with over half of the net job creation in Melbourne attributable to the *property and business services* industry. This matches the experience of Tasmania as *property and business* services did not provide the same level of growth that drove the Australian economy.

The shock also resulted in a lack of private investment into Tasmania during the 1990s. Tasmania failed to capture the national increase from either housing or business investment. Access Economics (2005) describes business investment as a barometer of corporate confidence. For this reason, Tasmanian business expectations for the state's future economic performance curtailed investment, which hindered further economic activity. Nixon (1997:53) points out that the recession has had 'a substantial impact on private investment in Tasmania', with the second lowest long-term growth of Australia's states.

Also, the State Government's financial position placed Tasmania in a difficult position, similar to other states such as Victoria. The level of public debt substantially increased from 1986 to 1991 through deficit spending, to pay government expenditure and developments into the Hydro-Electric Corporation (HEC). The result was a large non-performing net debt, representing 41 per cent of GSP, in comparison to 17.2 per cent for other Australian states as of June 1991 (Tasmanian Commission 1992). Compounding the problem were the very high interest rates during the 1980s, which raised interest payments to represent over 10 per cent of government revenue outlays in 1993–94 (Eslake 2004). Nixon (1997:43) highlights the problem of the State Government's financial position because it resulted in the government having 'little scope for stimulating economic recovery and tackling major problems such as unemployment'. In fact, Nixon (1997:45) declared that 'a great threat to Tasmania's future prosperity [was] posed by the state's large government debt'.

Renewal

The growth period demonstrates a virtuous circle through positive outcomes in a number of economic indicators. It is difficult to pinpoint a single driver for the growth. A number of drivers are evident, which make interconnecting and reinforcing contributions to the growth.

Private investment began to rise in 1998, but slowed again. However, since March 2002, private investment has increased substantially, particularly the business investment component. This became a key driver for Tasmania's economic growth.

Two substantial infrastructure projects were the gas pipeline and connection to the national grid, which were financed through public and private partnerships.

Tasmania also benefited from the national housing market. Australia has experienced substantial housing price growth which has raised the level of wealth and consumption in the economy (Tan and Voss 2000; Dvornak and Kohler 2003). Tasmania benefited because of the availability of relatively affordable housing. This increase in investment has raised economic activity and placed confidence in the continuing growth of the housing market.

Tasmanian domestic demand has increased with the strength of the state's economy and the strong performance of national demand. Consumption started to increase in late 1998, but slowed again with the introduction of the Goods and Services Tax (GST). However, after the September quarter in 2000, domestic demand had started to rise again with substantial improvements occurring from 2003. Access Economics (2005) described the flow on effects as a virtuous circle with further improvements in a number of economic indicators.

This increase in economic activity has improved a number of labour market indicators. Income has increased, participation rates have improved and unemployment rates have declined. Tasmania has consistently had higher unemployment rates than the national economy. After the recession hit, Tasmania's unemployment rate reached a high of 12.3 per cent in 1993, in comparison to 10.7 per cent in Australia. It has since declined with two periods of note. In 1999, the unemployment rate dropped 1.5 percentage points. This drop may in part be from employment growth such as new jobs generated from the establishment of call centres. This drop was followed by a *constant* unemployment rate for three years with a substantial drop occurring after March 2003.

Another aspect is the changing financial position of the State Government. Continuing tight fiscal policies decreased government debt to the point where net debt is now eliminated. In fact, Eslake (2004) argues this was done without raising state taxes and even reducing Tasmania's relative tax severity. But, while Tasmania's Government has improved its financial position, it is still exposed through their level of superannuation liabilities and public sector debt, which remains the largest of all the rated Australian states and territories at about 110 per cent of operating revenue (Standard & Poor's 2005).

The downside to the recent economic improvement in household income, wealth and consumption is that it does not make a sustainable foundation for future economic growth. Some commentators have argues that Tasmania's economic growth is already starting to slow down, with a possible indication being the levelling off of Tasmanian households' private consumption and rising interest rates.

9.2 Implications

Tasmania has experienced changing fortunes over the past two decades, with a two-speed economy evident. This development in the state's economy provides an opportunity to identify the drivers and their implications for public policy.

Moreover, Tasmania is not only a state, but also a regional economy, and shares many characteristics with non-metropolitan Australia. These characteristics include:

- lower levels of human capital
- traditional industry structure impacted through structural adjustment
- ageing population
- isolated economies
- out migration flows from the regions, particularly in the younger cohorts.

Regional and rural centres across the country have faced, and continue to face, the many challenges that confront small economies. Regional Victoria and subsets of regions in various states have similar economic bases and industry structures, for example, inland New South Wales, southern Western Australia, south west Queensland and regional South Australia. Hence, lessons drawn from the Tasmanian experience can be applied to regional economies in many part of the country, especially for regional centres and their surrounding regions. For these reasons Tasmania provides lessons for economic development in other Australian regions.

The policy implications have been separated into different characteristics of economic growth. These include migration, productivity, industry structure, government leadership and government finance. A discussion of the implications, for Tasmania and other regions of the country, is presented below.

Migration

An investigation into the drivers for the flow of individuals from Tasmania to the mainland found that higher relative employment rates in Tasmania were a factor. Periods of low relative employment in Tasmania coincided with high levels of out migration. Conversely, periods of higher relative employment in Tasmania resulted in a reduction in out migration flows.

In relation to in migration, housing affordability has also been found to be a determinant. Tasmania's lower house prices have attracted interstate migrants. Another factor is the attractiveness of the amenities available, such as a picturesque environment. This in-flow is principally in the older demographics (35–54 and 55+). Ironically, the in-flow of people into the state is raising housing demand and increasing house prices, which reduces the attractiveness of Tasmania as a place of migration.

The type of people migrating is impacting on the state's age structure. The pattern of young people leaving the state and older people arriving are accelerating the state's ageing process. While this phenomenon has been longstanding for Tasmania, high fertility rates have previously balanced the high emigration level. However, currently Tasmania has falling fertility rates. This pattern is also relevant for many non-metropolitan areas across the country.

The acceleration of the ageing structure does not call for policies to be implemented to keep younger people in Tasmania. Many young people are moving to increase their human capital—through formal tertiary education and/or work experience. Any

policy that deters young people from migrating also deters them from accumulating such human capital. A potential loss of human capital is a cost of such a policy unless one is willing to assume that the migration of young people from Tasmania to the mainland is based on incorrect information or expectations.

'Economic theory suggests that in the absence of some market failure, such as externalities or labour market rigidities, there are no simple efficiency grounds for policy to be used to influence individual migration decisions. Specifically, if markets work, the communities that receive immigration derive net gains and those that migrate reveal themselves to be better off' (Clarke *et al* 2006).

Productivity

Tasmania has a lower level of both labour and multifactor productivity than Australia. In fact, Tasmania's productivity relative to the national rate has declined this century. This discrepancy is important because productivity provides communities with the ability to raise living standards into the future. Thus, it is vital that productivity is raised to drive economic growth.

The current Tasmanian Government recognises the importance of raising Tasmania's productivity levels. Listed below are a number of the policy levers the State Government identified to raise productivity:

'Contributing to a stable macroeconomic environment through sound financial management' $% \left({{{\left[{{{C_{{\rm{m}}}}} \right]}_{{\rm{m}}}}} \right)$

'Improving workforce skills by providing and promoting quality education and training'

'Providing an attractive environment for investment'

'Implementing industry development programs to encourage particular industries and business practices'

'Encouraging competition through an ongoing process of regulatory reform'

'Striving for higher productivity in the State Government sector, which constitutes some 16 per cent of employment' (TDPAC 2004:22–23)'.

These policy objectives are long term and require a sustained commitment from all economic agents. An example is raising productivity through human capital. Skills influence productivity growth. Raising labour market skills raises the rate of innovation through absorption and development of technologies. After its investigation into public support for science and innovation the Productivity Commission (2007b:XVII) concluded that public support 'has, by and large, provided widespread and important benefits for Australians'.

A specific program to encourage research and development in Tasmania is the Department of Economic Development's Research Partnerships Program (RPP) (TDED 2007b). This program was setup to provide support in the development of 'innovative products, processes or services that have the potential to be commercialised' and the adoption of new technologies in industries (ibid). The program is reviewed by the Tasmanian Innovations Advisory Board (TIAB), which was established in 1999 to create a culture of innovation and advise the State Government.

A Federal Government initiative was established the Department of Communication, Information Technology and the Arts (DCITA). It is called the *Building on Information Technology Strengths* (BITS) Incubators program. Its specific Tasmanian program is titled the BITS Intelligent Island Program. An evaluation was completed in 2003, which found that it has performed well by international standards, but that these programs require long-term commitments (ACG 2003). The program cites the international experience which shows that it may take eight years for incubators to achieve sustainability (ibid). It 'also created a pool of skilled individuals with two to three years experience in building and operating ICT business incubators' (ibid:xi).

Enterprising human capital is another aspect of raising economic activity through effectively bringing innovations and ideas to the market place. Garlick *et al* (2007) investigated the Vocational, Education and Training (VET) system and found that a key driver for regional economic growth was enterprising human capital and that the building of enterprising skills is important. The suggestion is that equipping people with entrepreneurial skills would enable them to succeed. In other words, the VET system could enable people to exploit the opportunities and ideas identified, because '[e]nterprising regions are those that work together to build connectivity, to unleash local knowledge, to be strategic and to translate new ideas into meaningful outcomes' (ibid:42).

The discussion into the connection between productivity and infrastructure began with David Aschauer's 1989 study of public investment in the USA. This study found that the decline in productivity in the 1970s can be attributed to the slowdown in public investment. The debate that followed, using a number of methodological improvements, has produced contradictory results in terms of both magnitude and causality.

Studies that have investigated the impact of infrastructure on productivity at the sectoral level reveal that the impact is not uniform. Harchaoui and Tarkhani (2003) found that the main contributors towards productivity were technical change and exogenous demand, while public capital provided a positive influence—their estimates were lower than those calculated in previous studies. However, the degree of public capital contribution towards productivity varied significantly across industries, with the greatest influence occurring in transportation, trade and utilities. In the case of Australia, Connolly and Fox (2006) concluded that, at the industry level, a positive and significant impact is evident from public capital on private Multi-Factor Productivity for *Manufacturing* and *Wholesale and retail trade*.

An investigation at the state level for Australia into capital productivity and capital deepening by Nguyen and Smith (2006) illustrates a problem in relation to public investment. 'Public sector capital stock per hours worked is the highest [for] Tasmania ... and, yet this is the state recording the lowest output growth, suggesting that the high level of public investment expenditure in this state has not been of the type conducive to generating long-term economic growth in private sector activity' (Nguyen and Smith 2006:11). A possible explanation is the crowding out of the private sector.

The relationship between public infrastructure investment and productivity is important because it should guide policy responses. Kevin Fox (2007) highlights that public capital provides services, such as hospitals and schools, and these benefit the development of human capital rather than having a strict economic focus. 'Thus, not all public capital is equal' (ibid:slide 9). Haughwout (2002) observed that public

investment decisions result from local political processes. This is because 'residents vote and firms do not' (ibid:426). Therefore, 'it is perhaps unsurprising to discover that the marginal public investment dollar provides larger benefits to households than to firms' (ibid:426). Another challenge for public policy is the crowding out of private investment. In other words, would private investment have entered into the market anyway, or are public funds displacing private enterprise?

Government investment in infrastructure can promote economic activity; however, it must take into account future social and economy benefits. Large projects are not a 'panacea' for generating economic activity and 'there are clear risks in attaching "think big" or "nation-building" labels to infrastructure projects with very uncertain commercial and social payoffs' (Banks 2000:12).

Productivity as a key driver is vital to the future growth of an economy and the policy implications for Tasmania and for regions across the country is that there are no quick fixes. Raising human capital, increasing R&D and innovation, implementing microeconomic reforms and infrastructure projects are substantial investments into the future, which require strong evaluation frameworks to consider the likely benefits, costs and distributional effects.

Government finance

It should be clear that government debt is not necessarily a negative, but using debt to finance non-performing assets or budget expenditures can quickly place a government in financial difficulties, especially in combination with an adverse economic shock.

This is exactly the situation confronted by the heavily debt burdened Tasmanian Government after the recession in the early 1990s. The large debt curtailed fiscal policy options for subsequent state governments and resulted in the implementation of a tight fiscal program. A study by Giesecke and Madden (2003:2), using a dynamic multi-regional CGE model, 'demonstrated that a feasible State Government fiscal policy to halt Tasmania's declining share of national GDP does not exist'. In order to stop Tasmania's declining economic activity various fiscal policy options were simulated and, it was found that only a temporary halt required 'the introduction of subsidies and taxes which are of an infeasible size. A more modest, but nevertheless extreme measure, of eliminating payroll tax would only slightly alter the rate of decline, and then only for a limited time, at a cost of a major re-alignment of tax measures' (ibid:23). This also illustrates the limitations of government in influencing economic activity, especially if the underlying economic fundamentals are hampering development.

Industry structure

Two main sources for structural change are through market related and government related drivers. Examples of market-related factors include technology, preferences, trade and resources. Government related drivers include trade liberalisation, infrastructure, labour market reforms and taxation.

The recession in the early 1990s was prompted by global market conditions, which impacted on industry and in turn the Tasmanian economy. Small isolated communities

reliant on a single dominant industry will be subject to more boom and bust cycles, especially if they are not integrated into a broader economy. In fact, Callaghan (1977) showed foresight with his observation for Tasmania that large mining and manufacturing enterprises were dispersed around the state. Communities were building up individual sites, leaving them vulnerable should economic conditions turn against the dominant industry in the area. Thus, as stated by Kosturjak and Wilson-Smith (2004:2), the recession was simply the trigger for pent up forces that resulted in 'the scaling down and collapse of uncompetitive firms', particularly in manufacturing. This does not mean governments should intervene during these cycles or structural adjustment as the result may prolong the economic disadvantage. Moreover, Drache (1997) concludes that government programs alone will not protect a region from industrial decline. But governments should be aware of the greater economic impact that occurs in particular regions and understand the consequences of adverse and advantageous shocks on local economies. For example, the closure or opening of a mine or factory can have substantial economic and social impacts on small communities.

An investigation by the Productivity Commission (1998b) made a comparison between structural change occurring in metropolitan and non-metropolitan areas, from 1981 to 1996. It found that non-metropolitan regions had a higher structural change index on average and higher levels of variation in comparison to metropolitan locations. The highest structural change index was recorded in Lyell, Tasmania. The reason for the higher levels of structural change in non-metropolitan areas is due to the smaller industry base and a greater level of specialisation (often dominated by a few agricultural or mining activities). Similarly, the BTRE study into industry structure found that high levels of structural change was evident for regions that were very remote, lacked industrial diversity and had a small employment base. Between 1991 and 2001, Burnie and surrounds was identified as having a high level structural change with substantial employment declines for the major industry.

Another avenue for structural change is through government policies. In the 1990s substantial policy driven microeconomic reforms were implemented across the country, designed to meet the challenges of competing in a global market. Tasmania was particularly hard hit because of its traditional industry structure. The investigation by the Productivity Commission (2001:X) into the key policy issues for structural adjustment stated that '[w]here a reform proposal is likely to yield a net benefit for the community, but would impose significant transitional costs, there is a need to assess the scope for reducing those costs, and how this might best be achieved'.

The impact of implementing structural adjustment policy is very difficult to evaluate. Information limitations, alternate competing policies and lack of counter-factual analysis makes it hard to assess the distributional effects. As the Productivity Commission (2001:X) points out, '[t]here are few hard and fast rules to aid decision making in this area'. But, the 'National Competition Policy (NCP) has delivered substantial benefits to the Australian community which, overall, have greatly outweighed the costs' (Productivity Commission 2005b:XII).

Government leadership

Government leadership is an important influence on an economy. Nixon (1997:51) cites a lack of government leadership as a hindrance because 'efforts to implement a vision for a better future [we]re thwarted'. In contrast, the Bacon Government, for example, introduced *Tasmania Together 2020*, a consultative process, which provided a foundation for the development of core *visions* for the state, and, importantly, set measurable benchmarks. However, McCall (2001:288[4]) lists the mood of commentators at the time by referring to *Tasmania Together 2020* as 'motherhood statements', 'bland', 'uninspiring' or 'window dressing for the government'. But as Milne (2000) suggests, all examples of small jurisdictions moving from economic weakness to strength come about 'when communities actually face the challenges'. Hence, Tasmania made headway into formulating a comprehensive strategy through *Tasmania Together 2020*, an approach adopted by other regions such as South Australia's *Strategic Plan* and *Oregon Shines Vision* (United States of America).

This acknowledgment of Tasmania's economic position also led to a series of development plans culminating in the implementation of the *Industry Development Plan* in 1998. The plan was a 'structured and systematic approach' to promote business confidence and raise economic activity. But it should be noted '[t]he planning process, not the plan or document, is significant' (Blakely and Bradshaw 2002:342). As Rodriguez-Pose (2000:112) points out, '[o]nly if development problems are addressed in a comprehensive and encompassing way lagging regions may have a chance to set the foundations for future economic development' (ibid:112). This strategy however, is by no means simple or easy to implement.

Moreover, Blakely and Bradshaw (2002:342), stress that '[a]n institution with specific responsibilities to coordinate each step of the local economic development process is essential'. In the case of Tasmania it was the establishment of the Department of State Development, now referred to as the Department of Economic Development that identified the goals from *Tasmania Together 2020* and the Industry Development Plan as the basis for the State's strategic development.

It is impossible to measure the economic benefit gained through government leadership, but as Skilling (2004:3) points out, bad leadership or 'bad policies can destroy growth'. Moreover, leadership can be very ephemeral, as Drache (1997:47) argues, governments can no longer be the principal instrument for economic change, but rather can act as a 'catalyst and the lead partner'.

9.3 Conclusion

The factors that have influenced the Tasmanian economy are equally applicable to many other Australian regions. Structural adjustment, private investment, household consumption and the state of the national economy have all had influence. Thus, a complex mix of interacting drivers has shaped the Tasmanian economy with two distinct periods of economic activity. During the 1990s, Tasmania's economy grew very slowly in comparison to the faster growth this century.

Migration is changing the demographics and human capital of Tasmania. However, these changes do not necessitate the introduction of policies to curb migration

patterns. If we assume that the market is working, the communities receiving immigration derive net gains. Those migrating reveal themselves to be better-off and any interference would result in adverse consequences.

Industry structure has had influence on the performance of the economy because of the global trend from a traditional base towards a service economy. Tasmania with a traditional industrial base faced a difficult adjustment process. The role of government is both in its policy response to these shocks but also in managing the impacts of the structural adjustment process. However, the challenges of implementing effective structural adjustment policies should not be underestimated.

Productivity is a major influence on future living standards. Because of this it should be a high priority for governments and business, otherwise the recent economic growth is not laying the foundation for future activity. The components of productivity that have high priority include innovation, R&D, infrastructure and human capital.

Governments play a vital role in the functioning of an economy by providing leadership through appropriate fiscal management and setting a strategic plan for the economy. But while governments can be a leader of change, an awareness of their limitations that influence economic activity is also important.

Box 9.1 Key points

- The two-speeds of the Tasmanian economy reflect a number of key drivers. During the 1990s, Tasmania's industry structure, lack of private investment and the poor financial position of the State Government prolonged the slow growth. The renewal this decade demonstrates a virtuous circle of increases in income, consumption, wealth (primarily through housing) and population, which have all enhanced the growth of the Tasmanian economy.
- Lessons drawn from the Tasmanian experience are applicable for regional economies across the country, especially for regional centres and their surrounding regions.
- Migration: the flow of people and the changing demographic does not necessitate the introduction of policies because, if markets work, the communities that receive immigration derive net gains and those migrating reveal themselves to be better off.
- Productivity is a key driver for raising future living standards. The key mechanisms for improving productivity are innovation, infrastructure and human capital.
- Government finance: debt is not necessarily bad but if it is used to finance non-performing assets or current expenditure it can place the state's financial position in a vulnerable situation.
- Industry structure: structural change can have substantial impacts on regional economies and governments should be aware of the consequences.
- Government leadership: governments can be a leader of change but must be aware of their limitations to influence economic activity.

Chapter 10

Conclusion



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Chapter 10 Conclusion

Tasmania's economy has had a long history of economic underperformance but recently the economy has been experiencing its best economic conditions in decades. The motivation for this study was to investigate the underlying drivers for the changing fortunes in the State's economic performance. This development in the State's economy provides a unique opportunity to investigate the drivers of this change. A gap exists in the literature on understanding regional economies in Australia because of the difficulty of obtaining information. Tasmania is not only a state, but also a regional economy, and shares many characteristics with non-metropolitan Australia. For this reason it may provide lessons for economic development in other Australian regions.

This study reveals a complex mix of interacting drivers with no single cause for the state's economic performance. Often the interaction is overlooked because the focus is usually on a particular aspect of an economy such as unemployment or investment. But economies do not work in isolation and are buffeted by a number of forces. This is the key advantage of taking a holistic approach. It allows for consideration of interacting drivers and their relative influence on the economy.

Alternatively, many studies attempt to analyse economic growth using a single quantitative methodology, such as a Computerised General Equilibrium (CGE) model, reduced form econometrics or a shift-share analysis.⁸⁷ This study has adopted a broader approach, incorporating a range of both quantitative and qualitative techniques. This approach, while resource intensive has proven to be an effective method of identifying drivers of Tasmania's economic growth.

The key drivers identified were both exogenous and endogenous, with international, national and internal factors affecting the state's economy. Some of the important drivers include industrial structure, migration, productivity, private investment, the national economy and government.

A limitation of taking a holistic approach is that it restricts the level of investigation into particular drivers and doesn't lend itself to simple conclusions. Another challenge of concentrating on a single economy is judging applicability of the conclusions for other regions. Each region has their own characteristics that influence the impact of economic shocks and the response. However, taking a broad approach highlights the interaction and while there is no prescription or single driver of growth, there are more general lessons that can be drawn.

The policy implications for government are that the drivers of economic growth are wide ranging and require a long term approach to raising living standards. Moreover, particularly for regional economies, poor policy choices can destroy growth because of the lack of scale of the economy to withstand shocks. Good policies may not necessarily achieve growth but are more conducive to achieving a positive economic environment.

^{87.} Examples of the different techniques include Giesecke and Madden (2003) CGE; Garlick *et al* (2007) and BTRE (2006b) reduced form; Mitchell and Carlson (2005) shift-share analysis.

Migration is identified as an important driver and reflector of Tasmania's economic performance. Out-migration is influenced by the shape of the State's economy and in migration is influenced by the level of housing affordability in comparison to the mainland. Government intervention in this process may be very distortionary. In the absence of market failure, such as externalities of labour market rigidities, there are no simple efficiency grounds for policy intervention. Specifically, if markets work, the communities receiving immigration derive net gains and those migrating reveal themselves to be better-off.

Productivity is a key component of any economy or society that wishes to raise its standard of living into the future. As pointed out previously, 'productivity isn't everything, but in the long run it's nearly everything' (Krugman 1994:13). In the case of Tasmania, productivity has been consistently lagging behind the national level. In fact, during the growth period, productivity has declined in comparison to the national. The policy implications for Tasmania and for other regions across the country are not quick fixes. Raising human capital, increasing R&D and innovation, implementing microeconomic reforms and infrastructure projects are substantial investments into the future, which require strong evaluation frameworks to consider the likely benefits, cost and distributional effect.

Structural adjustment can come about through external shocks and government intervention. The impact on a local economy can be severe with losses in employment and reduction in supporting services in the local area. Governments must be aware and understand the consequences of these changes and the underlying drivers. But this task is very challenging because of the 'inherent limitations in the information available to policy makers' and the difficulty of robustly evaluating the implementation of policy (Productivity Commission 2001:X).

Both the Federal and State governments have played a role in the performance of the state's economy. The Federal Government influences regional economies through its macroeconomic and microeconomic reform agendas, such as financial deregulation, monetary and fiscal policies, national competition policy and labour market flexibility.

The national competition policies are an example that has provided a positive effect on the national economy. While these positive effects did not occur to the same degree for Tasmania, in the Tasmanian Government's submission to the Productivity Commission's review of the NCP reforms, they state that over the longer-term the 'NCP has assisted the State in meeting its objectives of attracting investment, generating employment and achieving higher levels of economic growth' (sub 109, p2 cited in Productivity Commission 2005: 48).

Tasmania's Government has influenced the performance of the state's economy through its fiscal management and leadership. A factor was the high level of Government debt accumulated during the 1980s, which initiated the tight fiscal policy followed by subsequent governments during the 1990s.

Government leadership impacts on the performance of an economy and Nixon (1997) identifies this as lacking in the Tasmanian case. The government has addressed this criticism by introducing a comprehensive plan that involved a consultative process, setting measurable benchmarks and providing an effective evaluation and review process. As Milne (2000) points out, all examples of small jurisdictions moving from

economic weakness to strength come 'about when communities actually face the challenges'. Also as Rodriguez-Pose (2000:112) highlights, '[o]nly if development problems are addressed in a comprehensive and encompassing way lagging regions may have a chance to set the foundations for future economic development'. This strategy however, is not simple or easy to execute and as Blakely and Bradshaw (2002:342) notes '[t]he planning process, not the plan or document, is significant'.

This study took advantage of studying an economy that has experienced changing fortunes over time to identify its drivers. Moreover, Tasmania is not only a state, but also a regional economy, and shares many characteristics with non-metropolitan Australia. Regional and rural centres across the country have faced and continue to face the many challenges confronting small economies. Hence, lessons drawn from the Tasmanian experience are applicable for regional economies across the country, especially for regional centres and their surrounding regions.

Box 10.1 Key points

- Tasmania shares many characteristics with non-metropolitan Australia and hence lessons from Tasmania's experience are applicable for other regional economies.
- A complex mix of interactive drivers influences Tasmania's economy with industrial structure, migration, private investment, the national economy and government being important.
- Particularly for regional economies, poor government policy choices can destroy growth, while effective policies are conducive but do not guarantee economic growth.
- Migration is an important driver and reflector of economic performance but government intervention is likely to be distortionary.
- Productivity is a key to future economic growth and an area where Tasmania like many regional areas, continues to lag behind the Australian economy.
- Tasmania's Government actions to reduce debt and provide leadership have been positive influences on the local economy.

Appendix A

Theories of economic growth and its spatial distribution



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Appendix A Theories of economic growth and its spatial distribution

Economic growth is broadly defined as an increase in an economy's ability to produce goods and services over a period of time. This growth in output in turn raises a region's income enabling the consumption of more goods and services. Economic growth theories attempt to explain this phenomenon and provide a guide to the determinants that contribute to economic growth. As this report is an investigation into the nature and drivers of Tasmania's economic performance, a short review of the theories and literature on economic growth, which are relevant to Tasmania, is provided in this Chapter. During this discussion the focus is on regional economies rather than national. A glossary of commonly used economic terms and concepts is presented in Box A1 for quick reference.

Economic growth theory can be roughly divided into two categories (McCann 2001). The post-Keynesian models emphasise the demandside determinants of growth, while the neoclassical models stress supplyside determinants of growth. These alternative theories are discussed in sections A1 and A2 respectively, with the aim of providing a general understanding of the two schools of thought. Section A3 presents an extension of the neoclassical model called the 'Endogenous growth model', which incorporates a human-capital component. In section A4, neo-Schumpeterian growth theory is explained. This will be followed by a description of spatial distribution theories in section A5. Section A6 provides a discussion of 'small economies' and 'geographical isolation' in the economic literature, which are relevant for understanding the Tasmanian economy. In section A7, two migration theories are outlined to provide different explanations for the movement of people. Finally, a summary of the Chapter is presented in section A8.

It should be noted here that it is appealing to regard these various explanations of regional growth as complementary rather than competitive (Armstrong and Taylor 2000). However, the neoclassical approach is concerned with the very long run, whereas the post-Keynesian models focus more on the medium term (Armstrong and Taylor 2000). Therefore, this discussion of the theories has taken a more cautious route by maintaining the separation of the theories.

AI Post-Keynesian regional growth

Post-Keynesian models for regional economic growth centre on the demand for regional exports. In other words, the Keynesian perspective on regional economic growth focuses on interregional income flows, within a balance-of-payments framework (McCann 2001).⁸⁸ It should be noted that the treatment of the relationship

^{88.} An example of an early post-Keynesian economic growth model is the Harrod-Domar model. Harrod and Domar independently developed a dynamic extension of Keynes' static equilibrium analysis. They examined the case of an economy dislodged from a path of steady growth with full employment and no inflation.

between investment and income in regional models differs significantly from the approach at the national level, as currency and interest rate adjustments do not occur with domestic trade.

In post-Keynesian regional models, it is assumed that the private sector is the major source of investment. Flows of private sector investment therefore determine a region's future capital stock, which in turn is the generator of long-run economic growth. As these flows tend to be very sensitive to current income in the region, it follows that the future capital stock (and economic growth) will be affected by current income levels and a source for changes in income is through the region's exports. As it is generally assumed that a large proportion of a region's output is consumed outside the region, this means that local expenditure (and therefore investment flows, the capital stock and growth) is constrained by the level of exports from the region (McCann 2001). Hence, post-Keynesian models stress the importance of a region's export sector in determining regional growth (Kaldor 1970).

Economic terms	Definition		
Capital stock	It represents all available resources to produce goods and services, now and into the future.		
Constant returns to scale	A change in inputs results in a proportional change in outputs.		
Economies of scale	The advantages gained by firms by lowering the average cost per unit for goods and services through increased production.		
Elasticity	It is a measure of responsiveness. For example, what would be the change in demand for a product from a change in price?		
Externalities	It represents the effect of an individual's activity on another individual.		
Factors of production	Classical economics refers to three factors of production which are land, labour and capital.		
Human capital	This capital represents the size, knowledge, skills and abilities of the workforce.		
Increasing returns to scale	The advantages gained by firms by lowering the cost per unit for goods and services through increased production, realised from operational efficiencies.		
Industries clustering	It represents the geographical concentration of inter-related firms that are positioned within a relatively narrow area.		
Lock-in process	The process becomes almost impossible to supersede because of cost or logistica difficulties.		
Monopolistic	It is a market structure in which a single seller is able to influence price.		
Marginal benefit	It is the benefit of consuming one more unit.		
Marginal cost	It is the cost of producing one more unit.		
Natural rate	Long-run equilibrium after any existing boom and bust cycles in the economy.		
Oligopolistic	It is a market structure in which sellers are so few, that their actions are able to influence price.		
Perfect competition	An economic model that assumes that the market has no producer or consumer with the market power to influence prices.		
Price takers	A buyer or seller that has no market power and does not influence the price of a good.		
Production function	A mathematical formula to describe the relationship between factors of production and output.		
Virtuous/Vicious circle	A series of reinforcing events through a feedback loop. A virtuous circle is a favourable result, while a vicious circle results in unfavourable outcomes.		

Box A1 Economic definitions
The competitiveness of a region's exports increases competitiveness, leading to higher regional income, resulting in more investment at the prevailing interest rate. The increase in investment enhances productive capacity, and therefore leads to raising the output of goods and services (i.e. economic growth). The scope for export expansion (and regional growth) primarily depends on the region's mix of industries and on the linkages between industries (McCann 2001). A combination of highly income-elastic exports and a low income-elasticity of demand for imports will tend to allow a high long-run level of regional growth. Another component of the post-Keynesian theory concerns the questions of *economies of scale* through *Verdoorn's Law* (McCann 2001). The law states the relationship between the growth of output and the growth of labour productivity. According to the law, a faster growth in output increases productivity due to increasing returns. In general, the assumption in post-Keynesian models is that the direction of causation is from increasing output growth, which then engenders dynamic economies of scale in production. The increase in the economies of scale is from two sources:

- 'Learning by doing' for labour (Arrow 1962), and
- increased capital accumulation.

This enables the model to extend through a *cumulative causation* process, which was developed by Dixon and Thirlwall (1975) from the initial model by Kaldor (1970). The concept of cumulative causation involves a process of self-perpetuating growth (or decline), which is generated by an initial stimulus. The stimulus may take the form of a shock to incomes, creating a divergence (Armstrong and Taylor 2000), resulting in a persistent regional disparity.

Figure A1 presents the pattern of first-round consequences from an increase in world income. The sequence of events is as follows:

- an increase in world income raises the demand for the region's exports
- the region responds by increasing output
- the increase in output raises the productivity of the labour market, which illustrates the relationship between output and productivity from *Verdoorn's law*
- an increase in productivity raises the competitiveness of the region
- an increase in competitiveness lowers the price of the region's exports
- a decrease in prices raises the demand for the region's exports and so it continues.

The subsequent rounds however have a diminishing impact (Armstrong and Taylor 2000). Thus, post-Keynesian theory predicts that regions will not necessarily converge to a particular long-run rate of growth (Higgins and Savoie 1995), which contradicts the neoclassical model of a long-run natural equilibrium discussed in the next section.

Figure A1 Cumulative growth induced by an increase in the growth of world income



Source: Based on Armstrong and Taylor (2000:97).

A2 Neoclassical regional growth

The neoclassical approach emphasises the role of factor supplies, with technological progress being the driver of growth (Armstrong and Taylor 2000). The models are principally designed for national economies but have been used to understand regional growth, particularly through the testing of convergence between regions. The neoclassical model is designed to show that an economy will tend towards a long-run equilibrium at a natural rate (Thirlwall 1999). This point will be explained in further detail later.

Robert Solow and Trevor Swan developed the first neoclassical growth model in 1956, which forms the basis for a range of neoclassical growth models. The basic assumptions of the model include the following:

- The *production function* incorporates *constant returns to scale* and diminishing returns for each input.
- Firms are *price-takers* in an environment of perfect competition.
- New technology is widely dispersed at no cost.
- Perfect knowledge of factor prices.
- Capital and labour flow to the nation (or region) offering the highest returns.

The model comprises two main components (McCann 2001):

- Allocation and migration of the factors of production.
- Relationship between the production factors and technological change occurs within a production function framework.⁸⁹

Therefore, in general, the model predicts that output will grow as long as there are increases in the capital stock, the labour force, and/or technology. Figure A2 presents the *factors of production* and a range of determinants that influences a region's

^{89.} The most commonly used neoclassical production function with constant returns to scale is the Cobb-Douglas production function (Thirlwall 1999).

output growth. For example, a region's labour force can increase through an increase in the birth rate or a decline in the death rate. It should be noted that the Figure does not represent all determinants of economic growth. For example, an increase in employment participation rates for a region will also raise the labour force, and in turn increase a region's output.



Figure A2 Factor supplies and regional growth

Source: Based on Armstrong and Taylor (2000:72).

However, regions do not live in isolation. Factors of production, with the assumption of complete mobility,⁹⁰ move towards regions that maximise their return and are paid according to their marginal cost and benefit. Hence, regional disparities can occur in the medium term due to variations in growth of the capital stock, labour stock, and/ or technological progress between regions. However, with free factor mobility, there will be convergence between regions (to identical levels of per capita income, growth rates, regional factor proportions and rates of return on capital) in the long run. This long-run outcome reflects the impact of diminishing returns and factor flows.

The convergence process can be illustrated with a simple example of two regions and two factors of production. One region initially has a high capital/labour ratio, meaning that real wages are high with a low return on investment. The other region has a low capital/labour ratio, meaning that real wages are low with a high return on capital. In response to the prospect of higher returns, labour migrates from the region with low wages to the region with high wages, and capital flows in the opposite direction. These interregional flows continue, and differential growth rates persist, until real wages and returns to capital are equalised in the two regions.

In practice, convergence between regions within a nation is more likely than convergence between nations (Martin and Sunley 1998). Regions are much more likely to share similar structural characteristics, with the result that there are fewer constraints on factor flows.

^{90.} In practice, the assumption of complete mobility of the factors of production is unrealistic. Significant rigidities exist, particularly in the labour market (Armstrong and Taylor 2000)

However, empirical research on cross-national and cross-regional trends has indicated that real-world economies do not consistently exhibit long-run convergence. Findings vary between studies and where convergence has been identified the process can be painfully slow (Armstrong and Taylor 2000). For example, a study in relation to Australia by Cashin and Strappazzon (1997) identified a divergence of cross-state incomes but a relatively constant dispersion of per capita incomes across sub-regions over the period from 1976 to 1991.

Another key aspect of the model is the role of technology. But, while the role of technology is important in the neoclassical model, it does not offer any insights into how the technological progress occurs. As such, technology represents the sets of production, organisation, and communication attributes, which are available to all firms (McCann 2001) and are immediately disseminated throughout the region. But, empirical work indicates that diffusion between regions is far from instantaneous (Armstrong and Taylor 2000). The underlying driver of long-term growth is therefore unexplained and this deficiency in the model has given rise to the endogenous growth model, which is discussed in the following section.

A3 Endogenous growth model

The neoclassical models argue that technological progress drives the growth in output. But the reasons for technological growth are not identified, and so, the underlying explanation of growth is not spelt out (Armstrong and Taylor 2000). This led to the development of the endogenous growth model in the mid 1980s (Thirlwall 1999).

Endogenous growth models (also called new growth theory or extended neoclassical theory) are an augmentation of the neoclassical production function, as human capital is incorporated into the model (Martin and Sunley 1998). Thus, the model integrates microeconomic characteristics that influence the individual's productivity and propensity to move, which in turn affects the economic growth of a region. The models explicitly incorporate one or more variables to explain the forces that give rise to technological progress (i.e. technological change becomes endogenous). This results in a long-run growth rate being determined within the model, rather than being the result of unexplained forces that impinge from outside (Romer 1994).

The initial contribution to endogenous growth theory came from Romer (1986, 1987a, and 1987b), within a neoclassical framework. Romer's models suggest endogenous growth may arise from increasing capital specialisation or an increase in the knowledge base with accompanied information spillovers. The consequences of the spillovers, however, results in the violation of the constant returns to scale and perfect competition assumptions in the neoclassical model. Romer overcomes this problem by basing the economy on three sectors; final goods sector, intermediate goods sector and the research sector. The final goods sector is perfectly competitive. But the intermediate sector can purchase patents from the research sector that can result in monopolies producing heterogeneous capital products.

A further extension was completed by Lucas (1988), who suggests that endogenous growth can arise from private investment in human-capital, with the benefits spilling over into the market place. Therefore, the model concludes that the portion of

output growth which would be from the unexplained technological progress in the neoclassical model can be attributed to labour through human-capital acquisition.

Criticisms of the endogenous model relate to the inadequate consideration of demand side factors that stimulate growth, such as the demand for exports. Thus, it is argued the exclusion of demand-side factors meant that endogenous growth models miss the main source of increasing returns, in the form of *Verdoorn's Law* (refer to post-Keynesian models). More generally, there is still significant debate about the process of technology creation and diffusion.

Another criticism raised is the inability of the model to consider a dynamic process because economic growth unfolds over time rather than consisting of ahistorical equilibrium outcomes (Foster 2003). An alternative theory that addresses this deficiency is the neo-Schumpeterian growth theory, which is explored in the following section.

A4 Neo-Schumpeterian growth theory

The neo-Schumpeterian growth theory separates into two key ideas. First, growth occurs due to an ongoing dynamic process. Second, transactions take place within a framework of uncertainty, *variety* and imperfect information in a market. Variety refers to the different stock of ideas, agents, products or firms. Thus, the model reflects the idea of continual structural change, with economic development based on the technological competition, between firms and sectors resulting in no equilibrium (Foster 2003).

Foster (2003) states that *variety* is a fundamental source of economic growth in the neo-Schumpeterian model. Variety flows through two stages. The first stage is the injection of innovation, which results in a diffusion of fresh processes and the adoption of ideas. However, the process is not without end because the *lock-in* process hinders the adoption of alternative ideas.

The second stage involves a competitive selection that eliminates unproductive processes and only the most desirable survives (Foster 2003). This does not, however, lead to a perfectly competitive outcome as suggested by neoclassical models but rather leads to monopolistic or oligopolistic conclusions (ibid).

Moreover, two related subsystems determine the mode of development: *technoeconomic* and *socioeconomic*. The development process works regardless of when an innovation is introduced, but the innovations introduced are interrelated between the subsystems. Technoeconomic subsystems have a fast adoption process, while the socioeconomic process is slower because of the evolution time required to disperse throughout the whole economy. This process continues with new innovations, and so, the economy is continuously provoked to strive towards a new and higher outcome.

A5 Spatial distribution of economic activity

In the previous sections, descriptions of the various growth models were presented. These models provide an understanding of the theoretical issues and the factors that influence the economic growth of a nation or more particularly a region. But regions also display differences in their competitiveness and production activity. To examine these differences, a discussion of the spatial distribution of industrial activities is required, as an understanding of these issues will be drawn upon when we investigate the Tasmanian economy more closely. Two theories that provide an explanation for the clustering of industries are agglomeration economies and the Porter model. These models are certainly not the only theoretical models available but provide a foundation to consider the various influences for Tasmania.

Agglomeration economies

Agglomeration economies apply to location-specific characteristics, external to a firm, which lead to increased output given the region's level of labour and capital. Therefore, agglomeration implies increasing returns to scale that in turn encourages firms to cluster in one location. The seminal paper by Marshall provides a description of the observed features of a location that promotes clustering, but is exogenous to a firm (Marshall 1920). Marshall outlines three sources for firms to benefit from agglomeration economics.

Information spillovers create spatial externalities (Fujita 1990). Firms operating within a cluster have easy access to other firms' employees, enabling information to be disseminated for the mutual benefit of all local participants. Information itself can be separated into two types, 'codified' and 'tacit' information. Codified information is systematic, easy to communicate, and shared with all participants (Guillain and Huriot 2001). Tacit information is random and informal in nature. Firms with the advantages of spatial proximity can continuously update information and build up a coherent market picture (ibid).

Non-tradeable local inputs provide agglomeration advantages because firms within the same industry will be able to access specialised factors more efficiently in one location, than would be the case if the firms were spatially dispersed (McCann 2001). For example, London has many specialised legal firms to cater for the specialised needs of the international financial district (McCann 2001). The provision of specific inputs can be very expensive; therefore firms will concentrate in regions that provide inputs that can take advantage of economies of scale.

Local labour skills provide firms with a readily accessible and skilled labour force. This local pool of labour would offer a clear advantage over regions with a small labour market. The advantages of a firm having access to a sufficient quantity of potential applicants are through the lowering of hiring and information costs, and also, the greater likelihood of having applicants with the appropriate skills.

The understanding of agglomeration was further extended by revealing that different industries benefit from clustering in one location. Ohlin suggests that there are three types of locational agglomeration (Ohlin 1933), as follows:

Internal returns to scale are simply based on the size of the firm. Some firms achieve economies of scale by spatially concentrating both their capital investment and access to a large labour pool with suitable human capital. For example, car manufacturing achieves greater efficiency through scale because of the large capital outlays and availability of labour (McCann 2001).

Localisation economies occur for a firm by locating itself in close proximity to operators in the same industry and/or being close to their suppliers and customers (Kolehmainen 2002). Thus, firms can obtain intermediate goods, labour-market pooling and knowledge spillovers simply by operating in a location utilised by many related firms.

Urbanisation economies result from the advantages of operating in an urban environment, which are available to all operators in the region (Jacobs 1960; Kolehmainen 2002). A large potential market, large basic facilities (e.g. Transport and health), and access to personal services (e.g. recreational activities attractive to potential employees) are examples of advantages of firms operating in an urban environment (Kolehmainen 2002).

Other descriptions of the spatial activities in a region have been formulated to consider the clustering of industries in specific locations, which include the *growth pole model* (Perroux 1950), the *incubator model* (Chinitz 1961 and 1964), and the *product cycle* (Vernon 1960 and 1966). Another model to explain industrial clustering is *Porter's Diamond*, which will be discussed in greater detail below.

Competitive advantage

Michael Porter introduced a model to analyse why some nations are more competitive than others, in his book *The Competitive Advantage of Nations*. This model has become commonly known as *Porter's Diamond* and is presented in Figure A3. It can easily apply to regions within a nation, and so may be applicable in this context for Tasmania. This is reinforced by Porter, who stated that the conditions that emphasise competitive advantage are 'often localised within a nation, though at different locations for different industries' (Porter 1990:157).

The diamond contains four forces that determine the ability of a firm to succeed.

Factor conditions reflect the region's position regarding production factors, such as skilled labour, national resources and infrastructure. Porter states that 'to increase productivity, factor inputs must improve in efficiency, quality, and (ultimately) specialisation to particular cluster areas' (Porter 2000:20).

Demand conditions describe the state of the domestic demand for goods and services. Sophisticated and demanding local customers will force firms to continuously innovate. This will enable the firm to remain competitive on the international market.

Related and supporting industries represent the presence or absence of connected industries in the local economy. The close proximity promotes the ability of firms to be competitive. These industries enable coordination and innovation through a value chain. For example, the ability to access high quality and cheap inputs places the firm at an advantage against those firms positioned outside the cluster.

Firm strategy, structure and rivalry describe the economic conditions in a region that determine how companies are managed, organised, created and the nature of domestic competition. For example, the presence of a number of similar firms increases the rivalry, especially regarding the introduction of new products and acquiring the best staff.





Source: Ankli (1992:234).

In addition to the four forces, Porter acknowledges the influence of two factors.

Chance represents the random and historical acts that can influence the forces operating in the diamond, for example, an oil shock, war or acts of pure invention (Ankli 1992).

Governments have the ability to manage the determinants of advantage to the benefit of their constituent industries (SGS Economics and Planning 2002).

Porter concludes that the 'cluster is the manifestation of the diamond at work. Proximity, arising from the co-location of companies, customers, suppliers and other institutions, amplifies all of the pressures to innovate and upgrade' (Porter 2000:21). In other words, competition occurs between firms, which improve their overall competitiveness. Moreover, this process of localised competition raises the competitiveness of the cluster as a whole and hence of the region (McCann 2001).

A6 Small island economies

The growth of a region is influenced by its size and distance from major markets, both of which are characteristics of the Tasmanian economy. For example, economic growth of a region is limited by the scope of the market, as larger markets are able to achieve greater productivity and efficiency because of increasing returns to scale, as opposed to a small market. Moreover, distance or the geographic proximity to a large economy benefits the small economy because of access to a larger consumer base. Also transport and communication costs still play an important role in the development of the small sized economy.

The bulk of the research into small island economies has been on *sovereign states*. Analyse of subnational regions exist but are far less extensive (Armstrong and Read 2004a). Moreover, the concept of size is contentious. Size is a relative concept and the literature utilises quantifiable variables, such as, population, GDP, land area and *sub-optimality* to define a *small island economy* (Shareef 2004). For example, the Commonwealth Secretariat uses a 1.5 million population threshold as a benchmark (Commonwealth Secretariat 2002). However, as stated in the United Nations report on 'Small Island Developing States',

'until an agreed definition of a small economy is available, the term "small" may be applied to almost any economy or State in any given context, discussion or meeting' (United Nations 2004:19).

As such, Tasmania can be easily viewed as a *small island economy* with a distant geographical position. In the literature the challenges facing small economies are well documented (Milne 2000; Commonwealth Secretariat 2002; Armstrong and Read 2004a; Poot 2004). A lot of the literature is in reference to developing economies; however the challenges raised and highlighted are equally applicable to understanding the Tasmanian economy. A brief summary of the challenges are described below (Armstrong and Read 2004a).

Small domestic market

A small domestic market is a particular challenge for the growth of a local economy. A number of factors that restrict development include:

- The limited ability of industries or firms to take advantage of the economies of scale, especially in the manufacturing and service sectors (Armstrong and Read 2004a).
- Weak domestic competition pressures may result in inefficient processes and/or a dominant provider in the market.
- A small domestic market can also restrict research and development programs because of a lack of access to financial capital. This would restrict the development of high-tech industrial sectors in the local economy (Briguglio 1995).
- The provision of basic services, such as health, education, communication, energy and other facilities, may have a high per capita cost for their supply.

Narrow domestic output and exports markets

A small domestic market can restrict a firm's ability to exploit economies of scale, and may result in a limited production base. This is likely to be associated with a highly specialised and undiversified output, for both domestic and international consumption, increasing the small economy's exposure to shocks.

Limited resource base

A number of small states have a very limited natural resource base. Yet, even regions that are well endowed with natural resources may lack a diversity of resources, which results in an overreliance on a single industry. The literature concentrates on very small islands that have severe constraints on their ability to cultivate agricultural products and/or very small populations that curtail their ability to move to labour intensive production, however, its pertinence towards Tasmania may be questionable.

High degree of openness to trade

The limitations in the production base result in greater reliance on the consumption of imported goods and services. This leads to an export-led path for economic growth, rather than an import substitution policy because of limitations in the capacity to achieve efficiency in production, particularly in manufactured goods.

Vulnerability

A high degree of openness presents challenges to small economies because of the vulnerability to external shocks, especially if exports are concentrated in terms of product and/or regions. This raises the issue of high income volatility, which restricts economic activity and increases uncertainty for future development. For example, if a major trading partner decides to purchase their exports from an alternative supplier, this would have severe consequences for the small exporting country.

A7 Migration

Models for migration can be separated into two competing groups, the disequilibrium and equilibrium models. Disequilibrium models emphasise differences in economic conditions, such as the state of the labour market influencing the decision to migrate. Equilibrium models focus on the amenities available in regions, because people are willing to forgo economic benefits from higher non-tradable amenities. Figure A4 shows these two aspects of the models.

Disequilibrium theory centres on the role of the labour market as the driver for migration, through income maximisation. The model has two distinguishing features. First, the theory emphasises migration as a function of spatial differences in economic opportunities, which arise because of disturbances in prices. These differences in economic opportunities between regions encourage individuals to

search new labour markets for higher wages, lower unemployment risks and greater employment security.

Second, disequilibrium models assume sluggishness as the labour market adjusts to a new equilibrium from economic disturbances that impact upon the market. Further, the adjustment mechanisms, such as wages and labour mobility, are inefficient and slow. Thus, the model draws upon the economic opportunities of individuals as an explanation for migration and a consequence is a slow adjustment in the labour markets.

The equilibrium model, on the other hand, regards migration as driven by much more than just economic opportunity. Graves (1980) designates models that emphasise amenity differentials in migration as equilibrium models. The amenities in the equilibrium model depend on how individuals measure their utility. Amenities divide into three groups: physical, service and social amenities, which are used as proxies for the psychic benefits and costs of interregional migration.





Perfect mobility refers to the assumption of zero transaction costs e.g. travel costs.
 Source: Graves and Clawson (1981:373).

This model assumes that spatial differences in incomes and prices reflect wholly, or in large part, a compensating gap associated with corresponding spatial variation in amenities. Amenity refers to the properties of a location, chiefly the attributes of the area that increase the attractiveness and utility for residents. In other words, it is an explanation of why an individual would migrate between two regions in which the destination region has lower wages or the individual receives no change in income levels (e.g. retirees). Compensating differentials in wages and rents are an important concept in the equilibrium model. In particular, individuals are willing to forgo high incomes and/or pay higher rents for a region with attractive amenities; otherwise, individuals will demand wage compensation.

Within the literature a number of determinants of migration have been found to be a significant contributor to the decision of an individual or household decision to migrate. A literature review on these determinants is beyond the scope of this paper.⁹¹ Nonetheless, some of the most commonly identifiable determinants of migration include:

- demographic: age, education and family status
- economic: unemployment and wages
- amenities: coastal, medical services and proximity to family and friends.

A8 Summary

This Chapter provided a brief summary of various theories and frameworks to examine a region's economic activity. The discussion is general in nature to enable non-economists access to the basic concepts underlying economic theories. These theories provide an opportunity to understand the potential drivers for economic growth.

The Chapter started by dividing the theories into two categories (McCann 2001). First, the post-Keynesian models emphasise the demandside determinants of growth. Second, the neoclassical models stress supplyside determinants of growth. A major difference between the two theories is the timeframe assumption. The neoclassical approach is concerned with the very long run, whereas the post-Keynesian models focus more on the medium term (Armstrong and Taylor 2000).

Alternative theories of examining economic growth covered in this Chapter include the 'Endogenous growth model', which is an augmentation of the neoclassical production function, as human capital is incorporated into the model (Martin and Sunley 1998). Technological change becomes endogenous to explain the forces that give rise to the economic growth of a region. Another theory for growth, which was outlined, was neo-Schumpeterian growth theory. This theory considers the economy as a dynamic process; as such the economy is continuously provoked to strive towards a new and higher outcome.

Regions also display differences in their competitiveness and production activity. To examine these differences a discussion of the spatial distribution of industrial activities was provided. Two theories were considered, agglomeration economies and the Porter model. Agglomeration encourages firms to cluster in one location, due to the effects of increasing returns to scale. Porter's diamond presents a model to explain the determinants of the competitive advantage of firms in specific locations, which are influenced by four forces; demand conditions, factor conditions, related and supporting industries, and firm strategy, structure and rivalry.

A discussion of the factors that impact on small island economies was included because of its particular relevance to the Tasmanian economy. Challenges considered included the weak domestic demand and limited natural resources that impact on small open economies. Finally a brief discussion of two competing theories of migration was presented. These models provided an opportunity to consider the various determinants that impact on a person's decision to move and so contribute to a region's population and economic growth or decline. Box A2 provides a list of key drivers of economic growth.

^{91.} Extensive surveys of inter-regional migration are provided in Greenwood (1997) and Lucas (1997).

Drivers of economic growth	
al	Industry structure
	Population
	Competition
	Government
oduction (land, labour and capital)	Investment
	Chance
t	Drivers of economic growth tal oduction (land, labour and capital)

Appendix B

Net employment growth



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Appendix B Net employment growth

Net state employment growth

Following Mitchell and Carlson (2003), the net state employment growth rate is calculated as follows:

$$g_s = 100 * \log(E_{st} / E_{st-4})$$

where E_{rt} is employment at time *t* in region *r*. The annual national employment growth is calculated as:

$$g_{in} = (E_{in(t+1)} - E_{int}) / E_{int}$$

where E_t is total national *n* employment at time *t*. The net state employment growth is calculated as:

$$g_s^{net} = g_{st} - g_{nt}$$

Appendix C

Shift-share analysis of Tasmania's regions



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Appendix C Shift-share analysis of Tasmania's regions

Shift-share

The traditional shift-share analysis decomposes growth of economic variables such as income and employment into their national and regional components (Selting and Loveridge 1994).

Actual growth in a region is decomposed into *national growth, industrial mix* and *competitive components*. The technique facilitates comparisons between the local economy of interest and the larger economy.

The traditional shift-share model is calculated by the following method, using employment as an example:

 E_{irr} : is employment in sector *i* of region *r* at the beginning of a time interval extending from *t* to t + 1

 $g_{ir} = (E_{ir(t+1)} - E_{irt})/E_{irt}$: rate of growth over the same time interval in employment in industry *i* of region *r* (a negative rate indicates decline)

 $g_{in} = (E_{in(t+1)} - E_{int})/E_{int}$: rate of growth of employment in industry *i* in the reference area, n. (The reference area is generally the nation, but for smaller area analysis it may be a state or region).

 g_n : rate of growth of all industries combined in the reference area.

National share

$$NS_r = \sum_i E_{irt} * g_n$$

Industrial Mix

$$IM_r = \sum_i E_{irt}(g_{in} - g_n)$$

• Differential shift (competition)

$$DS_r = \sum_i E_{irt} (g_{ir} - g_n)$$

• Total shift

$$TS_r = NS_r + IM_r + DS_r$$

OR

$$TS_{r} = \sum_{i} E_{irt} * g_{n} + \sum_{i} E_{irt} (g_{in} - g_{n}) + \sum_{i} E_{irt} (g_{ir} - g_{n})$$

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Industry division	61	91–1996 (em	ployment)		61	96–2001 (en	iployment)		20(01–2006 (em	ployment)	
	National share	Industry mix	Local share	Total	National share	Industry mix	Local share	Total	National share	Industry mix	Local share	Total
Agriculture, forestry and fishing	85	-9-	164	188	01	-12	27	25	412	-666	-89	-343
Mining	6	16-	-62	-144	_	-42	-13	-54	16	-15	44	45
Manufacturing	248	-I 039	332	-460	26	-638	354	-258	1 016	-742	-622	-348
Electricity, gas and water supply	48	-I 358	-112	-l 423	_	410	348	759	137	248	9	391
Construction	127	350	137	614	16	167-	-141	-916	528	I 398	252	2 178
Wholesale trade	102	-388	-64	-350	01	-55	c	-42	408	-480	-193	-264
Retail trade	300	161	-113	348	34	016	421	I 365	I 535	-168	421	1 789
Accommodation, cafes and restaurants	103	56	-199	40	Ξ	414	239	664	541	144	-24	660
Transport and storage	77	-272	34	-161	8	298	54	360	369	-37	209	540
Communication services	42	-67	65	40	5	64	-13	56	198	-373	-51	-226
Finance and insurance	121	-l 493	-82	-I 454	6	-529	88-	-608	294	23 I	-194	331
Property and business services	103	2 484	175	2 763	19	I 025	157	1 201	940	-206	-344	390
Government administration and defence	189	806	590	I 585	25	-1 796	-413	-2 184	774	2 872	-263	3 383
Education	175	457	393	I 025	22	202	-137	87	905	-123	-78	704
Health and community services	267	154	-383	38	29	514	461	I 004	1312	-23	-54	I 236
Cultural and recreational services	58	444	-259	243	7	-260	353	66	304	-236	-42	26
Personal and other services	83	655	157	895	12	-I52	-127	-268	450	-335	117	232
Total	2 136	796	775	3 707	244	-436	I 485	1 292	10 139	I 489	-903	10 742
Courses Analysis of BTBE Industry Ctruit	cture Databa	(~2002~)										

Analysis of BTRE Industry Structure Database (2003a). Source:

Table C1 Hobart's shift-share analysis

Industry division	561	1–1996 (en	ployment)		199	96–2001 (em	ployment)		200	1–2006 (em	ployment)	
	National share	Industry mix	Local share	Total	National share	Industry mix	Local share	Total	National share	Industry mix	Local share	Total
Agriculture, forestry and fishing	71	-51	-I 54	-135	7	6	85	84	314	-509	6	-185
Mining	S	-34	60	59	_	-40	43	c	26	-25	4	15
Manufacturing	164	-686	222	-301	17	-421	-233	-637	615	-450	-29	137
Electricity, gas and water supply	01	-296	20	-266	0	138	81	156	34	61	16	Ξ
Construction	62	170	-173	59	7	-349	66	-243	256	677	68	1001
Wholesale trade	70	-266	168	-28	8	4	-114	-147	292	-343	196	145
Retail trade	167	06	56	313	61	517	12	548	843	-92	-217	534
Accommodation, cafes and restaurants	50	27	-73	S	S	206	44	256	259	69	-55	273
Transport and storage	60	-211	-258	-409	5	200	183	388	266	-27	-433	-194
Communication services	15	-24	-15	-24	2	22	8	41	70	-I32	88	26
Finance and insurance	44	-544	51	-450	S	-207	238	35	147	116	235	498
Property and business services	46	I 115	-157	I 005	8	424	-60	372	375	-82	114	406
Government administration and defence	38	163	-162	39	4	-305	197	-104	166	616	132	914
Education	89	231	-258	62	01	06	33 I	43	451	-61	S	395
Health and community services	128	74	261	463	15	269	-182	102	638		-72	555
Cultural and recreational services	29	220	310	558	5	-176	-438	-609	123	-96	14	41
Personal and other services	33	260	-38	254	4	-57	23	-29	177	-132	4	49
Total	1 079	236	-109	1 206	120	261	265	646	5 053	-420	88	4 721
Source: Analysis of BTRE Industry Stru	cture Databas	ie (2003a).										

Table C2 Launceston's shift-share analysis

Appendix C | Shift-share analysis of Tasmania's regions

Industry division	661	1–1996 (en	ployment)		561	6–2001 (ei	nployment)		200	01–2006 (em	iployment)	
I	National share	Industry _{Lo} mix	cal share	Total	National share	Industry _L mix L	ocal share	Total	National share	Industry _{Lo}	cal share	Total
Agriculture, forestry and fishing	70	-51	-63	4	œ	6-	4	5	309	-500	-32	-223
Mining	17	-170	-69	-223	_	88	9	-93	50	48	84	86
Manufacturing	168	-706	-683	-I 220	15	-368	- 4	-494	539	-394	728	873
Electricity, gas and water supply	8	-218	131	-79	_	230	-261	-30	21	38	30	06
Construction	47	129	102	277	9	-298	75	-217	219	579	-283	515
Wholesale trade	51	-193	-100	-243	5	-26	-20	-41	196	-230	46	12
Retail trade	126	68	152	346	15	399	-358	56	612	-67	-52	493
Accommodation, cafes and restaurants	30	16	144	190	4	141	-118	27	164	44	43	251
Transport and storage	43	-151	224	116	5	188	-200	-7	207	-21	205	392
Communication services	01	-16	-23	-29	_	14	-10	4	41	-78	-30	-66
Finance and insurance	26	-319	26	-267	2	-120	-73	-191	62	49	-63	48
Property and business services	30	720	01	760	5	291	-48	249	255	-56	154	353
Government administration and defence	31	132	-206	43	c	-231	209	-19	132	491	88	712
Education	63	164	-27	200	7	68	-152	-79	291	-39	44	295
Health and community services	88	51	71	210	01	180	-219	-28	415	L	143	550
Cultural and recreational services	01	76	-86	ī	_	-40	46	7	45	-35	14	24
Personal and other services	24	193	-84	134	c	-40	75	39	131	-98	-8	-47
Total	841	-276	-481	84	92	290	- 197	-815	3 690	-371	I 039	4 358
Source: Analysis of BTRE Industry Struc	ture Databas	ie (2003a).										

 Table C3
 Burnie and Devonport shift-share analysis

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Table C4 Balance of Tasmania shift-share analysis

Industry division	661	1-1996 (em	blovment)		561	6-2001 (em	blovment)		200	1-2006 (em	blovment)	
	National	Industry	Local	Total	National	Industry	Local	Total	National	Industry	Local	Total
	share	mix	share		share	mix	share		share	mix	share	
Agriculture, forestry and fishing	94	-68	54	80	0	<u>- 1</u>	-117	-119	414	-669	112	-144
Mining	33	-333	4	-259	c	-210	-24	-232	16	88-	-142	-139
Manufacturing	72	-304	129	-102	8	-189	20	-161	290	-212	-77	-
Electricity, gas and water supply	15	-429	-39	-454	0	125	-105	21	16	30	-52	9
Construction	23	63	-66	61	c	-I 28	-33	-159	86	228	-37	278
Wholesale trade	15	-57	4	-46	_	٣	132	125	78	16-	-49	-63
Retail trade	45	24	-95	-25	5	132	-75	62	211	-23	-153	35
Accommodation, cafes and restaurants	28	15	128	172	4	134	-165	-27	150	40	36	225
Transport and storage	8	-62	Ī	-45	2	67	-37	32	80	۴	61	16
Communication services	4	7-7	-27	-30	0	S	S	=	17	-32	L	-22
Finance and insurance	8	-95	S	-82	_	-35	-78	-112	13	01	21	44
Property and business services	6	225	-29	205	2	86	-49	39	74	-16	76	134
Government administration and defence	19	8	-222	-122	2	-123	7	-114	57	212	43	312
Education	26	68	-109	-15	c	26	-43	-14	112	-15	29	126
Health and community services	26	15	51	16	c	54	-60	Ϋ́	126	-2	-17	107
Cultural and recreational services	4	33	36	73	_	-25	40	16	32	-25	14	21
Personal and other services	8	99	35	39	_	-13	28	16	47	-35	40	-28
Total	448	-765	-184	-501	47	-116	-553	-621	I 893	-697	-224	972
Source: Analysis of BTRE Industry Struct	ture Databas	e (2003a).										

Appendix D

Industry level productivity



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Appendix D Industry level productivity



Source: ABS Cats. 5204.0 and 6291.0.55.003.









ABS Cats. 5204.0 and 6291.0.55.003. Source:





Source: ABS Cats. 5204.0 and 6291.0.55.003.



Figure D5 Labour productivity in retail trade, Tasmania and Australia, 1989–90 to 2004–05

Figure D6 Labour productivity in accommodation, cafes and restaurants, Tasmania and Australia, 1989–90 to 2004–05



Source: ABS Cats. 5204.0 and 6291.0.55.003.

Source: ABS Cats. 5204.0 and 6291.0.55.003.





Source: ABS Cats. 5204.0 and 6291.0.55.003.

Figure D8 Labour productivity in communication services, Tasmania and Australia, 1989–90 to 2004–05



Source: ABS Cats. 5204.0 and 6291.0.55.003.







ABS Cats. 5204.0 and 6291.0.55.003. Source:



Figure D11 Labour productivity in health and community services, Tasmania and Australia, 1989–90 to 2004–05

Source: ABS Cats. 5204.0 and 6291.0.55.003.





Source: ABS Cats. 5204.0 and 6291.0.55.003.



Figure D13 Labour productivity in personal and other services, Tasmania and Australia, 1989–90 to 2004–05

Source: ABS Cats. 5204.0 and 6291.0.55.003.
Appendix E

OECD's factors of regional competitiveness



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Appendix E OECD's factors of regional competitiveness

The *factors of regional competitiveness* are used as benchmarks to identify the factors that enable future economic growth. Outlined below is the OECD's methodology to calculate the *Factors of regional competitiveness* (OECD 2005).

OECD decomposition of GDP per capita (in logarithms) in region i is defined as follows:

$$\frac{GDP_i}{P_i} = \frac{GDP_i}{EW_i} + \frac{EW_i/E}{LFW_i/E} + \frac{LFR_i}{P_i}$$

Alternatively, the equation is represented by:

GDP per capita = productivity + employment rate + activity rate

Where:

P—population EW—employment at the workplace LFW—labour force at the workplace LFR—labour force at place of residence

GDP per capita can be broken down by differences in productivity for a given region against the national average. Therefore, the equation can be rewritten as:

Differences in GDP per capita = Differences in productivity + Differences in employment rates + Differences in activity rates

The breakdowns of the differences for the determinants are represented as follows:

Breakdown of differences in productivity

Average labour productivity in region *i* is equal to a weighted average of sectoral productivity:

$$\frac{GDP_i}{EW_i} = \sum_j \frac{EW_{ij}}{EW_i} * \frac{GDP_{ij}}{EW_{ij}}$$

where *j* indicates the sector.

The difference from the average productivity can be broken down as:

$$\left(\frac{GDP_i}{EW_i} - \frac{GDP}{EW}\right) = \sum_j \left(\frac{EW_{ij}}{EW_i} - \frac{EW_j}{EW}\right) * \frac{GDP_j}{EW_j} + \sum_j \frac{EW_{ij}}{EW_i} * \left(\frac{GDP_{ij}}{EW_{ij}} - \frac{GDP_j}{EW_j}\right)$$

The first term on the right-hand side of the equation measures the proportion of the difference in productivity due to regional specialisation. The second term on the right-hand side measures the differences in GDP per capita due to differences in average labour productivity, adjusted for industry specialisation. The OECD methodology measures the distribution of employment across three sectors, however for this study using the 17 one digit ABS categories (Cat. 6291.0.55.001).

Breakdown of differences in employment rates

The employment rate in region *i* is equal to a weighted average of employment rates by educational attainment:

$$\frac{EW_i}{LFW_i} = \sum_j \frac{LFW_{ij}}{LFW_i} * \frac{EW_{ij}}{LFW_{ij}}$$

where *j* indicates the educational attainment.

The difference from the average productivity can be broken down as:

$$\left(\frac{E_i}{LF_i} - \frac{E}{LF}\right) = \sum_j \left(\frac{LF_{ij}}{LF_i} - \frac{LF_j}{LF}\right) * \frac{E_j}{LF_j} + \sum_j \frac{LF_{ij}}{LF_i} * \left(\frac{E_{ij}}{LF_{ij}} - \frac{E_j}{LF_j}\right)$$

The first term on the right-hand side of the equation measures the proportion of the difference in employment rates due to the skills profile of the regional labour force. The second term on the right-hand side measures the regional differences in GDP per capita that is accounted for by employment rates, adjusted for differences in educational attainment. The indicator is computed under the assumption that the distribution of the labour force by educational attainment is equal to the distribution of the sampled population. Skills are proxied by educational attainments according to be the International Standard Classification of Education (ISCED), which includes seven educational levels from 0 to 6. ISCED levels 5 and 6 refer to university education. The Australian Bureau of Statistics data is constructed to conform to the ISCED. The construction of the components for the decomposition is formulated from the ABS Cat. 4102.0.

Breakdown of differences in activity rates

The activity rate in region i is equal to a weighted average of activity rates by age groups:

$$\frac{LFR_i}{P_i} = \sum_j \frac{P_{ij}}{P_i} * \frac{LFR_{ij}}{P_{ij}}$$

where *j* indicates the age group.

The difference from the average productivity can be broken down as:

$$\left(\frac{LFR_i}{P_i} - \frac{LFR}{P}\right) = \sum_j \left(\frac{P_{ij}}{P_i} - \frac{P_j}{P}\right) * \frac{LFR_j}{P_j} + \sum_j \frac{P_{ij}}{P_i} * \left(\frac{LFR_{ij}}{P_{ij}} - \frac{LFR_j}{P_j}\right)$$

The first term on the right-hand side of the equation measures the proportion of the difference in activity rates due to the age profile of the regional population. The second term on the right-hand side measures the differences in GDP per capita that is accounted for by differences in activity rates, adjusted for the age profile of the population. Three age categories are constructed following the OECD, which include 0–14, 15–64 and 65 years and over.

Appendix F

Tasmania Together 2020



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Appendix F Tasmania Together 2020

Vision

Tasmania is an island community, unique for its natural and cultural environment, where people enjoy a prosperous lifestyle based on quality, creativity and opportunity.

Goals

- 1. A reasonable lifestyle and standard of living for all Tasmanians.
- 2. Confident, friendly and safe communities.
- 3. High quality education and training for lifelong learning and a skilled workforce.
- 4. Active, healthy Tasmanians with access to quality and affordable health care services.
- 5. Vibrant, inclusive and growing communities where people feel valued and connected.
- 6. Dynamic, creative and internationally recognised arts community and culture.
- 7. Acknowledgement of the right of Aboriginal people to own and preserve their culture, and share with non-Aboriginal people the richness and value of that culture.
- 8. Open and accountable government that listens and plans for a shared future.
- 9. Increased work opportunities for all Tasmanians.
- 10. Thriving and innovative industries driven by a high level of business confidence.
- 11. Built and natural heritage that is valued and protected.
- 12. Sustainable management of our natural resources.

Source: Tasmania Together 2006

Appendix G

Tasmanian labour markets



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Appendix G Tasmanian labour markets

Labour market classification

The Australian Bureau of Statistics (ABS) uses a system called the Australian Standard Geographical Classification (ASGC) and these boundaries are used to construct the Tasmanian Labour Market Regions (LMRs).

In concept, LMRs reflect the area within which people are willing to commute from their place of residence to their place of employment. A LMR was defined for each capital city. It typically included the capital city statistical division, plus any adjoining Statistical Local Areas (SLA) in which less than 70 per cent of employed residents worked in the SLA (i.e. more than 30 per cent commute elsewhere). Similarly, SLAs which adjoined regional centres and are more than 30 per cent of employed residents commuting elsewhere, are included within the LMR for the regional centre. Where there are a number of similarly sized towns in close proximity and commuting patterns were multidirectional, a broader LMR area defined. Table G1 presents the Local Government Areas (LGA) and SLAs that make up BTRE's LMRs as defined in BTRE (2003a).

BTRE Labour Market	Local Government Area (LGA)	Statistical Local Areas (SLA)
Hobart and surrounds	Brighton	Brighton
	Clarence	Clarence
	Derwent Valley	Derwent Valley Part A Derwent Valley Part B
	Glenorchy	Glenorchy
	Hobart	Hobart Inner Hobart Remainder
	Huon Valley	Huon Valley
	Kingborough	Kingborough Part A Kingborough Part B
	Sorell	Sorell Part A Sorell Part B
	Southern Midlands	Southern Midlands
Launceston and surrounds	Launceston	Launceston Inner Launceston Part B Launceston Part C
	Meander Valley	Meander Valley Part A Meander Valley Part B
	Northern Midlands	Northern Midlands Part A Northern Midlands Part B
	West Tamar	West Tamar Part A West Tamar Part B

Table G1 Tasmanian labour market classification

(continued)

BTRE Labour Market	Local Government Area (LGA)	Statistical Local Areas (SLA)
Burnie, Devonport and surrounds	Burnie	Burnie Part A Burnie Part B
	Devonport	Devonport
	Central Coast	Central Coast Part A Central Coast Part B
	Kentish	Kentish
	Latrobe	Latrobe Part A Latrobe Part B
	Waratah/Wynyard	Waratah/Wynyard Part A Waratah/Wynyard Part B
King Island	King Island	King Island
West Coast	West Coast	West Coast
Flinders	Flinders	Flinders
Circular Head	Circular Head	Circular Head
Dorset	Dorset	Dorset
Break O'Day	Break O'Day	Break O'Day
Glamorgan/Spring Bay	Glamorgan/Spring Bay	Glamorgan/Spring Bay
Tasman	Tasman	Tasman
Central Highlands	Central Highlands	Central Highlands
George Town	George Town	George Town Part A George Town Part B

Table G1 Tasmanian labour market classification (continued)

Source: BTRE Industry Structure Database (2003a).

Abbreviations and Acronyms



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Abbreviations and Acronyms

ABARE	Australian Bureau of Agriculture and Resource Economics
ABS	Australian Bureau of Statistics
ACC	Area Consultative Committee
ACT	Australian Capital Territory
AHP	Average House Price
AHS	Affordable Housing Strategy
ALP	Australian Labour Party
AO	Order of Australia
APPM	Associated Pulp and Paper Mills
AQF	Australian Qualifications Framework
ARTI	Aggregate real taxable income
ASGC	Australian Standard Geographical Classification
ATO	Australian Taxation Office
AUD	Australian Dollar
BIE	Bureau of Industry Economics
BITRE	Bureau of Infrastructure, Transport and Regional Economics
BTRE	Bureau of Transport and Regional Economics
Cat.	Catalogue number
CGC	Commonwealth Grants Commission
COAG	Council of Australian Governments
CPI	Consumer Price Index
CRC	Cooperative Research Centre
CSI	Consumer Sentiment Index
CSTDA	Commonwealth State Territory Disability Agreement
DASU	Demographic Analytical Service Unit
DCITA	Department of Communication, Information Technology and the Arts
DEST	Department of Education, Science and Training

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DETYA	Department of Education, Training and Youth Affairs
DEWR	Department of Employment and Workplace Relations
DFAT	Department of Foreign Affairs and Trade
DIAC	Department of Immigration and Citizenship
DICA	Department of Immigration and Citizenship
DSD	Department of State Development
DT	Department of Treasury
Ed-1	Bachelor degree or higher qualification
Ed-2	Diploma or advanced diploma qualification
Ed-3	Skilled vocational qualification
Ed-4	Basic vocational qualification and/or left school aged 15 or higher
EMP Inquiry	Inquiry into employment: increasing participation in paid work
ETM	Elaborately Transformed Manufactures
FOB	Free On Board
GBE	Government Business Enterprise
GBP	Great Britain Pounds
GDP	Gross Domestic Product
GFP	Gross Farm Product
GGFCE	General Government Final Consumption Expenditure
GISCA	National Centre for Social Applications of Geographic Information Systems
GPP	General Purpose Payment
GRP	Gross Regional Product
GSP	Gross State Product
GST	Goods and Services Tax
GVA	Gross Value Added
HACC	Home and Community Care
HCG	Health Care Grants
HEC	Hydro Electric Corporation
HFCE	Household Final Consumption Expenditure
Hon.	Honourable
HPI	House Price Index

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IC	Industry Commission
ICT	Information and Communication Technologies
IRIS	Infrastructure and Resource Information Services
IVA	Industry Value Added
LFS	Labour Force Survey
LGA	Local Government Area
LGB	Local Government Board
LM	Labour Market
LMR	Labour Market Region
MFP	Multi Factor Productivity
MLC	Members of the Legislative Council
NAFI	National Association of Forest Industries
NATSEM	National Centre for Social and Economic Modelling
NCC	National Competition Council
NCOA	National Commission of Audits
NCP	National Competition Policy
NSW	New South Wales
NT	Northern Territory
NTI	Number of taxable individuals
NZ	New Zealand
OECD	Organisation for Economic Co-operation and Development
PC	Productivity Commission
PriGFCF	Private Gross Fixed Capital Formation
PTE	Public Trading Enterprise
PubGFCF	Public Gross Fixed Capital Formation
QLD	Queensland
R&D	Research and Development
RBA	Reserve bank of Australia
REDI	Regional Economic Development and Investment
RFA	Regional Forest Agreements
RIPT	Real income per-taxpayer
S&P	Standard and Poor's

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SA	South Australia
SARS	Severe Acute Respiratory Syndrome
SD	Statistical Division
SFD	State Final Demand
SLA	Statistical Local Area
SNA93	System of National Accounts 1993
SPP	Specific Purpose Payment
SSD	Statistical Sub Division
STCRC	Sustainable Tourism Cooperative Research Centre
TAS	Tasmania
TASTA	Tasmanian State Training Authority
TCCI	Tasmanian Chamber of Commerce and Industry
TDE	Tasmanian Department of Education
TDED	Tasmanian Department of Economic Development
TDHHS	Tasmanian Department of Health and Human Services
TDPAC	Tasmanian Department of Premier and Cabinet
TDPIW	Tasmanian Department of Primary Industries and Water
TDSD	Tasmanian Department of State Development
TDTF	Tasmanian Department of Treasury and Finance
TFES	Tasmanian Freight Equalisation Scheme
TFI	Total Factor Income
TPBI	Total Private Business Investment
UK	United Kingdom
UN	United Nations
VET	Vocational Education and Training
VIC	Victoria
WA	Western Australia

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