Queensland Economic Review 2003/3

Office of Economic and Statistical Research
# Contents

## Economic Overview
- Summary ............................................................................................................... 1

## External Conditions
- International Economy ....................................................................................... 2
- National Economy ................................................................................................ 2
- Exchange Rates .................................................................................................... 3
- Monetary Policy .................................................................................................... 3
- Bond and Bill Yields ............................................................................................. 3

## State Economic Performance
- Overview ............................................................................................................... 4
- Employment .......................................................................................................... 4
- Unemployment ....................................................................................................... 4
- Job Vacancies ........................................................................................................ 5
- Employment by Industry ....................................................................................... 5
- State Economic Growth ......................................................................................... 6
- Consumption ......................................................................................................... 6
- Housing Investment ............................................................................................... 7
- Business Investment .............................................................................................. 7
- Business Conditions ............................................................................................. 8
- Agricultural and Mining Trends ........................................................................... 8
- Overseas Merchandise Exports .......................................................................... 8
- Commodity Prices ............................................................................................... 9
- Tourism ................................................................................................................ 10
- Inflation ................................................................................................................ 10
- Wages ................................................................................................................... 10
- Population ............................................................................................................. 11

## Economic Research Article
- Productivity and Regional Economic Performance in Australia ....................... 12

## Statistical Appendices
- Economic Indicator Charts ................................................................................ 22
- Commodity Price Charts ..................................................................................... 23
- Major Economic Indicators by State ................................................................... 24

## For Your Reference
- Index of Articles .................................................................................................... 25
- Glossary ................................................................................................................ 26
- Office of Economic and Statistical Research details ......................................... 27

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**Highlights of this Issue**

Productivity growth is the main factor contributing to higher living standards and sustainable economic growth. The feature article in this issue of the *Queensland Economic Review* is based on the introductory chapter of the recently released book, *Productivity and Regional Economic Performance in Australia*, part of the initial output from Queensland Treasury’s Drivers of Economic Growth research project.

The book examines the drivers of productivity and economic performance in Australia over the past decade and a half, and identifies those factors that are likely to drive economic growth in the future. The book highlights the fact that fostering innovation and developing human capital are the key factors in achieving sustainable economic growth.

This issue of the *Queensland Economic Review* also contains the usual detailed updates on the Queensland, national and international economies. The Queensland economy continued to perform solidly in March quarter 2003, with trend gross state product rising 0.7%, to be 3.8% higher over the year. The main drivers of growth in the quarter were dwelling investment and business investment.
The *Queensland Economic Review* is also now available through the Queensland Treasury Internet site:

www.treasury.qld.gov.au

For further economic, financial and statistical information relating to Queensland, visit the Office of Economic and Statistical Research Internet sites:

- OESR: www.oesr.qld.gov.au
- Statistics Queensland: www.statistics.qld.gov.au
- Economics Queensland: www.economics.qld.gov.au
- Qstats: www.qstats.qld.gov.au

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Notes for Contributors

The *Queensland Economic Review* (QER) invites articles from organisations and individuals on a broad range of topics suitable for inclusion in future issues of the publication. Three or four issues are published each year and 16 pages are set aside in each issue for articles. Some of the articles are prepared by officers of Queensland Treasury.

To get an idea of the types of articles that are published, please peruse previous issues. Please note aspects such as length and style of articles. Each article is usually two, three or four pages in length. Allow about 750 words per QER page, without headings or illustrations. Articles should be written in a style that is understandable to a diverse range of readers, and should include tables/charts/diagrams and one or two levels of headings.

Completed articles or ideas for articles can be emailed to oesr@treasury.qld.gov.au. Text should preferably be in Word. All tables, charts and diagrams should be in Excel, Illustrator, etc. as appropriate rather than imported into the Word document. Some editing of articles may occur. A typeset copy will be sent to authors for approval before printing.

The *Queensland Economic Review* is intended only to provide a summary of the subject matter covered and without assuming a duty of care. Although the information, including commentary, herein has been derived from sources believed to be reliable, Queensland Treasury does not guarantee or make any representations as to its accuracy or completeness or accept responsibility for any loss or damage occurring as a result of its use. Statements and opinions expressed or implied in this publication do not necessarily reflect the opinions or views of the Office of Economic and Statistical Research, Queensland Treasury or the Queensland Government.
Summary

International Economy
The global economic outlook remains subdued but the US Federal Reserve Board has recently provided a more optimistic assessment of the US economy.

National Economy
Australia’s economic growth moderated slightly to 0.6% in the March quarter, with growth driven primarily by consumption and investment growth.

Exchange Rates
The $A depreciated slightly compared with the $US over the three months to mid August but appreciated marginally on a trade-weighted basis over the period.

Monetary Policy
Australia’s official cash rate remained unchanged at 4.75% in mid August 2003.

Bond and Bill Yields
Bond yields increased in the three months to mid August while bill yields have largely remained unchanged in recent months.

Queensland Economy
Queensland’s economic performance in the March quarter remained solid, despite the uncertainty and weakness in the external economy. The outlook for the State economy remains favourable, with strong population growth and low interest rates continuing to underpin domestic economic activity.

Employment
Trend employment in Queensland grew only 0.2% in June quarter 2003 but annual growth remained strong at 3.4%.

Unemployment
Despite subdued employment growth, Queensland’s trend unemployment rate fell a further 0.1% point in the June quarter to 6.9%, the lowest rate in 13 years.

Job Vacancies
Trend job vacancies rose 1.4% in the June quarter, providing a more positive outlook for employment growth than in the previous two quarters.

Employment by Industry
Growth in employment in Queensland over the year to the June quarter was recorded in most service industries. The largest declines were recorded in accommodation, cafes and restaurants and agriculture.

State Economic Growth
Economic growth in Queensland moderated slightly to 0.7% in trend terms in March quarter 2003, to be 3.8% over the year. Dwelling and business investment were the main drivers of growth, while consumption growth eased and net exports continued to detract from growth.

Consumption
Household consumption growth in Queensland eased to 0.5% in the March quarter, reflecting the impact of the war in Iraq on consumer confidence.

Housing Investment
Dwelling investment in Queensland continued to grow strongly in the March quarter, rising 5.9%, after growing 7.5% in the previous quarter.

Business Investment
Business investment also remained solid in the March quarter, increasing 5.6%, with strong growth in investment in both machinery and equipment and other buildings and structures.

Business Conditions
Surveys provide a mixed outlook for business conditions, with a slight moderation in conditions in Queensland in the June quarter but an improvement in conditions expected in the September quarter.

Agricultural and Mining Trends
Crop production is expected to have fallen substantially in 2002-03 as a result of the drought. The mining sector should continue to be boosted by both new and expanded projects.

Overseas Merchandise Exports
Queensland’s overseas merchandise exports fell 8.0% in nominal terms over the year to the June quarter, reflecting the impacts of the drought, a higher $A and the subdued world economy.

Commodity Prices
The Queensland Commodity Price Index declined 10.4% in the June quarter, as a result of weaker international prices and an appreciation of the $A.

Tourism
Queensland’s tourism sector remained relatively solid, with room occupancy rates rising 2.1% over the year to the March quarter, as Australians holiday at home rather than overseas.

Inflation
Consumer prices were unchanged in Brisbane in the June quarter. Falls in transport and fresh fruit and vegetable prices were offset by rises in housing and health costs.

Wages
Growth in wages in Queensland moderated in the March quarter, with average weekly ordinary time earnings rising 0.4% in trend terms.

Population
Population growth in Queensland reached 2.4% over the year to December quarter 2002, reflecting a surge in interstate and overseas migration.
International and National Economies

International Economy

The outlook for the US economy in 2003 has improved due to a positive national accounts result for June quarter 2003. US gross domestic product (GDP) grew at an annual rate of 2.4% in real terms in the quarter, which was higher than expected by most market analysts and 1.0% point higher than that recorded in the March quarter. The Federal Reserve Board predicts that real GDP may grow by 3 3⁄4-4 3⁄4% in 2004, much higher than the 2 1⁄2-2 3⁄4% growth forecast for 2003. Federal Reserve Board Chairman Alan Greenspan cited several reasons for the optimistic assessment of the US economy:

• The market value of household assets, such as equity and property prices, has been lifted by the decline in long-term interest rates and diminished perception of credit risk;
• Households have taken advantage of low mortgage interest rates to refinance debt on more favourable terms to lower their debt servicing ratio;
• The recently passed tax legislation will provide support for household disposable income in the second half of 2003;
• Similar to the household sector, businesses in the US have taken advantage of low interest rates to strengthen their balance sheets; and
• Productivity in the US has continued to improve despite the economy’s lacklustre performance.

Financial markets worldwide reacted favourably to Greenspan’s assessment of the US economy, pushing equity prices and $US exchange rates higher. In contrast, prices of corporate and government bonds fell as investors readjusted their portfolios. As a consequence, the yield on 10-year US Treasury bonds surged from 3.1% in mid June to around 4.4% in mid August.

While the Severe Acute Respiratory Syndrome (SARS) continued to adversely affect the economies of China, Hong Kong, Singapore and Taiwan in June quarter 2003, there was some optimism for the Japanese economy. With the anticipation that growth rates of overseas economies will accelerate in the second half of 2003, exports and production in Japan are expected to recover gradually, which in turn may initiate a recovery in Japan’s domestic economy.

Forecasts of annual economic growth in the Euro zone in 2003 were further downgraded from 1.0% in April 2003 to 0.6% in August. Despite the European Central Bank (ECB) cutting the official interest rate by another 50 basis points in June, following reductions of an accumulated 75 basis points since December 2002, the market consensus is that the ECB is likely to cut the official rate further in the remainder of 2003. The ECB continues to cite a lack of structural reform as a major factor hindering growth prospects in the medium term.

National Economy

National accounts data indicate that economic growth in Australia continued to moderate in March quarter 2003, after easing steadily through 2002. Steady consumption growth and strong private investment growth were partially offset by a large detraction from growth by net exports. GDP rose 0.6% in trend terms in the March quarter, following 0.7% in each of the previous two quarters.

Although household consumption continued to grow soundly in the March quarter, increasing 0.7%, consumption growth peaked in March quarter 2002 and has eased over the past year. Similarly, growth in dwelling investment has moderated since late 2001, rising 2.5% in March quarter 2003, down from 3.9% growth in the previous quarter. Business investment continued to grow strongly in the March quarter, increasing 3.1%, following 4.5% growth in the previous quarter. Both components of business investment recorded solid growth, with machinery and equipment investment rising 2.8% and other buildings and structures investment increasing 3.5%.

The level of employment in Australia fell 0.2% in trend terms in June quarter 2003, the first quarterly decline in national employment since December quarter 2000. Full-time employment fell 0.3% and part-time employment rose by 0.1% in the quarter while annual employment growth eased to 2.3%, from 2.9% in the previous quarter.

Despite the fall in employment, a 0.4% point drop in the trend labour force participation rate, compared with the previous quarter, resulted in the country’s unemployment rate remaining unchanged at 6.1%.
**Exchange Rates**

The $A depreciated slightly over the three months to mid August 2003, falling 0.7% against the $US to be trading at around US$65.3¢. However, the similarity between the exchange rates at the start and end points of this period masked a period of substantial volatility in the exchange rate.

The $A appreciated notably throughout May and June to reach more than US$68¢ in early July, before depreciating to around US$65¢ by mid August. Despite the recent easing, the $A has appreciated almost 16% since the beginning of 2003, and by more than 35% since it dipped below US$50¢ in early 2001.

**Australian Dollar**

(daily, TWI: May 1970 = 100)  
Source: Reuters

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<th>Date</th>
<th>TWI (RHS)</th>
<th>TWI (LHS)</th>
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<td>55</td>
<td>0.60</td>
<td>60</td>
</tr>
</tbody>
</table>

The RBA’s decision to leave rates unchanged in recent months has been made in the face of somewhat conflicting economic and market signals. In particular, the national consumer price index was unchanged in the June quarter, while annual headline inflation fell to 2.7% (from 3.4% in the March quarter), to be back within the RBA’s target range.

Meanwhile, the slow recovery of the global economy, particularly in the US, and the more expansionary monetary settings adopted by most other major central banks, resulted in many market analysts suggesting that an interest rate cut was likely. Growth in the Australian domestic economy, while continuing at a moderate rate, has also eased over recent quarters.

However, the RBA has clearly voiced its concerns in recent months regarding the rapid pace of credit growth, with its main concern remaining the prospect of an over-extended housing market.

The combination of expansionary monetary and fiscal policy has resulted in a sharp increase in the price of residential property over the past 12 months and the RBA has intimated that, despite the external environment and other factors, it may even consider raising interest rates to prevent what appears to be an emerging asset bubble in the housing sector.

**Monetary Policy**

Australia’s official cash rate remained unchanged at 4.75% in early August 2003, with the Reserve Bank of Australia (RBA) having made no change to interest rates since it increased the official rate from 4.5% in June 2002.

Despite official cash rates remaining unchanged, Australian bond yields have increased in recent months, with the Australian 10-year bond yield rising 64 basis points over the three months to mid August. This is consistent with market expectations of stronger future economic growth and largely reflects the slightly more positive outlook for the US economy.

Meanwhile, 90-day bank bill yields have remained virtually unchanged, having risen just 7 basis points over the period, to be 4.84% in mid August.

**Bond and Bill Yields**

Despite official cash rates remaining unchanged, Australian bond yields have increased in recent months, with the Australian 10-year bond yield rising 64 basis points over the three months to mid August. This is consistent with market expectations of stronger future economic growth and largely reflects the slightly more positive outlook for the US economy.

Meanwhile, 90-day bank bill yields have remained virtually unchanged, having risen just 7 basis points over the period, to be 4.84% in mid August.
State Economic Performance

Queensland Economy

Overview

Despite continued uncertainty and weakness in the external environment in recent quarters, the Queensland economy has continued to record robust growth and to outperform the rest of Australia. Queensland’s gross state product rose 0.7% in trend terms in March quarter 2003, to be 3.8% higher over the year. This compares favourably with the 0.5% quarterly growth and 2.5% annual growth recorded in the rest of Australia.

Strong growth in domestic activity once again provided the main impetus to growth, with a 1.6% increase in gross state expenditure in the March quarter being partially offset by a detraction from growth by net exports. This result was largely expected, given the impact on exports of the stronger $A and the adverse external conditions that prevailed during the quarter. These included the ongoing impacts of the drought, the onset of the war in Iraq and ongoing concern regarding the SARS virus.

Dwelling investment and business investment were the primary drivers of growth in the March quarter. Household consumption growth remained strong but continued to moderate from the exceptionally high rates of growth in the second half of 2002. It is considered that the recent easing in consumption growth mainly reflected the detrimental impact on consumer confidence resulting from the war in Iraq and the associated weakness in equity markets.

Despite the slightly weaker growth recorded in the March quarter, the outlook for the Queensland economy remains bright. Continuing strong population growth, driven by high interstate and overseas migration, and the maintenance of historically low interest rates should continue to underpin solid growth in domestic activity. The external environment remains the major threat to future growth, although the outlook for the US economy in 2003 has improved slightly and the negative impacts of the drought, war in Iraq and SARS all appear to be gradually dissipating.

Employment

Queensland recorded subdued employment growth during June quarter 2003, with trend employment rising 0.2%. Despite this low growth, Queensland continued to outperform the rest of Australia, where the number of persons employed fell by 0.1% in the quarter.

Quarterly employment growth in Queensland eased considerably in the March and June quarters, following a recent peak of 1.4% in December quarter 2002. However, Queensland continued to record strong annual trend jobs growth of 3.4% (rest of Australia, 2.2%) in the June quarter, accounting for 59,800 (26.3%) of the 226,800 jobs created nationally over the year.

Easing employment growth in Queensland and the rest of Australia in the June quarter reflected the general moderation in economic activity during the previous quarter. In particular, this reflected slowing growth in the construction and retail trade industries, the effects of the drought, and the impact of the external environment, particularly SARS, on tourism.

Employment Growth

| Source: ABS 6202.0 |

The 4,400 jobs created in Queensland during the June quarter comprised a solid increase in part-time employment (up 5,600) and a marginal decline in full-time employment (down 1,200). However, the 59,800 jobs created in the State over the year to the June quarter constituted a substantial increase in both full-time (24,200) and part-time (35,600) jobs.

In year-average original terms, employment in Queensland increased by 3.3% in 2002-03. This is the highest annual average growth recorded since 1994-95, and compared favourably with the 1.9% growth recorded in 2001-02. Queensland’s year-average employment growth in 2002-03 was significantly higher than the 2.2% recorded in the rest of Australia and was the highest of any state over the year.

Unemployment

Despite the relatively weak employment growth in Queensland during June quarter 2003, the State’s quarterly trend unemployment rate fell a further 0.1% point to 6.9%, its lowest level since March quarter 1990.

The further fall in Queensland’s unemployment rate reflected the fact that employment growth exceeded labour force growth (0.1%) in the quarter. This is the lowest quarterly labour force growth recorded in Queensland since December quarter 2000 and represented a substantial easing in growth, compared
with the 1.1% recorded in each of the previous two quarters.

Queensland’s slower rate of labour force growth in the June quarter primarily reflected a 0.4% point fall in the State’s participation rate to 64.9%. This reversed much of the increase in the participation rate recorded in the previous two quarters and largely offset the impact of continued strong civilian population growth (0.8%). This was the strongest growth in the State’s civilian population since June quarter 1989, with population growth continuing to be fuelled by interstate and overseas migration.

Unemployment Rate
(%, quarterly average, trend)

Source: ABS 6202.0

The further reduction in Queensland’s unemployment rate in the June quarter resulted in the number of unemployed persons in the State declining by 1,900 compared with the previous quarter and 6,900 compared with a year earlier. As a result, Queensland’s quarterly unemployment rate has fallen 1.7% points since reaching a recent peak of 8.6% in June quarter 2001 and 2.5% points from the 9.4% reached in March quarter 1997.

In contrast, the trend unemployment rate in the rest of Australia remained at 5.9% in the June quarter and has fallen only 0.5% point since June quarter 2001. As a result, the differential between the unemployment rates in Queensland and the rest of Australia has more than halved, from 2.2% points to 1.0% point, since June quarter 2001.

Job Vacancies

Job vacancy data for June quarter 2003 provided a mixed outlook for overall employment growth in Queensland. The trend number of job vacancies in Queensland, as measured by the ANZ Job Advertisement Series, rose by 1.4% in the June quarter, to be 3.2% higher than a year earlier. In contrast, the number of job advertisements nationally fell 1.9% in the quarter, to be 5.5% lower than a year earlier.

The increase in job vacancies in the June quarter may partially reflect the strengthening in the retail trade sector during the quarter and the reduction in uncertainty following the end of the war in Iraq, which may have previously caused some employers to delay hiring intentions.

In contrast, the DEWR Skilled Vacancy Survey index for Queensland fell by a further 13.9% (nationally, down 7.4%) in the June quarter. However, the ANZ Job Advertisement Series is generally considered a more comprehensive measure of general job vacancies across all sectors of the economy.

Employment by Industry

Employment in Queensland, in original terms, increased by 72,400 over the year to June quarter 2003. This increase comprised a gain of 87,300 jobs in the service industries, more than offsetting a decline of 14,900 jobs in the primary and secondary sectors over the year.

The decline in employment in the primary sector over the year included the loss of 13,800 jobs in agriculture, forestry and fishing, reflecting the ongoing impact of the drought on this industry.

The impact of strong housing activity on labour demand contributed to substantial employment growth in property and business services (up 40,000 jobs), and a further increase in employment in construction (up 3,700 jobs) over the year to June quarter 2003.

Strong employment gains in other service industries, including cultural and recreational services (up 9,600 jobs), communication services (9,400), retail trade (9,300) and transport and storage (7,000), reflected the strength of those sectors, underpinned by Queensland’s strong economic growth and a continuing low interest rate environment.
State Economic Growth

According to the Queensland State Accounts, the pace of economic growth in Queensland eased over the second half of 2002, with the moderation continuing in March quarter 2003. An easing in household consumption spending, combined with strong growth in imports, were primarily responsible for this moderation.

Queensland’s gross state product (GSP) rose 0.7% in trend terms in the March quarter, easing from 0.9% growth in December quarter 2002. On an annual basis, GSP growth also slowed, rising 3.8% over the year to March quarter 2003, after peaking at 6.2% growth in March quarter 2002. Despite this, Queensland has maintained an economic growth rate well above that in the rest of Australia, which recorded growth of 0.5% in March quarter 2003 and 2.4% over the year.

Household consumption, the largest component of GSP, rose by 0.5% in Queensland in the March quarter, slowing from the pace of growth recorded over the previous several quarters. Despite a strong labour market and low interest rates, reduced growth in spending during the March quarter may have reflected consumer concerns surrounding the war in Iraq and high oil prices.

Private investment continued to drive economic growth in Queensland in the March quarter, rising 4.8% during the quarter and 25.8% over the year. While the peak of the housing investment cycle may have passed, dwelling investment still rose 5.9% in the March quarter, contributing 0.5% point to overall GSP growth. Business investment may also have passed its peak growth rate recorded in September 2002, but still rose 5.6% in March quarter 2003 and 31.4% over the year. Both machinery and equipment investment and other buildings and structures investment grew strongly over the quarter.

Despite a difficult external environment, Queensland export growth during the March quarter was stronger than in previous quarters, with total exports rising 2.1% and overseas exports rising 2.3%. Despite this strong performance, rapid growth in imports (up 4.1%) caused net exports to detract 1.0% point from overall economic growth during March quarter 2003.

Contribution to Growth
(quarterly % point, CVM, trend)
Source: Office of the Government Statistician, Queensland State Accounts

Household consumption expenditure growth moderated in Queensland to 0.5% in trend terms in March quarter 2003, compared with a 1.1% increase in December quarter 2002. In comparison, the rest of Australia recorded growth of 0.8% and 0.7% in these two quarters respectively.

The relatively modest growth in household consumption in the March quarter was largely due to the effect that the war in Iraq and associated weakness in equity markets had on consumer confidence.

Consequently, annual growth in household consumption expenditure in Queensland moderated 0.4% point to be 5.0% in the year ending March quarter 2003, but remained 1.8% points higher than that in the rest of Australia (3.2%).

More than 40% of total household consumption in Queensland is accounted for by retail trade turnover. Retail trade in Queensland grew 0.9% in trend terms in the March quarter, compared with lower growth of 0.6% in the rest of Australia. In Queensland, the largest detraction from retail trade growth was in the household goods sector, reflecting the moderation in growth in dwelling investment in recent quarters.
Despite easing in the March quarter, the outlook for household consumption expenditure growth in Queensland remains positive. Continued strong population growth driven by interstate and overseas migration, the strengthening in the retail trade sector in the June quarter, and an easing in tensions in the Middle East should support the current level of consumption in Queensland.

**Housing Investment**

Queensland experienced the ninth consecutive quarter of growth in dwelling investment in March quarter 2003. In trend terms, dwelling investment rose 5.9% in the March quarter, following 7.5% growth in December quarter 2002. Dwelling investment also continued to grow in the rest of Australia, but at a more moderate pace than in Queensland. Dwelling investment in the rest of Australia grew by 1.6% in the March quarter, following 2.9% growth in December quarter 2002.

Annual growth in dwelling investment in Queensland remained substantially higher than that in the rest of Australia. Dwelling investment in Queensland rose 33.7% in the year to March quarter 2003, more than double the rate of growth in the rest of Australia (14.0%).

The recent month-to-month volatility in ABS building approvals data has made it difficult to determine the overall direction of housing investment in Queensland. This volatility has been driven predominantly by the ‘other residential buildings’ category, which includes apartment buildings and townhouses. However, the number of private sector houses approved, regarded as the ‘core’ of the housing industry and as a reliable indicator of the general direction of housing investment, has been more stable. In trend terms, the monthly number of private sector houses approved in Queensland has remained relatively unchanged since late 2002, and in June was only 9.5% below the recent peak recorded in August 2002.

It is expected that growth in housing investment in Queensland will continue to moderate over the remainder of 2003. However, any sharp decline should be prevented by the relative stability in approvals of private houses, with strong interstate and overseas migration and alterations and additions activity supporting demand.

**Business Investment**

Growth in business investment in Queensland continued at a healthy pace in March quarter 2003, despite moderating from the growth rates achieved during the second half of 2002. Business investment rose 5.6% in trend terms in the March quarter, after growth peaked at 8.5% in September quarter 2002. Despite the moderation in growth, business investment still contributed 0.7% point to overall GSP growth in the March quarter. The strength of the recent investment boom in Queensland has surpassed that in the rest of Australia, where business investment grew at around 4% per quarter through 2002, moderating to 2.5% growth in March quarter 2003.
The two components of business investment (machinery and equipment, and other buildings and structures) grew at the same pace in Queensland in March quarter 2003, both rising by 5.6%. In the rest of Australia, other buildings and structures investment rose 3.0% while machinery and equipment investment increased 2.2%.

**Business Conditions**

The outlook for business conditions in Queensland is mixed. Business surveys suggest that business conditions moderated in the March and June quarters. Despite this, businesses have reported conditions superior to those reported in the rest of Australia, and the relative strength of business investment in Queensland may reflect this.

The National Australia Bank Quarterly Business Survey reported a slight weakening in business conditions in Queensland during June quarter 2003, with the business conditions index falling 2% points to 12%. All three components of the index fell in the quarter. The trading performance index fell 3% points to 16%, the index measuring profitability declined 2% points to 5%, while the employment index fell 3% points to 14% over the quarter. Despite this, the business conditions index in Queensland remained high compared with the national average of 7%.

The short-term outlook for business conditions in Queensland is more encouraging, with the index expected to double to 25% in the September quarter. Nationally, the outlook for business conditions over this quarter is also optimistic, with the index expected to rise to 15%.

The May 2003 Yellow Pages Business Index survey indicated that business conditions in Queensland moderated during the period February to April 2003, compared with the previous three months. The number of small and medium-sized businesses reporting an increase in sales or profitability declined over this period. However, the outlook for business conditions over the next 12 months was for an improvement, with the net balance of small and medium-sized businesses positive about their prospects over the coming year rising 5% points to 64% (nationally, down 1% point to 54%).

**Agricultural and Mining Trends**

Queensland’s major winter crop production for 2002-03 (including wheat, barley, canola and oats) is estimated by the Australian Bureau of Agricultural and Resource Economics to be 0.64 million tonnes. This represents a 43% decline on the previous season, and the third consecutive year in which poor seasonal conditions have led to relatively low winter crop harvests. However, with forecasts of drought-breaking rains, the total area sown to winter crops for the 2003-04 season is expected to increase by 21%. Wheat and barley production is forecast to rise 35% and 47% respectively in 2003-04.

Summer crop production is expected to have declined in 2002-03. Reduced plantings and hot, dry conditions during the main growing season lowered sorghum and cottonseed yields. Also, the fungal disease ergot has been identified in some sorghum crops. Sorghum production is estimated to have declined 48% in 2002-03, while a lack of irrigation water has resulted in production of cotton lint and cottonseed falling by an estimated 61% each.

Some cattle producers have continued to face problems with a lack of pasture and water, with large areas of Mitchell grass pastures blackened, indicating insufficient moisture penetration in the soil. Also of concern is Japan’s tariff increase on chilled beef imports from 38.5% to 50% for the period August 2003 to March 2004, following import volumes exceeding levels that triggered the increase in tariffs. A recovery in chilled beef exports to Japan following the ‘mad cow disease’ related slump in 2002 has been constrained by low trigger levels.

Swiss-based diversified resources company Xstrata has effected a ‘scheme of arrangement’ acquisition of coal and base metals producer MIM. Meanwhile, coal production was boosted recently by the start-up of Macarthur Coal’s Moorvale project in central Queensland. This comes on top of stronger production and sales from the company’s existing Coppabella mine in the June quarter. Other recently announced projects in the mining sector are BHP Billiton’s Broadmeadow underground coal project located near the company’s existing Goonyella operations, with development to commence in the third quarter of 2003, and Rio Tinto’s recent decision to expand Comalco’s Weipa bauxite mine to accommodate alumina production at its Greenfield refinery under construction in Gladstone.

**Overseas Merchandise Exports**

The nominal value of Queensland’s overseas merchandise exports recorded a fifth consecutive decline in annual terms in June quarter 2003 (down 8.0%). This was due to falls in the nominal value of exports of rural goods, crude minerals, and other manufactures by 18.5%, 11.6% and 9.7% respectively in year-on-year terms for the quarter. Meanwhile, the nominal value of exports of processed minerals and metals and confidential items (of which a large proportion is sugar) increased by 1.7% and 14.1% respectively in the June quarter compared with a year earlier.
Drought conditions have continued to affect agricultural production, and are the major factor behind the decline in the value of rural exports. The overall fall in rural export earnings was largely driven by decreases in the nominal value of cereals and textile fibres exports of 47.7% and 37.3% respectively in the June quarter compared with a year earlier. These declines were partly offset by an increase in the value of vegetables and fruit exports of 21.6% over this period.

Overseas Merchandise Exports, Queensland (nominal)

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<tr>
<td>Cereals</td>
<td>51.9</td>
<td>27.2</td>
<td>-47.7</td>
</tr>
<tr>
<td>Textile fibres</td>
<td>180.5</td>
<td>113.2</td>
<td>-37.3</td>
</tr>
<tr>
<td>Fish</td>
<td>89.8</td>
<td>62.3</td>
<td>-30.7</td>
</tr>
<tr>
<td>Vegetables and fruit</td>
<td>36.7</td>
<td>44.6</td>
<td>21.6</td>
</tr>
<tr>
<td>Other rural</td>
<td>258.6</td>
<td>197.8</td>
<td>-23.5</td>
</tr>
<tr>
<td>Total rural</td>
<td>1,245.5</td>
<td>1,097.0</td>
<td>-18.5</td>
</tr>
<tr>
<td>Crude minerals (b)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal (b)</td>
<td>1,723.1</td>
<td>1,550.0</td>
<td>-10.0</td>
</tr>
<tr>
<td>Other crude minerals</td>
<td>511.1</td>
<td>425.2</td>
<td>-16.8</td>
</tr>
<tr>
<td>Total crude minerals</td>
<td>2,234.1</td>
<td>1,975.1</td>
<td>-11.6</td>
</tr>
<tr>
<td>Manufactures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processed minerals and metals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-ferrous metals</td>
<td>539.6</td>
<td>544.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Other processed minerals and metals</td>
<td>50.2</td>
<td>55.8</td>
<td>11.2</td>
</tr>
<tr>
<td>Total</td>
<td>589.7</td>
<td>600.0</td>
<td>1.7</td>
</tr>
<tr>
<td>Other manufactures (a)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemicals</td>
<td>92.1</td>
<td>99.8</td>
<td>8.3</td>
</tr>
<tr>
<td>Leather, rubber, etc.</td>
<td>56.7</td>
<td>48.2</td>
<td>-14.9</td>
</tr>
<tr>
<td>Machinery</td>
<td>196.2</td>
<td>169.4</td>
<td>-13.6</td>
</tr>
<tr>
<td>Transport equipment</td>
<td>77.8</td>
<td>74.4</td>
<td>-4.4</td>
</tr>
<tr>
<td>Miscellaneous manufactures</td>
<td>69.2</td>
<td>54.7</td>
<td>-21.0</td>
</tr>
<tr>
<td>Other manufactures - other</td>
<td>5.9</td>
<td>3.3</td>
<td>-44.7</td>
</tr>
<tr>
<td>Total</td>
<td>497.9</td>
<td>449.8</td>
<td>-9.7</td>
</tr>
<tr>
<td>Total manufactures</td>
<td>1,087.6</td>
<td>1,049.9</td>
<td>-3.5</td>
</tr>
<tr>
<td>Confidential and special (a,b)</td>
<td>773.0</td>
<td>881.7</td>
<td>44.1</td>
</tr>
<tr>
<td>Total</td>
<td>5,440.3</td>
<td>5,003.7</td>
<td>-8.0</td>
</tr>
</tbody>
</table>

(a) Most of the value of sugar exports, a major revenue earner for Queensland, is included in the confidential and special category.
(b) Part of the decline in the value of coal exports over the year to June quarter 2003 was due to some shipments being reclassified as confidential.

Source: ABS, unpublished foreign trade data

The steady appreciation of the $A over the June quarter failed to fully offset modest gains in most global base metals prices and overall stronger production of Queensland’s processed minerals and metals. However, the rise in the $A has compounded the effects of weak international coal prices and subdued economic growth in Queensland’s major coal markets, resulting in further declines in export earnings for coal.

The nominal value of exports of other manufactures continued to fall over the year to the June quarter (down 9.7%), following a 7.1% annual decline in the March quarter. This fall reflects the pressure on export earnings resulting from the appreciation of the $A. A 13.6% decline in the value of exports of machinery in the June quarter compared with a year earlier was largely responsible for the overall decline.

The nominal value of Queensland’s overseas merchandise exports to most major destinations fell in June quarter 2003 compared with the same quarter in 2002. The value of exports to Japan fell by 4.9% over this period, mostly as a result of an appreciating $A. Meanwhile, exports to the United States (down 26.6%), European Union (down 7.5%), South East Asia (down 19.9%), North East Asia (down 4.6%) and New Zealand (down 14.1%) also fell over the same period. The only major destination that recorded an improvement was the United Kingdom, where the nominal value of exports increased by 12.7% in annual terms in the June quarter.

Commodity Prices

The Queensland Commodity Price Index fell 10.4% in $A terms in June quarter 2003. This decline was mainly driven by a weakening in international prices for Queensland’s major commodities, compounded by the effects of an appreciating $A. Measured in Special Drawing Rights (SDR) terms, the Queensland Commodity Price Index recorded a decline of 5.4% over the quarter.

The agricultural index fell by 17.9% in $A terms and 11.8% in SDR terms in the June quarter. Measured in quarterly average terms, declines in world prices of sugar (down 15.3%), wool (down 14.7%), beef (down 8.2) and wheat (down 4.1%) resulted in a decline in the sectoral index. Offsetting these falls, quarterly average cotton prices steadied over the quarter, with a slight gain of 0.5% in the Liverpool A price.

<table>
<thead>
<tr>
<th>Queensland Commodity Price Index</th>
<th>(index base 2001-02 = 100, quarterly)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source: Queensland Treasury</td>
<td></td>
</tr>
<tr>
<td>All commodities (SA)</td>
<td>All commodities (SDR)</td>
</tr>
<tr>
<td>110</td>
<td>100</td>
</tr>
<tr>
<td>100</td>
<td>90</td>
</tr>
<tr>
<td>90</td>
<td>80</td>
</tr>
<tr>
<td>80</td>
<td>70</td>
</tr>
<tr>
<td>Jun-98</td>
<td>Jun-99</td>
</tr>
<tr>
<td>Jun-00</td>
<td>Jun-01</td>
</tr>
<tr>
<td>Jun-02</td>
<td>Jun-03</td>
</tr>
</tbody>
</table>

After some modest gains in anticipation of an improvement in global economic growth during the March quarter, base metals prices eased marginally over the June quarter as market participants awaited...
evidence of demand growth. Meanwhile, weaker international coal prices and an appreciation of the $A against the $US led to a 7.5% decline in the weighted quarterly average export price for Queensland coal over the June quarter. As a consequence, the mineral index fell 9.6% in $A terms and 2.9% in SDR terms over the period.

Tourism

In trend terms, short-term visitor arrivals to Australia fell 10.1% in June quarter 2003. This continues the downward shift that commenced in the March quarter as a result of the war in Iraq and the outbreak of SARS. Over the year to the June quarter, short-term visitor arrivals fell 13.4%, to be the largest annual decline since December quarter 2001. The downward pressure on arrivals could continue over the next few quarters as travellers remain concerned about their health and safety.

The ABS Survey of Tourist Accommodation for March quarter 2003 showed a slight decline in tourism activity. The number of guest nights in all establishments in Queensland fell 1.6% over the year to the March quarter. In the rest of Australia, the total number of guest nights remained largely unchanged (down 0.1%).

The stock of guest rooms in Queensland declined 1.2% over the year to the March quarter. However, room occupancy rates in Queensland rose 2.1% in the year to the March quarter, averaging 61.5% over the year, their highest level in five years.

Inflation

Consumer prices were unchanged in Brisbane in June quarter 2003. This is the first quarter of no increase in the Brisbane CPI since March quarter 1999, when consumer prices fell marginally. Brisbane’s annual rate of inflation moderated 0.7% point to 2.7% in the June quarter.

The factors that led to an acceleration in price growth earlier in the year abated in the June quarter. Decreases in international oil prices and a rapidly appreciating $A resulted in lower transportation costs and the easing of the drought allowed fresh fruit and vegetable prices to fall. Meanwhile, housing costs continued to rise in the June quarter due to increases in house purchase costs and rents. Health was another component of the CPI to record strong growth in the June quarter, offsetting the falls in the other components discussed above.

Nationally, headline consumer prices were also unchanged in the June quarter, to be 2.7% higher than a year earlier. While market sector goods and services prices recorded a greater increase of 0.5% in the quarter (owing to the exclusion of more volatile items, in particular automotive fuel), they have increased less than headline consumer prices on an annual basis (up 2.0% over the year).

The overall market reaction to the June quarter result was relatively benign, with only a slight decrease in bond yields immediately following the release as the market balanced its position on a prospective cut in interest rates before the end of 2003.

Wages

Average Weekly Ordinary Time Earnings (AWOTE) for full-time adult workers in Queensland rose 0.4% in March quarter 2003, following a rise of 0.6% in December quarter 2002. On an annual basis, growth in AWOTE eased to 2.9% in the March quarter, following growth of 3.5% in the December quarter. The continued moderation in annual wages growth over recent quarters follows a peak of 6.5% growth in December quarter 2000, after the introduction of the GST in July 2000. On a national level, AWOTE for full-time adult workers rose 1.2% in both the March and December quarters, while rising 4.7% over the year to the March quarter.
The preferred measure of wages and salaries is the Wage Cost Index (WCI), as it is unaffected by changes in quality or quantity of work performed. The WCI total hourly rate (excluding bonuses) rose 0.9% in Queensland in both March quarter 2003 and December quarter 2002. Annual growth in the WCI was 3.3% in the March quarter, up from 3.1% in the December quarter. Along with Queensland, Tasmania (3.1%) was the only other state to record annual wages growth below the national average of 3.6%. All other states recorded annual growth in the WCI total hourly rate (excluding bonuses) of between 3.7% and 3.9%.

Population

Queensland continued to experience particularly strong population growth during December quarter 2002, with the State’s estimated resident population increasing to 3,750,543 persons. This represents an increase of 0.6% (21,515 persons) compared with the previous quarter and 2.4% (86,259 persons) compared with December quarter 2001. This is the highest rate of annual population growth in Queensland since March quarter 1996, while in terms of the number of persons, this was the largest annual increase since September quarter 1989.

In contrast, the population in the rest of Australia grew by 0.2% (37,600 persons) in the December quarter, to be 1.1% higher over the year. As a result, Queensland accounted for more than one-third (33.8%) of the national population increase of 255,100 persons during 2002.

The major contributor to Queensland’s population growth in the December quarter was net interstate migration (10,800 persons) while net overseas migration accounted for 5,200 persons and natural increase (births minus deaths) accounted for the remaining 5,500 persons. Over the year to the December quarter, the contribution to population growth from both net interstate migration (36,500 persons) and net overseas migration (25,900 persons) exceeded natural increase (23,800 persons). This represents the largest annual increase in net overseas migration to Queensland since the inception of the current quarterly data series in 1982. Further, this was only the second time during this period (the other being 1988) that net overseas migration has contributed more to population growth than natural increase in a calendar year.
Productivity and Regional Economic Performance in Australia

This research article is based on the introductory chapter to the recently released volume, Productivity and Regional Economic Performance in Australia. This volume is a collection of six research papers that contain the first round of results from the Drivers of Economic Growth Project. This project is a collaborative undertaking involving Queensland Treasury and several academics from Queensland universities, examining the factors that have driven Queensland’s superior economic growth performance in the past and identifying those factors that are likely to be the main drivers of the State’s future economic growth. The introductory chapter, reproduced below, summarises and draws together the main findings and implications of Productivity and Regional Economic Performance in Australia. Queensland Treasury has also released Drivers of Economic Growth in the Smart State, a policy paper that relates the implications of the findings in Productivity and Regional Economic Performance in Australia to the State Government’s Smart State vision and broader economic strategy.

Queensland has experienced a golden era of economic growth over the past decade and a half, recording stronger rates of growth in output, real wages and employment than that in the rest of Australia. This impressive economic performance prompted the Office of Economic and Statistical Research within Queensland Treasury to develop the Drivers of Economic Growth project, a collaborative exercise involving the Office, the University of Queensland and Griffith University.

The principal aim of the project is to identify the fundamental factors that have caused Queensland to record historically higher economic growth than that in the rest of Australia and to isolate those factors that will play an important role in shaping future economic growth, in order to assist the formulation of state economic policy. The papers in Productivity and Regional Economic Performance in Australia contain the findings and policy implications from the first stage of this research project.

Productivity as a source of economic growth is a central focus of this book. An economy can grow by either accumulation of its inputs, namely labour and capital, or improvements in productivity, that is, the rate at which inputs are transformed into output. Productivity growth is the main source of increases in living standards and sustainable growth in employment and economic output.

Growth in productivity creates more output from given inputs, generating a greater amount of income to be shared among residents of an economy, raising real per capita incomes – the main economic indicator of material living standards. In the labour market, any increase in labour productivity allows employers to raise real wages by a commensurate amount without increasing labour costs per unit of output, helping to sustain employment growth. More generally, productivity growth enables producers to raise supply without raising costs, allowing aggregate demand to grow at a faster rate without the need to pass cost increases on to consumer prices, generating non-inflationary sustainable economic growth.

Productivity growth is thus central to the attainment of the key economic policy priorities of the Queensland government. However, it also plays an important role in the delivery of the state government’s social policy priorities, including safer and more supportive communities, a healthy environment, community engagement and a better quality of life. For instance, the rise in real incomes generated by productivity growth also raises tax revenue without the need to raise tax rates, allowing governments to more easily increase spending on education, health and aged care, environmental protection, crime and poverty prevention and cultural activities (Baumol et al., 1988). As people’s incomes grow, they also tend to have more concern for the environment and other aspects associated with a better quality of life.

Understanding the Drivers of Economic Growth

Several chapters of the book concentrate on the determinants of productivity growth. Productivity growth is driven by efficiency improvements (making better use of existing technology) and technological progress itself. Capital deepening (increases in the capital to labour ratio) also affects labour measures of productivity. While the tariff reductions, labour market deregulation and microeconomic reforms that dominated the policy agenda in Australia in the 1980s were based largely on efficiency considerations, attention turned to innovation and human capital as determinants of technological advance in the 1990s.

Several developments led to this shift in emphasis. For instance, despite its success, there has been a slowdown in the process of microeconomic reform following debate over the extent of benefits delivered, mixed results across industries, unintended redistributions of income and a growing realisation that such reforms create one-off improvements in efficiency rather than sustained productivity growth (Industry Commission, 1995; Quiggin, 1998). In contrast, the information and communication technologies (ICT) boom that drove an acceleration in productivity growth and the ‘New Economy’ era in the United States (Gordon,
along with related productivity spillovers in ICT-importing countries such as Australia (Parham et al., 2001), have highlighted the importance of innovation and technology diffusion to economic growth. To quote the OECD (2001, p. 51):

The ability to harness the potential of new scientific and technical knowledge and to diffuse such knowledge widely has become a major source of competitive advantage, wealth creation and improvements in the quality of life. In order to reap the benefits from these changes, governments will have to put the right policies in place.

A seminal contribution of the book is the several chapters that look at how interstate differences in productivity determinants have influenced economic growth across Australian states over the past decade and a half (see Figure 1a).

While much attention has been given to the factors that have driven an acceleration in productivity growth in Australia as a whole since the 1980s (Productivity Commission, 1999), research into how productivity gains have been distributed across the states is sparse. This is surprising, given significant interstate differences exist in educational attainment, rates of research and development (R&D) expenditure, industrial structure and the impact and focus of microeconomic reforms. Further, many of the policy tools able to address these factors are available to state governments, providing considerable scope to influence productivity growth and thus economic growth.

The states of New South Wales, Victoria and Western Australia continue to have significantly higher levels of per capita income than the states of Queensland, South Australia and Tasmania (see Figure 1b). This provides clear evidence of interstate differences in productivity determinants and highlights the need for state-based policies that promote productivity growth.

Significant interstate differences in per capita incomes prompted authors of several chapters in the book to study the issue of convergence. The convergence hypothesis argues that economies with lower per capita incomes should subsequently record faster growth, thereby catching up to higher income economies over time. This process occurs through two channels in particular. Given that developing economies face a higher return to capital, they should record faster rates of capital deepening until their capital to labour ratio and the return to capital is equalised with that of higher income economies. Lower income economies also face convergence opportunities through absorbing the latest technologies available in higher income economies.

States such as Queensland, South Australia and Tasmania are therefore expected to have recorded stronger growth relative to their counterparts over the past decade and a half, as they converge on the per capita income levels enjoyed in New South Wales and Victoria. Failure to catch up in this way suggests structural impediments to convergence, and a number of studies in the book assess state performance in relation to these issues.

The research gathered in Productivity and Regional Economic Performance in Australia was not of course done in isolation. While the book is a product of a small group of economists from the University of Queensland, Griffith University and Queensland Treasury, it reflects the collective wisdom arising from a vast literature on economic growth. There is a wealth of research available worldwide that helps to develop an understanding of economic growth and appropriate policies, and the work in Queensland has been informed by this literature and by contact with other economists, policy makers and institutions. Several chapters in the book draw on and synthesise theoretical developments and empirical evidence.

Growth Theory: Its Implications for the Role of Government

John Foster has been a key contributor to the recent literature on economic growth. In Chapter 2, he
presents a clear and cogent exposition of a new set of theoretical perspectives on economic growth that can assist policy makers. After briefly reviewing the microeconomic reform process, he provides appraisals of the two theories that have emerged over the past two decades as the most popular explanations of the process of economic growth. The first, ‘endogenous growth theory’, evolved from neoclassical growth theory proposed by Robert Solow in the 1960s, while the second, ‘neo-Schumpeterian growth theory’, has been built upon the insights of Joseph Schumpeter over half a century ago.

Foster argues that neo-Schumpeterian growth theory is more helpful in understanding economic growth and of greater assistance to policy makers than endogenous growth theory. He provides examples of how both theories can aid policy makers, and concludes by using education policy as an example of how such theories can alter thinking about policy priorities.

Foster provides an intuitive and insightful critique of endogenous growth theory, illustrating how market failures associated with human capital and innovation as sources of productivity growth provide a revitalised government role in subsidising education and providing appropriate patents law. However, he argues that, apart from such general prescriptions, the theory provides little in the way of precise details about policy implementation, mainly because it deals with aggregate generalisations and often uses unrealistic assumptions to mathematically maintain tractability and consistency with the neoclassical framework.

He cites the assumption of a ‘one good’ final goods sector as perhaps the most serious deficiency, given that in practice product variety abounds and consumers provide the most decisive selection force. As a result, the theory ignores the marketing and entrepreneurial efforts and uncertainty innovators face as they attempt to commercialise their products in the market place – a large part of the innovation process and crucial area for policy.

In contrast, neo-Schumpeterian growth theory recognises that actions take place in a world of incomplete knowledge, variety and uncertainty. It posits that variety in the stock of knowledge generates diversity in the products and processes available, and incorporates uncertainty, whereby only the most productive innovations survive the competitive test. This selection process leads to ‘creative destruction’ in terms of the rise and fall of particular firms and industries, and produces the necessary change in the economy to produce ongoing economic growth.

Foster argues that, whereas endogenous growth theory stresses market failure as a rationale for government policy, the neo-Schumpeterian perspective stresses a wider role for government in relation to the uncertainties people face in making economic decisions. While uncertainty results in variety and selection, there is no guarantee that this will result in rational choices with economically valuable outcomes. The neo-Schumpeterian policy theme is thus to anticipate and deal effectively with emerging uncertainty by creating conditions in which quantifiable risk makes rational economic choices possible.

This theme underpins many of the economic policy principles that are canvassed in the chapter. One principle that is espoused is that governments should pay at least as much attention to the ‘process of destruction’ as the ‘process of creation’. Foster argues that government must be prepared to deal with the uncertainty that emerges among redundant employees in the case of corporate failures, which he cites was lacking in the recent failures of Ansett and OneTel. Rather than subsidising failing firms to continue in production, retrenched employees should be compensated for the loss of specific human capital and be supported to re-skill, in order to avoid losses of human capital and to provide new entrepreneurial opportunities. Similarly, he argues that the high failure rate of small firms that is necessary for the development of dynamic industries should involve a greater government commitment, beyond bankruptcy law protection, to creating new opportunities for failed entrepreneurs.

Another policy principle advocated is a focus on ‘regulatory innovation’ rather than deregulation. Neo-Schumpeterian growth theory suggests government should introduce, adapt and remove regulations, depending on the stage of economic evolution of various firms and industries, in contrast to the idea underlying much of the microeconomic reform agenda that a set of general theoretical principles could guide policy makers in all situations. For instance, Foster argues that encouraging competition may or may not be appropriate, depending upon an industry’s stage of development. Further, he argues that policy makers must recognise that competitive selection will eventually result in monopolistic or oligopolistic conditions. As a result, protective or facilitating regulations may be required to reduce uncertainty in emerging industries that would be inappropriate in mature and powerful industries, where certainty, inertia and the exercise of power must be challenged by policies that remove barriers to entry, for instance.

The chapter concludes by using education policy as an example of how growth theory can alter thinking about policy priorities. Foster suggests that individuals perceive participation in higher education as a human capital investment decision, given little evidence of an effect on demand for higher education following
the introduction of the Higher Education Contribution Scheme (HECS). In the case of highly vocational degrees, significant private fee payments should thus be involved from a neo-Schumpeterian perspective, since individuals are making choices that suggest they perceive quantifiable risk rather than uncertainty.

Foster notes that while human capital theory would favour policies that shift resources away from non-vocational education, where benefits are more difficult to quantify, neo-Schumpeterian theory provides a role for government in supporting high standards in this area, stressing basic literacy and analytical skills as sources of variety in knowledge, invention and growth. He provides a neo-Schumpeterian taxonomy of how different human capital investments support ‘inventive’, ‘innovative’, ‘maintenance’ and ‘strategic’ behaviours, and suggests how the composition of investment must be altered according to the changing structure of the economy in order to foster ongoing growth.

Regional Productivity Growth in Australia

In Chapter 3, Tom Nguyen, Christine Smith and Gudrun Meyer-Boehm turn to an empirical analysis of whether labour productivity levels across the states have tended to converge over the past decade and a half, in view of the importance of this process to convergence in per capita incomes. They find clear evidence of divergence in per capita output across the states over the period 1984-85 to 1998-99, confirming the findings of previous Australian studies relating to the 1970s and 1980s.4 This is shown in Figure 2a, which plots for each state the initial level of per capita income in 1984-85 against the trend growth in per capita income over 1984-85 to 1998-99. Convergence would suggest that the trend line through this scatter diagram would be negatively sloped, indicating that states with initially lower levels of per capita output subsequently record higher rates of growth in per capita output. However, in this case, the line is positively sloped, suggesting evidence of divergence.

Nguyen, Smith and Meyer-Boehm find that the discrepancy between a ‘low income’ group comprising Queensland, South Australia and Tasmania and a ‘high income’ group of New South Wales, Victoria and Western Australia actually became more pronounced during the 15 years in question. This is an important stylised fact that is addressed by other chapters in the book. Western Australia recorded the fastest growth in per capita income over this period, moving to the top of the high income group by 1998-99, while Tasmania recorded the slowest growth, worsening its relative position within the low income group (see Figure 2b).

Once allowance is made for the effects of growth in population and labour force, however, it turns out that the divergence pattern was much less pronounced. Indeed, labour productivity levels neither diverged nor converged during the 1990s, with almost all of the divergence in labour productivity during the period as a whole having occurred in the second half of the 1980s. Nguyen, Smith and Meyer-Boehm (2000) were probably the first to report this fact.

In attempting to explain the overall divergence trend in labour productivity for the period as a whole, the authors carry out an industry by industry analysis and find that divergence at the aggregate state economy level was caused mainly by interstate differences in industrial structure, rather than by similar industries across states recording dissimilar growth. In particular, during the second half of the 1980s, Western Australia (the highest labour productivity growth state) benefited from having a proportionately larger mining sector, which is itself capital intensive and has in turn recorded strong labour productivity growth across all states over the period. When mining is excluded from the analysis, the authors find no evidence of divergence or convergence and are left with a remarkably similar set of labour productivity growth rates across the states.

In short, the mining boom in Western Australia has distorted the true underlying picture, which is

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4 Nguyen, Smith and Meyer-Boehm (Chapter 3) and Bodman, Draca and Wild (Chapter 6) in this book both provide summaries of recent Australian convergence studies.
essentially one of parallel growth paths. In any case, the labour productivity growth paths experienced by the various states did not conform to the usual convergence process whereby lower productivity states record stronger capital deepening and catch up to higher productivity states.

The authors draw two main policy conclusions from their study. First, they note that states recorded similar labour productivity growth despite any interstate differences in government policy that may have existed over the period. The authors argue that this contrasts with the concern of previous studies that states have greatly differed in their ability to adapt to changing domestic and external conditions, with possible consequences for relative productivity performances. Second, though, they note that while there is no longer evidence of divergence when mining is excluded from the analysis, similar productivity growth across states has by the same token resulted in no convergence in per capita output either. The authors argue that this provides scope for lower income states to implement policies that address any impediments that may have offset this convergence tendency, in order to raise their relative per capita output levels.

Nguyen and Smith delve further into regional and sectoral explanations of interstate differences in economic performance in Chapter 4. They use shift-share analysis in order to explain economic growth across the states in terms of national growth effects, the impact of industry mix, and regional effects.

With this technique, states with industrial structures conducive to above average growth are those that have a larger share of output attributable to industries with national growth rates above the overall rate of economic growth nationally. Similarly, states that exhibit regional advantage are those that record growth in their industries above the national rates of growth in the same industries. Together, the industry mix and regional effect determine whether a state recorded above or below average economic growth over the period. The authors also extend their shift-share analysis in order to determine whether state economic growth has been driven primarily by contributions from employment growth or productivity change, the first such application of this type in the Australian context.

The authors find that industrial mix and regional advantage have played a different role in Western Australia and Queensland – the two states that grew at above average rates over the past decade and a half. Western Australia was the only state to have both an industrial mix conducive to above average growth and to experience even higher growth than expected on this account alone (regional advantage).

In comparison, Queensland had an industrial structure conducive to below average economic growth, given it was less reliant relative to other states on industries recording the fastest growth nationally. However, this was more than offset by regional advantage, with most industries in the state recording growth rates above their counterparts nationally. In contrast, Tasmania, Victoria and South Australia were in the undesirable position of being characterised by both an industry mix conducive to below average growth and regional disadvantage.

The productivity extensions in the chapter also provide some interesting findings, and are at the cutting edge of the application of this technique internationally in the sense that they relate to economic output rather than employment. The authors find that Queensland’s regional advantage was driven by an above average contribution from employment change to growth, with the state experiencing a below average contribution from changes in labour productivity. This does not imply below average productivity growth. As Chapter 3 shows, Queensland recorded the second highest labour productivity growth rate behind Western Australia over the past decade and a half. However, Queensland also recorded the fastest jobs growth of any state, meaning the share of its growth left attributable to labour productivity fell below the national average.

It was also found that the above average contribution of productivity to growth in Western Australia stems more from non-labour factors, consistent with Chapter 3 in which excluding the capital-intensive mining sector significantly lowered labour productivity growth in this state. However, the authors note that state capital stocks are required for a more detailed analysis of state level multifactor productivity.

Jimmy Louca accepts this challenge in Chapter 5, by constructing state level capital stocks in order to study multifactor productivity (MFP) rather than labour productivity. Labour productivity, defined as output per hour worked, is only a partial productivity measure, as it can be raised by capital deepening. MFP is a more comprehensive indicator, measuring output per joint unit of labour and capital. MFP growth occurs when output grows without any rise in labour or capital and differs from labour productivity growth by excluding the impact of capital deepening.

Chapter 5 examines MFP across Australian states as a source of interstate differences in economic growth and improving living standards over the past decade and a half and then studies innovation as one explanation for these interstate trends in MFP and economic performance. The chapter fills an important gap in the literature, with little research previously
conducted on MFP at the state level. As a result, it presents a number of interesting findings and issues for policy that complement and build upon the results of the other chapters in the book that deal mainly with labour productivity.

The chapter highlights three notable stylised facts on interstate MFP. First, states recording the highest economic growth over 1985-86 to 2000-01, namely Queensland and Western Australia, also recorded the highest MFP growth. Queensland’s rapid population growth caused it to have the highest growth contribution from labour accumulation, while Western Australia’s mining boom saw it enjoy the highest contribution from capital – both results consistent with findings of Chapters 3 and 4. Second, the contribution of MFP to rising real per capita incomes ranged from 30% to 80% across the states, with the influence of terms of trade and demographics on per capita incomes varying between states.

Finally, and most importantly, while Louca also presents evidence of diverging labour productivity levels over the past decade and a half, he finds that interstate differences in capital deepening have masked an underlying process of MFP convergence among five of the six states. This is shown in Figure 3a, where the trend line is negatively sloped through this scatter diagram plotting initial levels of MFP against MFP growth, suggesting states with initially lower MFP levels subsequently recorded higher rates of MFP growth. The figure also shows how Queensland and Western Australia were found to record MFP growth above rates expected based on convergence channels alone (with these states lying above the trend line).

This last finding complements the results of Nguyen, Smith and Meyer-Boehm. In Chapter 3, they find that Western Australia’s greater reliance on the capital-intensive mining sector largely explained their finding of divergence in labour productivity, causing this high income state to record stronger capital deepening than lower income states, contrary to traditional convergence theory. This is consistent with the idea that such states initially faced greater opportunities to profit from R&D and thus invested more heavily, causing their MFP levels to converge on the MFP levels enjoyed in New South Wales and Victoria relatively faster than other states.

In particular, the returns to business R&D seem to have been highest, but have fallen most, in Queensland and Western Australia, which began the period with relatively low commitments to R&D. This is consistent with the idea that such states initially faced greater opportunities to profit from R&D and thus invested most heavily, causing their MFP levels to converge on the MFP levels enjoyed in New South Wales and Victoria relatively faster than other states.

Louca discusses several policy issues from his findings, using Queensland as a case study. He argues that stronger jobs growth in Queensland requires higher rates of investment relative to other states if Queensland is to record similar rates of capital deepening, highlighting a vital challenge for investment policy in this state, given the importance of capital deepening to convergence in per capita innovation indicators shows that the states that recorded the highest MFP growth over the past decade and a half also recorded the highest growth in business R&D and patent grants, while an econometric analysis reveals that business R&D growth explains up to 75% of the variation in MFP growth across the states (see Figure 3b). The analysis also finds evidence of interstate R&D spillovers and some equalisation in the returns to domestic R&D across the five major states, both consistent with a process of convergence in MFP.

**Figure 3: Multifactor Productivity (MFP) and Innovation**

(a) Convergence in MFP

(b) Contribution of business R&D to MFP

In particular, the returns to business R&D seem to have been highest, but have fallen most, in Queensland and Western Australia, which began the period with relatively low commitments to R&D. This is consistent with the idea that such states initially faced greater opportunities to profit from R&D and thus invested more heavily, causing their MFP levels to converge on the MFP levels enjoyed in New South Wales and Victoria relatively faster than other states.

Louca discusses several policy issues from his findings, using Queensland as a case study. He argues that stronger jobs growth in Queensland requires higher rates of investment relative to other states if Queensland is to record similar rates of capital deepening, highlighting a vital challenge for investment policy in this state, given the importance of capital deepening to convergence in per capita
incomes. Similarly, he notes that, while fast growth in business R\&D has allowed Queensland to record MFP growth at a rate above that expected from convergence dynamics, the state’s level of MFP, along with its R\&D intensity, still remains below that in the larger states of New South Wales and Victoria.

Louca argues that past convergence itself has partly been the result of the initially higher returns to R\&D facing this state, suggesting policies in Queensland will need to continue to adapt to, and capitalise upon, threats and opportunities inherent in a changing technological environment and remove structural impediments to this process, in order to raise this state’s R\&D intensity, level of MFP and per capita income level toward that in higher income states.

Philip Bodman, Mirko Draca and Phillip Wild take a different approach to convergence in Chapter 6. The previous chapters in the book studied convergence in terms of a gradual equalisation in the level of per capita output across economies. In contrast, Bodman, Draca and Wild define ‘long-run convergence’ to exist between any two economies when the tendency for the difference in their per capita output levels to narrow has been completed and a stable per capita output gap between the two economies has been reached. In a sense, this type of convergence deals with equalisation in the long-run growth of per capita output between economies, and permits differences in per capita output levels to exist.

In order to evaluate the long-run convergence hypothesis, the authors are able to apply time series methods that test for a stationary income gap between any pair of state economies over time, given long-run convergence implies that any changes in the size of the income gap between two economies should be transitory rather than permanent in nature. The authors argue that the time series approach has several advantages over traditional approaches to convergence, including the ability to test for convergence between different pairs of economies and thus ‘convergence clubs’, rather than test only for a general pattern of convergence across a larger group of economies.

Bodman, Draca and Wild find strong evidence for their convergence hypothesis across Australian states. In particular they found that out of a possible fifteen pair-wise tests across the states, seven for per capita output and ten for labour productivity indicated statistically significant evidence of long-run convergence.

The authors make a number of general observations based on this evidence. First, while other studies in the book that test for convergence in labour productivity or per capita output in traditional terms found evidence of divergence over the past decade and a half, this appears to represent a transitory rather than permanent departure from a long-run stable income gap that exists between many pairs of state economies. Further, while economic restructuring in terms of microeconomic reform, trade liberalisation and labour market deregulation has had wide-ranging effects on economic activity over the past decade, it has not caused any permanent changes in the income gap between most pairs of state economies.

The authors also provide some interesting insights into individual state economies. They argue that while Queensland has closed part of the shortfall between its per capita output level and that of New South Wales and Victoria, a stable income gap (long-run convergence) had now been reached between it and the southern states. The authors interpret this as limiting the extent to which Queensland can raise its relative per capita output through traditional convergence processes such as capital deepening. Rather, they argue that investments in human capital that raise the rate of technological progress are required for Queensland to improve its relative level of per capita output.

In contrast, the authors find that the lowest income state, Tasmania, had the poorest results from the pair-wise convergence tests, which they argue is inconsistent with traditional convergence dynamics. However, this finding is consistent with the results in Chapter 5, where convergence in MFP appeared to be operating among the Australian states, excluding Tasmania.

In advocating greater accumulation in human capital in Queensland, Bodman, Draca and Wild thus give a specific example of the type of policy that Nguyen, Smith and Meyer-Boehm in Chapter 3 stress would be crucial to removing impediments to convergence. However, it should be noted that the interpretation placed on capital deepening by Bodman, Draca and Wild in this case differs slightly to that in Chapter 5. There, Louca indicates that capital deepening will play a crucial role for Queensland in the future, given stronger jobs growth in this state will require higher investment rates relative to other states if Queensland is to record rates of capital deepening comparable with the rest of Australia. Clearly, the contribution of capital deepening to convergence in per capita incomes across the states is an important area for future research, with implications for how State infrastructure policies can complement education policies in raising productivity.

Human Capital and Innovation

In an enlightening study, Mirko Draca, John Foster and Colin Green examine in greater detail, in the final chapter of the book, how investment in human capital contributes to state economic growth. A central
theme of their chapter is that the focus on *financing* of education that has dominated debate since HECS – itself an example of sophisticated policy design – must be complemented with a discussion of the appropriate *composition* of human capital investment if future education policies are to be effective at state level.

The chapter thus builds on Foster’s discussion on the composition of investment in relation to education policy in Chapter 2 of the book. The authors canvass previous research into the impacts of education on labour market outcomes, study the causes of the rise in the Australian human capital stock, and examine the contribution of human capital to interstate differences in per capita incomes in order to provide a number of policy conclusions in the area of education.

In reviewing previous work into the effect of educational attainment on labour market outcomes, the authors question the validity of the ‘skill upgrading’ theory that has dominated policy discussion. This theory suggests that improvements in the education level of the labour force generate uniform improvements in terms of more jobs in high skill professions at better rates of pay. However, they cite research to the contrary, including evidence that a rise in demand for skilled workers has reduced the number of low skill workers but caused a greater fall in their relative wages, increasing the dispersion in earnings. They conclude that the skill upgrading theory needs to be replaced with a more rigorous analysis of both labour market dynamics and the composition of educational investment in order to provide strategic policies that address issues such as conditions in the low wage sector and earnings inequality.

The authors provide interesting insights into the composition of growth in Australian human capital. They note that a move to mass higher education has raised tertiary attainment levels in Australia above the OECD average, but that OECD countries have expanded qualifications more evenly, with Australia possessing below average secondary level outcomes despite improvements in school completion rates and vocational training.

The authors construct human capital stocks to show large rises in the stocks of secondary qualifications and tertiary qualifications over the period 1970 to 1995. They find that labour force growth accounted for most of the rise in secondary qualifications, while a rise in enrolment rates drove tertiary qualification growth since the 1980s, consistent with a move to mass higher education (see Figure 4a). The authors argue that demographic and other influences will slow both the rate of increase in enrolments and labour force growth in the future. While the former effect will be a general OECD trend, they argue that Australia’s greater reliance on labour force growth means that convergence with educational attainment levels of leading OECD economies is not assured.

Most importantly, Draca, Foster and Green highlight the importance of human capital to interstate differences in per capita output. They illustrate that the three states possessing the highest per capita incomes, namely New South Wales, Victoria and Western Australia, also had the highest human capital stocks defined in terms of the distribution of educational qualifications (see Figure 4b). In a growth accounting exercise, the authors show that differences in human capital can explain as much as 87.0% of the difference in per capita output between New South Wales and Queensland and 45.1% between New South Wales and South Australia.

**Figure 4: Human Capital in Australia and its States**

(a) Drivers of human capital growth

(b) Education completion rates, 2000

Crucially, differences in secondary level qualifications were most important in explaining differences in output per capita. They find that Queensland would gain most by raising its human capital stock, with an estimated rise of $5,652 per capita and an additional $14.7 billion in gross state product if it equalised its human stocks with New South Wales based on 1996 data, reinforcing the need for Queensland to intensify efforts in human capital accumulation.

The authors conclude with two main policy proposals. First, they argue that human capital can account for
large differences in interstate per capita output, raising the need for state-based human capital policies. They question the current emphasis of state development strategies that focus on attracting physical or financial capital to particular regions, arguing their value in raising productivity is limited. Second, the authors advocate comprehensive programs in the area of early childhood education, following growing evidence that early human capital investment promotes later investment and that by alleviating deficits created in the early years in life, policy makers are able to avoid large costs incurred in later years.

This focus on early education is consistent with the authors’ growth accounting results that illustrate the importance of below tertiary level education, but also highlights a concern over Australia’s below average attainment in secondary and lower level education. The authors argue that for ‘lifelong learning’ policies to be meaningful, they must begin with early intervention programs that maximise the potential for ongoing skill upgrading through later stages in life.

**Summary of Findings and the Way Forward**

The various determinants of productivity growth are clearly interrelated and this can be illustrated by comparing the empirical results of Chapters 5 and 7 in particular. In Chapter 5, Louca finds that variation in business R&D activity can explain up to 75% of the disparity in MFP growth across the states, while in Chapter 7, Draca, Foster and Green find that a similar amount of the variation in per capita output across the states can be explained by differences in human capital.

These results can be reconciled when noting that human capital and R&D spending are closely related. It is the analytical and creative skills embodied in people that determine the rate at which new products can be developed and new technologies absorbed, while the resulting R&D activity itself adds to the existing stock of knowledge. It is for this reason that Foster in Chapter 2 comments that the ‘sharp distinction’ made in endogenous growth theory between human capital and innovation is ‘somewhat artificial’ and stresses the neo-Schumpeterian perspective whereby variety in the social stock of knowledge generates innovation and economic growth.

The relationship between productivity determinants is crucial for correctly interpreting empirical work on economic growth and policy formulation. A casual inspection of the results of a recent Productivity Commission paper on the impact of increasing skills on Australia’s productivity surge finds only a limited effect. However, the authors stress that only the direct impact of skills on labour productivity is estimated, rather than its influence through innovation, which could be considerably greater (Barnes and Kennard, 2002).

Misinterpreting such results may lead policy makers to underestimate the importance of human capital to economic growth in Australia. Similarly, Australian studies estimating the benefits of microeconomic reform often ignore its influence on innovation, with growing international evidence that greater competition prompts firms to innovate in order to obtain a competitive advantage over their rivals (Aghion et al., 2002). Policies to hasten innovation in particular industries are likely to fail if incumbent firms are not exposed to adequate competitive pressures, while policies aimed at raising R&D spending will be ineffective if education policies do not promote appropriate skill attainment.

The link between innovation, human capital and other drivers of economic growth helps summarise the findings of the book. The principal aim of the Drivers of Economic Growth project is to identify the factors that have both caused Queensland to generate higher economic growth historically and will be important to future state growth. The book suggests that Queensland’s faster rate of economic growth over the past decade and a half has been underpinned by faster productivity growth, driven by higher rates of business R&D growth (Chapter 5), and stronger labour accumulation, underpinned by faster population growth (Chapters 4 and 5).

However, per capita output in Queensland still remains well below that in New South Wales and Victoria, largely due to a relatively lower innovative capacity reflected in a smaller human capital stock (Chapters 6 and 7) and negligible capital deepening in Queensland over the period (Chapter 5). This contrasts with the Western Australian experience, the other high growth state, where capital deepening has allowed this state to surpass the per capita output levels enjoyed in New South Wales and Victoria (Chapters 3 and 4). These findings have drawn out a number of issues for policy concerning government strategies in relation to innovation and entrepreneurship (Chapter 2), capital deepening (Chapter 5) and the composition of investment in education (Chapter 7).

The policy issues raised in *Productivity and Regional Economic Performance in Australia* support a number of initiatives already in place under the Queensland Government’s economic strategy, which focuses on promoting innovation, human capital investment and improving economic fundamentals as sources of productivity growth and sustainable economic growth. For instance, the Queensland State Education 2010 Strategy aims to significantly raise year 12 completion
rates and introduce a preparatory year of schooling, consistent with the evidence that secondary education explains a large part of per capita output differences and the importance of early childhood education to lifelong learning. State innovation strategies such as the Smart State Research Facilities Fund, which provides funding for the construction of science and technology R&D infrastructure, and the Queensland government’s proactive approach to forging partnerships between the private and public sectors are also consistent with growing evidence that emerging areas of technological opportunity are increasingly dependent on public sector research, but also require partnerships that allow public inventions and discoveries to be transformed into commercially viable products that create wealth in the wider economy.

It is envisaged that future research under the Drivers of Economic Growth project will delve further into issues with more detailed policy implications. The research under the first stage of the project reflected more of a fact-finding exercise, given previously little Australian work conducted into state economic growth. However, the results so far draw attention to several issues worthy of future consideration. These include the complex interaction between human capital accumulation, labour market outcomes and income distribution at the state level and the determinants of interstate variation in innovation activity. The work under the Drivers of Economic Growth project reflects the state government’s continued commitment to an economic strategy that fosters high rates of productivity growth, economic growth and improvements in living standards for current and future generations of Queenslanders.

References


Statistical Appendices

Economic Indicator Charts

**Retail Trade**
(quarterly % change, CVM, trend)
Source: ABS 8501.0

**Residential Building Approvals**
(quarterly % change, trend)
Source: ABS 8731.0

**Queensland Commodity Price Indices**
($A, index base 2001-02 = 100, quarterly)
Source: Queensland Treasury

**Red Meat Production and Wool Receivals**
(annual % change, quarterly, trend, Queensland)
Source: ABS 7291.0

**New Motor Vehicle Sales**
(quarterly % change, trend)
Source: ABS 9314.0

**Private Non-residential Construction Indicators**
(annual % change, quarterly, Queensland)
Source: ABS 8731.0, 8752.3 and 8762.0

**Coal Production**
(kt, quarterly)
Source: ABARE, Quarterly Mineral Statistics

**Overseas Merchandise Exports**
(annual % change, 12 month rolling sum, Queensland)
Source: ABS 5422.0
Commodity Price Charts

Sugar Prices
(US cents/lb, quarterly)
Source: New York Commodities Exchange

Wheat Prices
($US/t, quarterly)
Source: Australian Wheat Board

Export Coal Prices*
($A/t, weighted export price, quarterly, Queensland)
* Recent movements in coal prices may not be accurately reflected, due to delays in receiving coal price data.
Source: Department of Mines and Energy, Queensland Treasury

Gold Prices
($US/oz, quarterly)
Source: New York Mercantile Exchange

Beef Prices
(Index base 2001-02 = 100, $US, quarterly)
Source: Livestock and Meat Authority - Weighted Export Price Index

Aluminium and Copper Prices
($US/t, quarterly)
Source: London Metals Exchange

Nickel and Lead Prices
($US/t, quarterly)
Source: London Metals Exchange

Note: All charts show quarterly average data.
## Major Economic Indicators by State

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<th>Data Period</th>
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<th>NSW</th>
<th>VIC</th>
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<td>821.3</td>
<td>951.2</td>
<td>900.7</td>
<td>841.1</td>
<td>890.7</td>
<td>826.4</td>
<td>899.8</td>
</tr>
<tr>
<td>Consumer Price Index (o)</td>
<td>6401.0</td>
<td>Jun-03 (q)</td>
<td>Quarterly</td>
<td>0.0</td>
<td>2.9</td>
<td>5.2</td>
<td>5.3</td>
<td>5.3</td>
<td>3.5</td>
<td>7.4</td>
<td>4.7</td>
</tr>
<tr>
<td>Annual</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: All data are in trend terms unless otherwise indicated. Annual growth rate is the percentage change between the latest quarter and the same quarter a year earlier. Quarterly growth rates represent growth on the previous quarter.

(a) The Queensland State Accounts are the source of all Queensland and Australian data with the exception of State/National Final Demand. This and remaining data, i.e. for other states, are sourced from ABS, Australian National Accounts, Cat. no. 5206.0.40.001.

(b) Commonwealth Department of Employment and Workplace Relations.

cvm - chain volume measure
l - level or rate, i.e. not rate of change
o - original
q - quarterly data
v - value
na - not available
Index of Articles

2001/1
- Cost of Capital in the Public Sector II by Queensland Treasury Corporation
- Structural Mismatch and Unemployment by Philip M. Bodman and Gareth Leves
- Job Flows in Queensland and Australia

2001/2
- Commonwealth Grants Commission 2004 Methodology Review
- The Contribution of the Tourism Sector to the Queensland Economy
- Queensland Household Survey Results

2001/3
- Visitor Expenditure across Queensland Regions: Changes between 1989 and 1999
- Population Change in Queensland
- CensusAtSchool
- Queensland Household Survey May 2001 Results

2002/1
- Research and Experimental Development Expenditure, Queensland and Australia, 1990-91 to 1999-2000

2002/2
- The Contribution of Tourism to Queensland’s regions, 1998-99

2002/3
- 2001 ABS Census Results

2002/4
- Queensland Housing Trends
- Queensland Household Survey May 2002 Results

2003/1
- The Economic Impact of the Drought
- Monitoring Domestic Tourism - Data Issues

2003/2
- The Coal Industry in Queensland
- Australian Economic Outlook
- Queensland Household Survey, November 2002 Results

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- Population (quarterly)
- Queensland State Accounts (quarterly)

Links
- State and National Economics Sites
- International Economics Sites

Research Papers
- Various
### Glossary

**ABARE**  
Australian Bureau of Agricultural and Resource Economics  

**ABS**  
Australian Bureau of Statistics  

**annual change, monthly**  
percentage change between one month and the same month a year earlier  

**annual change, quarterly**  
percentage change between one quarter and the same quarter a year earlier  

**AWE**  
average weekly total earnings for all employees. Includes overtime earnings and part-time workers’ earnings, in addition to full-time workers’ ordinary time earnings.  

**AWOTE**  
average weekly ordinary time earnings for full-time adults. Includes award wages and over award (or ‘drift’) payments.  

**chain volume measures (cvm)**  
conversion of prices (by means of an index) in order to abstract from the effects of inflation. Designed to reflect changes in quantity, rather than price, they are often referred to as ‘real’ terms. Chain volume measures are compiled by linking together (compounding) movements in volumes, calculated using the average prices of the previous financial year, and applying the compounded movements to the current price estimates of the reference year.  

**constant prices**  
conversion of prices (by means of an index) to those prevailing in a base period, thus abstracting from the effects of inflation. Designed to reflect quantity, rather than price, changes only. Often referred to as ‘real’ terms.  

**CPI**  
Consumer Price Index  

**current prices**  
the total value in today’s dollars. Movements reflect both quantity and price changes. Often referred to as ‘nominal’ terms.  

**DEWR**  
Department of Employment and Workplace Relations (formerly DEWRSB, DEETYA, DEET)  

**EMU**  
European Monetary Union – launched on 1 January 1999. Comprises Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, Netherlands, Portugal and Spain.  

**EU**  
European Union – comprises Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and United Kingdom  

**GDP**  
Gross Domestic Product – the total value of final output produced in the nation in a given period of time  

**GNE**  
Gross National Expenditure – the total value of final household and general government consumption spending, gross private and public investment and change in inventories by the nation in a given period of time  

**GSE**  
Gross State Expenditure – the total value of household final consumption spending, gross private investment and government spending in a given period of time  

**GSP**  
Gross State Product – the total value of final output produced in the State in a given period of time  

**IMF**  
International Monetary Fund  

**leading indicators**  
statistics or data which provide an early indication of a likely change in the pattern of economic activity  

**moving average**  
average value of a series of data calculated over a set period such that, as new data become available, the earliest dated observation is removed from the calculation of the average and the most recent observation added in its place  

**natural increase**  
the excess of births over deaths  

**net exports**  
exports minus imports. For Queensland, includes interstate as well as overseas trade.  

**net interstate migration**  
the excess of interstate migrant arrivals over departures  

**net overseas migration**  
the excess of overseas migrant arrivals over departures  

**OECD**  
Organisation for Economic Cooperation and Development  

**original data**  
raw or unadjusted survey based data  

**seasonally adjusted data (sa)**  
original data are adjusted to remove the effect of identifiable movements due to regular seasonal factors, e.g. Christmas, Easter, etc.  

**SDR**  
Special Drawing Rights. Calculated by the International Monetary Fund, based on a weighted average of five key world currencies – the $US, German mark, French franc, Japanese yen and Pound sterling.  

**State Final Demand**  
the total value of final household and general government consumption spending, and gross private and public investment, in a given period of time  

**tourism**  
interstate (overseas) tourism exports refers to interstate (overseas) residents holidaying in Queensland. Imports are Queensland residents holidaying interstate (overseas).  

**trend data**  
seasonally adjusted statistical data are smoothed to reduce the impact of irregular factors and allow analysis of the underlying behaviour of the series over time  

**TWI**  
Trade Weighted Index  

**year average growth**  
percentage change between the average over one year and the average over the previous year  

**yield curve**  
plots market yields against the term to maturity for a range of securities. If the yield on longer-term securities is higher (lower) than short-term securities the yield curve is said to be positively (negatively) sloped
Background
The Office of Economic and Statistical Research (OESR) was established as a centre of excellence for independent social, economic and statistical information, advice and research.

The main office is located in Brisbane, with regional offices in Townsville, Rockhampton and Cairns that service the State’s north, central and far north regions.

Core Business
The Office provides the following services:

- Intelligence in the form of current economic and social conditions in the State and its regions
- Advice on economic and statistical methodology
- Data from household and business surveys and administrative systems
- Coordination of information access and whole of government policy information
- Research and development into economic and statistical methodologies, and social issues.

Products and Services
Examples of the products and services produced by the Office are:

- Economic information, econometric modelling and statistical information
- Major surveys on social issues such as crime victimisation, internal migration, women, youth, and lifestyle related issues
- Publications and reports on a range of economic and statistical issues important to the growth and development of the State and its regions
- The Queensland State Accounts and state and regional input-output tables.

For more information
Visit our website: www.oesr.qld.gov.au
or email: oesr@treasury.qld.gov.au
or contact one of our offices:

Lynn Collins
Level 16, Queensland Minerals & Energy Centre
61 Mary Street
BRISBANE QLD 4000
Phone: (07) 3225 8235

Liesl Harrold
Level 3, State Government Building
209 Bolsover Street
ROCKHAMPTON QLD 4700
Phone: (07) 4938 4486

Cathy Wallis
1st Floor, State Government Building
Cnr Walker & Stanley Streets
TOWNSVILLE QLD 4810
Phone: (07) 4760 7650

Geoff Hunter
Level 9, Cairns Corporate Tower
15 Lake Street
CAIRNS QLD 4870
Phone: (07) 4039 8804