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BANKWEST CURTIN ECONOMICS CENTRE

BACK TO THE FUTURE

Western Australia's economic future after the boom

Focus on Western Australia Report Series, No.8
October 2016

About the Centre

The Bankwest Curtin Economics Centre is an independent economic and social research organisation located within the Curtin Business School at Curtin University. The centre was established in 2012 through the generous support from Bankwest (a division of the Commonwealth Bank of Australia), with a core mission to examine the key economic and social policy issues that contribute to the sustainability of Western Australia and the nation, and the wellbeing of households both in WA and nationally.

The Bankwest Curtin Economics Centre is the first research organisation of its kind in Western Australia, and draws great strength and credibility from its partnership with Bankwest, Curtin University and the Western Australian government.

The centre brings a unique philosophy to research on the major economic issues facing the state. By bringing together experts from the research, policy and business communities at all stages of the process – from framing and conceptualising research questions, through the conduct of research, to the communication and implementation of research findings – we ensure that our research is relevant, fit for purpose, and makes a genuine difference to the lives of Australians, both in WA and nationally.

The centre is able to capitalise on Curtin University's reputation for excellence in economic modelling, forecasting, public policy research, trade and industrial economics and spatial sciences. Centre researchers have specific expertise in economic forecasting, quantitative modelling, micro-data analysis and economic and social policy evaluation. The centre also derives great value from its close association with experts from the corporate, business, public and not-for-profit sectors.

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Foreword



In 2014, the first report in the Bankwest Curtin Economics Centre's *Focus on Western Australia* series highlighted the abnormally high growth rate enjoyed by the state in the early years of the new millennium. This extended period of economic growth was driven primarily by the state's mining boom. It gave rise to unprecedented growth in Western Australia's economy, with the annual growth rate of WA's gross state product spiking at 9 per cent in 2011-12. However, the economic outlook post-2012 is very different. By 2015, the state's GSP growth rate had slid to 3.5 per cent and the gap between the state and nation's economic growth rate had narrowed.

Back to the Future is the eighth report in the Bankwest Curtin Economics Centre's *Focus on Western Australia* series. Using the latest data available, this report examines recent changes in the state's economic trends following the tailing off of the resources boom. It identifies the implications of these trends for the wellbeing of West Australian households, and sheds light on the challenges and opportunities that have arisen along with changes in the state's economic position. It represents a timely follow up to the Centre's first *Focus on Western Australia* report in 2014 – *Sharing the Boom* – which explored the distribution of income and wealth over the course of the latest resources boom, and examined the extent to which the wealth of WA was shared among those who live here.

This new report examines the extent to which WA has been undergoing an economic downturn in recent years. How has income and wealth inequality changed since the peak of the mining boom? Have prices and cost of living in WA fallen in line with incomes and wealth? How does WA compare with the rest of the states and territories? Have the recent changes in economic conditions negatively affected opportunities in the labour markets for West Australians? On the other hand, are we starting to see more industry diversification outside the resources sector?

This report shows that after a prolonged period of economic bonanza driven by the resources boom, WA's economic trajectory has returned to a 'new normal' more consistent with national economic growth rates. However, the reversion in the state's economic fortunes has undoubtedly had significant impacts on the economic and social wellbeing of West Australians. There has been a shift away from full-time towards part-time employment, underemployment is on the rise, and feelings of job insecurity are more prevalent than before. The state has also experienced a net population outflow as its economic performance declined. However, the recent economic slowdown has also resulted in some positive outcomes, including a narrowing of the gap between the rich and poor in WA and a general easing of cost of living pressures in resource-rich regions. While the mining sector has no doubt slowed in recent years, it remains the dominant industry in WA, both in terms of its contribution to production and employment in the state. Signs of industry diversification following the economic slowdown are scarce.

A handwritten signature in black ink, appearing to read 'Alan Duncan', written in a cursive style.

Professor Alan Duncan

Director, Bankwest Curtin Economics Centre
Curtin Business School, Curtin University

Executive summary

This eighth report in the Bankwest Curtin Economics Centre's *Focus on Western Australia* series examines the implications of recent economic trends for the wellbeing of West Australian households.

It represents a timely follow up to the Centre's first *Focus on Western Australia* report in 2014 – *Sharing the Boom* – which explored the distribution of income and wealth over the course of the latest resources boom, and examined the extent to which the wealth of WA was shared among those who live here.

The report's analysis draws on a range of data sources including but not limited to data from the Australian Bureau of Statistics, Australian Department of Employment, Department of Immigration and Border Protection, and WA Department of Mines and Petroleum to shed light on the challenges and opportunities that have arisen along with changes in the state's economic position.

This report focuses on a series of key issues:

- How has income and wealth inequality changed since the peak of the resources boom?
- Has cost of living in WA fallen since the economic slowdown and are there variations across regions?
- How have recent changes in economic conditions affected labour market opportunities for men and women in WA?
- Is industry diversification increasing outside the resources sector?
- To what extent has there been a reversal to the huge influx of migrants that took place during the resources boom?

Key findings

After the boom

- WA's gross state product growth rate dropped from 9 per cent in 2011-12 to 3.5 per cent in 2014-15 below the state's long-term average growth rate of 4.7 per cent.
- Though the gap between the WA and Australia's economic growth rate has narrowed post-2012, WA's growth rate still remains above the nation's growth rate of 2.3 per cent.
- The size of the WA mining workforce has steadily shrunk from nearly 106,000 FTE in mid2013 to around 84,000 FTE by the end of 2015.
- Despite a drop in the value of WA's mining investment and mineral exploration expenditure, WA's share of national mining investment has grown from half to around two thirds during 2013-15 and its share of national mineral exploration expenditure has remained stable at under 60 per cent.

Income and wealth distribution

- Perth attained the highest average gross household income across all of Australia's six state capital cities and two territories in 2013-14, at \$2,840 per week in 2016 dollars
- Average household gross weekly income for regional Western Australia sits at \$2,199, comfortably exceeding those for regional Queensland (at \$2,001), New South Wales (\$1,768) and Victoria (at \$1,599).
- Average gross incomes in regional areas of Western Australia have fallen by 1.6 per cent since 2009-10. This likely reflects the greater economic challenges for families living in regional Western Australia after the state's resources boom.

- Single parents have seen a much lower growth in median gross income since 2009-10, up 5 per cent to \$64,200.
- There is an evident gender gap of some 33 per cent in median gross incomes between non-elderly single men (\$72,500) and women (\$48,900).
- Non-elderly single men and women have disposable incomes of \$821 and \$674 respectively after housing costs, representing a gender gap of 18 per cent.
- Income inequality in WA has reversed since 2009-10.
- The incomes of the state's richest 10 per cent of households were at least 5 times those of the poorest 10 per cent in 2010, but the gap has fallen substantially since, to a multiple of around 4.5 by 2015.
- Nearly six in ten (58 per cent) single parent households draw most of their income from earnings, a rise of 7.9 percentage points since 2009-10.
- Government payments, principally the age pension, now make up the principal source of income for nearly three quarters of elderly single men (73 per cent) and four in five (81 per cent) elderly single women.
- Perth ranks fourth in terms of the median net wealth of households in the state's capital, at \$508,500.
- Median net wealth in the balance of Western Australia ranks seventh across all capital cities and state/territory balances, at \$424,700.
- Western Australian households held assets with an aggregate net value of some \$895 billion in 2013-14.
- The richest 20 per cent of WA households in wealth terms (the fifth quintile) holds at least 64.7 per cent of the state's aggregate household net wealth.
- Superannuation assets constitute around 17 per cent of total household assets by value for the third and fourth wealth quintiles, and nearly 20 per cent for the wealthiest quintile.

Cost of living pressures

- The average inflation rate was in Perth declined from 3 per cent during the resource boom to under 2 per cent during the post-boom period.
- During the post-boom period, Perth has experienced slower price growth than metropolitan Australia in categories representing basic day-to-day necessities i.e. Food, Housing, Transport and Health.
- Between 2013-14 and 2015-16, the percentage change in the price of non-tradable goods dipped from 4 per cent to 1 per cent Perth. In the case of tradable goods, the percentage change in price fell much less from around 1.8 per cent to 0.7 per cent.
- Since 2013, the retail trade turnover in WA has been growing much more slowly than in Australia and even exhibited negative growth rates in some quarters.
- Between 2012 and 2016, the WA-Australia gap in per capita expenditure shrunk from \$146 to \$61 for durable goods and from \$160 to \$54 for restaurant food services.

- The cost of living in Pilbara was 37 per cent higher than in Perth in 2011 but just 18 per cent higher in 2015.
- The cost of living in the Kimberley region was 20 higher than Perth in 2011 and this gap narrowed to 15 per cent in 2015.
- Regions with more diverse economies such as the Gascoyne, Wheatbelt and South West have become more expensive in recent years.
- During 2000-01 and 2014, the inflation rate was greater than the wage growth rate in WA, implying that the purchasing power of West Australian households declined during these two periods.
- Between 2013 and 2015 WA's real income growth fell behind Australia. However, during the first two quarters of 2016, there are signs that the growth in real incomes in Western Australia is once again outpacing Australia's real income growth.
- For the first time since 2006, the state's unemployment rate surpassed the nation's unemployment rate in mid-2015.
- In general, the IVI for both WA and Australia have remained below 2006 levels since the slowdown of the resources sector ushered in a new era of weaker demand in labour markets.
- High skilled occupations in WA appear to benefit the most from economic booms, with IVIs for managers and professionals peaking at over 200 during the pre-GFC high in the economic cycle and the peak of the resources boom.
- Blue collar occupations have benefited more from the resources boom than white collar occupations. The IVI for technicians surged from 90 to 210 between 2009 and 2012, and the IVI for machinery operators and drivers also almost tripled from 60 to 150 over this period.
- Demand for high skilled and blue collar occupations are more sensitive to the movements of the economic cycle than demand for low skilled and white collar occupations respectively.
- In August 2016, the labour force participation growth rate in WA dipped to -1.7 per cent, almost six times the negative growth rate experienced by Australia as a whole at -0.3 per cent.

Workforce in transition

- As at August 2016, the unemployment rate in WA was over 6.0 per cent compared with 5.7 per cent in Australia.
- In WA, the Internet Vacancy Index (IVI) plummeted from a high of 160 in 2012 to 90 in 2013 as growth in the resources sector stalled and in 2015, the state's IVI dipped below the nation's IVI for the first time in a decade.
- During 2013-16, the IVI growth rate for WA turned negative and plunged below Australia's IVI growth rate.
- During the resource boom years of 2011 and 2013, the WA unemployment rate was lower than Australian unemployment rate for both males and females. During the post-boom years, the reverse can be observed.

- For both males and females, full-time employment growth in WA dipped below the national average after the resources boom to -5 per cent in 2016.
- By 2016, the biennial part-time employment growth rate had climbed to 10 per cent for males and females in WA. In the case of females, this represents the highest growth rate among all states and territories in 2016.
- The underemployment rate in WA has risen more sharply than the other four most populous states in Australia – from 6 per cent in 2011 to 10 per cent in 2016.
- Between 2008 and 2014 the share of casual employees in WA rose from 20.5 to 22.5 per cent and the rate of growth of this casualisation accelerated from -1.5 per cent to 1.5 per cent.
- The share of employees who report more than 50 per cent chance of losing their job in the next year has doubled from 1.5 to 3 per cent between 2010 and 2012.
- The per capita measure of industry training has remained constant at 2 per cent in WA compared with a decline in other states. In 2011, the per capita measure of industry training was the lowest in WA. By 2016, it was the highest in WA.
- In both the state and nation, the growth in new trainees has been negative in recent years, indicating a decline in the number of new traineeships offered.

Migration flows

- WA experienced the steepest decline in net interstate migration in decades. WA's migration numbers dipped from a net inflow of 8,898 in 2012 to a net outflow of 3,005 in 2015.
- The number of temporary visa holders more than halved between 2012 and 2014 from 27,090 to 12,130 and the net number of New Zealand Citizens moving to WA dived from 9,330 to 650.
- During the post-boom period 2012-14, the number of skilled migration visa holders in WA fell from 7,960 to 7,220 and temporary visa holders dropped from 10,940 to just 820.
- The number of 457 visa grants to primary applicants located in WA dipped from nearly 17,000 (25 per cent of the total granted in Australia) in 2011-12 to just 6,000 (10 per cent) in 2015-16.
- The number of 457 visas granted to workers in WA mining and construction fell by around 3,000 per industry in the five year to 2015-16.
- The WA Outback has lost 2,000 to 3,000 migrants annually to other regions within WA since 2007-08. In contrast, the Wheatbelt region has been experiencing a net gain in intrastate migrants since 2013-14.
- The Pilbara region has experienced the largest decline in the number of 457 visa grants among all statistical divisions in regional WA from over 1,600 grants to around 440 (nearly 75 per cent) between 2011-12 and 2015-16.

Industrial landscape

- The mining industry contributed 37 per cent and 30 per cent of GVA in 2015 and 2010 respectively.
- Most industries including mining have experienced positive GVA growth in both timeframes despite the economic slowdown in the state.
- Industries that feature strongly in the tourism sector – Accommodation and food services, Retail trade, and Arts and recreation services – together made up only 5.4 per cent of total GVA in 2010 and this contribution has shrunk to 4.9 per cent in 2015.
- Health care and social services and Arts and recreation displayed the highest employment growth rates in 2014-15 while also increasing their GVA.
- The industry profile in WA has become less diversified over the course of the mining boom and throughout the post-boom years.
- The Western Australian industry profile has always been more concentrated than Australia overall in terms of GVA.
- WA has similar industry concentration levels as Australia overall, but the state's industry profile is getting slightly more diversified over time in terms of the workforce the industries employ.
- In 2015, iron contributed to 55 per cent of the value of the mining industry, followed by LNG (13 per cent) and gold (10 per cent).
- The contribution of iron ore to the WA mining industry has contracted by six percentage points since 2013, and this has been replaced by growing contributions by gold, alumina and LNG.
- While the WA economy has become more specialised over time, some diversification has actually taken place within the mining sector itself.

WA

economic trends
after the boom

Introduction

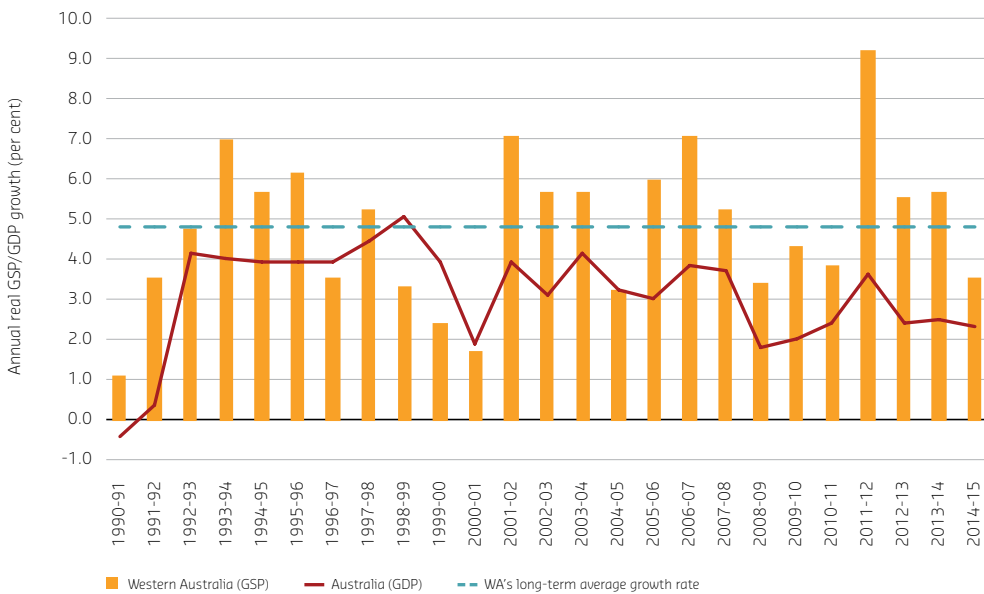
WA's gross state product growth rate dropped from 9 per cent in 2011-12 to 3.5 per cent in 2014-15 below the state's long-term average growth rate of 4.7 per cent.

The Bankwest Curtin Economics Centre's first *Focus on Western Australia* report series highlighted the impact of the sustained period of growth enjoyed by WA in the first decade of the new millennium. This period of economic growth was driven primarily by the state's mining boom, particularly in the iron ore industry. During this period, global demand – particularly from China – fuelled the growth of the resources industry in WA. It gave rise to an unprecedented growth in the state's population, as an influx of migrants from both overseas and interstate flowed into Western Australia to capitalise on the resources boom.

After a period of slow growth in the late 1990s, the annual real economic growth rate in Western Australia measured by Gross State Product (GSP) shot above Australia's national GDP growth rate in 2002 (as shown in Figure 1). The growth rate in WA has remained above the national trend ever since, giving rise to a popular proposition that Australia has become a two-speed economy. The extended resources boom culminated in a spike in the state's GSP in 2011-12, with annual GSP growth rate hitting 9 per cent, nearly three times the national GDP growth rate of 3.6 per cent.

Economic growth in Western Australia remains above the national trend, but the gap has narrowed considerably over the last three years. WA's GSP growth moderated to around 3.5 per cent in 2014-15 compares with a national GDP growth rate of 2.3 per cent. This is below the state's long-term average GSP growth 4.7 per cent, but nonetheless above previous economic troughs in the cycle experienced in 1990-91 and 1999-2001.

Figure 1 Annual real growth of WA Gross State Product and national Gross Domestic Product: 1991 to 2015



Though the gap between the WA and Australia's economic growth rate has narrowed post-2012, WA's growth rate still remains above the nation's growth rate.

Note: GDP and GSP are derived from chain volume measures.
 Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 5220.0

Back to the Future is the eighth report in the Bankwest Curtin Economics Centre's *Focus on Western Australia* series. Using the latest data available, this report addresses a key economic issue facing Western Australia – that of recent changes in the State's economic trends following the tailing off of the resources boom.

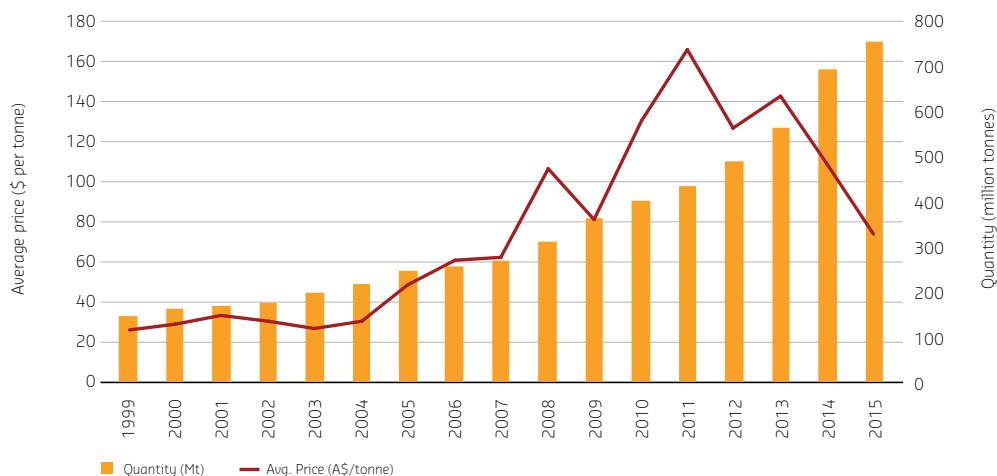
This report aims to identify the implications of recent economic trends for the wellbeing of Western Australian households, as well as shed light on the challenges and opportunities that have arisen along with changes in the State's economic position since the slowdown of the resources boom. How has income and wealth inequality changed since the peak of the mining boom? Have prices and cost of living in WA fallen in line with incomes and wealth? How does WA compare with the rest of the states and territories? Have the recent changes in economic conditions negatively affected opportunities in the labour markets for West Australians? On the other hand, are we starting to see more industry diversification outside the resources sector? This report also highlights the implications of these trends for regional WA's economic outlook.

The end of the mining boom?

The size of the WA mining workforce has steadily shrunk from nearly 106,000 FTE in mid2013 to around 84,000 FTE by the end of 2015.

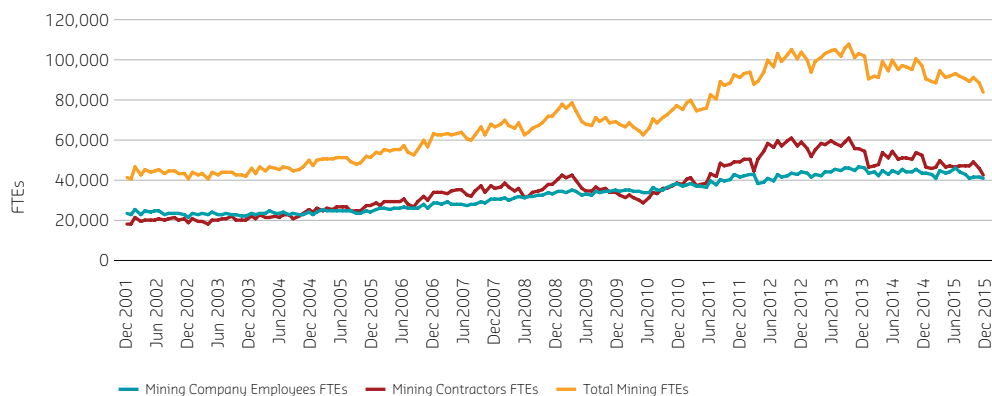
There is no doubt that the mining industry in WA has experienced a slowdown in recent years. Commodity prices are on a decline and the average price of iron ore has more than halved from a historic high of \$160 per tonne to around \$70 per tonne in the last four years (see Figure 2). As such, it is not surprising to find that the WA mining workforce of recent years is a shrinking one, as measured by the number of full-time equivalent employees (FTEs). The FTE takes into account the hours worked by each employee. A full-time worker is counted having a workload of 1.0 FTE. So for instance, a part-time employee who works half-time would be counted as 0.5 FTE. According to Figure 3, the size of the WA mining workforce has steadily shrunk from nearly 106,000 FTE in mid2013 to around 84,000 FTE by the end of 2015.

Figure 2 Iron ore price and quantity in WA, 1999-2015



Source: BANKWEST CURTIN ECONOMICS CENTRE | WA Department of Mines and Petroleum

Figure 3 Employment in the WA mining industry, 2001-2015

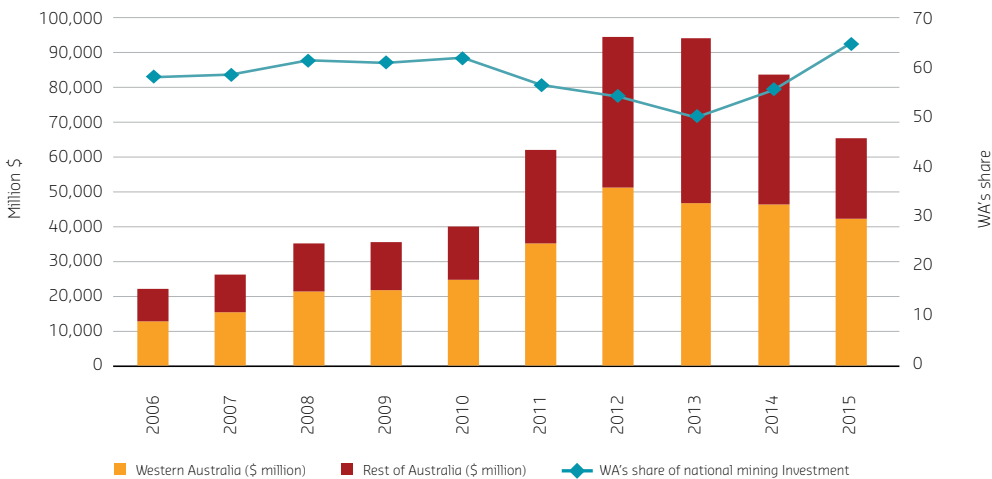


Source: BANKWEST CURTIN ECONOMICS CENTRE | WA Department of Mines and Petroleum

The value of Western Australia's mining investment and mineral exploration expenditure have also both declined since 2012. Mining investment fell from \$51 billion to \$42 billion between 2012 and 2015 (Figure 4) while mineral exploration expenditure fell from \$2 billion to \$0.8 billion over the same period (Figure 5). However, it is notable that the contribution of Western Australia to the mining sector remains extensive. While prices have dropped, iron ore production has continued to climb from under 450 million tonnes in 2011 to nearly 750 million tonnes in 2015. Furthermore, it is important to note that while mining investment and mineral exploration expenditure has shrunk in WA, corresponding declines are observable in the rest of Australia. What this means is that despite a drop in the value of WA's mining investment and mineral exploration expenditure, WA's share of national mining investment has actually grown from half to around two thirds in the last three years and its share of national mineral exploration expenditure has remained relatively stable at just under 60 per cent.

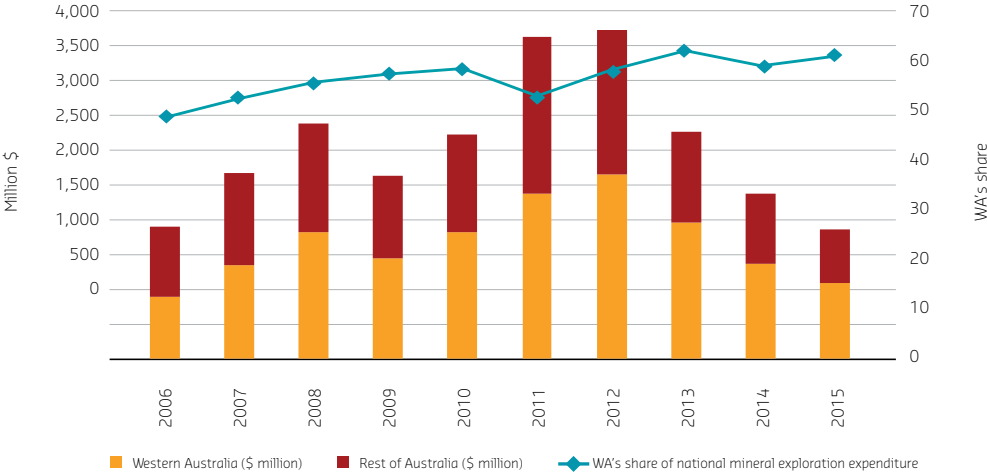
Despite a drop in the value of WA's mining investment and mineral exploration expenditure, WA's share of national mining investment has grown from half to around two thirds during 2013-15 and its share of national mineral exploration expenditure has remained stable at under 60 per cent.

Figure 4 Mining investment in WA versus rest of Australia, 2006-2015



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 5625.0

Figure 5 Mineral exploration expenditure in WA versus rest of Australia, 2006-2015



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 5625.0

Returning to a 'new normal'

The latest data does show that the Western Australian economy has well and truly passed the peak of the construction phase of the commodities boom, characterized by growth in productive capacity and high employment. The state has also clearly moved into a production phase in which the state's productive capacity is 'put to work' in driving resource volume and export growth, as evidenced by lower investment in mining and a shrinking workforce.

Taken together, these trends are consistent with an economic slowdown in the state after an economic boom lasting a decade. However, the mining boom was clearly an economic bonanza – albeit a protracted one – that drove WA's long-term average real GSP growth rate to 4.7 per cent between 1990 and 2015, well above the national average real GDP growth rate of 3.1 per cent over the same 25-year period. While the state's GSP growth rate has dipped to 3.5 per cent in 2015, this is nonetheless a higher growth rate than observed during previous economic downturns in 1990-91 and 1999-2001. Moreover, WA's annual GSP growth rate of 3.5 per cent remains above the nation's GDP growth rate of 2.3 per cent.

These statistics suggest that the state's economic trajectory has returned to a 'new normal' more consistent with national averages. However, the reversion in the state's economic fortunes will undoubtedly have significant impacts on the economic and social wellbeing of Western Australian households. These impacts are the subject of investigation in the next chapters of this report.

After a prolonged period of economic bonanza driven by the resources boom, WA's economic trajectory has returned to a 'new normal' more consistent with national averages.

Household

income and wealth in
Western Australia

Introduction

How have Western Australian households fared over the period since the end of the state's resources boom? Has the distribution of income in WA been affected by the more challenging economic climate after the end of the resources boom? Which asset classes contribute most to household net worth, and have there been any changes in household wealth holdings since the heat has come out of the WA economy?

The first BCEC *Focus on Western Australia* report, *Sharing the Boom*, challenged the common orthodoxy of a 'trickle down' effect for Western Australia, whereby the benefits of the wealth created by resources-led economic growth in WA were shared by all. Instead, that report showed that the benefits of the resources boom in WA were distributed unevenly, with low income households losing ground even to the typical WA household on median incomes. Now that WA has passed the height of the resources boom, is there any evidence of a reversal in this trend? Have incomes become more equally distributed? And if so, by what mechanism?

In this new report, we take a closer look at the major trends in household income and wealth for West Australian households, using data from the ABS' Survey of Income and Housing (SIH) up to the latest survey round in 2013-14. We compare the scale and composition of income and wealth between WA and other Australian states and territories, and assess the degree to which household incomes have changed since the end of the resources boom.

A direct comparison of incomes between different household types is made more challenging when the number of people, and number of earners, vary across households within or between each group. A more appropriate comparison can be achieved by standardising (or *equivalising*) household incomes using factors called equivalence scales to take account of differences in household size and composition. Where appropriate, in this report we use the OECD modified equivalence scale to standardise household incomes. These scales apply a weight of 1.0 for the first adult in the household, 0.5 for any subsequent adults and 0.3 for children.

The SIH survey data also provide us with useful breakdowns of aggregate income and wealth data into components of income (wages and salaries, government payments and public pensions, income from superannuation, and investment and business income) and wealth (residential home value, home contents, other property assets, superannuation balances, shares and other financial and business assets).

How do incomes in Western Australia compare?

Figure 6 compares the incomes of Western Australian households with those in other states and territories, using both average incomes (in orange) and a more stable median measure (in red) that shows the income of the 'typical' household in each geographical region, along with the percentage change since 2009-10 (the blue diamonds, against the right hand scale).

Perth attained the highest average gross household income across all of Australia's six state capital cities and two territories in 2013-14, at \$2,840 per week in 2016 dollars – an increase of some 23 per cent on 2009-10 figures. The ACT and Northern Territory came in second at \$2,671 per week, with lower real growth since the start of the decade (3.6 per cent). Sydney and Melbourne comes in third and fourth, at \$2,601 and \$2,304 respectively, followed by Brisbane, Adelaide. Average gross household income in Hobart, at \$1,819 in 2016 dollars, was the lowest across all capital cities in 2013-14.

The red bars in Figure 6 show the median weekly gross household incomes in 2013-14 for capital cities and regional areas across all states and territories, as an indication of the level of incomes enjoyed by a 'typical' household. The median gross income for Western Australian households (at \$2,025) was again higher than the major east coast capital cities of Sydney (at \$1,894) and Melbourne (at \$1,770). Median household incomes in Perth have grown strongly (rising 15.5 per cent to \$2,025 since 2009-10) relative to either Sydney (rising 8.4 per cent since 2009-10) or Melbourne (rising 5.1 per cent). Indeed, Perth now ranks second behind the two territories in terms of median household incomes.

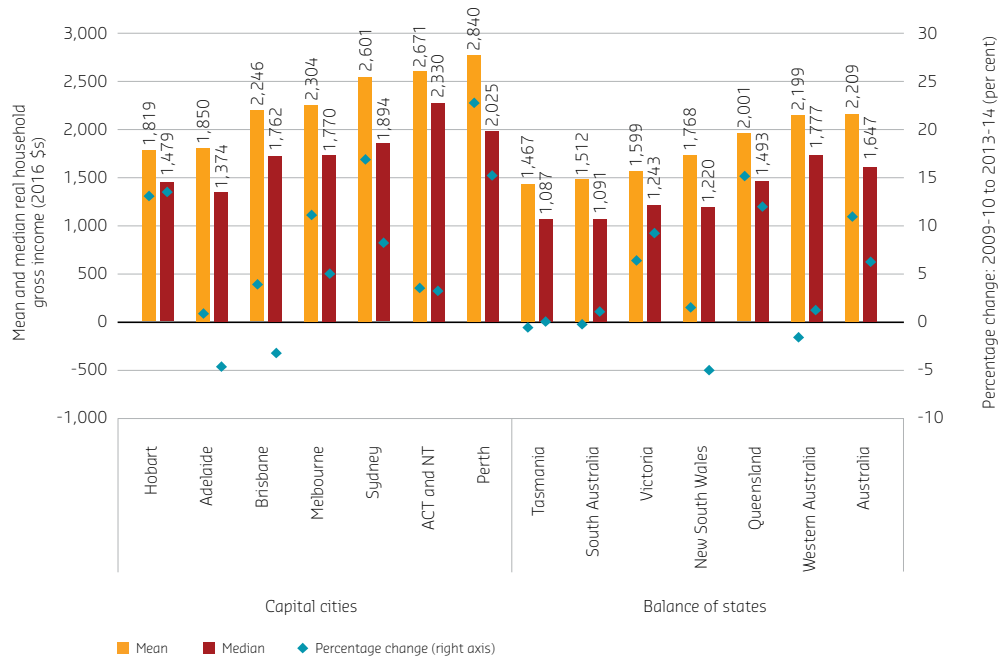
The same broad relativities apply for regional areas outside the states' capital (the "balance of states"). Average household gross weekly income for regional Western Australia sits at \$2,199, comfortably exceeding those for regional Queensland (at \$2,001), New South Wales (\$1,768) and Victoria (at \$1,599). However, in contrast to Perth, average gross incomes in regional areas of Western Australia have fallen by 1.6 per cent since 2009-10. This likely reflects the greater economic challenges for families living in regional Western Australia after the state's resources boom.

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Average gross incomes in regional areas of Western Australia have fallen by 1.6% since 2009-10. This likely reflects the greater economic challenges for families living in regional Western Australia after the state's resources boom.

Figure 6 Average and median household weekly incomes by states and territories: 2013-14 and change since 2009-10



Note: Chart reports the average (in orange) and median (red) value of real household gross weekly incomes for all households in each state and territory, with incomes updated to June 2016. Figures are sorted separately for cities and balance of state in ascending order of average weekly incomes.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Survey of Income and Housing, 2009-10 and 2013-14.

The distribution of incomes in WA

Table 1 presents a breakdown of annual gross incomes for households differentiated by family status (couples, single and multiple adult households) and the presence of children, as well as the age of the head of household (those non-elderly under retirement age, and those over). Average and median incomes are presented for the latest 2013-14 SIH data, as well as the percentage changes since 2009-10.

Average annual gross household incomes (the first column in Table 1) were higher for non-elderly couples with children (at \$182,100, rising 11 per cent on 2009-10 figures) than for non-elderly couple only households (at \$158,700, up 20 per cent from 2009-10). Single parent families in WA had an average gross income of \$93,000 in 2013-14 (up 23 per cent from 2009-10), compared with \$87,000 for single men and \$61,500 for single women. Elderly households have lower average gross annual incomes than their non-elderly counterparts (whether male-only, female-only or couple households). Gross incomes are higher for single men compared with single women, whether elderly or non-elderly.

As noted earlier, the calculation of average incomes can be influenced strongly by the presence of a few high income households in each class surveyed in a given year. The second column in Table 1 reports the more stable median annual gross incomes for the 'typical' household in each category. Relatively, the median incomes for WA households are similar in pattern to average incomes, but with generally a lower rate of growth since 2009-10. Median incomes are again highest among non-elderly couples with children (up 18 per cent since 2009-10 at \$160,300) compared with non-elderly couple only families (up 11 per cent since 2009-10 at \$143,000). Single parents have seen a much lower growth in median gross income since 2009-10, up 5 per cent to \$64,200.

There is an evident gender gap of some 33 per cent in median gross incomes between non-elderly single men (\$72,500) and women (\$48,900). Incomes are lower for elderly single men and women, at \$27,200 and \$26,300 respectively, growing 14 per cent and 12 per cent respectively since 2009-10. The gender gap in gross incomes between elderly single men and women is much lower than for their non-elderly counterparts, at 3.3 per cent.

The third column of Table 1 presents the median equivalised gross income within each household category to provide a more consistent income comparison across households of different size and composition. This analysis shows that single people have the lowest equivalent income resources on a standardised measure, with single parents, non-elderly single women and men people also seeing the lowest rates of growth in their incomes since 2009-10 (of 1 per cent, 2 per cent and 7 per cent respectively).

The fifth to seventh columns in Table 1 present median weekly disposable incomes for the same household types. These account for taxes and payments, and better represent the level and change in the resources available to households on a week-to-week basis. With adjustments for household size and housing costs, the seventh column shows that the typical single parent in WA has only \$511 per week to live off after housing costs are accounted for. This figure hasn't grown since 2009-10.

Non-elderly single men and women have disposable incomes of \$821 and \$674 respectively after housing costs, representing a gender gap of around 18 per cent. Their elderly single counterparts live on little more than \$450 per week after housing costs.

Single parents have seen a much lower growth in median gross income since 2009-10, up 5% to \$64,200.

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Table 1 Household incomes by family type in Western Australia: 2013-14 and change from 2009-10

Household type	Gross annual household income: 2013-14 (% change from 2009-10)			Weekly disposable income: 2013-14 (% change from 2009-10)							
	Mean gross	Median gross	%	Median gross equivalised	Weekly disposable income: 2013-14 (% change from 2009-10)	Median equivalised disposable (AHC)	%				
Non-elderly couple only	158,700	143,000	+20	92,900	77,700	+15	2,247	1,423	+9	1,146	+12
Non-elderly couple with children	182,100	160,300	+11	72,600	61,600	+12	2,452	1,121	+15	881	+7
One parent with children	93,200	64,200	+23	36,800	28,200	+3	1,189	679	+8	511	+0
Non-elderly single male	87,000	72,500	+1	72,500	59,200	+19	1,137	1,137	+5	821	+15
Non-elderly single female	61,500	48,900	+10	48,900	40,400	+6	848	848	-2	674	+5
Elderly couple	73,500	51,300	+6	33,500	31,600	+9	966	631	+7	594	+7
Elderly single male	39,800	27,200	+31	27,200	24,100	+14	524	524	+14	464	+22
Elderly single female	33,300	26,300	+17	26,300	23,600	+12	505	505	+11	454	+10
Group household	149,500	120,900	+19	80,600	67,800	+17	2,042	1,281	-2	1,014	+10
Other household	184,300	144,200	+56	65,200	56,300	+23	2,358	1,040	+41	913	+15
All households	130,300	100,600	+15	60,900	50,600	+11	1,659	994	+11	786	+9
Income quintile											
First (lowest)	37,600	29,600	+24	23,800	18,400	+18	569	453	+27	332	+17
Second	67,000	58,200	+13	36,000	31,500	+11	1,013	661	+10	537	+11
Third	105,300	100,500	+18	58,000	49,700	+10	1,677	939	+18	782	+10
Fourth	159,900	160,000	+22	87,100	76,900	+12	2,452	1,346	+20	1,141	+9
Fifth (highest)	277,100	247,100	+11	135,100	125,800	+7	3,562	1,987	+9	1,789	+6
All households	130,300	100,600	+15	60,900	50,600	+11	1,659	994	+11	786	+9

Note: All incomes are expressed in real 2016 dollars. Median gross equivalised incomes are adjusted for household size using the modified OECD equivalence scales. See Glossary for definitions of terms.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Survey of Income and Housing, 2009-10 and 2013-14.

Has income inequality changed in WA after the boom?

The first BCEC report in the *Focus on Western Australia* series showed that the benefits of the resources boom in Western Australia had not 'trickled down' to all sections of WA society. Income inequality was found to have risen in WA between 2003-04 and 2009-10 at a faster rate than for the rest of Australia, with low-income households losing ground to even the 'typical' WA household on median incomes.

Now that WA has passed the height of the resources boom, is there any evidence of a reversal in this trend? Have incomes become more equally distributed?

Table 1 gives some indication that income inequality has fallen in WA post-resources boom, with equivalised disposable incomes of those in the first income quintile growing more strongly (up 17 per cent between 2009-10 and 2013-14) compared with the fifth quintile (up 6 per cent over the same period).

To provide further insights, we look at how incomes in WA have evolved over time compared with other Australian states and territories (Figure 7). We compare the incomes of the richest 10 per cent of households – those above the 90th percentile of the income distribution – with the incomes of the median household – the 50th percentile – and the poorest 10 per cent of households – those below the 10th income percentile.

The ratio of the 90th and 10th income percentile (the 90-10 ratio) gives an overall measure of income inequality – a simple interpretation would be the richest compared with the poorest. The 90-50 ratio tracks inequalities at the top half of the income distribution – the distance between the richest households and the typical household – while the 50-10 ratio shows the separation in the lower half of the distribution, between the median household and the poorest 10 per cent. Each ratio can be interpreted as an income multiple: for example, a 90-10 ratio of 4 means that the incomes of the richest 10 per cent of households are (at least) four times those of the poorest 10 per cent.

What is immediately clear from a comparison of the 90-10 ratios for WA and Australia – Figure 7 panel (a) – is that income inequality in WA has indeed reversed. The incomes of the state's richest 10 per cent of households were at least 5 times those of the poorest 10 per cent in 2010, but the gap has fallen substantially since, to a multiple of around 4.5 by 2015. For Australia, the 90-10 measure of income inequality has declined from a multiple of 4.6 in 2008 to around 4.2 by 2013-14.

Panel (b) looks at overall income inequality for all states and territories, and shows that while WA recorded the highest 90-10 ratio across the Federation since 2008, the gap between WA and NSW pretty much disappeared by 2014.

So what has contributed to the fall in income inequality since the end of the resources boom? Are the richest households losing out at a greater rate than those lower down the income distribution? Or are the poorest households in WA moving closer to a 'typical' income household?

The trends in Figure 7 suggest the latter. The 90-50 ratios for WA and Australia – panel (c) – track fairly closely over the period since 2010, with incomes for the richest 10 per cent of households at just over twice the incomes of the median household.

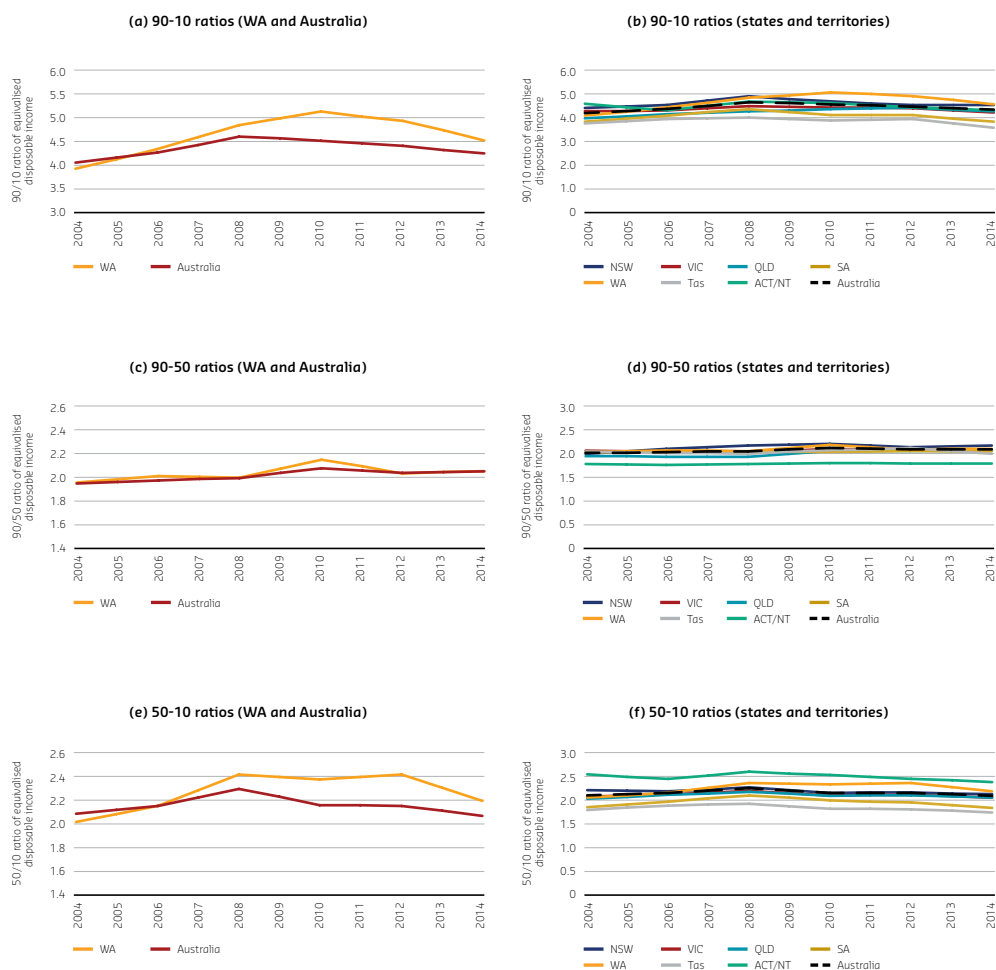
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The incomes of the poorest 10 per cent of households in Western Australia are now significantly closer to those of the median household.

The same is true for all other states, as shown in panel (d), although median incomes in ACT/NT are somewhat closer to the top end of the distribution, with a 90-50 ratio closer to 1.75.

However, Western Australia's 50-10 ratio – panel (e) - has declined at a faster rate than for Australia since 2012, dropping to around 2.2 by 2014. This supports the conclusion that the incomes of the poorest 10 per cent of households in Western Australia are now significantly closer to those of the median household.

Figure 7 Relative income inequality in WA and Australia: 2003 to 2014



Note: All ratios are calculated using household equalised disposable income. See Glossary for definitions.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Survey of Income and Housing, 2003-04 to 2013-14.

What are the principal sources of income for Western Australian households, and have these changed to any degree since the end of the resources boom?

Table 2 shows the proportion of households who draw their principal income from wages and salaries, income from government sources (both welfare payments and pensions), income from superannuation, investment and business income.

In 2013-14, around nine in ten non-elderly WA couples without children drew most of their income from wages and salaries – panel (a) of Table 2. This represents an increase of 3.9 percentage points since 2009-10 – panel (b). Only 2 per cent now draw income mainly from government payments (down nearly 5 percentage points since 2009-10), and 3 per cent each from superannuation and investment income sources (up 1.5 percentage points and 1 percentage point respectively).

The proportion of non-elderly couples with children who derive income mainly from wages and salaries also sits at 90 per cent, with only 4 per cent who draw government benefits as their main income source. These shares have been relatively stable since the end of the resources boom.

Nearly six in ten (58 per cent) single parent households draw most of their income from earnings, a rise of 7.9 percentage points since 2009-10. Around 39 per cent of single parents rely on government payments as their main income source, down 9.5 percentage points since 2009-10. Despite this, it remains the case that government payments provide a critical source of support to single parent households.

Elderly people, particularly women, who live alone have become more reliant on public pensions since the resources boom ended. Government payments, principally the age pension, now make up the principal source of income for nearly three quarters of elderly single men (73 per cent) and four in five (81 per cent) elderly single women – for the latter, an increase of 4.7 percentage points since 2009-10.

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Table 2 Principal sources of income among WA households: by family type, 2009-10 and 2013-14

Household type	Households #	%	Income class					Income class						
			Wages & salaries	Govt. income	Super. income	Investm't income	Business income	Other sources	Wages & salaries	Govt. income	Super. income	Investm't income	Business income	Other sources
(a) Principal source of household income: 2013-14														
Non-elderly couple only	180,100	20	90%	2%	3%	3%	1%	0%	+3.9	-4.9	+1.5	+1.0	-1.2	-0.3
Non-elderly couple with children	292,800	32	90%	4%	1%	2%	3%	1%	-0.2	-0.2	+0.6	+0.4	-0.9	+0.4
One parent with children	44,200	5	58%	39%	-	0%	-	3%	+7.9	-5.5	-1.1	-1.9	+0.0	+0.6
Non-elderly single male	83,000	9	76%	13%	0%	4%	3%	3%	+6.7	-8.3	-1.5	+0.3	+2.0	+0.9
Non-elderly single female	57,700	6	64%	24%	5%	2%	0%	5%	-2.7	-2.6	+3.9	+2.1	-2.2	+1.4
Elderly couple	95,600	10	20%	50%	21%	9%	0%	-	-2.8	+3.1	+0.5	-0.4	-0.4	+0.0
Elderly single male	25,300	3	9%	73%	14%	4%	-	-	-1.9	-0.8	+2.9	+2.1	-1.2	-1.0
Elderly single female	52,700	6	1%	81%	9%	7%	-	2%	-0.5	+4.7	-5.8	-0.4	+0.0	+2.1
All households	913,400	100	69%	20%	4%	4%	2%	1%	+1.7	-2.4	+0.5	+0.8	-0.6	-0.1
(c) Mean gross weekly household income by source: 2013-14														
Household type	Mean h/h income: 2013-14	Change: 2009-10 to 2013-14	Wages & salaries	Govt. income	Super. income	Investm't income	Business income	Other sources	Wages & salaries	Govt. income	Super. income	Investm't income	Business income	Other sources
Non-elderly couple only	\$ 3,051	+20	2,784	18	54	122	27	47	+461	-19	+22	+79	-20	-11
Non-elderly couple with children	3,502	+5	2,952	52	39	208	157	94	+50	+4	+29	+27	+55	-3
One parent with children	1,498	-0	945	341	-	40	-	171	+78	-36	-	-54	-	+20
Non-elderly single male	1,673	+1	1,447	57	2	66	66	35	-29	-24	-12	+15	+64	+10
Non-elderly single female	1,182	+10	912	105	30	48	5	82	+30	+5	+21	+51	-65	+63
Elderly couple	1,413	+6	406	276	256	234	7	234	-63	+56	+17	+57	-8	-
Elderly single male	765	+31	132	362	181	82	7	3	+16	+49	+81	+47	-	-
Elderly single female	640	+17	16	394	126	96	-	7	-3	+52	+25	+15	-	+3
All households	2,506	+15	1,968	122	69	183	57	107	+204	+1	+22	+82	+10	+7
(d) Change in mean h/h income by source: 2009-10 to 2013-14														

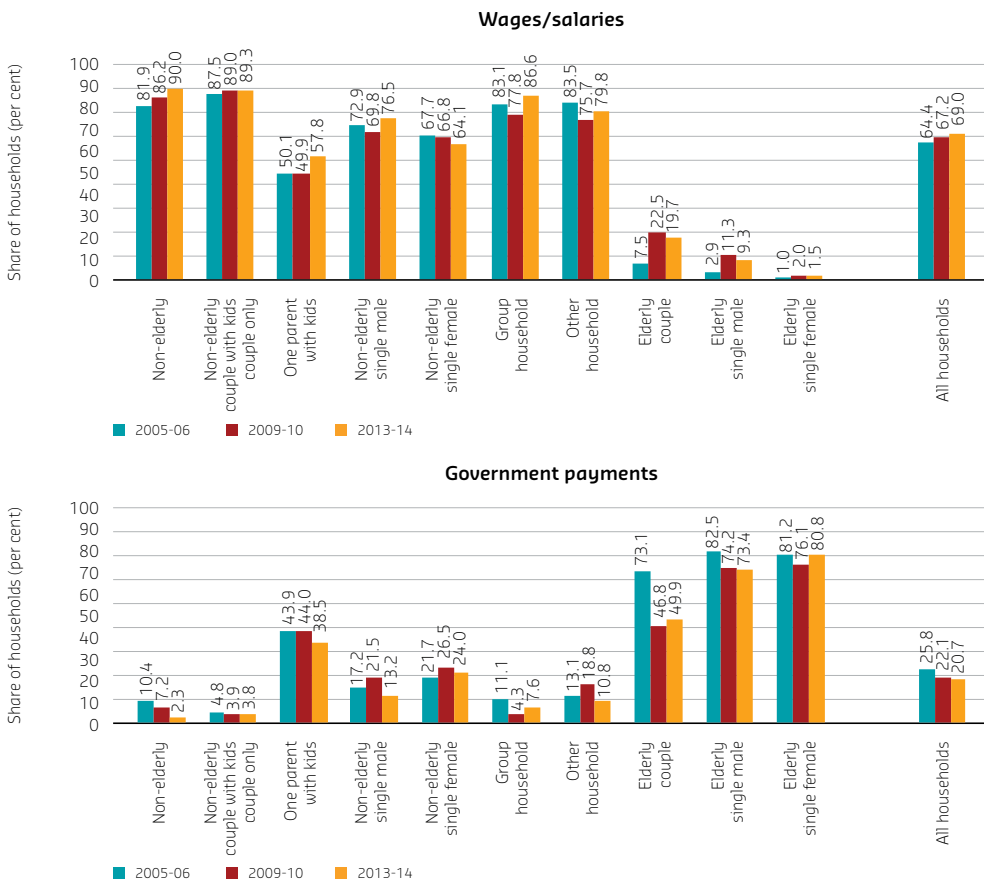
Note: Data exclude households with zero or negative incomes. Households reporting gross annual incomes in excess of \$2m, or weekly business or investment incomes of above \$20k, are excluded from calculations.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Survey of Income and Housing, 2009-10 and 2013-14.

Figure 8 provides a graphical representation of how principal income sources have evolved for WA households over time. The graphs show the proportion of WA households with wages and salaries (top panel) or government payments (bottom panel) as their main income source for each of three periods: 2005-06, 2009-10 and 2013-14. It is certainly the case that a greater share of households in most categories now draw most of their income from earnings.

Although the share has fallen since 2009-10, one parent families still depend on government payments more than do any other non-elderly household group. Equally, more elderly couples, and more elderly single men and women, are now drawing most of their income from government pensions, a fact that highlights the need for adequate support to minimise financial vulnerabilities for these groups.

Figure 8 Share of WA households with wages/salaries and government payments as principal source of income: 2005-06 to 2013-14



Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Survey of Income and Housing, 2013-14.

Household wealth in Western Australia

Perth ranks fourth in terms of the median net wealth of households in the state's capital, at \$508,500.

For this next section of the report, we turn to a consideration of the distribution of wealth in Western Australia, and the value of wealth across the main asset classes held by Western Australian households compared with their counterparts in other states and territories. In particular, we are interested in whether there have been any significant changes in the wealth asset portfolios held by WA households since the end of the resources boom.

Household net wealth is preferred as the basic unit of analysis. Total household net wealth comprises the aggregate of home value, home contents, property investments, business assets, superannuation, shares and other forms of financial assets, less any liabilities held either in the form of mortgages or other loans.

So how do Western Australian households measure up in terms of net worth compared with their counterparts in other states and territories? Table 3 compares the real median net worth (expressed in 2016 prices) for households in all capital cities and balance of state areas of Australia over four periods from 2005-06 to 2013-14.

Median net wealth in the balance of Western Australia ranks seventh across all capital cities and state/territory balances, at \$424,700.

Perth ranks fourth in terms of the median net wealth of households in the state's capital, at \$508,500. Yet the median value of household net worth has endured something of a roller-coaster ride since the height of the resources boom – increasing by \$93,000 to \$530,900 (or 21 per cent) between 2005-06 and 2009-10, then dropping \$43,200 to \$487,700 by 2011-12 following the fall-out from the global financial crisis, before increasing by \$20,800 to \$508,500 between 2011-12 and 2013-14 (a rise of 4 per cent). Median net wealth in the balance of Western Australia ranks seventh across all capital cities and state/territory balances, at \$424,700. This has remained fairly stable since 2011-12.

ACT and Northern Territory households rank first in terms of median net wealth in 2013-14, at \$582,500. Households in the two territories enjoyed substantial growth of \$121,100 in total net worth up to the global financial crisis, but heavy falls of nearly \$76,000 in the post-GFC period. Melbourne ranks in second place in terms of net wealth (at \$576,600) and Sydney third (\$553,500).

Table 3 Median household net wealth by states and territories, 2005-06 to 2013-14

Region	Median net worth (2016\$)								Change in net worth (2016\$)					
	2005-06		2009-10		2011-12		2013-14		2005-06 to 2009-10		2009-10 to 2011-12		2009-10 to 2011-12	
	\$	R	\$	R	\$	\$	R	\$	%	\$	%	\$	%	
ACT and NT	492,000	2	613,100	1	537,400	2	582,500	1	+121,100	+25%	-75,600	-12%	+45,000	+8%
Melbourne	437,800	6	578,600	2	571,500	1	576,600	2	+140,800	+32%	-7,100	-1%	+5,100	+1%
Sydney	528,100	1	540,100	3	525,000	3	553,500	3	+12,000	+2%	-15,100	-3%	+28,500	+5%
Perth	437,900	5	530,900	4	487,700	4	508,500	4	+93,000	+21%	-43,200	-8%	+20,800	+4%
Balance of NSW	427,300	7	449,900	8	441,900	8	455,700	5	+22,600	+5%	-8,000	-2%	+13,800	+3%
Adelaide	376,200	10	464,500	6	472,900	6	443,700	6	+88,300	+23%	+8,400	+2%	-29,200	-6%
Balance of WA	393,400	9	447,200	9	421,000	9	424,700	7	+53,700	+14%	-26,200	-6%	+3,700	+1%
Balance of VIC	401,000	8	362,500	13	363,900	13	402,800	8	-38,500	-10%	+1,400	+0%	+38,900	+11%
Hobart	456,900	4	459,500	7	482,500	5	401,600	9	+2,600	+1%	+23,000	+5%	-80,900	-17%
Brisbane	468,100	3	482,500	5	448,400	7	400,600	10	+14,500	+3%	-34,100	-7%	-47,800	-11%
Balance of TAS	331,300	13	425,400	11	385,400	11	394,000	11	+94,100	+28%	-39,900	-9%	+8,600	+2%
Balance of QLD	362,300	11	433,600	10	400,200	10	364,700	12	+71,200	+20%	-33,400	-8%	-35,500	-9%
Balance of SA	341,200	12	403,900	12	373,800	12	361,400	13	+62,700	+18%	-30,100	-7%	-12,400	-3%
Australia	430,300		488,900		465,600		473,700		+58,600	+14%	-23,300	-5%	+8,100	+2%

Note: Wealth values are expressed in 2016 dollars, and for those with positive net worth. See Glossary for a definitions.
 Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Survey of Income and Housing, 2009-10 and 2013-14.

Household wealth is distributed far more unevenly than incomes, a fact that is true not just for Western Australia but for all states and territories. But how unevenly? To what degree is wealth concentrated among the wealthiest households in the state?

Noting the difficulties in accessing data on the wealth holdings of the richest in the state, we estimate (conservatively) that Western Australian households held assets with an aggregate net value of some \$895 billion in 2013-14. This represents an increase of 18 per cent compared with 2011-12, and an increase of 9% on the \$822 billion held in 2009-10. The average net household wealth of the top wealth quintile in the state came to just under \$3.2 million in 2011-13, an increase of 43 per cent on 2009-10 asset holdings.

There is a huge degree of inequality in the distribution of household net wealth. Figure 9 shows that the richest 20 per cent of WA households in wealth terms (the fifth quintile) holds at least 64.7 per cent of the state's aggregate household net wealth. This is around 3.4 percentage points more than the 61.3 per cent share of wealth held by the richest fifth of households nationally. The fourth quintile in WA holds 18.7 per cent of the state's total net wealth on 2013-14 data. Taken together, the wealthiest 40 per cent of households in WA account for 83.2 per cent of total household net wealth in the state.

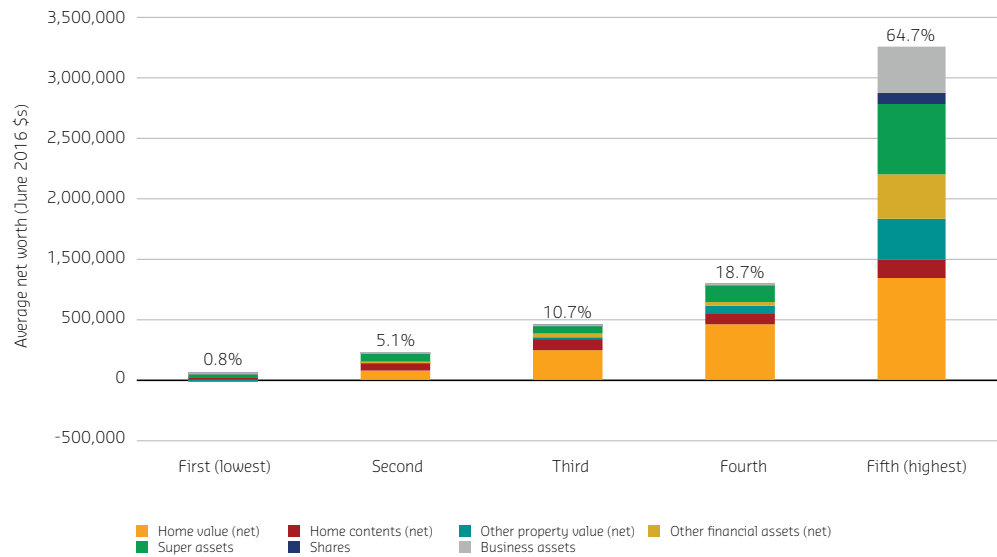
In contrast, the poorest 20 per cent of households hold a mere 0.8 per cent of the state's total household net wealth by value – less than one hundredth of the value of all household wealth holdings.

The poorest 20 per cent of households hold a mere 0.8 per cent of the state's total household net wealth by value – less than one hundredth of the value of all household wealth holdings.

The richest 20% of WA households in wealth terms (the fifth quintile) holds at least 64.7 per cent of the state's aggregate household net wealth.

Net home value rises from 36% as a share of total asset holdings for the second quintile, rising to nearly 60% for the fourth quintile.

Figure 9 Share of household net wealth by quintile: Western Australia, 2013-14



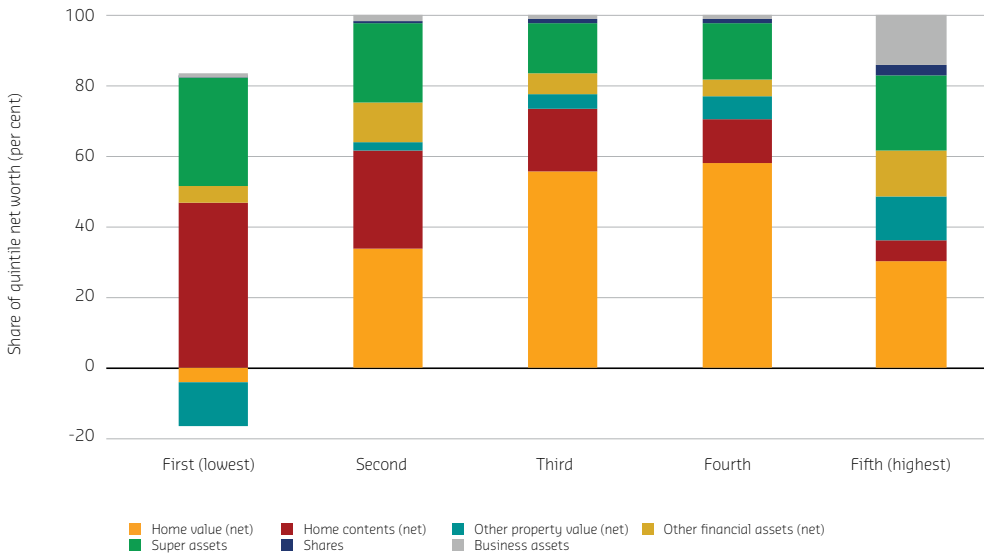
Note: Percentages represent the share of total net wealth held by each wealth quintile.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Survey of Income and Housing (SIH), 2013-14.

Figure 9 shows how the composition of household net wealth differs for richer and poorer households in the five wealth quintiles. For the poorest households, most positive wealth value is held in the form of home contents and superannuation. The net values of home and other property assets are both actually negative for the first wealth segment, with liabilities exceeding the gross property asset value.

Superannuation assets constitute around 17 per cent of total household assets by value for the third and fourth wealth quintiles, and nearly 20 per cent for the wealthiest quintile.

Net home value rises from 36 per cent as a share of total asset holdings for the second quintile, rising to nearly 60 per cent for the fourth quintile, before falling as a share of total assets for the wealthiest fifth of households. It is interesting to see from Figure 9 the growth in the value of other asset classes for the richest households. The net value of other property and superannuation assets rise substantially as a share of total assets as wealth increases. For the fifth wealth quintile, other property assets account for up to 12 per cent of total wealth holdings. Superannuation assets constitute around 17 per cent of total household assets by value for the third and fourth wealth quintiles, and nearly 20 per cent for the wealthiest quintile.

Figure 10 Household net wealth composition by quintile: Western Australia, 2013-14



Note: Bars that fall below the zero horizontal axis denote asset classes with negative average net worth for households in that quintile.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Survey of Income and Housing (SIH), 2013-14.

How has household wealth in WA changed after the boom?

Table 4 breaks down the level of asset ownership among households in Western Australia, by reporting the share of households of different characteristics who own each of the main asset classes, as well as the median values of those asset holdings.

The first panel (a) of Table 4 summarises the proportion of households who hold different classes of private assets, while the second panel (b) reports the percentage point change in this share since 2009-10. Around three quarters of non-elderly couples with children, and 71 per cent of couples with no children own a home asset. These shares fell slightly since 2009-10, by 3.5 and 2.2 percentage points respectively. In contrast, just over a third of single parent families have a home asset, down by more than 10 percentage points since 2009-10.

Fewer households own investment properties compared four years earlier. The share of households with property assets other than their main home has fallen by 2.7 percentage points since 2009-10, to around 21% overall in 2013-14. In contrast, the share of households with superannuation assets has grown 5.5 percentage points since 2009-10, to 80 per cent.

There is a noticeable gender gap in the share of households with superannuation assets; a quarter of single women don't hold any superannuation assets, compared with one in ten men. So too are the values of superannuation assets lower for women compared with men for those who do hold the asset. This highlights the lower propensities for women to accumulate superannuation savings due to a greater likelihood of interrupted labour market careers. If there is a pattern emerging of a substitution away from property assets towards superannuation, this risks widening the gender wealth gap further.

For those holding property assets as part of their wealth portfolio, the Survey of Income and Housing data provide evidence of a significant fall of \$77,900 in asset value compared with four years earlier. On the other hand, the median value of superannuation assets has risen by nearly \$25,000 since 2009-10.

Table 4 Median household wealth by asset class, Western Australia: 2013-14 and change from 2009-10

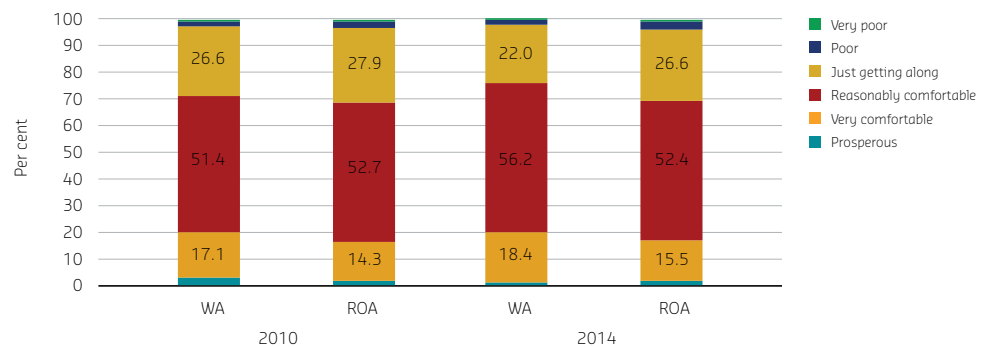
Household type	Asset class					Asset class							
	# households	Home asset	Home contents	Other property	Super assets	Other financial	Shares	Home asset	Home contents	Other property	Super assets	Other financial	Shares
		(a) share of households who own asset class											
Non-elderly couple only	180,100	71%	100%	30%	92%	98%	25%	-3.5	-	-2.1	7.3	1.5	-2.4
Non-elderly couple with children	292,800	76%	100%	28%	91%	98%	28%	-2.2	-	-5.9	5.3	2.3	-7.5
One parent with children	44,200	36%	100%	13%	74%	98%	7%	-10.6	-	3.8	8.3	1.8	-3.5
Non-elderly single male	83,000	48%	100%	13%	89%	97%	25%	-3.8	-	-4.2	14.6	4.1	4.4
Non-elderly single female	57,700	55%	100%	15%	75%	95%	16%	9.2	-	-0.5	5.6	-	-0.6
Elderly couple	95,600	92%	100%	12%	59%	99%	34%	3.1	-	-10.3	0.8	1.5	-3.4
Elderly single male	25,300	66%	100%	9%	30%	100%	15%	-8.0	-	1.6	-8.6	4.4	-6.9
Elderly single female	52,700	77%	100%	7%	26%	99%	16%	3.1	-	1.2	2.8	-0.3	-2.0
Group household	29,400	18%	100%	10%	92%	100%	8%	-2.8	-	-8.1	10.0	0.7	-14.8
Other household	52,700	72%	100%	24%	78%	100%	14%	10.0	-	12.7	0.5	0.3	1.8
All households	913,400	68%	100%	21%	80%	98%	23%	-0.1	-	-2.7	5.5	1.8	-3.2
		(b) ppt change in ownership, 2009-10 to 2013-14											
		(c) Median asset value among those owning asset class											
	Median net worth: 2013-14	Home (net)	Home contents	Other property (net)	Super assets	Other financial (net)	Shares	Home (net)	Home contents	Other property (net)	Super assets	Other financial (net)	Shares
Non-elderly couple only	492,400	418,700	84,500	237,700	76,100	14,400	21,100	-13,800	-5,500	-77,900	-4,200	+6,800	+8,300
Non-elderly couple with children	619,500	412,000	100,400	232,400	111,600	8,700	13,700	-48,600	-8,400	-128,500	+26,900	+5,200	+4,400
One parent with children	83,300	348,600	40,100	316,900	23,200	300	(a)	-90,800	-12,400	+24,700	+2,500	+200	(a)
Non-elderly single male	220,800	338,100	38,000	241,200	53,900	3,200	10,600	+44,400	-2,900	+31,300	+20,000	+500	+1,800
Non-elderly single female	299,000	419,600	44,400	137,300	59,200	5,300	9,500	+68,900	+3,500	-73,100	+24,100	+4,100	+1,500
Elderly couple	905,600	581,000	95,100	528,200	221,800	28,000	30,200	-3,500	+8,500	-56,300	+18,700	-9,400	+4,100
Elderly single male	428,100	444,000	37,000	(a)	158,500	11,700	(a)	+13,700	-9,800	(a)	-22,800	-7,000	(a)
Elderly single female	549,700	538,800	52,800	(a)	114,100	15,800	8,500	+71,200	+2,000	(a)	+22,500	+1,200	-3,200
Group household	93,300	528,200	26,400	98,800	42,300	6,900	(a)	+119,000	-12,200	+52,100	+18,900	-4,800	(a)
Other household	516,400	423,100	71,000	188,700	89,000	10,800	37,200	+13,900	+6,700	-38,000	+58,100	+5,900	+22,000
All households	508,500	443,700	73,900	237,700	84,500	10,800	15,800	-16,900	-2,000	-77,900	+24,900	+4,900	+4,700

Note: All asset values have been updated to 2016 dollars. Cells are marked (a) where too few observations exist for reliable estimates.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Survey of Income and Housing, 2009-10 and 2013-14.

Financial security among WA households after the boom?

It is now clear that Western Australians have higher levels of net income and wealth than the national average. So do these translate into stronger perceptions of financial security? Figure 11 suggests it is the case. Specifically, Western Australians were more likely to report feeling “prosperous;” “very comfortable” or “reasonably comfortable” than non-Western Australians in both 2010 and 2014. From 2010 to 2014, the proportion of Western Australians reporting feeling “reasonably comfortable;” “very comfortable” or “prosperous” increased from 71 per cent to 76 per cent while that of non-Western Australians was stable at around 69 per cent. However, during the same period, the proportion of Western Australians reported feeling “prosperous” or “very comfortable” remained stable at around 20% while the proportion of non-Western Australians reported the same level of financial prosperity increase slightly from 16 per cent in 2010 to 17 per cent in 2014.

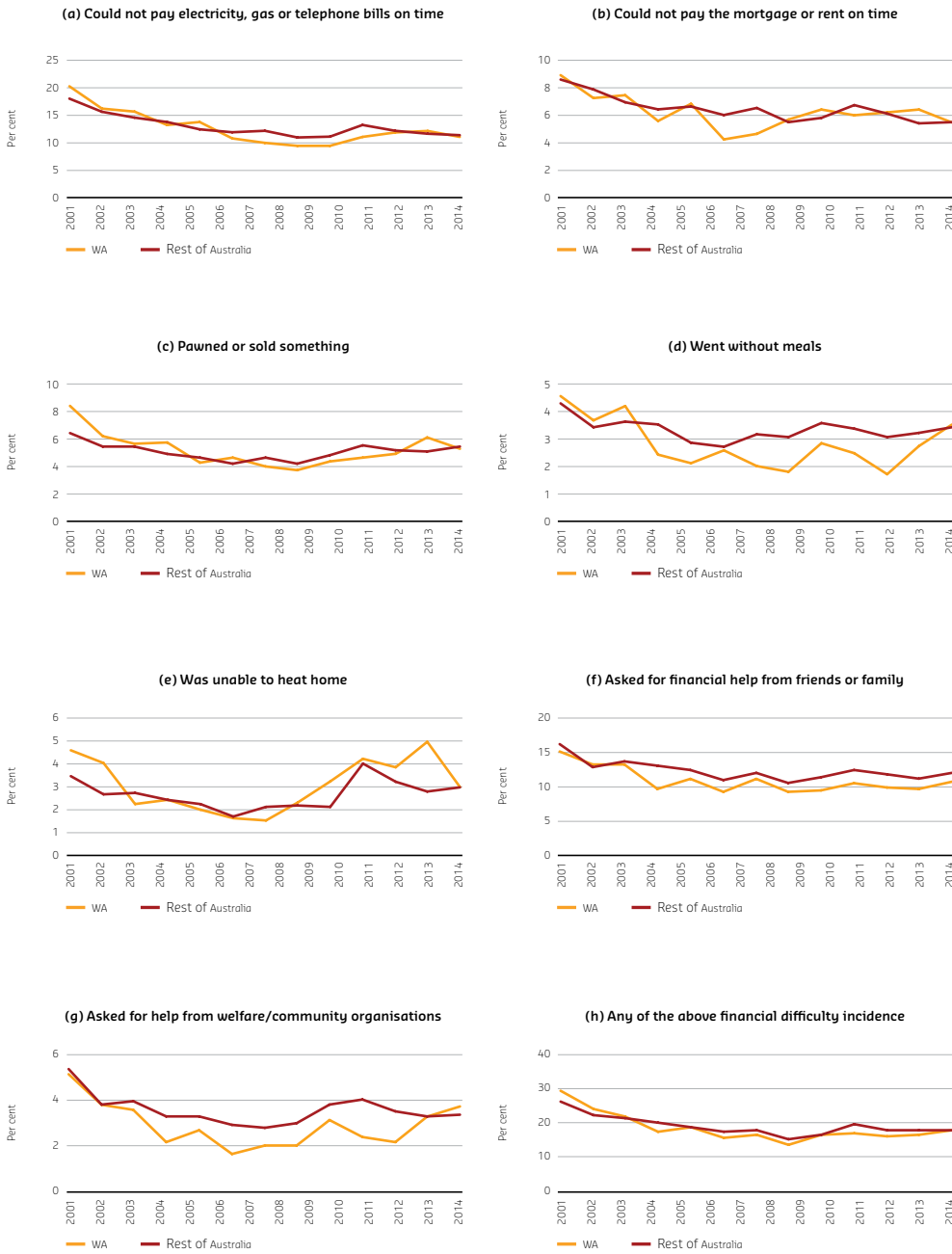
Figure 11 Perceived prosperity in 2010 and 2014, Western Australia and the rest of Australia



Source: BANKWEST CURTIN ECONOMICS CENTRE | Author' estimates based on HILDA Survey data.

Figure 12 also indicates higher levels of net income and wealth indeed result in higher levels of financial security perceptions. In particular, Figure 12 represents the percentages of Western Australians and non-Western Australians reporting incidence of financial difficulties due to shortage of money. As shown in Figure 12 Western Australians are less likely to pay electricity, gas or telephone bills after the due date, ask for financial health from friends or family or ask for help from welfare/community organisations. During 2010 and 2014, the gap in the proportion of Western and non-Western Australians reporting such financial difficulty incidents tend to peak at around the end of the last decade, before starting to fall. By 2014, there is no clear difference in the proportion of Western and non-Western Australians reporting such financial difficulty incidents, except asking for financial health from friends or family.

Figure 12 Incidence of financial difficulties, Western Australia and the rest of Australia, 2001 to 2014



Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on HILDA Survey data.

Prices

and the cost of living
in Western Australia

Introduction

During the resources boom, price increases in Perth consistently outpaced the rest of Australia. The Consumer Price Index (CPI) in Perth regularly reached an annual rate of increase of five percentage points between 2005 and 2008, more than one percentage point higher than national CPI changes over the same period. The Pilbara, Kimberley and Gascoyne regions experienced even larger increases in the CPI than Perth during the boom, and housing costs in WA soared above the national average (Cassells et al. 2014). This chapter provides updated cost of living estimates for WA to shed light on the extent to which prices and household spending in Perth and regional WA have been impacted by the downturn in the resources sector in recent years.

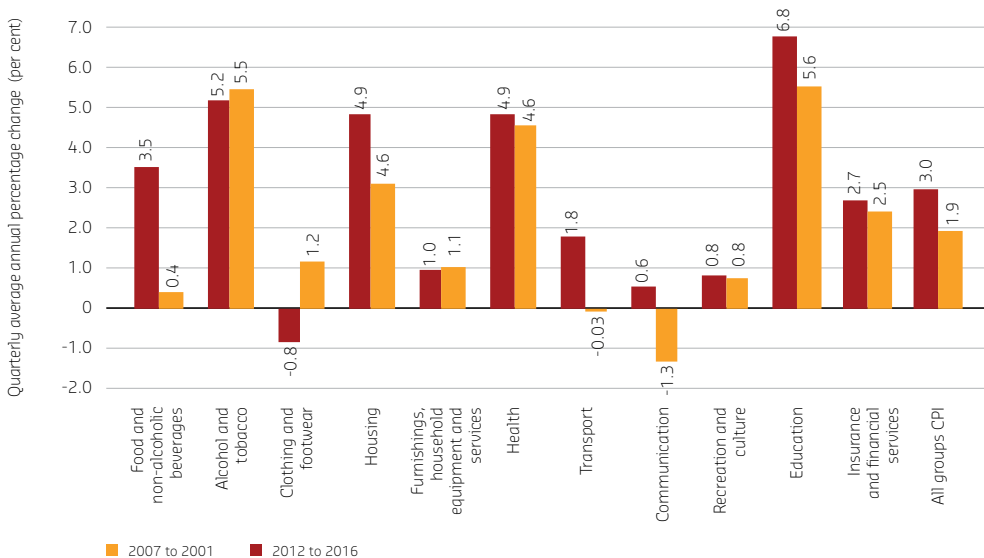
How does WA's cost of living compare to the rest of Australia?

Figure 13 compares the average inflation rate in Perth over two periods corresponding to the resources boom and post-boom period. The inflation rate is measured on the basis of changes in the CPI. Firstly, the percentage change in CPI in each quarter from the corresponding quarter of the previous year is calculated to derive an annual inflation rate for each quarter. The annual inflation rates during March 2007 to December 2011 are averaged to derive an average inflation rate for the boom period. Similarly, the annual inflation rates during March 2012 to June 2016 are averaged to derive the inflation rate for the post-boom period. As indicated by the bars in the rightmost corner of the figure, the average inflation rate was 3 per cent during boom times, but it declined by one-third to under 2 per cent during the post-boom period.

As the most important household consumption components, Food (16.8 per cent), Housing (22.3 per cent), Transport (11.6 per cent) account for more than half of the household budget according to ABS Household Expenditure Survey. The price increases of these three components have decelerated significantly since 2011. The annual increase in food prices was 3.5 per cent before 2011, which sits above the overall Perth CPI of 3 per cent. After 2011, food prices only increased by 0.4 per cent every year. As this category includes processed food and restaurant services, the small price rise can be explained by the declining agricultural price index and slow growth of other costs such as rent, electricity and labour. The Housing component of the CPI has dropped from 5 per cent to 3 per cent. In addition, transport costs in Perth have been on a negative growth trajectory in the last five years compared with 1.8 per cent annual growth before 2012. The group with most significant price drop is Communication, with a 1.3 per cent decrease every year. All CPI categories except Clothing and footwear and Alcohol and tobacco, have experienced a slower price increase during the post-boom period compared to the boom years.

The average inflation rate was in Perth declined from 3 per cent during the resource boom to under 2 per cent during the post-boom period.

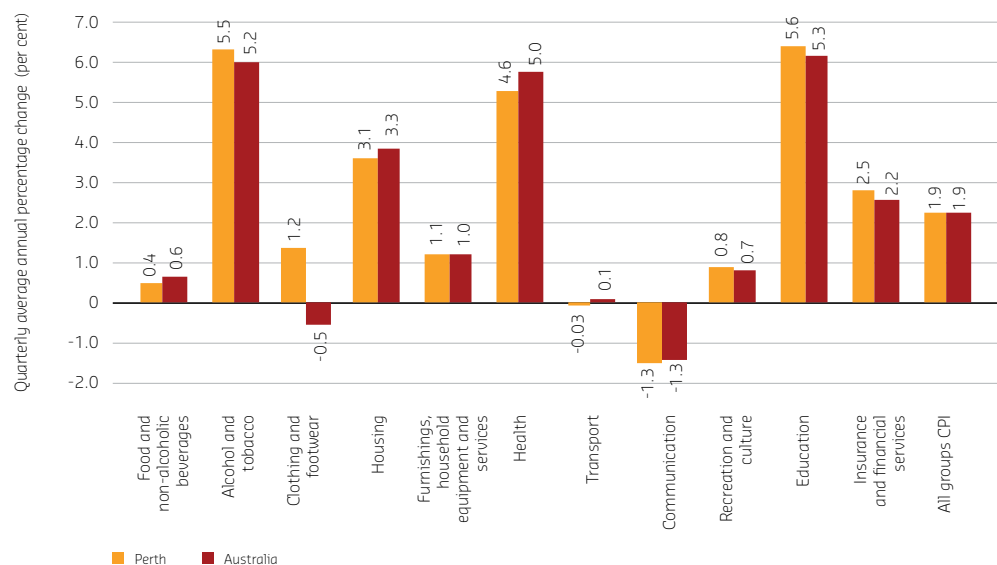
Figure 13 Average annual inflation rate by groups, Perth, 2007-2016, per cent



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6401.0

Since 2012, the CPI trend in Perth has been highly consistent with the metropolitan Australian average (as represented by the weighted average of the eight capital cities). Figure 14 compares the inflation rate during the post-boom period by CPI groups in Perth and metropolitan Australia. Perth has experienced slower price growth than metropolitan Australia in categories representing basic day-to-day necessities i.e. Food, Housing, Transport and Health. However, it has experienced greater price increases in categories such as Alcohol and tobacco, Clothing and footwear, Education, and Insurance and financial service.

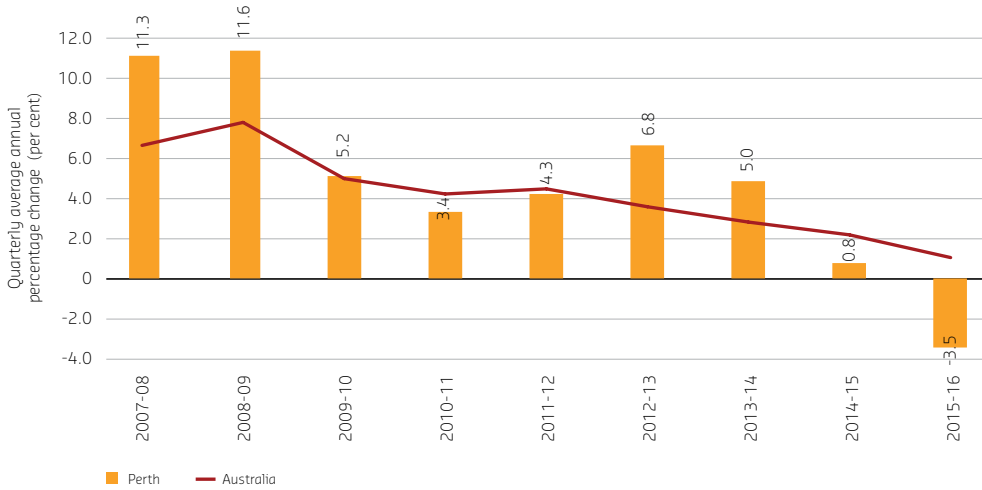
Figure 14 Annual inflation rate by groups, Perth and metropolitan Australian, 2012 to 2016, per cent



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6401.0

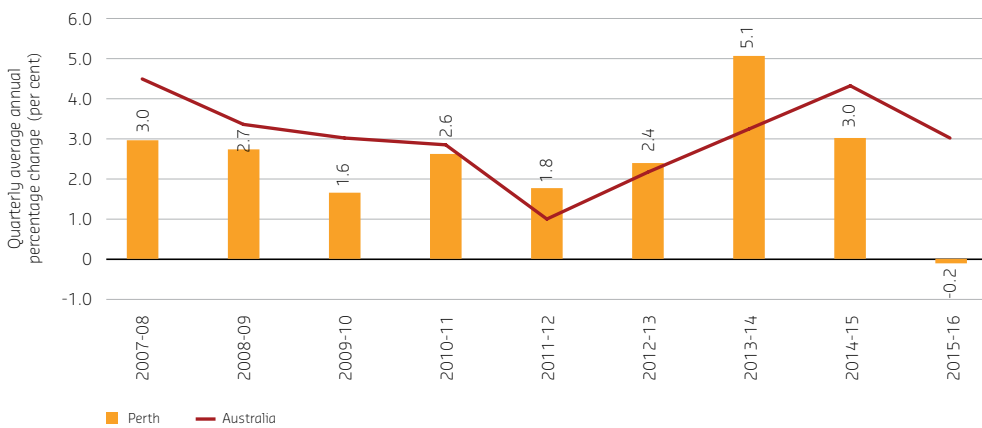
As the major contributor of living costs, Housing takes up to nearly one quarter of household expenditure. The recent softening of the housing market has a considerable influence on cost of living in Perth. Figure 15 and Figure 16 illustrate the annual percentage change in rental cost and new house purchase price by owner-occupiers between 2007 and 2016. Rental costs have been on a decline in both Perth and metropolitan Australia. The annual growth rate in rents was 0.8 per cent in Perth in 2014-15 compared to 2.2 per cent in metropolitan Australia in the same year. However, by 2015-16, rents in Perth were exhibiting a negative growth trend of 3.5 per cent compared to a positive growth rate of 1.1 per cent in metropolitan Australia on average. The price of new dwelling purchase in Perth has dropped to 0.2 per cent in 2015-16 after positive growth over a decade. This contrasts with the Australian capital city average, which showed a positive growth trend of 3 per cent in 2015-16. Other capital cities such as Sydney and Melbourne still have very active housing markets while the Perth housing market has softened considerably in recent years, putting downward pressure on rents and house prices.

Figure 15 Percentage change in rents, Perth versus metropolitan Australia, 2007-08 to 2015-16



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6401.0

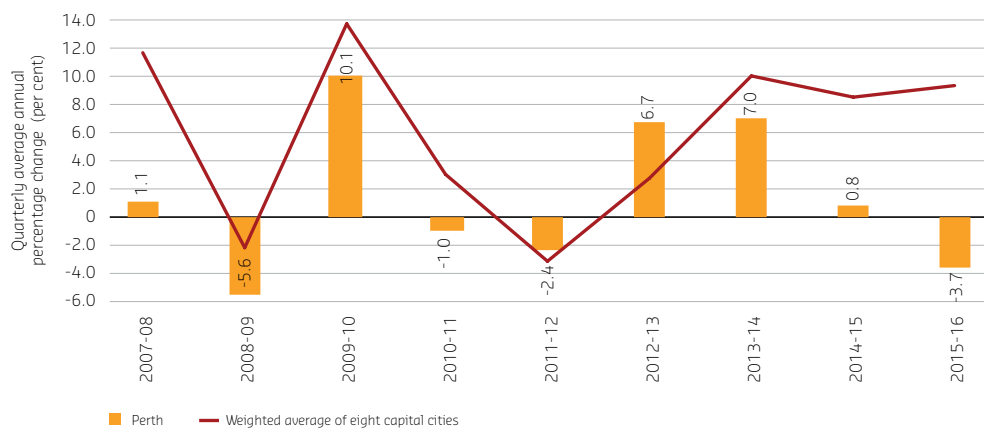
Figure 16 Percentage change in new dwelling purchase price, Perth versus metropolitan Australia, 2007-08 to 2015-16



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6401.0

A comparison of established house prices also demonstrates how significant the slowdown in the Perth housing market has been since the tailing off of the resources boom. Similar movements in established house prices can be observed in Perth and metropolitan Australia till late 2013. Since then, the average established house price growth rate has been about 8-9 per cent in metropolitan Australia. However, in Perth the established house purchase price has been on a sharp decline in recent years, with the annual percentage change in established house prices declining to -4 per cent in 2015-16.

Figure 17 Percentage change in established house purchase prices: 2007-08 to 2015-16

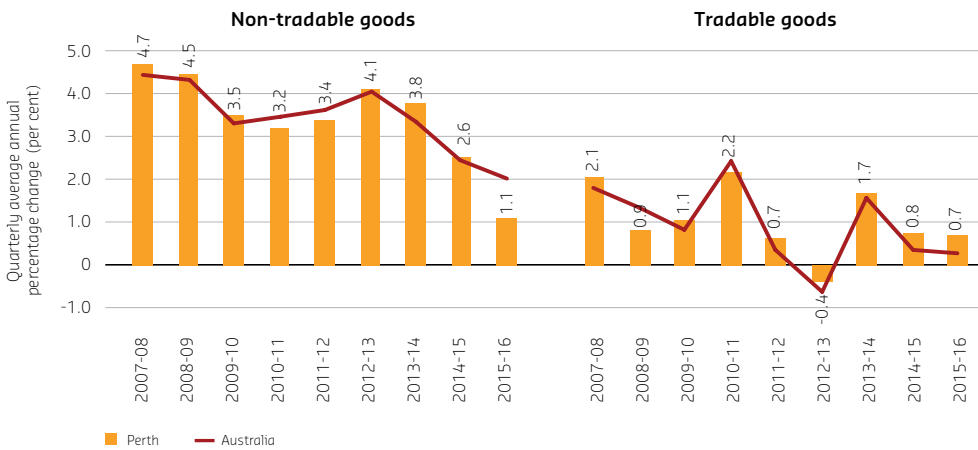


Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6416.0

The significant slowdown in Perth's inflation rate after the boom has been largely for non-tradable goods.

Interestingly, the significant slowdown in Perth's inflation rate after the boom has been largely for non-tradable goods (see Figure 18). Between 2013-14 and 2015-16, the percentage change in the price of non-tradable goods dipped from 4 per cent to 1 per cent Perth. In the case of tradable goods, the percentage change in price fell much less from around 1.8 per cent to 0.7 per cent in Perth. By 2015-16, the percentage change in the price of non-tradable goods was lower in Perth than in metropolitan Australia whereas the percentage change in the price of tradable goods was lower in Perth than metropolitan Australia. Non-tradable goods have relatively little exposure to international competition compared to tradable good and are more likely to be influenced by developments in the domestic economy. Specifically, the rate of inflation of non-tradable goods is affected by the domestic business cycle. The sluggish growth in the prices of non-tradable items has coincided with a high unemployment rate and slow growth in labour costs in the domestic economy. Indeed, non-tradable items such as restaurant food, housing and health services has exhibited slow or even negative growth after the boom.

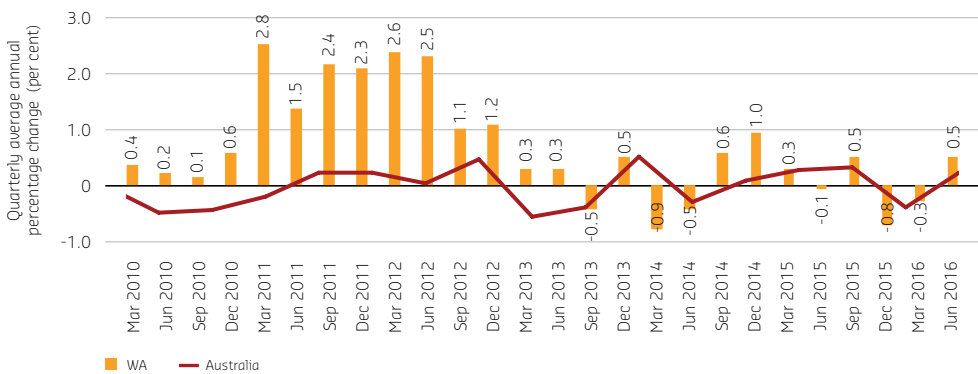
Figure 18 Percentage change in the price of tradable and non-tradable goods, Perth versus metropolitan Australia, 2007-08 to 2015-16



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6401.0

To provide further explanation for the slow price growth in the non-tradable sector, we investigate the retail trade sector most closely. Controlling for inflation, Figure 19 shows the chain volume measure of retail trade turnover for WA and Australia from 2010 to 2016. During peak period 2011-12, WA retail trade expanded much faster than Australia overall. However, since 2013 the retail trade turnover in WA has been growing much more slowly than in Australia and even exhibited negative growth rates in some quarters.

Figure 19 Percentage change in quarterly retail trade turnover, WA versus Australia, chain volume, 2010-2016

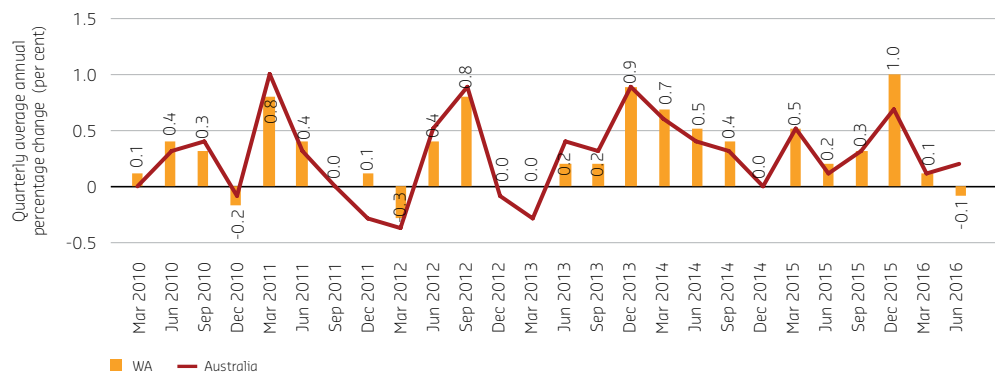


Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 8510.0

Since 2013, the retail trade turnover in WA has been growing much more slowly than in Australia and even exhibited negative growth rates in some quarters.

As shown in Figure 20, the implicit retail trade price deflator in Western Australia is consistent with other states and territories. However, in the most recent quarter for which data is available (June 2016), the WA price deflator has decreased by 0.1 per cent while the Australian average deflator has grown by 0.2 per cent.

Figure 20 Percentage change in quarterly retail trade implicit price deflator, WA versus Australia, 2010-2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 8510.0

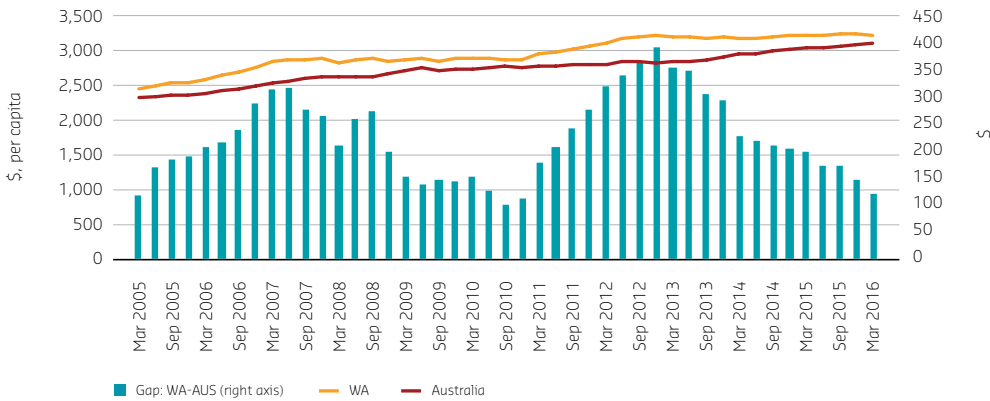
Between 2012 and 2016, the WA-Australia gap in per capita expenditure shrunk from \$146 to \$61 for durable goods and from \$160 to \$54 for restaurant food services.

According to ABS retail trade data, the per capita expenditure on retail trade in the first quarter of 2016 in Western Australia was \$3,221 compared to an Australian average of \$3,101 (Figure 21). The WA per capita spending on retail trade has been higher than the Australian average for a decade. However the gap between WA and Australia grew during in 2011-12 before returning to the pre-boom gap levels recently. The retail trade expenditure gap is mainly from two retail trade categories – household goods retailing and restaurant food services.

As can be seen in Figure 22, WA residents spent per capita \$61 more on household goods in the first quarter of 2016 than Australian residents. In the second quarter of 2013, this gap was much larger at \$146. As household goods are mostly durables, the spending cut in this category reflects low cash capacity or low expectations of future income flow.

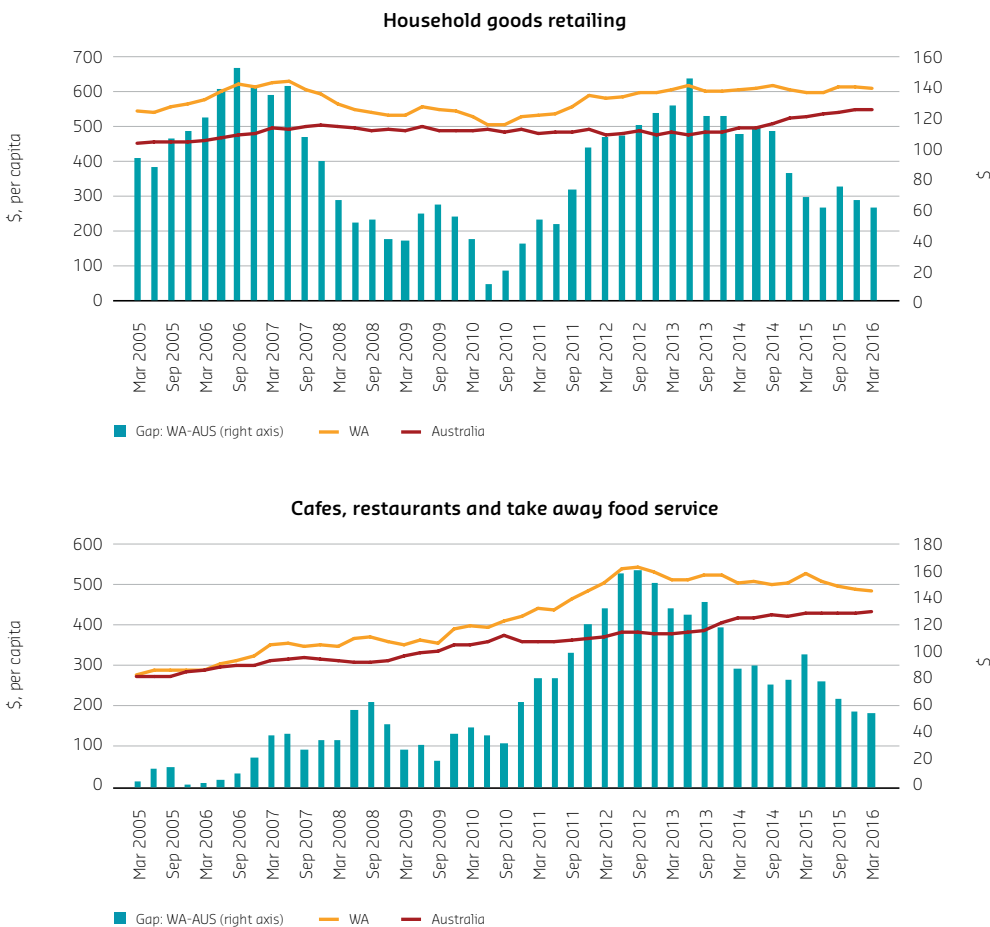
Similarly, the WA-Australia gap in expenditure on restaurant food services shrunk from \$160 in the third quarter of 2012 to \$54 in the first quarter of 2016 (see Figure 22). It is clear that in WA there has been a shift away from restaurant services towards meals at home as incomes declined after the boom. WA household quarterly spending on basic food goods has increased from \$1,239 to \$1,315 between 2012 and 2016, while expenditure on restaurant food has dropped from \$542 to \$484.

Figure 21 Retail trade turnover in dollars per capitabased on chain volume measure, WA versus Australia, 2005 to 2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors calculations using ABS Cat. No. 8510.0 and 3101.0

Figure 22 Retail trade turnover per capita, household goods and restaurants service, 2010-2016



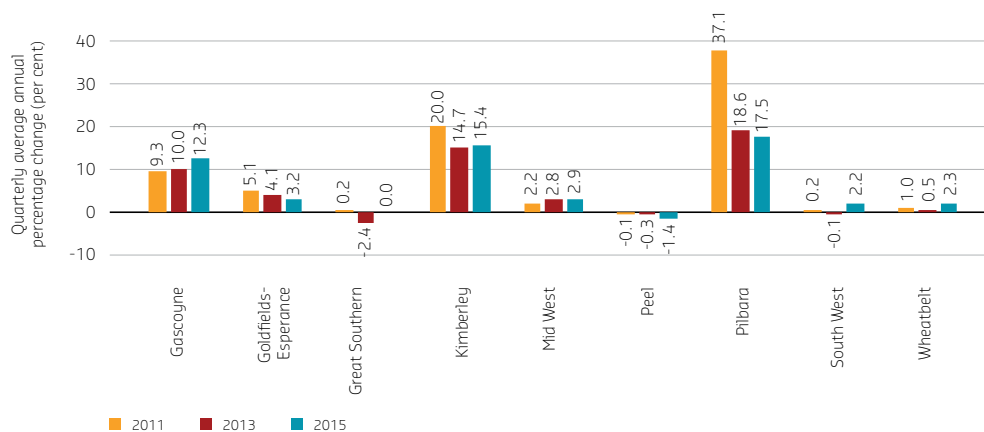
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors calculations using ABS Cat. No. 5801.0 and 3101.0

Regional cost of living variations in WA

Resource-rich regions remain the most expensive in WA, but the price gap between the Pilbara and Kimberley regions and Perth has declined since the slowdown of the resource sector. Regions with more diverse economies have become more expensive in recent years.

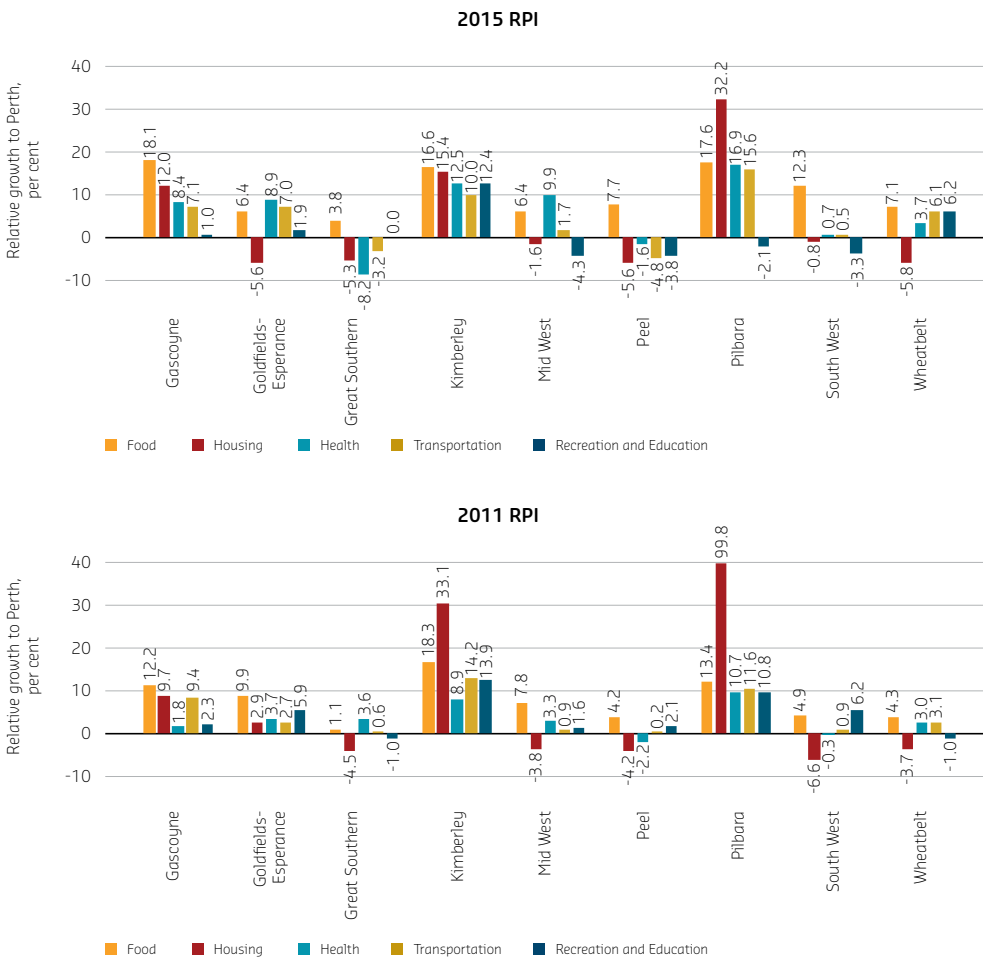
This section examines whether the slowing down of the mining industry has had a severe impact on cost of living in mining regions such as Pilbara and Kimberley due to the lack of economic diversity in these regions. Figure 23 plots the growth in Regional Price Index (RPI) in nine WA regions relative to Perth. Perth is the base index of 100 in every year. Hence, the vertical axis represents the gap between the RPI of each region and the Perth's price index of 100. The resource-rich regions of the Pilbara and Kimberley remain the most expensive in Western Australia but these regions' price gaps with Perth have been narrowed since 2011. As indicated by the RPI, the cost of living in Pilbara was 37 per cent higher than in Perth in 2011 but just 18 per cent higher in 2015. The cost of living in the Kimberley region was 20 higher than Perth in 2011 and this gap narrowed to 15 per cent in 2015. Regions with more diverse economies such as the Gascoyne, Wheatbelt and South West have become more expensive in recent years.

Figure 23 Gap between the Regional Price Index of each region and Perth, 2011-2015



Source: BANKWEST CURTIN ECONOMICS CENTRE | WA DEPARTMENT OF REGIONAL DEVELOPMENT

Figure 24 Gap between the Regional Price Index of each region and Perth, 2011-2015, by groups, 2011-2015



Source: BANKWEST CURTIN ECONOMICS CENTRE | WA DEPARTMENT OF REGIONAL DEVELOPMENT

Figure 24 displays the gap between the RPI of each WA region and Perth by key goods and services for 2011 and 2015. It is clear that in the resource-rich regions of the Pilbara and Kimberley, housing costs have dropped significantly. However, the Pilbara, Kimberley and Gascoyne regions still had higher housing costs than Perth in 2015, while all other regions have remained cheaper than Perth. Transport prices have become relatively cheaper in most regions except Pilbara. On the other hand, food prices have gone up in the regions relative to Perth, and health services have also become relatively more expensive in all regions except the Great Southern.

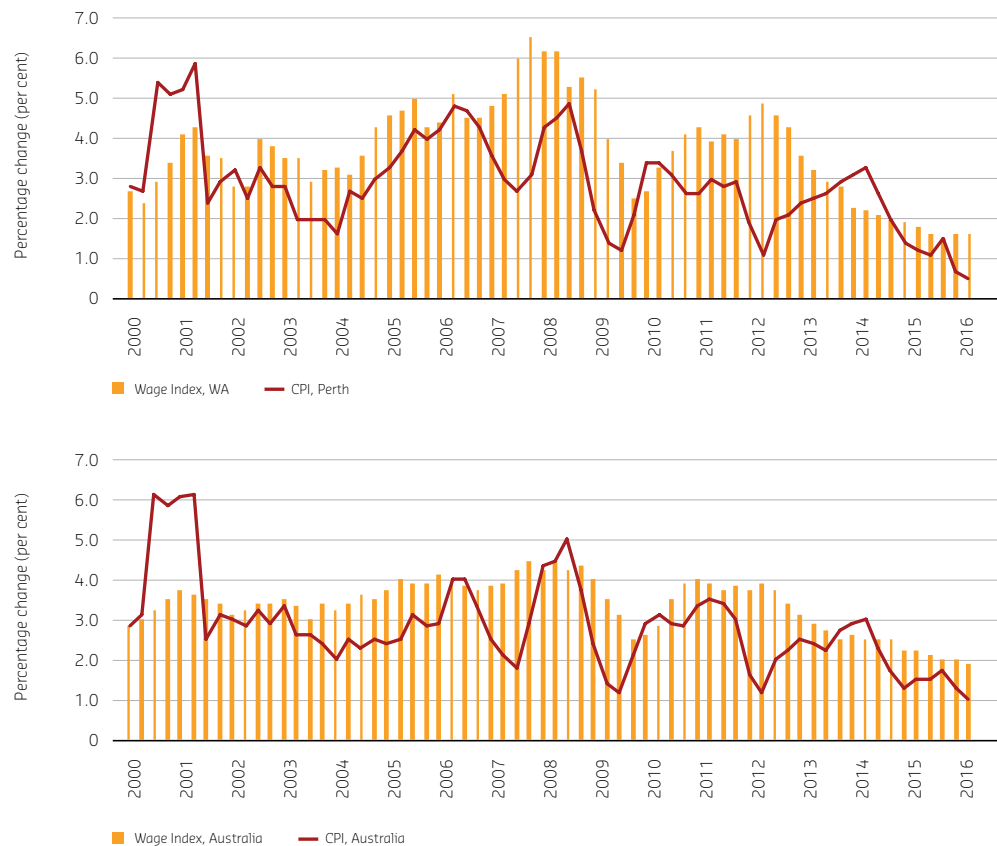
Are WA incomes keeping pace with prices?

Between 2013 and 2015 WA's real income growth fell behind Australia. However, during the first two quarters of 2016, there are signs that the growth in real incomes in Western Australia is once again outpacing Australia's real income growth.

In this section, we examine whether the purchasing power of WA households have increased or decreased over time, and whether there are variations across the economic cycle and regions. Figure 25 shows the percentage change in the Wage Price Index (WPI) and CPI in each quarter from the corresponding quarter of previous year. As can be seen in the figure, the inflation rate and wage growth rate trends for WA are generally very similar to the Australian average. There are two periods during which the percentage change in the CPI exceeds the percentage change in the WPI in WA by a clear margin. During 2000-01 and 2014, the inflation rate was greater than the wage growth rate, implying that the purchasing power of West Australian households declined during these two periods.

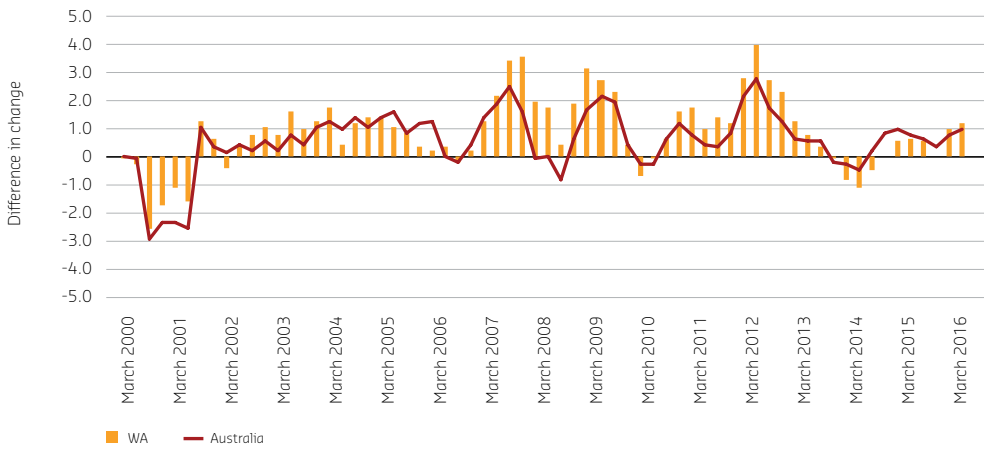
Figure 26 plots the wage growth rate deflated by the inflation rate for WA and Australia to derive a proxy for real income growth for both the state and nation. Real income growth was stronger in WA than Australia overall during the GFC and the peak of mining boom in 2011-12. Between 2013 and 2015 WA's real income growth fell behind Australia. However, during the first two quarters of 2016, there are signs that the growth in real incomes in Western Australia is once again outpacing the growth in real incomes in Australia.

Figure 25 Wage Index and CPI



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6345.0 and Cat. No. 6401.0
 Note: Wage Index represents Total hourly rates of pay excluding bonuses, private and all industries

Figure 26 Percentage change in Wage Price Index deflated by percentage change in Consumer Price Index, WA versus Australia, 2007-2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors calculations using AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6345.0 and 6401

Workforce

transitions in
Western Australia

Introduction

During the mining boom, the resources industry delivered an expansion in the number of jobs, soaring wages and record low unemployment rates. Without doubt, benefits from the sustained economic growth of the last decade have flowed to the labour market. With the tailing off of the resources boom, it is reasonable to expect significant accompanying shifts in the labour market.

This chapter sheds light on the extent and ways in which the WA labour market has changed in response to the recent economic slowdown in the state. Has the turnaround in the state's economic fortunes reduced labour market opportunities for West Australians looking for work, both in terms of the number of jobs and hours of work available? Is there evidence of growing casualisation of the workforce, and how has the job security of West Australians been affected by the economic slowdown? Are businesses reducing the number of traineeship opportunities available to West Australians? How do employment conditions in WA current compare with the rest of Australia, and are West Australian men and women facing different labour market circumstances post-boom? Overall, this report highlights post-boom transitions in the labour market and offers insights into the future of work for West Australians in a new era marked by slower economic growth.

Unemployment trends

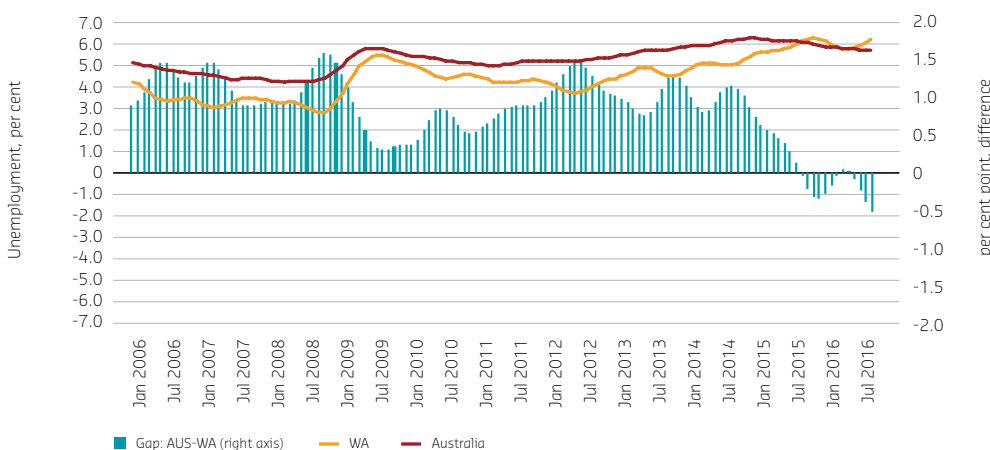
We begin by reviewing recent trends in unemployment in Western Australia compared to the rest of Australia across different point in time. We are particularly interested in comparing unemployment during critical periods of the economic cycle that represent the highs and lows of the resources boom. The labour force includes people of working age (usually aged 15 years and over) who are either employed or actively looking for work. The unemployment rate is defined as the proportion of the labour force that is unemployed.

Figure 27 tracks long-run trends in the unemployment rate over the period 2006 to 2016, using monthly labour force data from the Australian Bureau of Statistics. Since 2006 up until the GFC years of 2008-09, the unemployment rate in Australia was around 4 to 5 per cent; in WA this was even lower at 3 to 4 per cent. During the GFC, the unemployment rate spiked in both the state and nation though WA's unemployment rate was still below that of Australia. The GFC appeared to have sparked a structural shift in labour market conditions. As shown in Figure 27, since the GFC, the unemployment rates in both WA and Australia have been higher than pre-GFC levels, and in 2014-15 the nation's unemployment rate peaked at just above 6 per cent.

There are two notable differences between the state and nation in the performance of the labour market. Firstly, a consistent observation over the long-run is the higher volatility in unemployment rates in the state compared to Australia as a whole. Secondly, WA has traditionally enjoyed unemployment rates that sit below the national average, but for the first time since 2006 the state's unemployment rate surpassed the nation's average in mid-2015. As at August 2016, the unemployment rate in WA was over 6.0 per cent compared with 5.7 per cent in Australia.

For the first time since 2006, the state's unemployment rate surpassed the nation's unemployment rate in mid-2015.

Figure 27 Unemployment rate in WA versus Australia, 2006 to 2016, per cent



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6202.0

State-by-state comparisons in Table 5 highlights some further nuances pertaining to WA's labour market position relative to the rest of Australia. Unemployment rates in the territories have been traditionally been the lowest in Australia in recent years. New South Wales, Victoria and South Australia enjoyed a reduction in their unemployment rate between 2011 and 2016 (though in some cases marginal). On the other hand, WA, along with Queensland and Tasmania have experience an increase in the unemployment rate.

In Table 5, states and territories are assigned unemployment rankings in each year with the first rank indicating the lowest unemployment rate among all states and territories. At the height of the resources boom, WA's unemployment ranking among all states and territories was very high at second rank in 2011 and third rank in 2013. However, as the resources boom tailed off, WA's unemployment ranking among all states and territories has dropped to fifth in 2016 as its unemployment rate rose from 4.3 to 6.2 per cent between 2011 and 2016.

Table 5 Unemployment rate by state and territories, 2009 to 2016, per cent

Region	August 2016		August 2015		August 2013		August 2011		August 2009	
	%	Rank	%	Rank	%	Rank	%	Rank	%	Rank
Australia	5.68%	–	6.09%	–	5.69%	–	5.14%	–	5.73%	–
NSW	5.10%	3	5.77%	3	5.70%	4	5.28%	7	5.97%	8
VIC	5.68%	4	6.07%	4	5.80%	5	5.18%	6	5.85%	7
QLD	6.29%	6	6.24%	6	5.84%	6	5.52%	8	5.75%	6
SA	6.59%	7	7.77%	8	6.42%	7	5.18%	5	5.62%	5
WA	6.19%	5	6.12%	5	4.57%	2	4.25%	3	5.42%	4
TAS	6.70%	8	6.39%	7	8.14%	8	5.17%	4	5.03%	3
NT	3.47%	1	4.55%	1	5.53%	3	4.06%	2	3.65%	1
ACT	3.58%	2	4.89%	2	4.00%	1	4.01%	1	3.68%	2

Notes: States and territories are ranked from 1 to 8, with 1 signifying the lowest unemployment rate and 8 signifying the highest unemployment rate among all states and territories.

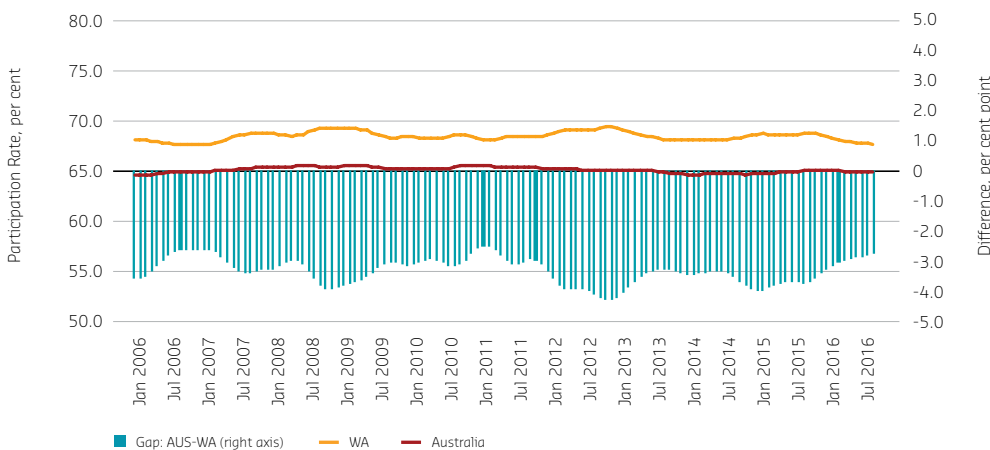
Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6202.0

Changes in labour supply and demand

Like any other market, the labour market is driven by a combination of supply and demand forces. Labour is supplied by those who are willing to offer their skills for paid work, while labour is demanded by employers looking to recruit staff to fill job vacancies in their firms. In this section, we take the labour force participation rate as a proxy for labour supply. The labour force participation rate is defined as the proportion of the population aged 15 years or over that is in the labour force, i.e. either employed or looking for work. The Internet Vacancy Index (IVI) acts as a proxy for labour demand. This index has been generated and released by the Australian Department of Employment to measure the number of vacancies advertised online at any point in time. While it may not encapsulate total labour market demand, it provides a reliable indicator with which we can gauge changes in labour demand over time.

As shown in Figure 28, the labour force participation rate is generally higher in WA than Australia in general. The participation rate in Australia has remained more or less constant at around 65 per cent between 2006 and 2016. Though WA labour force participation trends are more volatile, this has remained consistently above the Australian rate at around 67 to 70 per cent. The state's labour force participation rate peaked at nearly 70 per cent in early 2013. Since then, the WA labour force participation rate has been somewhat lower; in mid-2016 it sat at around 67 per cent. Hence, the gap between the state and nation's labour force participation rate (as represented by the bars) was the greatest at nearly five percentage points in early 2013, but this gap has narrowed since to around 3 percentage points.

Figure 28 Labour force participation rate in WA versus Australia, 2006 to 2016, per cent



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6202.0

In WA, the IVI plummeted from a high of 160 in 2012 to just 90 in 2013 as growth in the resources sector stalled and in 2015, the state's IVI dipped below the nation's IVI for the first time in a decade.

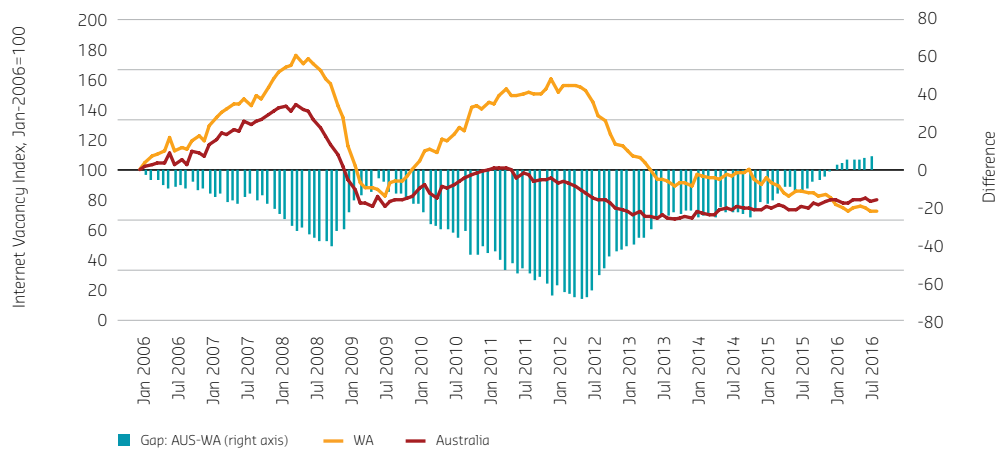
In general, the IVI for both WA and Australia have remained below 2006 levels since the slowdown of the resources sector ushered in a new era of weaker demand in labour markets.

Figure 29 shows how the IVI has changed since 2006 for WA and Australia, with the index base set at 100 in January 2006. The bars once again represent the gap in the index between the state and nation. The IVI trends suggest that there are four distinct phases throughout the economic cycle from 2006 to 2016 with respect to labour demand – 2006 to mid-2008 (pre-GFC), mid-2008 to mid-2009 (GFC period), mid-2009 to 2012 (post-GFC recovery period to the height of the resources boom), and 2013-16 (the post-boom period).

The pre-GFC period saw the IVI climb for both WA and Australia, peaking at 180 and 140 respectively in the first half of 2008. In the second half of 2008, the damaging impacts of the GFC set in and the IVI dived sharply for both the state and the nation to a trough of 80 as demand for labour shrunk in the wake of a worldwide economic crisis. During the post-GFC recovery period, the IVI recovered partially. Indeed, at the height of the resources boom in 2011-12, the IVI reached another high point of 160 for WA; it also climbed for the nation as a whole but only back to the base level of 100 as WA benefited more from the resources boom than the rest of Australia.

In the first three phases, the IVI performed generally better for WA than Australia as a whole, with the difference between the state and the nation being the greatest in mid-2012. However, the post-boom period presents a very different picture. The IVI for Western Australia plummeted from a high of 160 in 2012 to just 90 in 2013 as growth in the resources sector stalled. Beyond 2014, the IVI for WA continued to decline while the index showed some signs of steady recovery for Australia. For the first time since 2006, the IVI for WA dipped below Australia in 2015 as the state's index continued on a downward trend. In general though, the IVI for both WA and Australia have remained consistently below the 2006 base level of 100, since the slowdown of the resources sector ushered in a new era of weaker demand in labour markets.

Figure 29 Internet Vacancy Index for WA versus Australia, 2006 to 2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | Australian Department of Employment, LMIP, Internet Vacancy Index

Figure 30 delves deeper into IVI variations in the labour market by disaggregating IVI trends by occupational categories for WA and Australia. Firstly, the occupations can be classified under three broad groupings – high skilled (managers and professionals), medium skilled (technicians and trade workers, community and personal service workers, clerical and administrative workers, and sales workers), and low skilled (machinery operators and drivers, and labourers). Secondly, they can be viewed as blue collar versus white collar occupations, with the former predominantly made up of trade occupations (i.e. technicians and trade workers, and machinery operators and drivers).

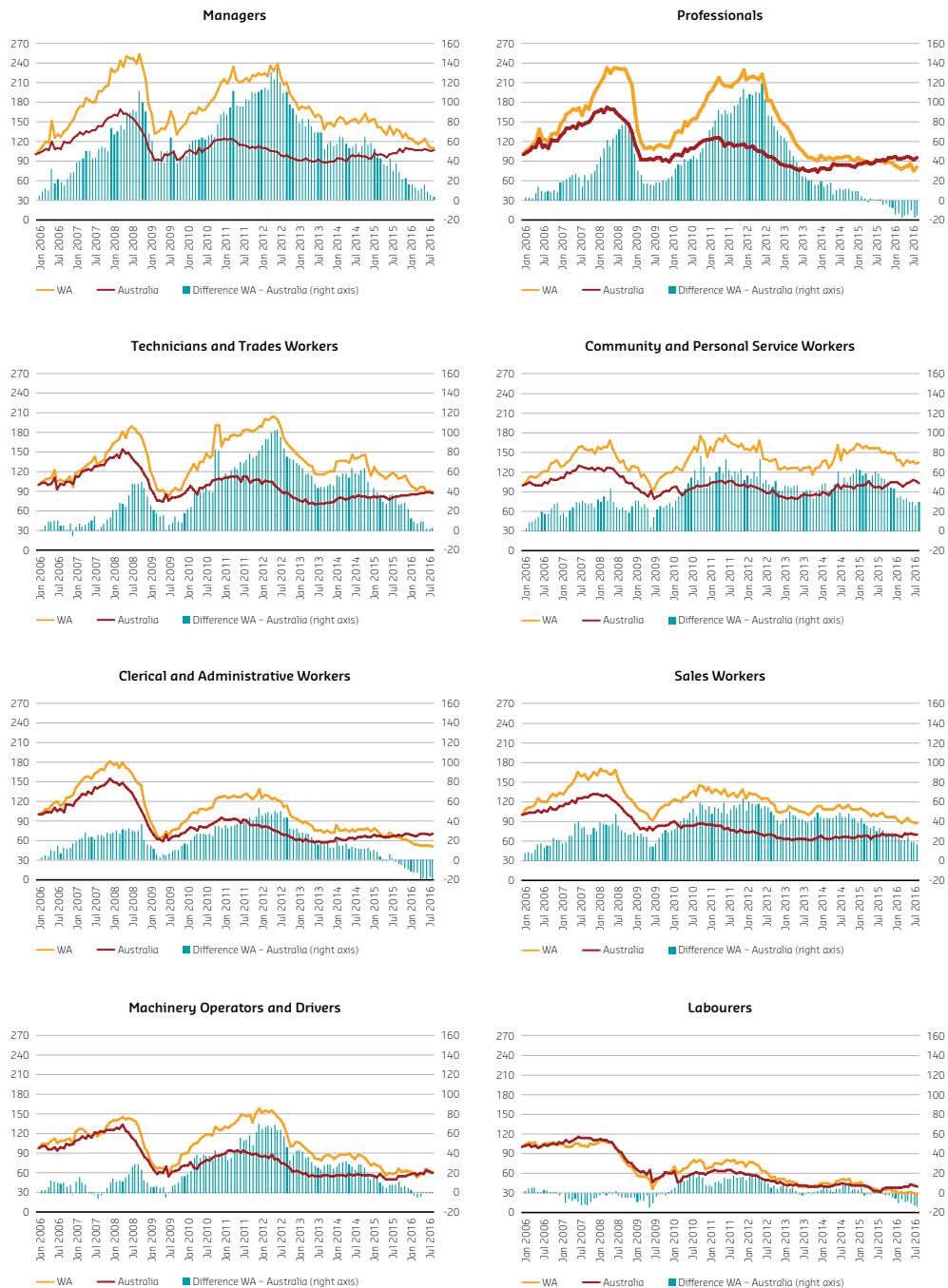
When analysed by skill level, we find that high skilled occupations in WA appear to benefit the most from economic booms, with the IVIs for managers and professionals peaking at over 200 during the pre-GFC high in the economic cycle and the peak of the resources boom. It is also clear that blue collar occupations have benefited more from the resources boom than white collar occupations. The IVI for technicians surged from 90 to 210 between 2009 and 2012, and the IVI for machinery operators and drivers also almost tripled from 60 to 150 over this period.

Demand for high skilled and blue collar occupations are clearly more sensitive to the movements of the economic cycle in WA than demand for other occupations. During the post-resources boom period of 2013 to 2016, the IVI for managers, professionals and technicians and trade workers more than halved from over 200 to under 100. Similarly, the IVI for machinery operators and drivers reverted from 150 back to 60 over this period. On the other hand, demand for low skilled and white collar occupations appear to be less sensitive to the cyclical movements of the economy.

High skilled and blue collar occupations in WA have benefited more from the resources boom than other occupations.

Demand for high skilled and blue collar occupations are more sensitive to the movements of the economic cycle than demand for low skilled and white collar occupations respectively.

Figure 30 Internet Vacancy Index for WA versus Australia, by occupation, 2006 to 2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | Australian Department of Employment, LMIP, Seasonally adjusted Internet Vacancy Index

Figure 31 plots the growth in both labour supply and demand for WA and Australia during critical points in time representing the GFC (2009), resources boom (2011 and 2013), and post-boom period (2015 and 2016). The bars represent the growth in the labour force participation rate while the lines represent the growth in the IVI across the years.

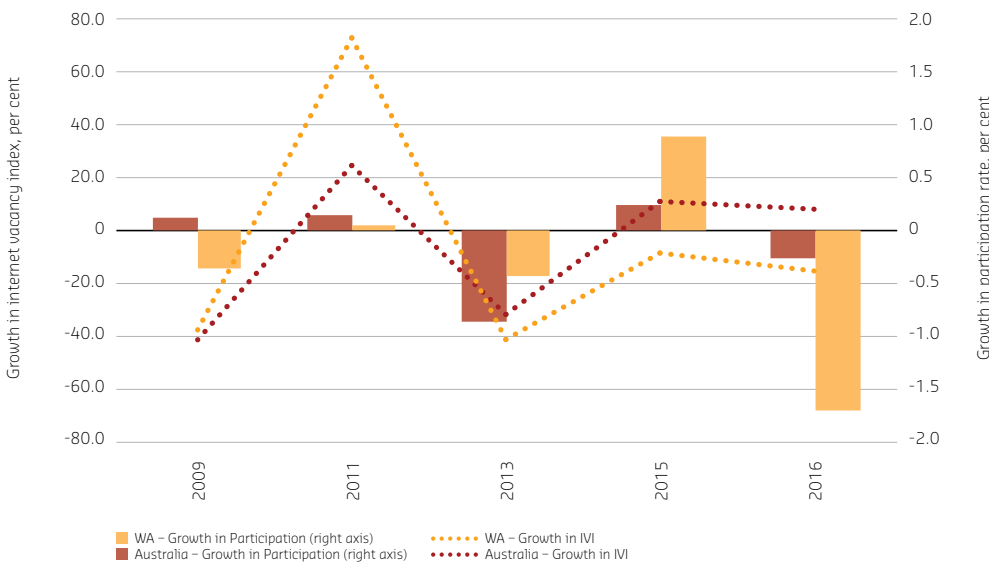
On the supply side, the difference in the labour force participation growth rate between WA and Australia was relatively small prior to 2016. However, in August 2016, the labour force participation growth rate in WA dipped to -1.7 per cent, almost six times the negative growth rate experienced by Australia as a whole at -0.3 per cent.

There are three notable differences between WA and Australia with respect to the IVI growth rate. The first is observed in 2009, when Western Australia's IVI growth rate peaked at 70 per cent, more than three times Australia's IVI growth rate of 20 per cent. The second important observation arises in August 2013, when the IVI growth rate for Western Australia plunged below the nation's IVI growth rate. In August 2013, the IVI growth rates for both the state and the nation turned negative. During the post-boom years of 2015 and 2016, the labour demand growth rate in Western Australia remained in the negative while the growth in labour demand has recovered to a positive rate again for Australia.

In August 2016, the labour force participation growth rate in WA dipped to -1.7 per cent, almost six times the negative growth rate experienced by Australia as a whole at -0.3 per cent.

During 2013-16, the IVI growth rate for WA turned negative and plunged below Australia's IVI growth rate.

Figure 31 Labour force participation and Internet Vacancy Index growth rates in WA versus Australia, 2009 to 2016



Source: BANKWEST CURTIN ECONOMICS CENTRE | Australian Department of Employment, LMIP, Internet Vacancy Index, AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6202.0

Labour force status

As indicated in the previous section, the supply of labour in WA is made up of the pool of working age West Australians who are in the labour force. However, the labour force pool is a heterogeneous one that is made up of persons employed full-time, employed part-time and unemployed. This section sheds light on how the composition of the labour force across these three categories have changed since the resources boom. We also highlight differences by gender where they exist.

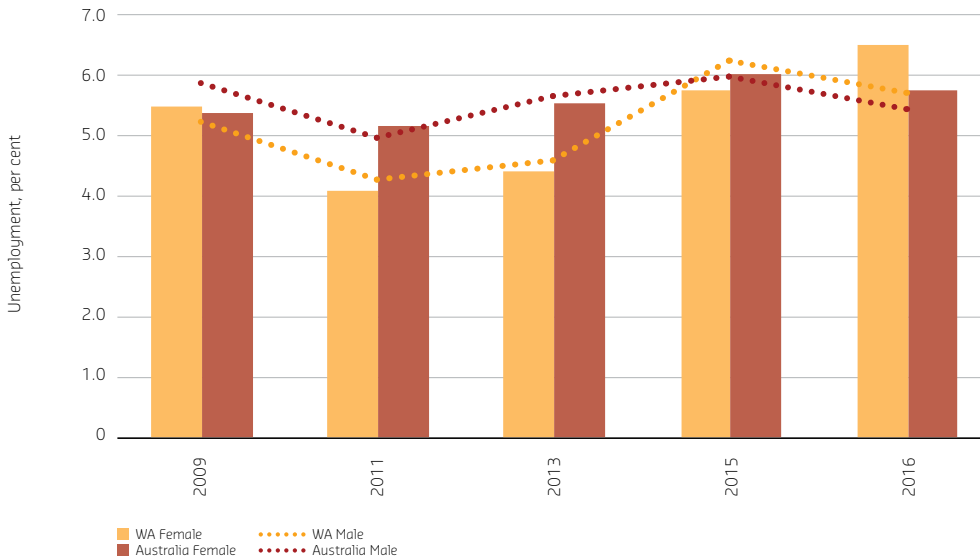
Overall, we find that labour force participation trends have remained more or less constant from 2009 to 2016. The male labour force participation rate in WA has declined mildly from around 77 per cent to 73 per cent, but this has remained consistently higher than the male labour force participation rate in Australia or around 70 per cent. The female labour force participation rate has remained below males at around 60 per cent in both the state and nation over the same period.

However, a more detailed investigation of full-time workers, part-time workers and the unemployed reveals substantial variations between WA and the rest of Australia, and between men and women.

Figure 32 explores gender difference in the unemployment rate for WA and Australia, with the lines and bars representing trends for males and females respectively. On an Australia-wide basis, the male and female unemployment rates have tracked quite closely over time. A similar observation can be made of WA for the period 2009 to 2013, but in 2015 the WA male unemployment rate surpassed the WA female unemployment rate. In 2016, the reverse can be observed, with the WA male unemployment rate dipping below the WA female unemployment rate.

When comparisons are made between WA and Australia, we find that both the male unemployment rate and female unemployment rate was lower in WA than Australia during the resources boom period of 2011 to 2013. However, during the post-resources boom years, the WA unemployment rate exceeded the Australian unemployment for males and females in 2015 and 2016 respectively.

Figure 32 Unemployment rate by gender in WA versus Australia, 2009 to 2016, per cent



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6202.0

During the resource boom years of 2011 and 2013, the WA unemployment rate was lower than Australian unemployment rate for both males and females.

During the post-boom years, the reverse can be observed with the WA unemployment rate rising above the Australian unemployment rate for both males and females.

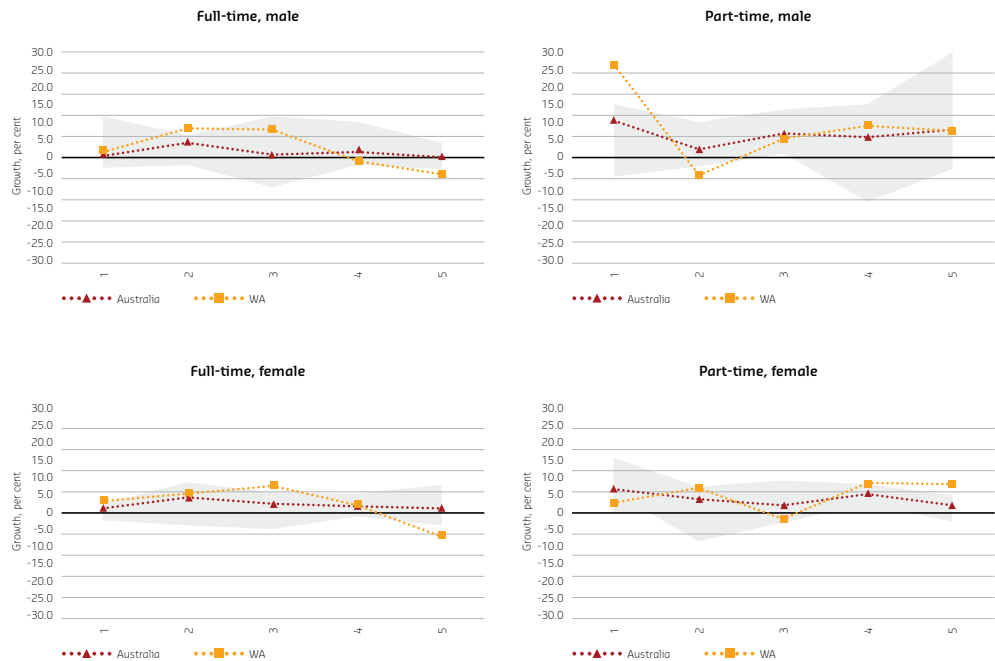
Next, we turn the focus of the investigation to the growth in full and part-time employment in WA versus Australia, and for males versus females. Figure 33 is divided into four panels that display the biennial or two-yearly growth in male full-time employment, female full-time employment, male part-time employment and female part-time employment. The line trends in the figure offer direct comparisons between WA and Australia, while the shaded bands record the maximum and minimum growth rates from all other states and territories combined. As expected, the national trends are found within this band, being the weighted average of all states and territories in Australia. However, in some cases the data for WA yield points outside these bands suggesting that at certain points in time, the growth rate of an employed state in WA does exceed or dip below that of other states and territories.

Comparing the top and bottom left hand panels, we find that the full-time employment trends for WA and Australia are very similar across gender. The biennial full-time employment rate for both males and females in WA grew to 10 per cent during the resources boom, but declined to a negative growth rate of around 5 per cent in 2016. In the case of both males and females, the full-time employment growth rate in WA dipped below the national average after the resources boom. Indeed, by 2016, the growth in male and female full-time employment rates were lower in WA than any other state or territory as shown by the WA line dipping below the shaded band in that year.

By 2016, the biennial part-time employment growth rate had climbed to 10 per cent for males and females in WA. In the case of females, this represents the highest growth rate among all states and territories in that year.

The post-boom decline in the full-time employment growth rate is paralleled by a rise in the part-time employment growth rate for both males and females between 2013 and 2016. By 2016, the Western Australian part-time employment growth rate had climbed to 10 per cent in the case of both males and females. However, this growth in part-time employment represents a more pronounced labour market shift for West Australian females than females in other states and territories. As shown in the bottom right hand panel of the figure, the line representing the growth in WA female part-time employment has climbed above the shaded band representing the maximum of other states and territories.

Figure 33 Growth in full-time and part-time employment by gender in WA versus rest of Australia, 2009 to 2016, per cent

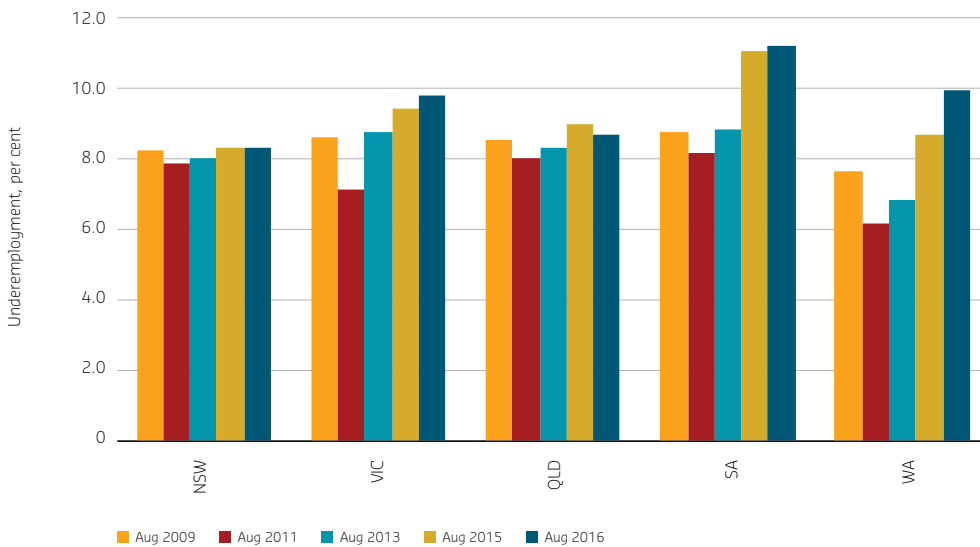


Notes: The shaded bands represent the maximum and minimum growth rates of all other states and territories combined.
Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6202.0

Labour force underutilisation

Underemployment is an increasingly common measure of labour force underutilisation. The underemployment rate is defined as the percentage of employed persons who prefer to work more hours than they currently have. Figure 34 compares the underemployment rate across the five most populous states in Australia between 2009 and 2016. In New South Wales and Queensland, the underemployment rate has remained reasonably constant at 8 per cent over time. However, in three other states – Victoria, South Australia and Western Australia – the underemployment rate has risen between 2011 and 2016. In Victoria and South Australia, the underemployment rate rose by three percentage points, but in WA it rose more by four percentage points. Indeed, in 2011 the underemployment rate in WA was the lowest among the five states at 6 per cent compared to 7 per cent in Victoria and 8 per cent in New South Wales, Queensland and South Australia. By 2016, the underemployment rate in WA had risen to 10 per cent, exceeding the underemployment rate in all other states except South Australia.

Figure 34 Underemployment rate across the five most populous states, 2009 to 2016, per cent



Notes: Tasmania and the territories are excluded from the figure because of small sample numbers.
 Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6202. Table 23

Figure 35 highlights gender differences in the underemployment rate in WA relative to the rest of Australia. The first key observation is that the female underemployment rate is consistently higher than the male underemployment rate across all years. For instance, in 2009 the underemployment rate was around 10 per cent for females in WA and the average of other states and territories, compared to just 6 per cent for males. Secondly, the underemployment rate has been on the rise for both males and females in and out of WA. However, it would appear that underemployment has grown at a sharper rate for both males and females in WA than in the rest of Australia since the resources boom tailed off. In 2011, the male and female underemployment rate

The underemployment rate in WA has risen more sharply than the other four most populous states in Australia – from 6 per cent in 2011 to 10 per cent in 2016.

in WA was 4 and 8 per cent respectively, which were noticeably lower than the male and female equivalent rates in other states and territories combined. By 2016, the male and female underemployment in rate in WA had risen to 8 and 12.5 per cent respectively, exceeding the male and female average of other states and territories respectively. Thirdly, the gender gap in underemployment rate appears to have widened slightly over time, from around 4 to 4.5 percentage points between 2011 and 2016.

Figure 35 Underemployment rate by gender in WA versus the average of other states and territories, 2009 to 2016, per cent



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6202. Table 23

Underemployment has grown at a sharper rate for both males and females in WA than in the rest of Australia since the resources boom tailed off.

Job security and precarious employment

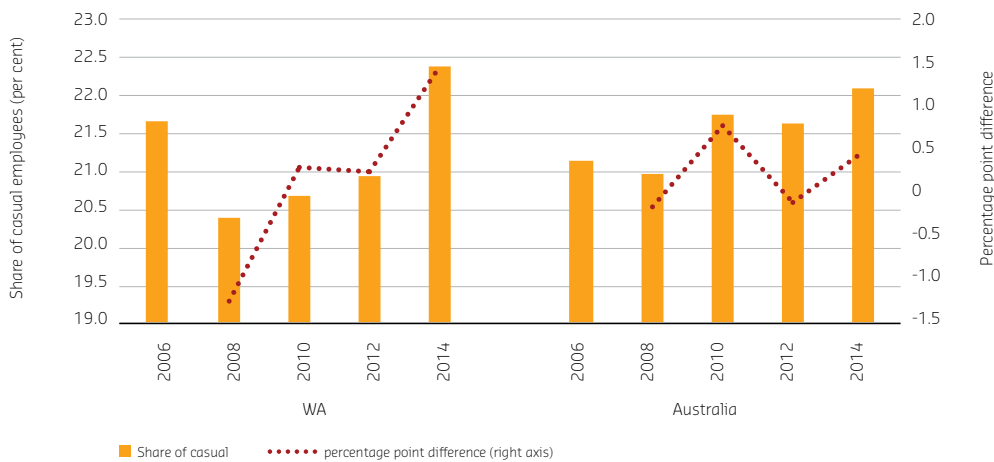
This section examines whether the changing economic conditions in WA has led to growing precariousness in the state's labour market characterised by job insecurity. Measures of workforce casualisation and workers' self-reported feelings of vulnerability to job loss are invoked to shed light on the extent to which WA's labour market has become more insecure.

Figure 36 reports the share of employees on casual contracts in WA versus Australia across the period 2006 to 2014, as depicted by the bars. The year-on-year percentage point change in the share of casual employees are depicted by the lines in the figure.

On comparing the bars representing the 2006 and 2014 shares for each state, it is clear that there has been a mild increase in the share of casual employees in Australia from 21 to 22 per cent. However, the share of casual employees has grown at a quicker rate in WA than Australia; between 2008 and 2014 the share of casual employees in the state rose from 20.5 to 22.5 per cent and the rate of growth of this casualisation accelerated from -1.5 per cent to 1.5 per cent.

Between 2008 and 2014 the share of casual employees in WA rose from 20.5 to 22.5 per cent and the rate of growth of this casualisation accelerated from -1.5 per cent to 1.5 per cent.

Figure 36 Share of casual employees, WA versus Australia, 2006 to 2014, per cent

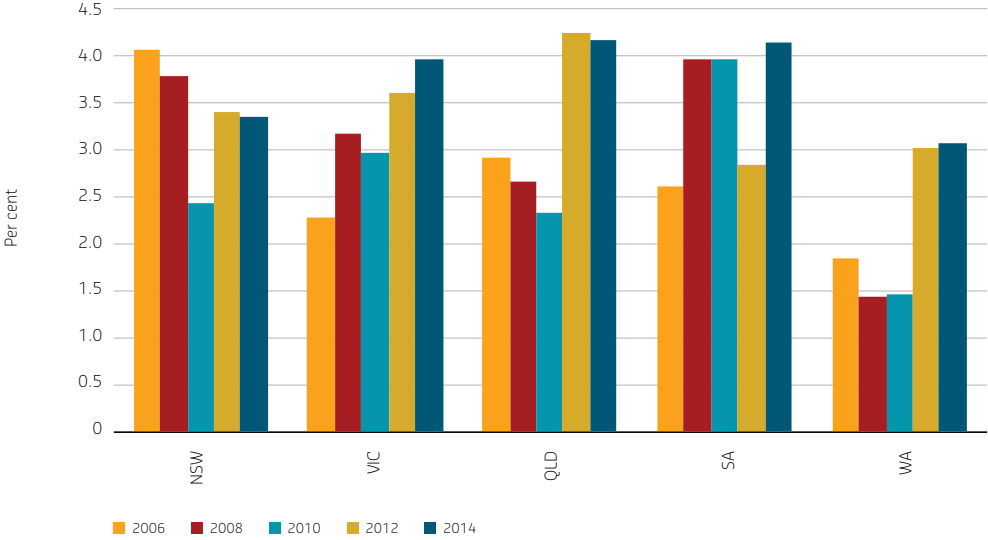


Notes: Tasmania and the territories are excluded from the figure because of small sample numbers.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors calculations using the HILDA Survey

Figure 37 tracks another measure of job insecurity drawn from workers' perceptions of vulnerability to job loss over the period 2006 to 2014. Specifically, the figure shows the percentage of employees in each of the five most populous states who report a greater than 50 per cent chance of losing their job next year. Prior to the tailing off of the resources boom, the share of employees report this level of vulnerability to job loss was the lowest in WA at 1.5 per cent in 2010. By 2012, this share had surged to 3 per cent indicating a rise in feelings of job insecurity in the state.

The share of employees who report more than 50 per cent chance of losing their job in the next year has doubled from 1.5 to 3 per cent between 2010 and 2012.

Figure 37 Share of employees who report more than 50 per cent chance of losing their job next year across the five most populous states, 2006 to 2014, per cent



Notes: Tasmania and the territories are excluded from the figure because of small sample numbers.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors Calculations on HILDA

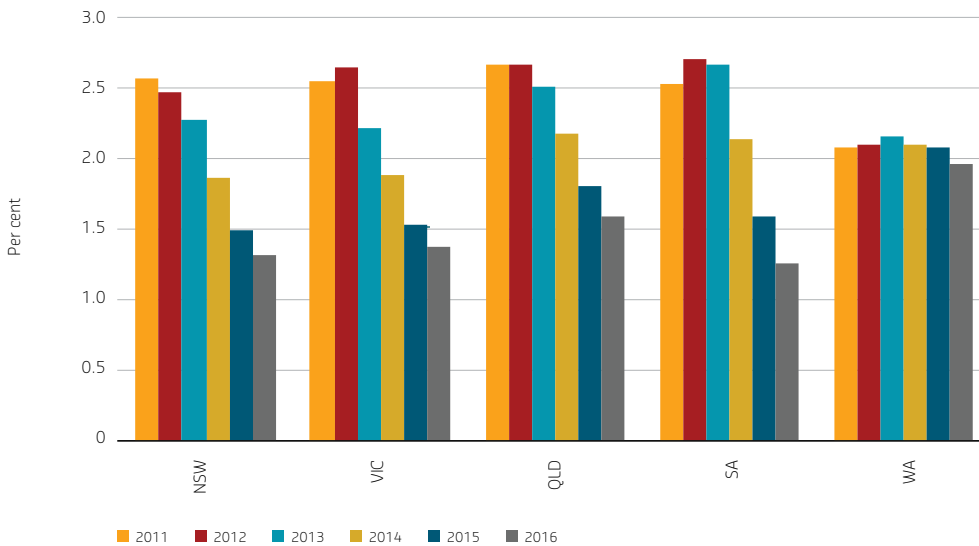
The demand for industry training

During an economic downturn, competition for job vacancies is high and this may sharpen incentives to undertake additional training or education than during periods of economic boom when job opportunities are abundant. This section documents trends in industry training to offer an indication of whether trends in industry training have shifted in recent years in WA compared to other states and territories.

Figure 38 captures a per capita measure of industry training, that is, it shows the ratio of the number of individuals undertaking industry training in each year to the number of people of working age (aged 15 years and over) in the same year. WA stands out as having very different industry training patterns in recent years compared to the other states. While the per capita measure of industry training has clearly declined in all other states between 2011 and 2016, it has remained relatively constant in WA at around 2 per cent. While the per capita measure of industry training was the lowest in WA among all the states in 2011, it was the highest in 2016 as a result of the decline in industry traineeships being undertaken in other states. The findings suggest that the incentive to undertake industry training may have been higher in WA than other states in recent years as job opportunities associated with the resources boom dissipated.

The per capita measure of industry training has remained constant at 2 per cent in WA compared with a decline in other states. In 2011, the per capita measure of industry training was the lowest in WA. By 2016, it was the highest in WA.

Figure 38 Ratio of individuals undertaking industry training to number of people of working age in each of the five most populous states, 2011 to 2016, per cent

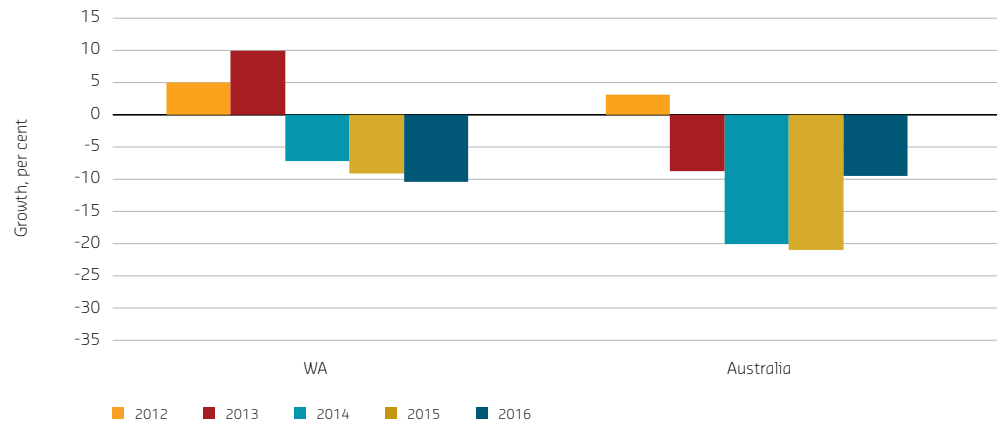


Source: BANKWEST CURTIN ECONOMICS CENTRE | NCVER Australia and AUSTRALIAN BUREAU OF STATISTICS Cat. No. 6202.0

In both the state and nation, the growth in new trainees has been negative in recent years, indicating a decline in the number of new traineeships offered.

While individuals may be more inclined to take up additional training during periods of economic downturn, businesses may be less willing to offer new training opportunities due to the associated training costs involved. Figure 39 captures the growth in the number of traineeship commencements in each year in WA and Australia. In both the state and nation, the growth in new trainees has been negative in recent years, indicating a decline in the number of new traineeships offered. However, in WA the growth of new traineeships has continued to decline further into the negative while the new traineeship opportunities on offer in Australia seems to be recovering as of 2016.

Figure 39 Growth in new trainees in WA versus Australia, 2012 to 2016



Notes: Tasmania and the territories are excluded from the figure because of small sample numbers.
Source: BANKWEST CURTIN ECONOMICS CENTRE | NCV ER Australia

Should I stay,

or should I go? Migration flows
after the boom

Introduction

During the peak of the boom, worldwide demand, particularly from China, fed the resource industry and Western Australia gained a large influx of population as people flowed in from both within and outside Australia to seek their fortune. Indeed, during the first decade of the new millennium, Western Australia's population expanded by nearly 30 per cent.

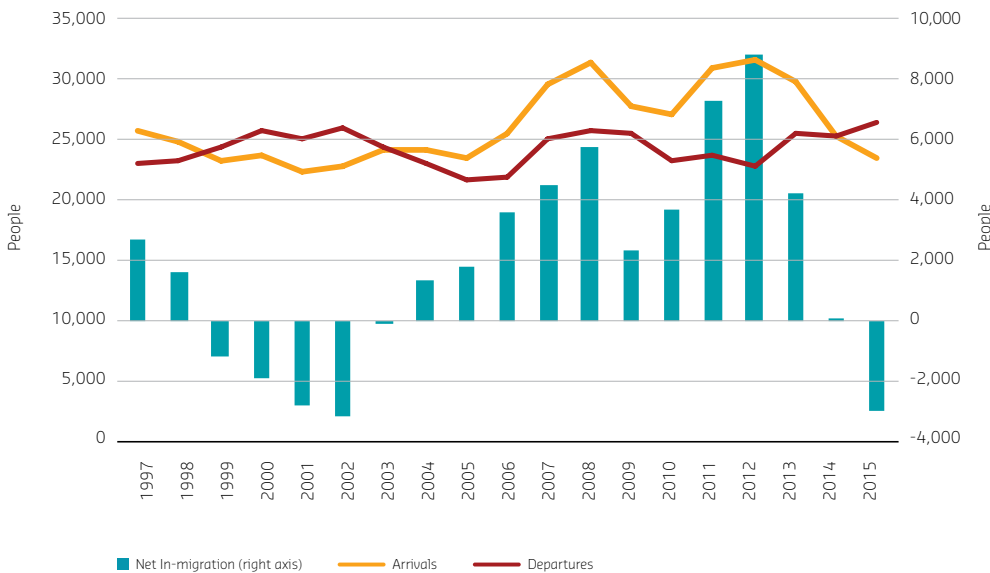
With the decline in mining production, there are signs of shifts in the patterns and directions of migration flows both into and within the state. This section examines the dynamics of these migration flows. We examine both interstate and overseas migration flows to WA. In addition, intrastate migration flows are analysed to highlight regions in Western Australia that have suffered the most from a migration outflow since the slowdown in the resources sector. The analysis in this chapter also uncovers implications of recent economic trends in WA for 457 visa grants.

Interstate migration flows

Having previously enjoyed significant net gains in the population from other states and territories during the mining boom, Western Australia has been suffering from a net loss in interstate migration in more recent years. As indicated in Figure 40, interstate arrivals aged 15-64 years has dropped and the departures have risen since 2012. In 2012, net interstate migration to Western Australia peaked at 8,898 but has been on a steep downward trend since then. Net migration numbers halved to 4,000 between 2012 and 2013. In 2014, net migration was nearly zero and in 2015, Western Australia lost 3,005 residents aged 15-64 to other states and territories. This is the steepest decline in net interstate migration that WA has experienced in decades.

Western Australia is experiencing the steepest decline in net interstate migration in decades. WA's migration numbers dipped from a net inflow of 8,898 in 2012 to a net outflow of 3,005 in 2015.

Figure 40 Interstate migration to WA, persons aged 15-64 years, 1997 to 2015



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 3412.0

Figure 41 plots the interstate migration flow to WA by the state or territory of origin in the most recent five years for which data is available. The year 2012 was a 'peak' year for interstate migration to WA from most other states and territories. Since then, the net number of migrants from most other states and territories has dropped. This has been primarily due to a decline in arrivals paralleled with a rise in departures from WA over the years. The greatest changes observed during this five-year period are the net migration flows between Victoria and Western Australia, and between New South Wales and Western Australia. In 2012, WA gained 2,328 arrivals from Victoria but lost 2,667 to Victoria in 2015. In 2012, New South Wales was the state from which WA received its largest net migration flow of 3,644 persons. However by 2015, WA had suffered a net loss of 883 migrants to New South Wales. South Australia and the Northern Territory are the only two states that suffered a net loss of migrants to WA in 2015.

Figure 41 Interstate migration to WA, by state or territory of origin, 2011 to 2015



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 3412.0

Overseas migration flows

Like interstate migration, it is clear that overseas migration to WA has been on the decline with a steadily growing number of departures. The trend with respect to overseas arrivals is more volatile. But Western Australia is still a winning receiver from overseas migration. Overall, however, WA still experienced a net gain in overseas migration during the last decade, and this has remained at a more or less consistent net level of 200,000 persons since 2010.

During 2012-2014, the number of temporary visa holders more than halved from 27,090 to 12,130 and the net number of New Zealand Citizens moving to WA dived from 9,330 to 650.

Figure 42 Overseas migration to WA, 2007 to 2015



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 3412.0

Table 6 documents the net overseas migration numbers to WA by visa type between 2005 and 2014. Net overseas migration of permanent visa holders has been stable in the past 3 years, but the number of temporary visa holders more than halved from 27,090 to 12,130 between 2012 and 2014. Significant change can also be found in the flow of New Zealand citizens and Australian citizens. The net number of New Zealand Citizens moving to Western Australia dived from 9,330 in 2012 to 650 in 2014. Between 2013 and 2014, 2,960 Australian citizens living in WA moved overseas, which is the highest loss of Australian citizens in a decade.

During the post-boom period 2012-14, the number of skilled migration visa holders in WA fell from 7,960 to 7,220 and temporary visa holders dropped from 10,940 to just 820.

Table 6 Net overseas migration to WA, by visa type, 2005 to 2014

	Permanent visa	Temporary visa	New Zealand Citizen (subclass 444)	Australian Citizen	Other visas
2005	9,280	10,030	2,110	-1,590	-630
2006	10,860	13,560	2,650	-1,020	-520
2007	12,450	17,730	3,550	-1,290	-1,040
2008	12,820	24,580	5,950	-1,210	-950
2009	12,560	25,590	5,290	420	480
2010	10,010	13,120	3,140	-270	2,880
2011	8,840	17,530	6,480	-220	3,800
2012	11,970	27,090	9,330	-1,030	5,850
2013	12,140	23,100	6,290	-940	7,410
2014	11,140	12,130	650	-2,960	-1,640

Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 3412.0

More than half of permanent visa migration to WA is comprised of skilled migration in which visa are granted in a targeted manner to applicants based on demand for their skills set in Australia (see Table 7). The annual number of permanent visas granted has undergone two cycles, peaking at around in 2008 just before the GFC and in 2013 just as the WA was beginning to slow down. As the economy has slowed, the number of permanent visas grants has been on a mild decline from 12,140 to 11,140. Between 2012 and 2014, the number of skilled migration visa holders fell from 7,960 to 7,220. At the same time, the net number of temporary skill work visa holders has reduced from a peak of 10,940 in 2012 to just 820 in 2014 (see Table 8). On the other hand, due to a depreciation in the Australian dollar, a growing number of education related temporary visa holders and visitors came to Western Australia in the past 4 years.

Table 7 Net overseas migration to WA on permanent visas, by visa type, 2005 to 2014

	Total	Family	Skill	Special Eligibility and humanitarian	Other permanent visas
2005	9,280	2,340	5,390	1,760	-210
2006	10,860	2,500	7,090	1,360	-90
2007	12,450	2,720	8,130	1,670	-70
2008	12,820	2,830	8,570	1,430	0
2009	12,560	3,070	7,850	1,700	-60
2010	10,010	3,190	5,850	1,160	-180
2011	8,840	3,340	4,770	800	-70
2012	11,970	3,390	7,960	750	-120
2013	12,140	3,750	7,920	540	-60
2014	11,140	3,280	7,220	840	-190

Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 3412.0

Table 8 Net overseas migration to WA on temporary visas, by visa type, 2005 to 2014

	Total	Vocational Education and Training	Higher education	Other student	Temporary work skilled (subclass 457)	Visitor	Working Holiday	Other temporary visas
2005	10,030	420	1,920	1,200	2,110	2,670	970	750
2006	13,560	400	1,610	1,000	5,480	3,140	1,500	430
2007	17,730	1,020	2,400	1,380	7,090	3,890	1,820	130
2008	24,580	1,530	4,740	1,810	9,800	4,330	2,770	-390
2009	25,590	3,450	4,770	1,730	9,490	3,560	3,480	-880
2010	13,120	1,820	2,580	1,380	2,890	3,440	2,470	-1,460
2011	17,530	150	1,380	1,280	5,640	4,300	6,030	-1,250
2012	27,090	530	1,240	1,190	10,940	5,240	9,220	-1,260
2013	23,100	470	2,390	1,240	7,270	5,220	8,380	-1,860
2014	12,130	710	3,360	1,320	820	4,210	3,810	-2,090

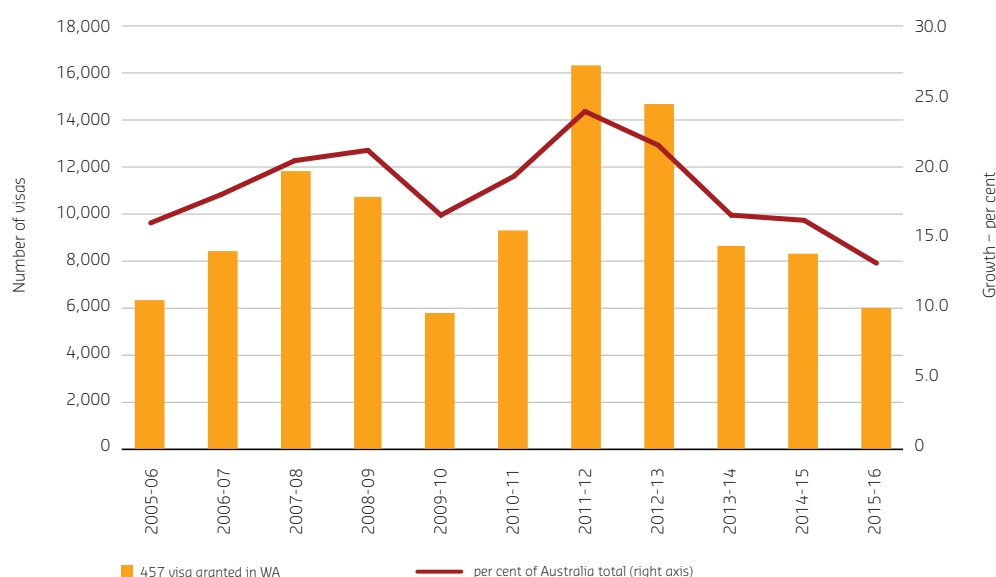
Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 3412.0

Temporary skilled visa workers

The number of 457 visa grants to primary applicants located in WA dipped from nearly 17,000 (25 per cent of the total granted in Australia) in 2011-12 to just 6,000 (10 per cent) in 2015-16.

The 457 visa was introduced to enable businesses to sponsor highly skilled workers, with the aim of contributing to productivity growth in Australia. Initially, the 457 visa was largely used to facilitate the temporary entry of highly-skilled senior executives and specialists. In the 2000s, the use of the 457 programme was expanded to a broader range of skilled occupations to address skill shortages in the trad occupations within the Australian labour market. As can be observed in Figure 43, the number of 457 visa grants to primary applicants located in WA peaked at nearly 17,000 in 2011-12. This accounted for nearly one-quarter of 457 visas granted in Australia in that year. After 2011, the number of 457 visas granted to primary applicants based in WA has dipped to around 6,000 in 2015-16 or just 10 per cent of the total granted in Australia in that year.

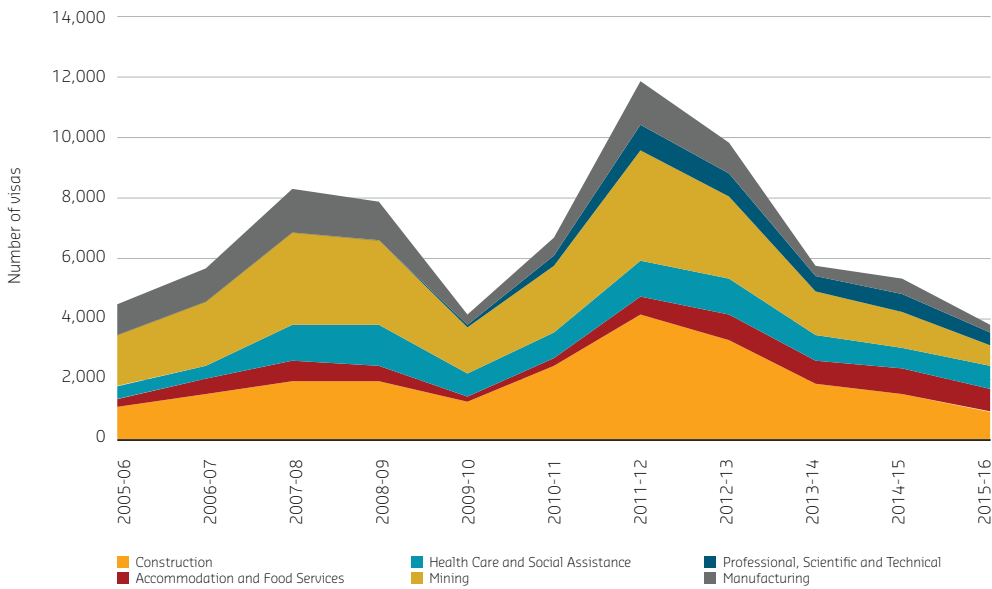
Figure 43 Number of 457 visas granted to primary applicants located in WA, 2005-06 to 2015-16



Source: BANKWEST CURTIN ECONOMICS CENTRE | DEPARTMENT OF IMMIGRATION AND BORDER PROTECTION

Figure 44 documents the number of 457 visas granted to workers in key industries in WA in the last decade. The numbers of 457 visas granted to workers in mining and construction industries peaked at 4,095 and 3,631 respectively in 2011-12. However, by 2015-16, the number of 457 visas granted to workers in these industries in WA had dipped by nearly 3,000 per industry by 2015-16. Indeed, there has been a decline in 457 visas granted to workers in WA in nearly every other industry although not to the same extent as in the mining and construction industries. The exceptions are Accommodation and food services and Agriculture, forestry and fishing where the number of 457 visas to workers in WA rose slightly.

Figure 44 Number of 457 visa grants in WA, by top six sponsor industries, 2005-06 to 2015-16

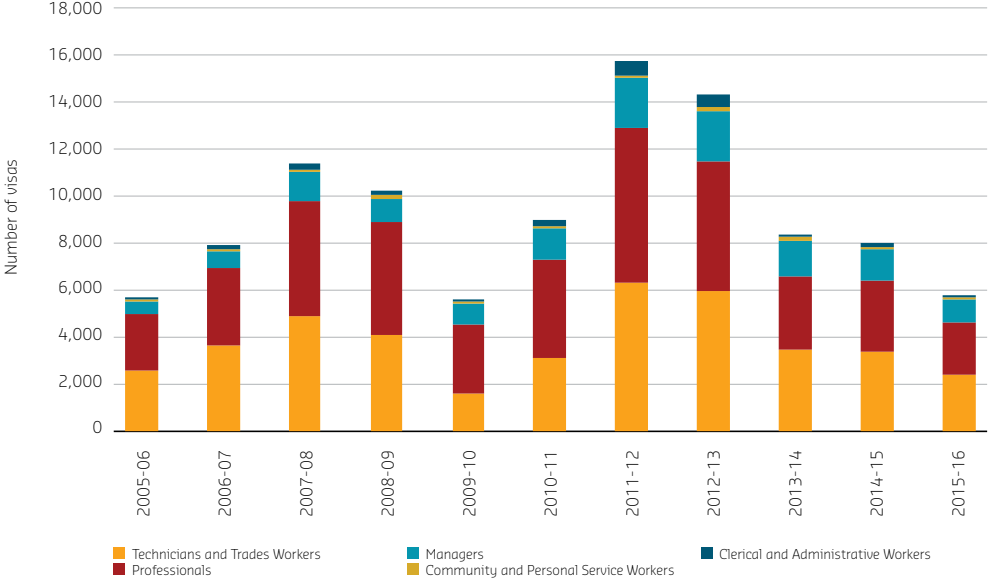


The number of 457 visas granted to workers in the WA mining and construction industries fell by around 3,000 per industry between 2011-12 and 2015-16.

Source: BANKWEST CURTIN ECONOMICS CENTRE | DEPARTMENT OF IMMIGRATION AND BORDER PROTECTION

About 80 per cent of 475 visa granted applicants are Technicians, trade workers or Professionals. As shown in Figure 45, the number of 475 visas granted for these two occupations combined was 12,925 in 2011-12 but only 4,670 in 2015-16.

Figure 45 Number of 457 visa grants in WA, by top five occupations, 2005-06 to 2015-16



Source: BANKWEST CURTIN ECONOMICS CENTRE | DEPARTMENT OF IMMIGRATION AND BORDER PROTECTION

Regional migration in WA

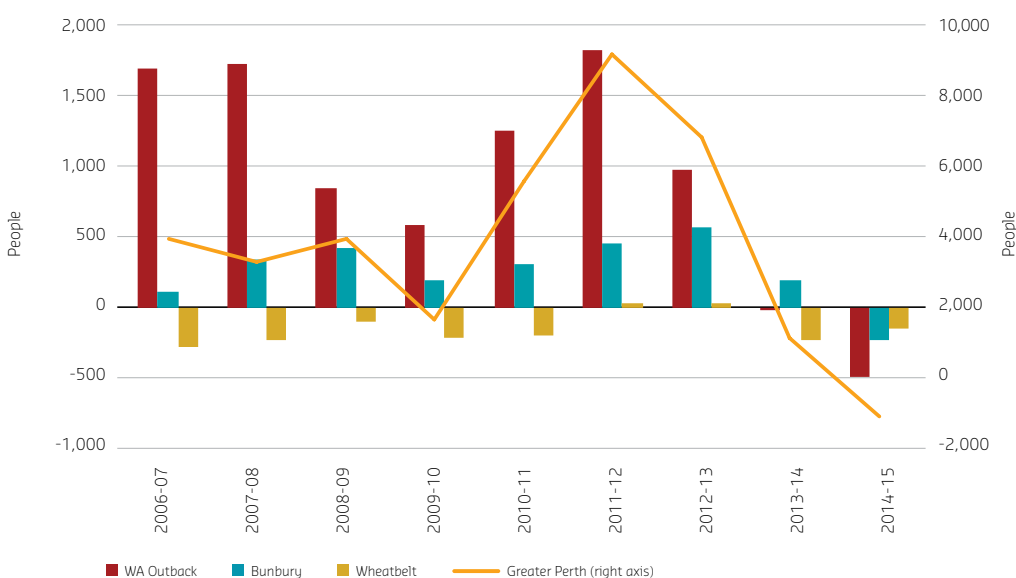
This section takes a closer look at migration flows to different regions within WA in recent years. First, we analyse patterns of net interstate migration to WA regions in Figure 46. Greater Perth and Bunbury have consistently been 'winners' in interstate migration between 2006-07 and 2013-14. Net interstate migration to the WA Outback was positive till 2012-13 before turning negative in 2013-14. The Wheatbelt region tended to suffer a net loss of migrants during the timeframe. By 2014-15, all four regions were experiencing a net loss in interstate migration.

Turning next to intrastate migration flows (see Figure 47), it can be observed that urban areas i.e. Greater Perth and Bunbury experienced net gains while and the remote WA Outback have lost 2,000 to 3,000 migrants annually to other regions within WA since 2007-08. Furthermore, net out-migration from the WA Outback has grown since 2011-12. On the other hand, while the Wheatbelt region lost 1,008 people to other regions in 2010-11, the loss of population has since eased and indeed the Wheatbelt region has been experiencing a net gain in intrastate migrants since 2013-14.

Finally, it can be observed from Figure 48 that the number of 457 visas granted to applicants based in the resource-rich Pilbara region has declined from over 1,600 to around 440 between 2011-12 and 2015-16 – a nearly 75 per cent decline. This is the largest recorded decline in the number of 457 visa grants in a statistical division in regional WA since the tailing off of the resources boom. The only other statistical division with a larger decline is Perth, where the number of 457 visas granted fell from around 12,000 to 5,000 – although this amounts to a smaller percentage decline of 61 per cent.

The WA Outback has lost 2,000 to 3,000 migrants annually to other regions within WA since 2007-08. In contrast, the Wheatbelt region has been experiencing a net gain in intrastate migrants since 2013-14.

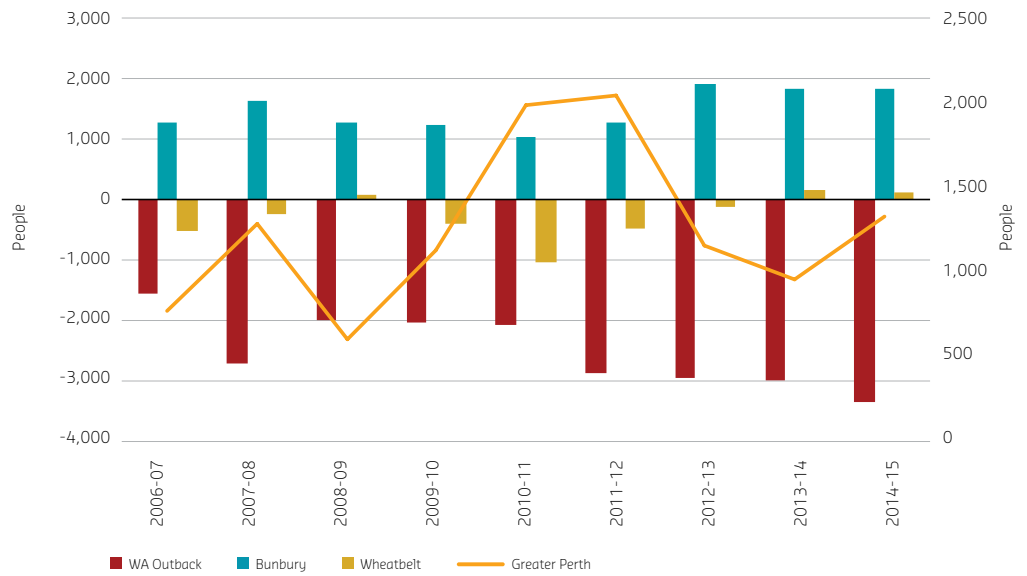
Figure 46 Net interstate migration to WA regions, 2006-07 to 2014-15



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 3412.0

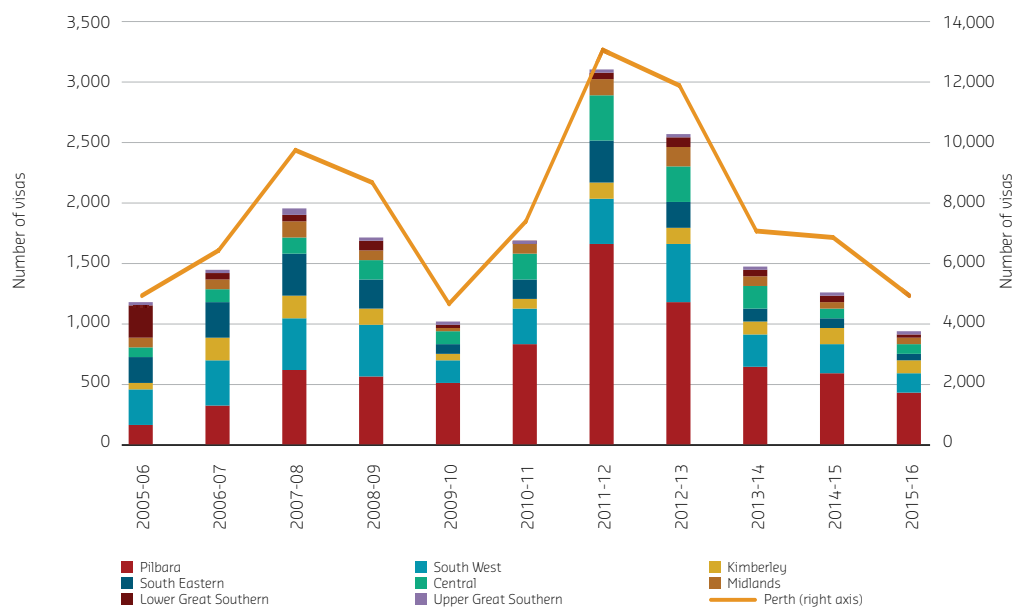
Since the tailing off of the resources boom, the Pilbara region has experienced the largest decline in the number of 457 visa grants among all statistical divisions in regional WA.

Figure 47 Net intrastate migration across WA regions, 2006-07 to 2014-15



Source: BANKWEST CURTIN ECONOMICS CENTRE | AUSTRALIAN BUREAU OF STATISTICS Cat. No. 3412.0

Figure 48 Number of 457 visa grants in WA, by statistical division, 2005-06 to 2015-16



Source: BANKWEST CURTIN ECONOMICS CENTRE | DEPARTMENT OF IMMIGRATION AND BORDER PROTECTION

WA'S

industrial landscape
after the boom

Introduction

It has long been accepted that WA's prolonged economic growth in the last decade has been primarily driven by the growth in the resources sector. The mining industry has traditionally been a key contributor to the WA economy. This chapter appraises the post-boom contribution of the mining industry to the state's economy relative to other industries including agriculture, manufacturing, construction, financial and insurance services, electricity, gas, water and waste services, wholesale trade, retail trade, accommodation etc.

The analysis in this chapter uncovers the extent to which industry diversification has taken place outside the resources sector since its growth slowed. Are the contributions of non-resource industries growing in importance to the WA economy and if so, which industries are growing in prominence? Has the dominance of the mining industry to the WA economy weakened in the post-boom period, or is it likely to retain its long-standing position as the key contributor to economic growth in the state?

To shed light on these questions, we compare gross value added (GVA) estimates across industries to gauge each industry's relative contribution to the state's output. The GVA is typically used to describe the contribution of each industry to the gross product of the economy. It measures each industry's output value at basic prices less its intermediate consumption value at purchasers' prices (Australian Bureau of Statistics, Cat. 5204.0). The contribution of each industry to the state's employment is also estimated and an appraisal is made of the extent to which each industry's relative contribution has shifted since the slowdown of the resources sector.

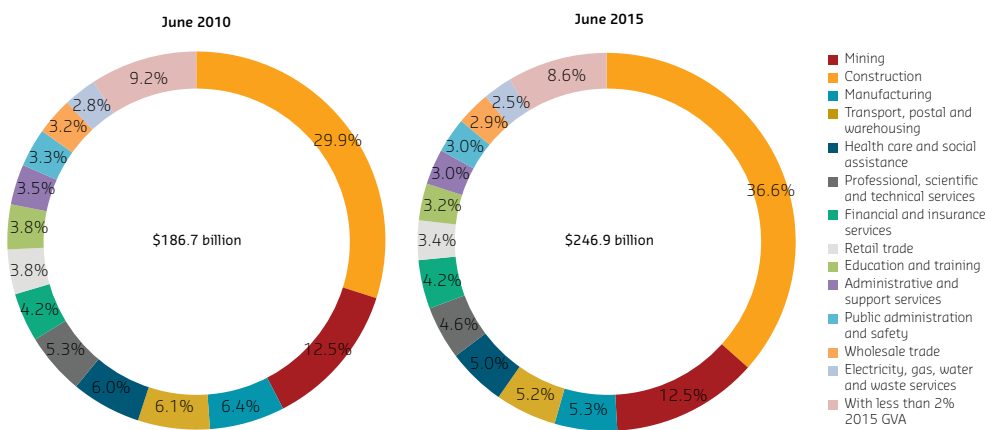
Industry contributions to economic growth in WA

Figure 49 displays the percentage contribution of each industry to the state's output based on GVA measures. The sum of GVA across all industries was \$247 billion in 2015 compared to \$186 billion in 2010. By comparing each industry's share of GVA in 2010 and 2015, we are able to assess the extent to which each industry's contribution to the state's output has changed since the slowdown of the resources sector.

A comparison of industry GVA shares across both years suggests that the slowdown of the resources sector has done little to alter the distribution of GVA across industries. The mining industry continues to maintain its dominance in the WA economy, contributing about 37 per cent and 30 per cent of GVA in 2015 and 2010 respectively. The second largest industry is still the Construction industry, capturing around 13 per cent of GVA in both years. This is followed by Manufacturing, Transport, postal and warehousing, and Health care and social assistance, with each of these industries contributing to around 5 to 6 per cent of GVA in both years. On the other hand, industries that feature strongly in the tourism sector – Accommodation and food services, Retail trade, and Arts and recreation services – together made up only 5.4 per cent of total GVA in 2010 and this contribution has shrunk slightly to 4.9 per cent in 2015.

The mining industry continues to maintain its dominance in the WA economy, contributing about 37 per cent and 30 per cent of GVA in 2015 and 2010 respectively.

Figure 49 Percentage contribution of each industry to GVA in WA, 2010 and 2015, per cent



Notes: Ownership of dwellings is excluded from the GVA. Industries that made less than 2 per cent contribution to GVA in 2015 are grouped together.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Australian Bureau of Statistics Cat. No. 5220.0

In Figure 50, each industry's GVA growth rate in 2009-10 is displayed in horizontal axis, and plotted again its GVA growth rate in 2014-15 on the vertical axis. The relative size of the bubbles reflects the relative size of each industry's GVA in 2014-15. For instance, the bubble representing the mining industry is the largest because the mining industry generated the highest amount of GVA of 90,278 million in 2014-15, more than any other industry in that year.

The figure is divided into four quadrants. Industries in the blue upper right quadrant are those which experienced positive growth in both timeframes. Most industries

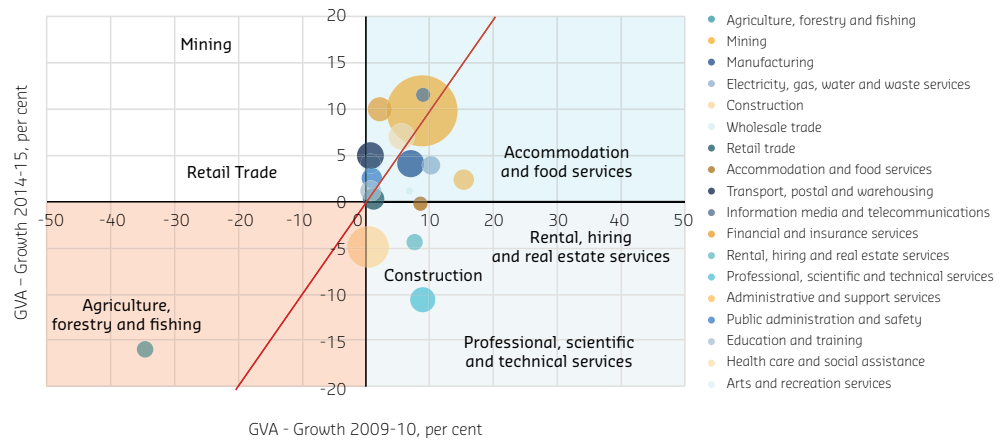
Accommodation and food services, Retail trade, and Arts and recreation services together made up only 5.4 per cent of total GVA in 2010 and this has shrunk to 4.9 per cent in 2015.

including the mining industry have experienced positive GVA growth in both timeframes despite the economic slowdown in the state. The red line is a 45-degree line that offers an indication of whether an industry's GVA growth in 2014-15 was greater or lower than its GVA growth in 2009-10. The bubble representing the mining industry is approximately located on the 45-degree line, indicating that this industry in fact experienced similar GVA growth rates in both years.

The pink lower left quadrant captures industries that have experienced negative GVA growth in both 2009-10 and 2014-15. The only industry in this quadrant is agriculture, forestry and fishing; its negative growth rate doubled from -16 per cent in 2009-10 to -32 per cent in 2013-14.

The yellow bottom right quadrant captures industries that had positive GVA growth in 2009-10 but experienced negative GVA growth in 2014-15 as the resources boom tailed off. Two industries fall into this quadrant – the rental, hiring and real estate industry, and professional, scientific and technical services. The construction industry's GVA growth rate fell from zero per cent in 2009-10 to -5 per cent in 2014-15.

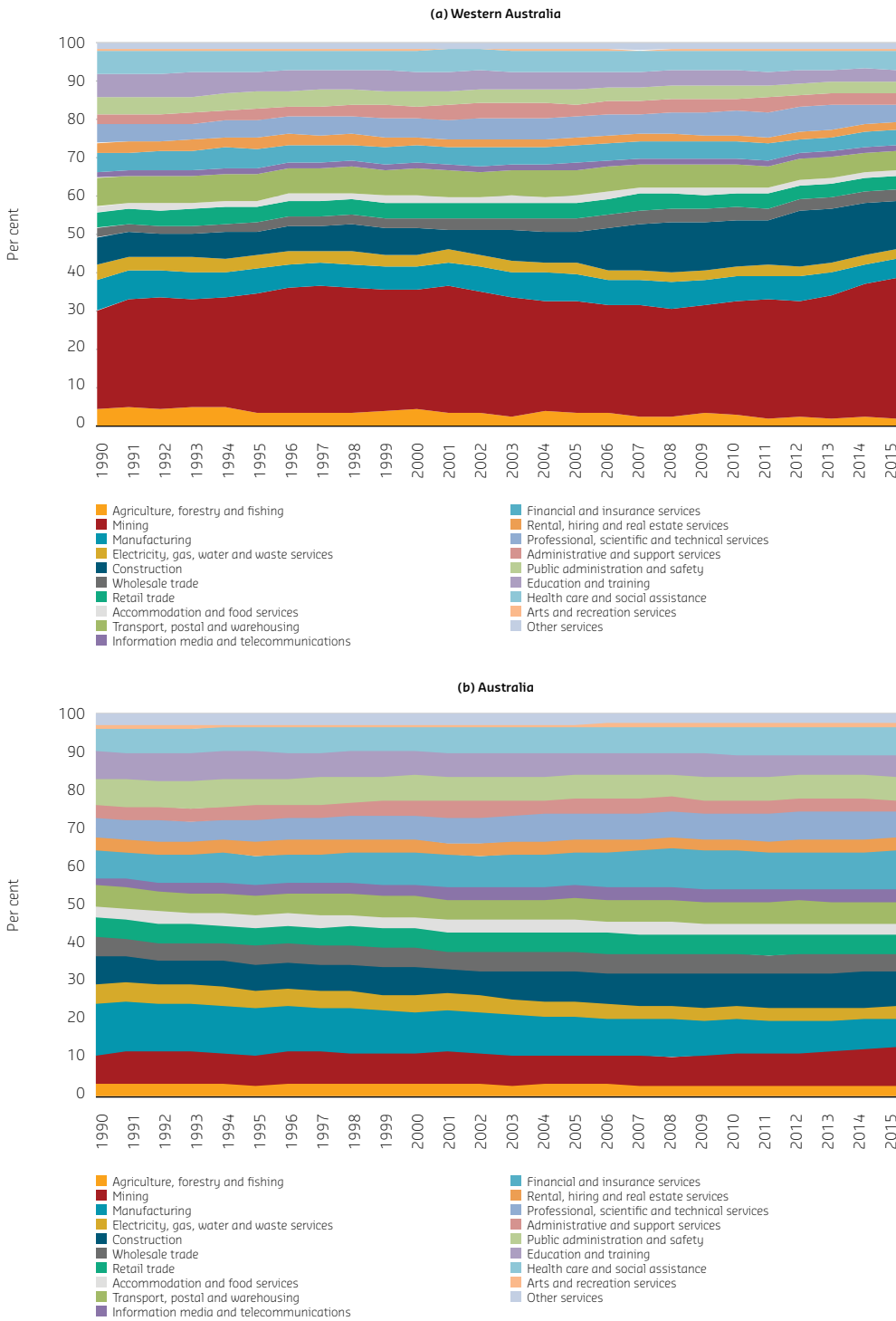
Figure 50 Growth in industry GVA in WA, 2009-10 and 2014-15, per cent



Notes: Ownership of dwellings is excluded from the GVA.
 Source: BANKWEST CURTIN ECONOMICS CENTRE | Australian Bureau of Statistics Cat. No. 5220.0

Time trends of each industry's proportional GVA for Western Australia and Australia are plotted in Figure 51 to shed light on longer term changes in each industry's GVA share in the state and nation. As indicated by the red shaded area, mining has clearly been a dominant industry in WA and its share has increased from around 25 to 37 per cent between 1990 and 2015. However, on an Australia wide basis, the share of mining has only increased very mildly from around 7 to 9 per cent. Over this period, the construction industry's share has also expanded from 7 to 12 per cent in Western Australia, a noticeably larger expansion than for Australia. On the other hand, the share held by the manufacturing industry has shrunk from 12 to 7 per cent in Australia, but it has only diminished slightly from 8 to 5 per cent in WA.

Figure 51 Industry contribution to GVA, WA versus Australia, 1990 to 2015, per cent



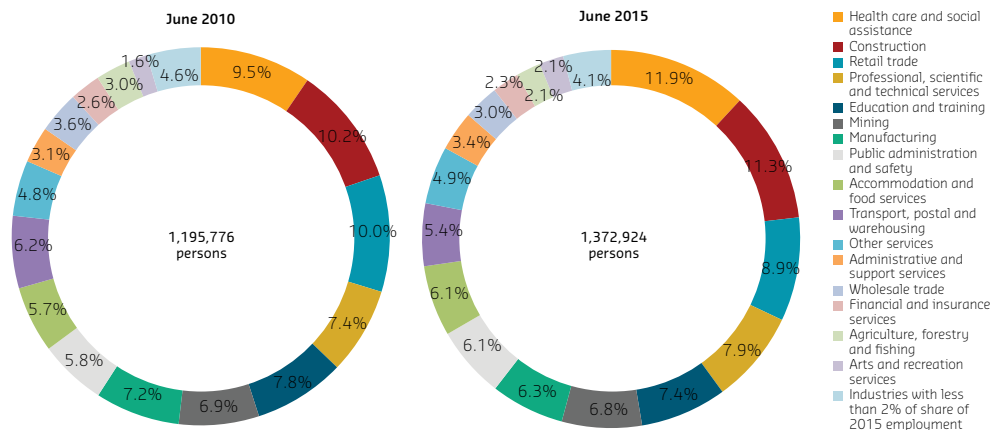
Notes: Ownership of dwellings is excluded from the GVA.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Australian Bureau of Statistics Cat. No. 5220.0

Employment trends across WA industries

In addition to GVA, the contribution of each industry to the WA economy can also be measured by its contribution to total employment in the state. Figure 52 displays the percentage contribution of each industry to the state's employment. The total number of persons employed across all industries was 1.4 million in 2015 compared to 1.2 million in 2010. By comparing each industry's share of employment in 2010 and 2015, we are able to assess the extent to which each industry's contribution to the state's employment has changed since the slowdown of the resources sector.

While the mining industry was the primary contributor to the state's GVA in 2015, it accounted for only 7 per cent of the state's employment in that year. The Construction, Health care and social assistance, and Retail trade industries are more labour intensive, with each accounting for around one-tenth of the state's employment in 2015. Once again, a comparison of employment shares across both years suggests that the slowdown of the resources sector has done little to alter the distribution of employment across industries.

Figure 52 Percentage contribution of each industry to employment in WA, 2010 and 2015, per cent



Source: BANKWEST CURTIN ECONOMICS CENTRE | Australian Bureau of Statistics Cat. No. 6291.0.55.003

The slowdown of the resources sector has done little to alter the distribution of employment across industries.

To derive a clearer picture of the interactions between the growth in employment and GVA since the state's economic slowdown, we plot each industry's 2014-15 employment growth rate on the vertical axis against the GVA growth rate on the horizontal axis in in Figure 53. The relative size of each bubble represents the relative share of GVA from each industry in 2014-15. Industries found above the 45 degree line are those that experienced a higher employment growth rate than GVA growth rate in 2014-15. Industries below the 45 degree line are those that experienced a higher employment growth rate than GVA growth rate in 2014-15.

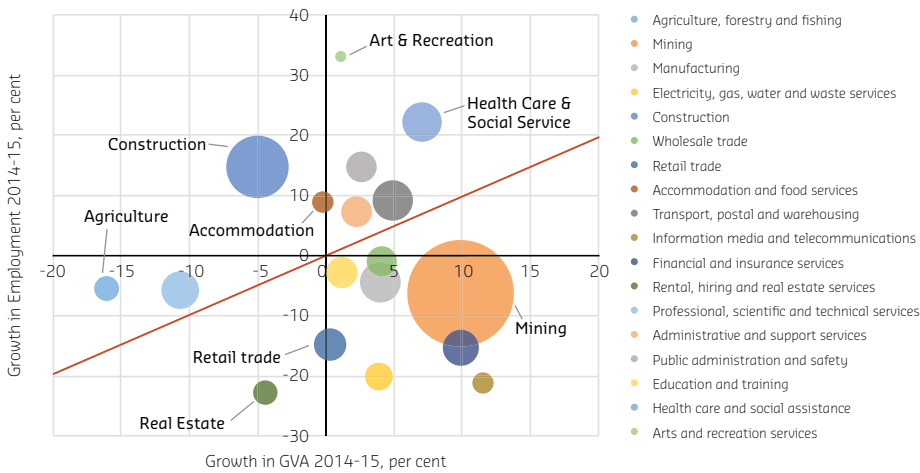
Health care social assistance and and Arts and recreation services are two industries with highest growth in employment while they also had an increase in their GVA. In the opposite side, Real estate services has shrunk both in terms of employment and GVA. ICT and Utilities also had negative growth in employment but their GVA has

increased. Situation for Agriculture and Professional services are almost the same, negative growth in both dimensions, although agriculture has shrunk more in terms of GVA.

Importantly, while the Mining industry experienced a positive GVA growth rate of 10 per cent in 2014-15, its employment growth rate was pretty much static in the same year. On the other hand, the Construction industry experienced a higher employment growth rate than GVA growth rate. The Agriculture, forestry and fishing industry experienced a decline in both employment and GVA, but the decline was greater in the case of GVA than employment. Other industries of interest include Health care and social services and Arts and recreation, which displayed the highest employment growth rates in 2014-15 while also increasing their GVA. In contrast, the Real estate services industry shrunk in terms of both employment and GVA estimates.

Health care and social services and Arts and recreation displayed the highest employment growth rates in 2014-15 while also increasing their GVA.

Figure 53 Growth in industry GVA and employment in WA, 2014-15, per cent



Source: BANKWEST CURTIN ECONOMICS CENTRE | Australian Bureau of Statistics Cat. No. 6291.0.55.003 and Cat. No. 5220.0

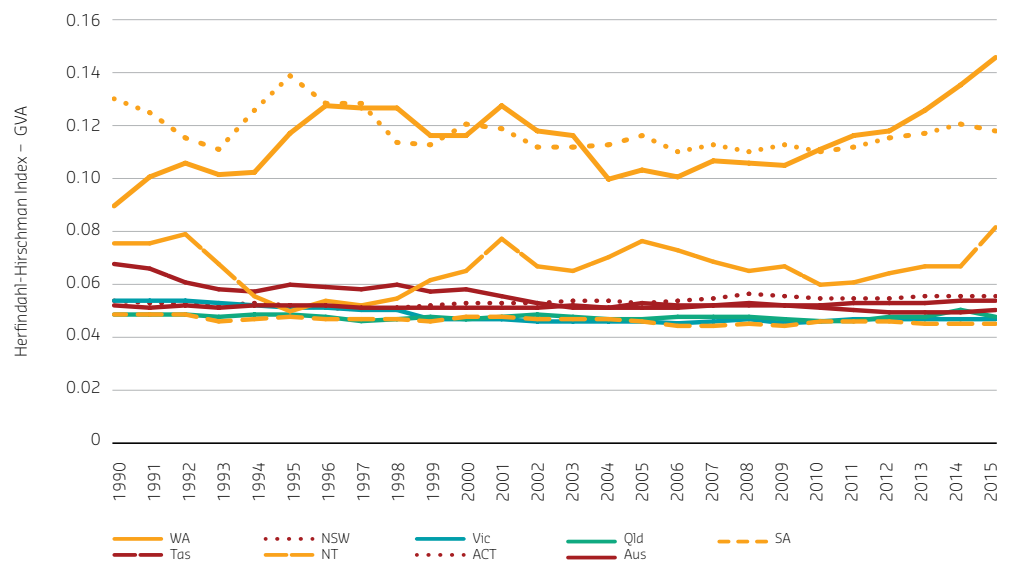
Is WA industry becoming more diversified or more specialised?

The industry profile in WA has become less diversified over the course of the mining boom and throughout the post-boom years.

Next we assess whether Western Australia's industry profile has become more diversified or more specialised over time using a measure known as the Herfindahl-Hirschman Index or HH Index. The HH index is a common measure of market concentration calculated by squaring the market share of each firm in a market, and then summing up the squares (Herfindahl, 1950; Hirschman, 1980). The index ranges from 0 to 1. The higher the index, the more market power is concentrated among a small number of firms. In the present context, a higher HH index indicates a more specialised economy while a lower index indicates a more diversified economy. A rising (declining) index over time indicates that the economy is becoming less (more) diversified over time. As per previous sections, we calculate the index based on two measures – GVA shares and employment shares.

Figure 54 graphically illustrated how the GVA-based HH index has changed between 1990 and 2015 for all states and territories. The trends reveal that in terms of GVA, Western Australia and the ACT consistently display the least diversified industry portfolio over time. However, while the HH index for the ACT has remained relatively stable in recent years at around 0.12, the HH index for Western Australia has been rising since 2004. Between 2004 and 2012, the HH index for WA rose from 0.1 to 0.12 as the industry profile in WA became more specialised over the course of the mining boom. However, while a reversal of this trend might have been expected in the post-boom years, it would appear that the state's industry profile has continued to become more specialised between 2012 and 2015, rising from 0.12 to nearly 0.15 over the three years. In most other states, the HH index has remained relatively stable and low over time at 0.4 to 0.6.

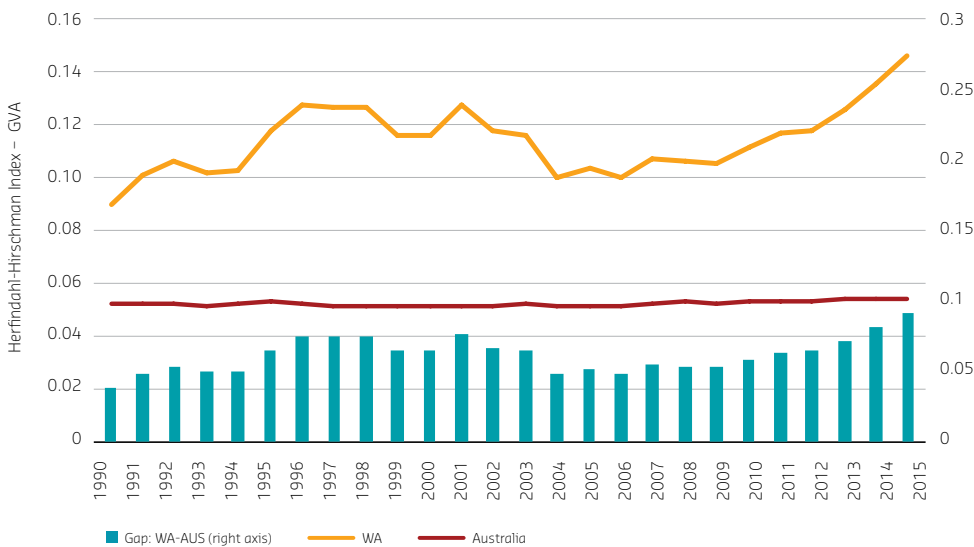
Figure 54 Industry production concentration across states and territories, 1990 to 2015, GVA-based Herfindahl-Hirschman index



Notes: Higher values of the index represent less industry diversification. | Ownership of dwellings is excluded from the GVA.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors Calculations based on Australian Bureau of Statistics Cat. No. 5220.0

The next figure offers a sharper focus on WA by directly comparing the state with Australia, with the bars representing the gap in HH index between the state and nation. It is clear that the Western Australian industry profile has always been more concentrated than Australia overall, in terms of industry GVA. Furthermore, while the GVA-based HH index for Australia has remained more or less static just over 0.5, the index has been on a persistent rise in WA since 2004.

Figure 55 Industry production concentration, WA versus Australia, 1990 to 2015, Herfindahl-Hirschman index



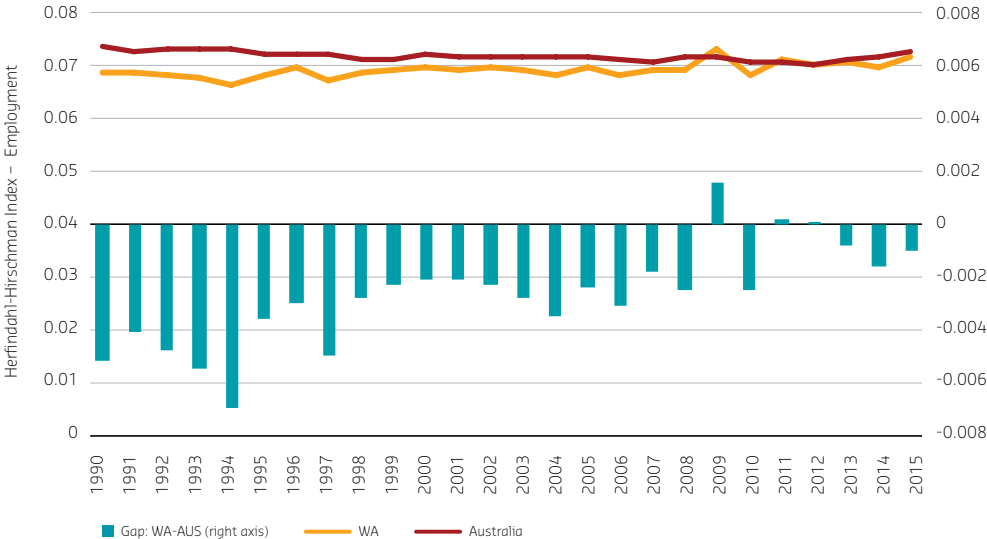
Notes: Higher values of the index represent less industry diversification. Ownership of dwellings is excluded from the GVA.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors Calculations based on Australian Bureau of Statistics Cat. No. 5220.0

Next, we investigate changes in industry concentration over time from the perspective of employment. Figure 56 captures the industry employment diversity in Australia and WA. Higher employment-based HH-index values represent greater employment concentration into a few industries (or less diversity). As can be seen from the figure, the employment-based HH index in both WA and Australia has remained quite static at a relatively high 0.07 since 1990. However, the long-run employment-based HH index for WA has been on a mild incline, from just under 0.07 in 1990 to just over 0.07 in 2015, that is, WA's industry profile is getting slightly more diversified over time in terms of the workforce the industries employ. As indicated by the bars, the gap in industry employment concentration between WA and Australia has been narrowing slightly over time.

The Western Australian industry profile has always been more concentrated than Australia overall in terms of GVA.

WA has similar industry concentration levels as Australia overall, but the state's industry profile is getting slightly more diversified over time in terms of the workforce the industries employ.

Figure 56 Industry employment concentration in Australia and WA, 1990 to 2015, Herfindahl-Hirschman index



Notes: Higher values of the index represent less industry diversification.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors Calculations based on Australian Bureau of Statistics Cat. No. 6291.0.55.003

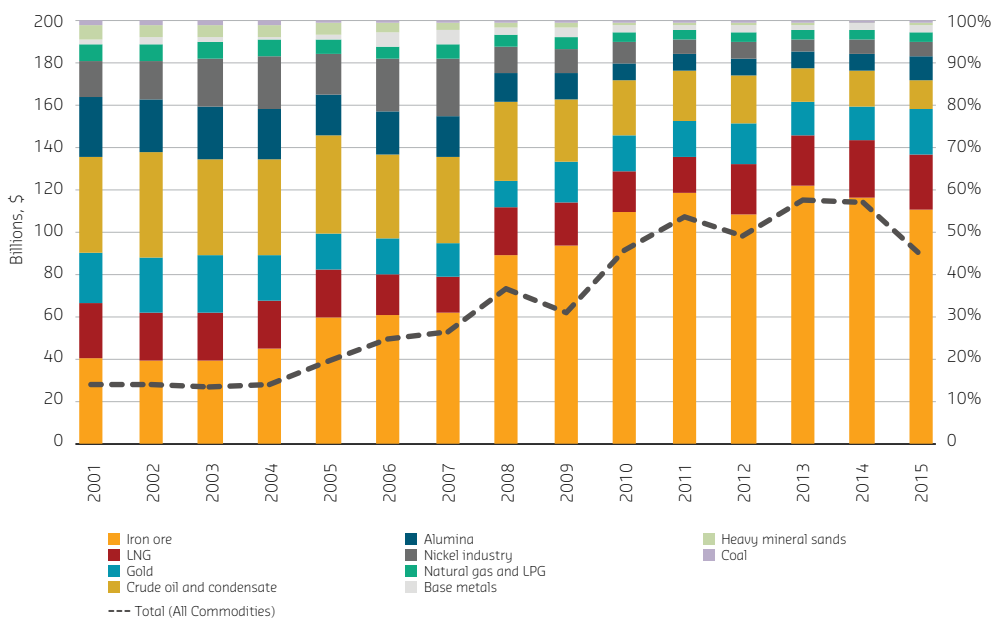
The changing profile of the WA mining industry

The mining industry has clearly continued its dominance in WA despite the recent slowdown in the sector. However, a deeper investigation reveals some interesting trends within the mining industry. Importantly, the mining industry is made up of a diverse range of sub-industries including iron ore, liquefied natural gas (LNG), gold, coal, natural gas and liquefied petroleum gas (LPG), nickel, alumina, crude oil, heavy mineral sands, base metals, etc. The value of the mining industry is not distributed equally across its sub-industries. Indeed Figure 57 shows that the WA mining industry has been dominated by iron ore in recent years. Iron ore has contributed to over half of the value of the mining industry since 2010. In 2015, iron contributed to 55 per cent of the value of the mining industry, followed by LNG (13 per cent) and gold (10 per cent).

The share of iron ore tripled from 20 per cent in 2001 to 61 per cent in 2013. Between 2013 and 2015, the contribution of iron ore to the WA mining industry fell by six percentage points as iron ore prices dropped. At the same time, three sub-industries have expanded their shares – gold, alumina and LNG by three, two and one percentage points respectively. It would appear that while the WA economy has become more specialised over time, some diversification has actually taken place within the mining sector itself.

While the WA economy has become more specialised over time, some diversification has actually taken place within the mining industry.

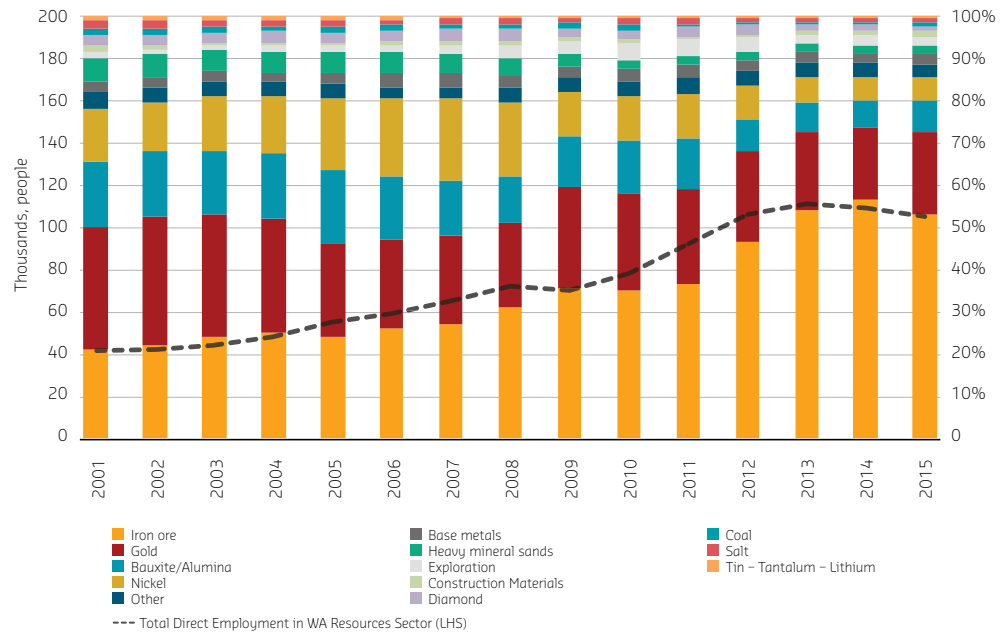
Figure 57 Commodity shares in the mining industry in WA, 2001 to 2015, per cent



Source: BANKWEST CURTIN ECONOMICS CENTRE | WA DEPARTMENT OF MINES AND PETROLEUM

Since 2013, the contribution of iron ore to the WA mining industry has contracted by six percentage points, and this has been replaced by growing contributions by gold, alumina and LNG.

Figure 58 Commodity shares of employment in the mining industry in WA, 2001 to 2015, per cent



Source: BANKWEST CURTIN ECONOMICS CENTRE | WA DEPARTMENT OF MINES AND PETROLEUM

Iron ore has also had the largest share of employment within the mining sector in WA in recent years. In 2015, iron ore accounted for 53 per cent of employment in the mining industry, followed by gold at 20 per cent (see Error! Reference source not found.). It is clear that the distribution of employment across mining sub-industries has changed drastically over the long-term. In 1990, iron ore only accounted for around 21 per cent of employment in the mining industry, below the 29 per cent accounted for by gold. As a result of the expansion in employment in the iron ore sector in recent years, it overtook gold as the primary contributor to the resource sector workforce in WA as its share of employment in the WA mining industry expanded to over 50 per cent while gold's share of employment fell by nine percentage points.

Together, the two key mining sub-industries in WA – iron ore and gold – accounted for half of the workforce in the WA resource sector in 1990. By 2015, the two sub-industries' combined contribution to the WA mining workforce had blown out to 73 per cent. With total employment in resource sector sitting at around 100,000 persons in 2015, this means the iron ore sub-industry employed around 50,000 persons and the gold sub-industry employed around 20,000 people in 2015.

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Summary

and conclusions

A more egalitarian future?

A more egalitarian future?

The resources boom in Western Australia led to an unprecedented growth in employment, wages and economic growth for the state. Demand for skilled workers drew many to Western Australia to share in the state's growth story, and to walk on streets paved with gold towards new economic and lifestyle opportunities.

But high and rising incomes posed risks too, of creating a society of have's and have-not's. Income inequality rose substantially in Western Australia over the course of the resources boom, and by more than for the rest of Australia. Costs of living, especially housing costs, tracked to the rising trend in incomes, not just in Perth but in the resource-rich regional areas of WA. All this meant that the poorest WA households, particularly those reliant on welfare pensions and payments, failed to keep pace even with those on 'typical' median incomes.

Now that WA has passed the height of the resources boom, is there evidence of a reversal in the rising inequality trend? The evidence in this report confirms a fall in overall inequality in Western Australia since 2009-10. Interestingly, most of the action is at the bottom end of the income distribution. The incomes of the poorest 10 per cent of households in Western Australia are now closer to those of the median household. Yet the spread of incomes at the top end of the distribution appears no less unequal than at the end of the boom.

The report also uncovers evidence of a shift away from investment property and towards superannuation. The share of households with property assets fell 2.7 percentage points to 21 per cent overall since 2009-10, while the share of households with superannuation assets has grown 5.5 percentage points to 80 per cent since 2009-10.

In fact, wealth inequality has actually risen slightly in Western Australia in the last two years. The wealthiest 20 per cent of households now account for 65 per cent of all household net wealth, while the poorest 20 per cent hold less than 1 per cent. The gap may be closing at the lower end, but there are no strong signs that we are moving towards a more egalitarian society.

The future of work

This BCEC *Focus on Western Australia* report has highlighted significant shifts in Western Australia's labour market position in recent years, as growth in the resources sector slowed. The post-boom labour market is one characterised by weaker demand, growing precariousness and reduced work hours after a sustained period of strong labour market performance.

While WA has traditionally enjoyed unemployment rates that sit below the national average, for the first time since 2006 the state's unemployment rate surpassed the nation's average in mid-2015. According to the Internet Vacancy Index, job vacancies in the state also dipped below the nation for the first time in a decade in 2015.

West Australians are also working or seeking jobs within an increasingly precarious environment, including those in high-earning occupations. The report findings

indicate that while high skilled and trade occupations have benefited the most from the WA resources boom, demand for these two occupational categories are also more susceptible to the highs and lows of the economic cycle. During the post-resources boom period, job vacancies for managers, professionals and technicians and trade workers plummeted more than other occupations. Importantly, workforce casualisation is on the rise; between 2008 and 2014 the share of casual employees in WA rose from 20.5 to 22.5 per cent and the rate of growth of this casualisation accelerated from -1.5 per cent to 1.5 per cent. The share of employees who report more than 50 per cent chance of losing their job in the next year has doubled from 1.5 to 3 per cent between 2010 and 2012.

The biennial full-time employment rate for both males and females in WA declined from 10 per cent during the boom to a negative growth rate of around 5 per cent in 2016, dipping below the national average after the resources boom. This downward full-time employment trend has been paralleled by a rise in the part-time employment. The statistics show that some of the growth in part-time employment has been largely involuntary in nature. Underemployment has grown at a sharper rate for both males and females in WA than in the rest of Australia since the resources boom tailed off.

There are some distinct gender differences. The growth in part-time employment represents a more pronounced labour market shift for Western Australian females than females in other states and territories. The female underemployment rate is also consistently higher than the male underemployment rate in all years.

Overall, West Australians now face a labour market future that is marked by weaker demand, growing precariousness and reduced work hours. These are at odds with the long-held notion that an individual will secure and sustain long-term full-time employment held over the course of his or her working life until retirement. On the contrary, labour market careers will likely be increasingly insecure. There are strong signals emanating from the labour market that career pathways will be less straightforward; it may be that more and more West Australians will need to hold multiple jobs at any point in time to make up preferred work hours, and multiple job turnovers and career shifts before retirement would not be unusual. According to the BCEC's 2015 report on population ageing (Dockery et al. 2015), growing numbers of baby boomers are extending their working lives through 'blended' retirement transition pathways that involve part-time work. Hence, the competition for part-time jobs by all age groups is likely to grow as businesses reduce the number of full-time jobs on offer.

A changing industrial landscape?

Much has been made in policy and media commentary about the growing diversification of the West Australian economy following the end of the resources boom. Industries outside the mining sector, such as tourism and agriculture, are being looked to as potential new 'growth' sectors that are positioned to replace the mining sector as the primary driver of the state's economic growth.

The post-boom labour market is one characterised by weaker demand, growing precariousness and reduced work hours after a sustained period of strong labour market performance.

There are strong signals emanating from the labour market that career pathways will be less straightforward, more and more West Australians will need to hold multiple jobs at any point in time to make up preferred work hours, and multiple job turnovers and career shifts before retirement would not be unusual.

Mining contributes to be the primary contributor to the state's GVA. The report's findings contradict commonly mooted propositions that the tourism industry will contribute growing shares of GVA and employment as the resources economy slows.

The slow growth of industries that are particularly important to regional economies raises important questions around the degree to which the state's regional economic blueprints coordinated with state development plans to deliver the best outcomes for WA.

However, our report dispels any notion that the mining industry has receded in importance to the WA economy. Indeed, the slowdown of the resources sector has done little to alter the distribution of GVA across industries. The mining industry continues to maintain its dominance in the WA economy, contributing about 37 per cent and 30 per cent of GVA in 2015 and 2010 respectively. The second largest industry is still the Construction industry, capturing around 13 per cent of GVA in both years, followed by Manufacturing, Transport, postal and warehousing, and Health care and social assistance, with each of these industries contributing to around 5 to 6 per cent of GVA in both years. On the other hand, industries that feature strongly in the tourism sector – Accommodation and food services, Retail trade, and Arts and recreation services – together made up only 5.4 per cent of total GVA in 2010 and this contribution has shrunk slightly to 4.9 per cent in 2015.

A comparison of employment shares across both years suggests that the slowdown of the resources sector has done little to alter the distribution of employment across industries. Unsurprisingly, the three tourism-related industries mentioned above contribute a higher share of employment (17 per cent) than the mining industry (7 per cent) in the state given the service-oriented nature of tourism. However, this share has remained stagnant between 2010 and 2015, contradicting one of the prevailing narratives of the state's future economic direction post-resources boom, that the tourism industry will contribute growing shares of employment after the slowdown of the mining sector. The Agriculture, forestry and fishing sector has also shrunk proportionately in both GVA and employment terms. On the other hand, the contribution of Health care and social assistance to the state's employment has grown from 9.5 to 12 per cent over the five-year period. This is not surprising given the growing importance of this industry within an ageing WA population.

Overall, the industrial landscape in WA has become less diversified in terms of GVA since the slowdown of the resources boom, once again contradicting the popular notion that new 'growth' sectors are emerging from other industries that are positioned to replace the mining sector as the primary driver of the state's economic growth. However, there is some evidence of diversification taking place within the mining sector itself. The state's industry profile is also getting slightly more diversified over time in terms of the workforce the industries employ.

It would appear that the industrial landscape in WA has changed very little in recent years. Despite the prevailing narrative of new economic initiatives combined with to promote the development of regional industries such as food, tourism and agriculture. The relatively slow growth of industries that are especially important to regional economies – agriculture, energy, tourism and food among others - raises important questions around the degree to which the state's regional economic blueprints are coordinated with state development plans to deliver the best outcomes for WA.

It is also clear that the Health care and social assistance sector is growing as the population ages. However, the sector also faces challenges related to high costs, and issues relating to low pay.

If the state is to capitalise on the growth of this sector, then issues associated with sectoral wages and working conditions will need to be addressed. For instance, the WA aged care sector is often afflicted with high turnover rates and issues related to low pay, which are commonly attributed to the undervaluation of care work. It should also be recognised that the majority of the health care and social assistance workforce is made up of women. Hence, workforce strategies to support the growth of this sector will need to take into account the family, community and informal care roles that are typically performed by women to build a health care workforce that can support the growth of this sector.

Is WA ready for a 'new normal'?

Western Australia is entering a critical phase in its economic trajectory after the boom. The state's prevailing narrative for economic development has been built around a strong resources sector, combined with a diversified industrial development strategy promoting growth in other sectors of the economy. Agriculture, food and tourism and food feature strongly in this narrative, but are these sectors well enough positioned, or of sufficient scale, to continue the state's growth story?

In considering Western Australia's economic future after the boom, we do need also to reflect on where the state has come from. It is certainly the case that prices and rents have fallen, but from unprecedented highs during the boom period. Income inequality in WA has been high relative to eastern coast states, but is reverting to the sorts of income separation seen elsewhere in Australia. Unemployment in WA has risen at a faster rate than for Australia, but again, from historic lows.

Overall, the evidence in this report suggest that, economically speaking, Western Australia is set for a 'new normal'. Yet this should not diminish the need for efficient, creative and imaginative policy settings to take full advantage of new opportunities for economic growth and future industrial development. This responsibility extends to the imperative for new, secure employment opportunities for the state's workforce. In doing so, it is surely also worth reflecting on the fact that the labour market of the future – flexible, multi-faceted, portfolio-based – may well be substantially different from the labour market of the past.

If the state is to capitalise on the growth of the health care and social assistance sector, then issues associated with wages and working conditions within this sector will need to be addressed.

Glossary

Consumer Price Index (CPI)

The Consumer Price Index measures quarterly changes in the price of a 'basket' of goods and services which account for a high proportion of expenditure by metropolitan households.

Equivalised Income

Equivalising income is a method of standardising household income to take account of household size and compositional differences.

Disposable Income

Disposable income is total income less income tax, the Medicare levy and the Medicare levy surcharge.

Gini coefficient

The Gini coefficient is a single statistic between zero and one which is a summary indicator of the degree of inequality. Values closer to 0 represent less inequality, and values closer to one represent greater inequality.

Gross Value Added (GVA)

Gross Value Added (GVA) measures each industry's output value at basic prices less its intermediate consumption value at purchasers' prices. It is typically used to describe the contribution of each industry to the gross product of the economy.

Percentiles

A percentile is a measure indicating the value below which a given percentage of observations in a group of observations fall. For example, the 20th percentile is the value (or score) below which 20% of the observations may be found.

Household Reference Person

The reference person for each household is chosen by applying, to all household members aged 15 years and over, the selection criteria below, in the order listed, until a single appropriate reference person is identified: (1) the person with the highest tenure when ranked as follows: owner without a mortgage, owner with a mortgage, renter, other tenure; (2) one of the partners in a registered or de facto marriage, with dependent children; (3) one of the partners in a registered or de facto marriage, without dependent children; (4) a lone parent with dependent children; (5) the person with the highest income; (6) the eldest person.

Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is an economic indicator of the value of a country's total output, calculated as the sum of the following measures: consumption expenditures; business investment; government spending; and net exports (defined as exports minus imports).

Gross State Product (GSP)

Gross State Product (GSP) is a measure of the economic output of a state, province or region, and serves as the counterpart to gross domestic product for a country. Conceptually, GSP is measured on the same basis as GDP, although there are practical difficulties in measuring 'import' and 'export' flows across state boundaries, and attributing state-specific income accruing from factors of production in national and multinational firms.

Herfindahl–Hirschman Index or HH Index

The HH index is a common measure of market concentration calculated by squaring the market share of each firm in a market, and then summing up the squares. The index ranges from 0 to 1. The higher the index, the more market power is concentrated among a small number of firms.

Labour force participation rate

The labour force participation rate is defined as the proportion of the population aged 15 years and over that is in the labour force, i.e. either employed or looking for work.

Net worth

Net worth is the value of a household's assets less the value of its liabilities. Net worth may be negative when household liabilities exceed household assets.

Quintiles

Quintiles are groupings that result from ranking all households in ascending order according to the relevant characteristic (i.e. net income or net wealth) and then dividing the household population into five equal groups, each comprising 20% of the total household population.

Real GDP/GSP

Real GDP (GSP) is GDP (GSP) at market prices (ie. adjusting for price changes) in order that measures can be compared over time. The Australian Bureau of Statistics (ABS) measures real GDP (GSP) using chain volume estimates. Such estimates are derived by revaluing current price, income-based estimates of GDP (GSP), using deflators which are calculated from the expenditure components of the state series concerned.

Regional Price Index (RPI)

The Regional Price Index compares the cost of a common basket of goods and services at a number of regional locations to the Perth metropolitan region.

Underemployment

The underemployment rate is the percentage of employed persons aged 15 years and over who prefer to work more hours than they currently have.

Unemployment rate

The unemployment rate is the proportion of the labour force that is unemployed.

Temporary Work (Skilled) visa (subclass 457)

A subclass 457 visa allows a skilled worker to travel to Australia to work in their nominated occupation for their approved sponsor up to a period of four years. 457 visa holders must only work in the nominated occupation and for the approved sponsor.

Wage Price Index

The Wage Price Index measures quarterly changes in the price of wages. Changes in rates of pay arise from various sources including award variations, enterprise and workplace agreements, minimum wage setting, individual contracts and informal arrangements.

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Bankwest Curtin Economics Centre Focus on Western Australia Report Series

ISBN: 978-1-925083-48-4

This report was written by: Alan Duncan, Grace Gao, Ha Nguyen, Rachel Ong and Yashar Tarverdi from the Bankwest Curtin Economics Centre at Curtin Business School.

This report may be cited as: Duncan A, Gao G, Nguyen H, Ong R and Tarverdi Y (2016), 'Back to the future: Western Australia's economic future after the boom', Bankwest Curtin Economics Centre, *Focus on Western Australia Series*, Issue #8, October 2016.

This report uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (Melbourne Institute). The findings and views reported in this paper, however, are those of the authors and should not be attributed to either DSS or the Melbourne Institute.

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CRICOS Provider Code 003011

ADV092142