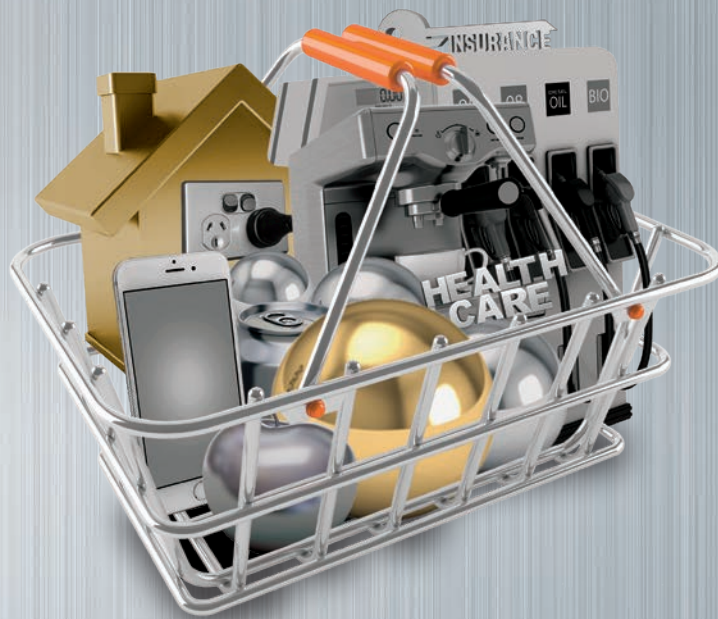


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BANKWEST CURTIN ECONOMICS CENTRE

THE PRICE IS RIGHT?

an Examination of the Cost
of Living in Western Australia

Focus on Western Australia Report Series, No.10
December 2017

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 of Bankwest, a division of the Commonwealth Bank of Australia. The Centre's core mission is to deliver high quality, accessible research that enhances our understanding of key economic and social issues that contribute to the wellbeing of West Australian families, businesses and communities.

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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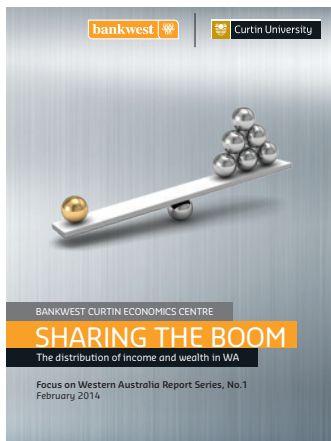
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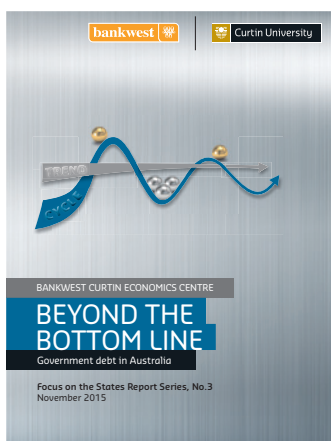
BCEC report series



Focus on Western Australia

This series presents a West Australia centric approach at analysing global events and domestic policy issues.

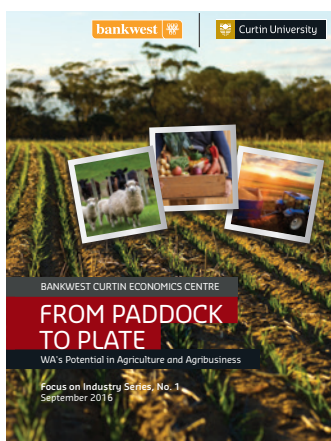
First release 2014



Focus on the States

This series presents a critical comparison of topical issues between the states and territories of Australia.

First release 2014



Focus on Industry

This series examines trends in important industries and sectors within the context of the West Australian economy.

First release 2016

Foreword



The Western Australian economy has experienced something of a roller-coaster ride over the last decade, with unprecedented economic growth over the course of the resources boom followed by a post-boom period during which activity has cooled. Despite a reduction in demand in a number of industry sectors, there is a prevailing notion that West Australians remain exposed to high cost of living pressures. Yet several worldwide cost of living indicators suggest that Perth has actually become increasingly affordable relative to other cities. So how can we reconcile these differences?

This tenth report in BCEC's *Focus on Western Australia* series examines the important issue of costs of living in WA, and how real household living costs have changed in recent years. It begins by tracking the prices of broad categories of goods and services in Perth over time relative to other capital cities. This is followed by a detailed analysis of the expenditure pattern of WA households across the State's regions, and an examination of the extent to which wages have lagged behind price growth for different population subgroups in WA. The report sheds light on numerous policy issues that affect the economic wellbeing of West Australian households, including the impact of cost of living pressures on income inequality and poverty in the State.

The report looks at various indicators of cost of living, and highlights the limits in using CPI and inflation rate measures to draw inferences about the real living cost pressures faced by households or individuals in vulnerable circumstances.

The report seeks to gain a better understanding of how much households need to spend on goods and services to maintain a baseline standard of living. A detailed analysis of expenditure patterns and incomes of WA households, drawn from the latest Census and Household Expenditure Survey data, reveals what types of households are hardest hit and which WA regions are doing it tough.

I hope you will find this report thought-provoking and informative.

A handwritten signature in black ink, appearing to read 'Alan Duncan'.

Professor Alan Duncan

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

Executive summary

In a recent report by The Economist Intelligence Unit, Perth is ranked 49th in the world in their global cost of living survey. Five years prior, in the very same survey, Perth was the 10th most expensive city in which to live. To take this on face value, over five years there has been a five-fold reduction in the relative ranking of the cost of living in Perth. There are aspects of this that make perfect sense, given that Western Australia is coming off the peaks of an unprecedented mining boom, with a significant reduction in resources-sector workforce and falling wages. There are, however, other indicators that point to the remnants of persistence or inertia in high prices. This report dwells deeper into prices, expenditure and income of West Australian households with an aim to further understand the costs of living in WA.

At the outset it should be emphasised that whilst economists consider the theoretical concept of the cost of living uncontentious, there are many interpretations of it in mainstream media. Among these are the consumer price index, prices in specific goods, assets or services such as housing, and consumer-based surveys.

For Australia, a concern is that selected cost of living indicators for Age Pension holders, Pensioner and beneficiary households, and other government transfer recipient households have all recently grown faster than general inflation, and have done so for several quarters in succession. We find that price inflation has generally grown at a slower pace in Perth than the rest of Australia. Indeed, CPI figures show that Perth has the slowest growing prices among the Australian capital cities. The exceptions are that transport costs, and insurance and financial services in Perth have grown at faster rates than for Australia. Housing and utilities remain the largest component of household expenditure.

In terms of regional Western Australia, though prices are continuing to fall relative to Perth, the Kimberley has overtaken the Pilbara as the most expensive place in which to reside.

In seeking to move beyond indices and percentage growth charts we examine the weekly expenses and income of hypothetical households in Western Australia. As one would expect, we find that unemployed single West Australians and single parents are comparatively worse off given typical spending patterns. This is amplified in certain regions within the State.

This report has found that whilst there is unambiguously less price pressures on the State, there remains segments of the population that are vulnerable.

Key findings

Cost of living indicators

- According to the Economist Intelligence Unit, Sydney is the most expensive capital city in Australia in 2017. Perth is fifth.
- Price growth for Furnishings, household equipment and services, Transport, and Communication are similar for Perth and Australia.
- By contrast, groups such as Housing and Education see Perth with larger fluctuations in price growth than for Australia.
- Perth has a housing affordability median multiple rating of 6.1.
- The cost of living index growth for government transfer recipients, and the broad category of pensioner and beneficiary holders, both currently exceed CPI inflation.

Consumer price index and components

- In the most recent quarters, Perth's prices for Food and non-alcoholic beverages, Alcohol and tobacco, Housing, Furnishings, household equipment and services, Health, Transport, Communication, and Education have grown slower than for Australia.
- By contrast, Clothing and footwear, Recreation and culture, and Insurance and financial services in Perth have experienced faster price growth than for Australia more generally.

Prices of commonly consumed goods and services

- Price data for five capital cities in Australia from the Economist Intelligence Unit show, in general, that Perth prices for clothing, housing and personal care are less expensive than for other capital cities while prices for selected housing supply items and recreation are relatively more expensive.

- The cost of a control basket of commonly purchased supermarket items is highest in Brisbane, at \$246, and lowest in Adelaide (\$217) among five Australian capital cities. For Perth the cost of the basket is \$237, or third in terms of rank.
- The same basket purchased at mid-priced stores is, on average, 20% higher.

Prices in regional Western Australia

- The Department of Primary Industries and Regional Development Price Index shows the Kimberley as having the highest aggregate price level among WA's regions, having overtaken the Pilbara since 2015.
- A 2017 Demographia report found that, with the exception of Mandurah, which has the lowest median annual household income among the regional centres, all the other centres are more affordable than Perth.

Have wages kept up with prices in Western Australia?

- Average wages have risen at a steeper rate than prices in WA between 2002 and 2017. Between 2002 and 2017, the WPI rose by over 60% while the CPI rose by over 40%.
- The growth rate of wages and prices in WA appear to rise and fall in line with economic booms and downturns in the State.

How do real wage movements in WA compare to Australia as a whole?

- The real WPI in WA has climbed at a steeper rate than Australia as a whole between 2002 and 2017. The gap between the real WPI of WA and Australia widened from zero to four points between 2008 and 2016.
- The private sector's real WPI in WA began surpassing Australia back in 2007. By 2013, the public sector's real WPI in WA had also begun surpassing the public sector real WPI in Australia.

Wages and price growth: State and territory comparisons

- WA has experienced the highest real WPI growth rate among the states and territories over the period 2002-2017 at 0.26% per quarter while Queensland ranks the lowest at 0.17%.
- Like WA, Queensland and New South Wales had relatively high CPI growth rates during 2002-2017. However, their nominal WPI growth rates of 0.83% and 0.8% respectively were not as high as WA's 0.88%.
- Between 2002-2007 and 2007-2012, the real WPI in WA more than doubled from 0.22% to 0.42%. During the post-resources boom period of 2012-2017, WA's real WPI growth rate was just 0.14% per quarter.

Have incomes in WA regions kept paced with price growth?

- Regional income movements have been more volatile than regional price movements relative to Perth over the period 2006-07 to 2016-17.
- In most regions, incomes relative to Perth have failed to keep up with price relative to Perth. The Pilbara is a

clear exception, where income relative to Perth strongly outstripped price relative to Perth during 2006-07 to 2016-17.

Have real incomes grown at the same pace across different population subgroups in WA?

- During 2003-09, low-income households' real income growth lagged behind high-income households, with the poorest 20% experiencing only an 11% increase in real income, while the richest 20% in WA reaped income gains of nearly 60%.
- All quintiles experienced a smaller real income growth in 2009-15 than back in 2003-09. However, the richest 20% of households experienced the greatest reduction in real income of 8%.
- During 2009-15, households with more volatile main sources of income (business and other income) suffered from a reduction in real income as economic conditions became more uncertain.
- Lone parents and single person households suffered the largest reduction in real income among all household types during 2009-15, of 7% and 8% respectively.

Household income in Western Australia

- The Pilbara has the highest level of household income in Western Australia with a median of \$2,422 a week.

How different are household expenditure patterns in WA compared to the rest of Australia?

- WA households' average weekly expenditure lies at around \$1,500, which is similar to the average weekly expenditure of Australia as a whole.
- In WA and Queensland, real household expenditure increased by 25% compared to 16% for Australia during 2003-09. Expenditure values continued to increase in 2009-15 but at a lower pace than the rest of Australia.
- Expenditure shares in WA are comparable to the rest of Australia. However, expenditure shares are slightly higher for housing, food, recreation and health, but smaller for transportation and domestic fuel and power, in WA than the rest of Australia.

Are there variations in household expenditure patterns between Perth and the rest of WA?

- The economic slowdown during 2009-15 appears to have hit regional areas harder as they experienced an 8% decline in median expenditure. Median expenditure of families in Perth, on the other hand, has continued to increase, but at a lower rate from the previous period, reaching, nevertheless, an 8% growth rate in 2015-16.

What is the balance of basic versus discretionary spending by WA households?

- The gap between basic and discretionary expenditures has almost doubled from 2003 to 2015 for WA and Australian households. In 2009, WA households consumed an extra 12% of discretionary goods and services relative to the rest of Australia.

However, this trend in WA was short-lived, and by 2015, the average weekly discretionary expenditure of WA households was back at the same level as the rest of Australia.

- Households living in regional WA appear to divert greater shares of their expenditures to transport, food and domestic fuel and power. However, the former also spend more on discretionary items such as tobacco, alcohol and recreation.

A comparison of household expenditures by housing and household type

- Renter or recent mortgagor households spend over one-third of their budget on housing in WA, which is significantly higher than the one-quarter expenditure share accounted for by housing in the general WA population.
- Perth households spend an extra 7 percentage points of their budget on housing than the rest of WA. This higher housing budget share occurs at the expense of a range of other items including basic expenditures such as food, domestic fuel and power, transport and health.
- Single parents exhibited the lowest spending level of \$732 per week on an equivalised basis among all household types during 2015-16.
- During 2009-15, single parent households were the only household type to experience a decline in real expenditure, with mean expenditure falling by 9% over the period.
- Single parents devote a noticeably larger share of their expenditure to housing than other household types, crowding out expenditure shares on health, transport and discretionary items.

How has the expenditure of financially stressed households evolve over time?

- The gap between households in financial stress and the rest of WA has deteriorated over time, doubling its size from 2003 to 2015.
- Financially stressed households spend on average 10% to 12% more in housing compared to the rest of WA households. This increase in expenditure is mostly offset by a cutback in discretionary expenses of 6% on average.

Cost of living pressures and substitution effects: Nutritional poverty

- Lower income households tend to have higher budget shares on processed meat.

The impact of the resources boom

- Triggered by unprecedented rural-to-urban migration in China leading to accelerated demand for iron ore for the production of steel, mining investment has increased, leading to higher wages and subsequently higher prices for several items in the household consumption basket.

Cost of living adjustments

- September 2017 marked the point at which many Commonwealth benefits, such as the Age Pension, are indexed using the consumer price index.

On poverty, indebtedness and low-income households in WA

- A family that is considered as being in poverty in a first world country would be an aspiration to others in less developed nations.
- According to OECD data, Australia's hourly minimum wage has been between the 2nd and 3rd highest over the past 5 years.

Financial stress, exclusion and resilience

- Poor financial resilience for low income households can mean that just one emergency or crisis could find them facing severe financial shock and becoming over-indebted.

Analysis of survey of financial counsellors in WA

- Increasingly, financial stress, being a previously less acknowledged or downplayed 'symptom' of low-income and poverty, is being brought to the fore.
- Expenditure on utilities are slightly higher for households in financial hardship than for an average household.

Introduction

There appears to be a widespread perception among West Australian households that cost of living pressures are intensifying every year. A sustained resources boom during the first decade of the millennium has driven significant price growth across the State. During the boom, the cost of meeting some essential household needs, such as housing, soared to unprecedented levels in WA. This drove a growing wedge between the 'haves' and 'have nots', with previous BCEC analysis showing that financially vulnerable groups were increasingly lagging behind high-income groups during the height of the resources boom.

The perception that the average West Australian household is 'doing it tough' continues to persist post-boom, but have prices really been outpacing incomes? Nationally, WA is still perceived as a relatively expensive state, but do these perceptions align with reality? While the prices of some goods and services categories such as recreation, insurance and education appear to have risen more in Perth than most other major capital cities over the last two decades, prices of various other items such as food, clothing and footwear seem to have become relatively more affordable.

This is the tenth *Focus on Western Australia* report by the Bankwest Curtin Economics Centre. The report offers a much needed up-to-date analysis of the dynamics of cost of living pressures in the State. It offers empirical evidence to shed light on the unique cost of living pressures faced by West Australians. The report asks how WA benchmarks against other states and territories in terms of cost of living pressures. We consider the extent to which the resources boom and subsequent downturn have uniquely impacted on WA households' ability to meet basic needs over time. The report compares average price and income growth trends, to uncover the extent to which prices may have outpaced or lagged behind incomes over time.

This report also shines a spotlight on the circumstances of vulnerable groups including those in need of financial counselling. There remain significant cost of living challenges among households whose main source of income is from government transfers, and where the value of welfare payments fail to keep pace with local price increases. For instance, previous BCEC research has shown that high housing costs remain a critical burden for many low-income households. This report sheds light on the extent to which financial constraints might have forced households in financial hardship to divert household budgets away from other areas of spending to meet basic needs such as housing, food and health. Some low-income households may make trade-offs between discretionary and essential items, but others may be forced to trade off one essential item for another, with adverse impacts on health, wellbeing and financial resilience.

Given the lack of up-to-date evidence on cost of living pressures that are specific to WA, this report makes a timely contribution to the cost of living debate in Australia by highlighting key issues that pertain specifically to the State. It offers an in-depth analysis into variations in cost of living pressures in both Perth and regional areas, and across household types and income groups, drawing on a range of national and WA data sources.

Measuring

the cost of living –
definitions and approaches



Measuring the cost of living – definitions and approaches

The cost of living refers to the (minimum or average) costs that are required for individuals or households to attain goods and services that will sustain them with a baseline standard of living. Most often the term is associated with comparisons of how expensive a city is in which to live relative to other cities or a control, such as New York City.

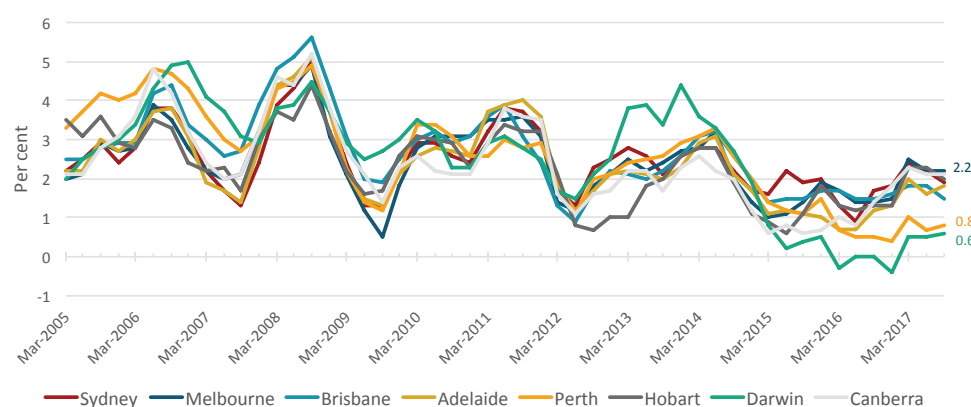
The most commonly used headline indicator of the cost of living is the consumer price index (CPI). The CPI is constructed using data on prices for a broad range of goods and services, and is used to measure the overall price inflation rate in Australia. There are eleven groups (e.g. Food and non-alcoholic beverages) which are aggregated upward from many more sub-groups (e.g. Bread and cereal products) and expenditure classes (e.g. Cakes and biscuits). Price data, from published sources, collected by trained field staff, transactions data and sometimes surveys are collected for the eight capital cities in Australia. The frequency of price collection differs for different items as necessary to obtain reliable price measures. The Australian Bureau of Statistics (ABS) uses information from the six-yearly household expenditure survey to derive the weights that reflects the expenditure patterns of households.

Figure 1 plots the inflation rate, or rate of growth of the CPI (all goods) for all eight capital cities in Australia. The inflation rate is typically pro-cyclical, as it tends to move with economic upturns and downturns as a result of demand and to a lesser extent, supply side factors. From the first quarter of 2005, inflation for all eight capital cities have been cyclical in nature, rising to a peak in September quarter 2008 of 5.6 per cent for Brisbane, and a trough of -0.4 per cent for Darwin in the December quarter of 2016.

The CPI is not technically a measure of the cost of living.

A closer examination of the inflation rate in Perth reveals that prices growth have been at or near the top of the range during the period of the mining boom from around 2005 to 2012. This is followed by Perth having lower prices growth relative to the other capital cities, especially in recent quarters. The inflation rate for Perth currently stands at 0.8 per cent on an annual basis for September quarter, 2017, as compared to 2.1 per cent for Australia as a whole.

Figure 1 Rate of inflation, capital cities, 2005 to 2017



Source: Bankwest Curtin Economics Centre | ABS cat no 6401.0, Sep 2017.

At a glance: Headline cost of living indicators

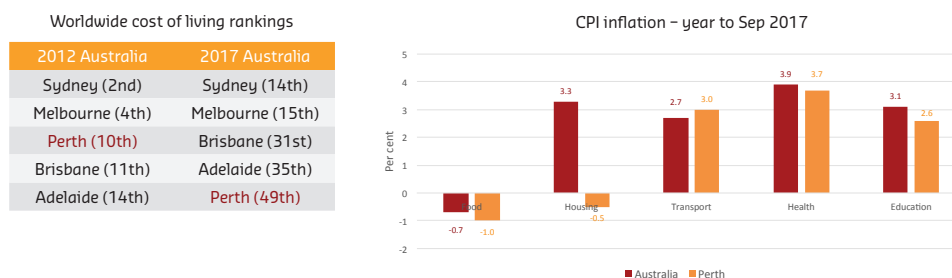
Figure 2 presents some related measures of cost of living in Perth and Western Australia, and provides some benchmarks for living costs in Perth compared with the other Australian state capitals.

The Economist Intelligence Unit produces a ranking of the most and least expensive cities around the world, using data from its World Cost of Living (WCOL) survey. Five Australian cities are tracked in this ranking. Perth ranked third among Australian state capitals and 10th worldwide in 2012, just prior to the post-resources boom economic downturn and the consequent falls in commodity prices in the State. However, in the latest iteration of the WCOL, Perth now ranks 49th among world cities, and is a cheaper than all other Australian cities in the WCOL survey - lower than Brisbane (ranked 31st in the world) and Adelaide (35th).

As will be discussed later, these indicators don't capture housing and thus may not be the most accurate representation of living costs in WA. Nevertheless, the ranking does help to rectify to a degree the perception that living costs in Western Australia remain among the highest in the country.

In terms of CPI inflation, Perth has grown at a slower rate of 0.8 per cent over the year to the September 2017 quarter, compared to Australia in general at 1.8 per cent. Food prices in Perth have fallen by 1 per cent through the year while housing has also experienced negative growth of 0.5 per cent. On housing, it is the single biggest expenditure item in WA households, with households spending on average \$334 per week on housing and related expenses. Food is the second largest category and also forms a significant proportion of weekly expenditure.

Figure 2 Cost of living in WA at a glance



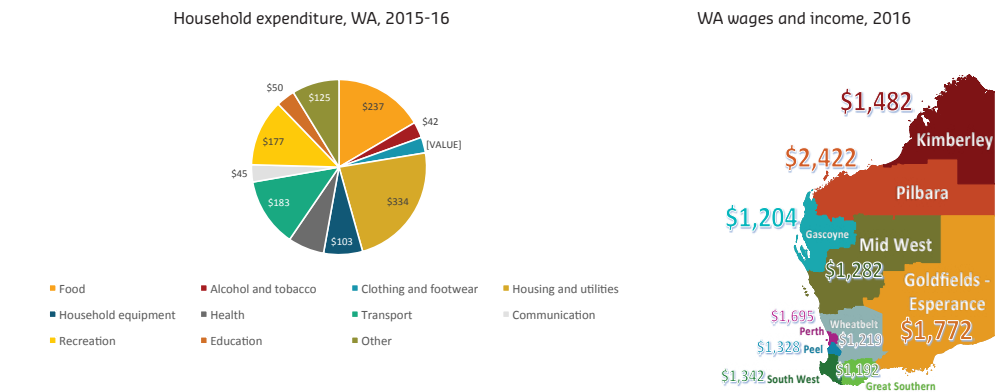
Note: The worldwide cost of living rankings exclude housing.

Source: Bankwest Curtin Economics Centre | Economist Intelligence Unit (EIU), ABS cat no 6401.0 Sep 2017, 6530.0 Sep 2017, Census 2016, BCEC analysis.

Though the CPI is treated technically as a representative measure of the cost of living, it falls short in a number of ways in capturing living costs in any real or relatable sense. Fundamentally, the CPI is a measure of prices designed as a measure of inflation (the so-called *acquisitions* approach in economics) while a more genuine cost of living indicator measures the costs or expenses required to maintain a specified or baseline standard of living (an *outlays* approach).

In terms of coverage, the CPI tracks the prices of an expanded 'basket' of goods and services. However, a number of studies have shown that the CPI overstates cost of living increases due to the way it is conceptualised and measured in practice (see, for example, ABS (2011) for an overview and Boskin *et al.* (1996) for a US-based study).

Figure 3 Household expenditure, wages and income in WA



Source: Bankwest Curtin Economics Centre | ABS cat no. 6530.0 Sep 2017, and Census 2016, BCEC analysis.

On the flipside of cost of living rankings and price inflation, it is important to compare expenditures, incomes and wages, both overall and for different regions of Western Australia (Figure 3). Housing and utilities are the single biggest expenditure item in WA households, with households spending on average \$334 per week on housing and related expenses. Food is the second largest category and also forms a significant proportion of weekly expenditure. Data from the latest 2016 Census reveals that the Pilbara has the highest total weekly household income in the State at \$2,422.

One of the most important shortcomings of using the CPI as a cost of living indicator is the way it treats housing. While the CPI includes purchases of new dwellings (excluding land), and rents, maintenance, property charges and utilities, it does not include the transfers of established homes. It is important to note that whilst it is common place to use the CPI as a defacto cost of living adjustment indicator, the ABS is very clear in stating that there exist other indicators that are more suited to assessing cost of living of Australian households – some of these indicators are presented later in this report.

Costs of living in Western Australia are analysed in a number of ways in this report. In addition to the CPI, several other cost of living indicators are considered to arrive at a general comparison of living costs between states and territories. The report also takes a detailed look at the expenditure patterns among West Australian households.

Chapter 2 analyses in detail trends in cost of living indicators in Western Australia. It begins with a summary of national and international indicators, and incorporates a summary analysis of the ABS' cost of living indexes for segments of the population - employees, age pensioners and self-funded retirees - as well as for specific components of the overall CPI for Perth and other capital cities.

Chapter 3 compares trends in wages and income for West Australians. We ask whether wages are sufficient to sustain the cost of living of households in WA and track the extent to which incomes have been outpacing, lagging behind, or keeping up with price growth over time. The primary indicator in this chapter is the wage price index, where it is analysed in nominal and real (inflation-adjusted) variants.

A Regional Income Index is developed using Census data to further understand regional disparities in prices and incomes. This indicator is analysed along with the WA Department of Primary Industry and Regional Development's Regional Price Index. This chapter concludes with a discussion of real income growth among different population subgroups in the state.

Chapter 4 takes a detailed look at the expenditure patterns of households in Western Australia, and how spending differs in the West compared to other states and territories. The analysis is made possible with the recent release of the six-yearly Household Expenditure Survey. Our analysis highlights the particular distinction between basic and discretionary spending, and looks at how different forms of spending have evolved over the course of the resources boom, and the post-boom slowdown. Expenditures are compared for different household types, and among those on low incomes or facing financial hardship.

The chapter also reports recent work by WA Council of Social Service, which compares incomes and expenditure for scenario households in the WA community facing different vulnerabilities – a single parent, a working family on casual hours, an unemployed single, and age pensioners.

As a complement to this analysis, the report examines spending patterns among households in financial hardship, and who have sought financial counselling. This section takes advantage of a unique data source generously made available by the WA Financial Counselling Network. The dataset covers the income and expenditure patterns of respondents both in Perth and regional WA, and provides a good point of comparison with the findings from the recent Household Expenditure Survey.

Trends in

cost of living in Western Australia



Trends in cost of living in Western Australia

This chapter examines the evolution of cost of living indicators in Western Australia. It begins with a comprehensive look at the CPI and its components. This is followed by a study of the regional disparities in prices around WA. Finally an analysis of international comparisons show that Australian capital cities are, or have been, among the most expensive places in which to live.

Cost of living indicators - International

Various cost of living indicators have been developed for purposes of comparison between cities or countries, or between demographic groups. This section looks at two sets which are indicative of these.

The first two are part of the Economist Intelligence Unit's (EIU) worldwide cost of living survey (The Economist, 2017). The survey is conducted twice a year and compares prices for, in the latest iteration, 133 cities. It draws upon a large dataset of prices for main expenditure groups such as Food, Alcohol, Household Supplies and Personal Care, and calculates a worldwide ranking. It should be noted at the outset that though prices on housing (and international schools, health and sport; and business trip costs) are collected they are not used in the capital city cost of living index calculations. The ranking are expressed as relativities to New York which is set to the index of 100. Table 1 shows where Perth and the Australian capital cities (only five are included) compared with the top and bottom ten most expensive cities.

Another point to note about the survey is its original intention. The survey's genesis was to compare the cost of living in over a hundred cities worldwide and calculate fair compensation policies for relocating employees. As such some of the goods and services surveyed, which in turn are used to calculate the 'cost of living' and 'liveability' indices reflect a basket of goods and services that are more relevant to a higher-end lifestyle - expatriate employees, for example, than for employees on lower incomes.

Singapore is the world's most expensive city and has been so for the fourth consecutive year with the EIU's Worldwide Cost of Living (WCOL) index of 20 per cent higher than the baseline of New York. Hong Kong remains second, followed closely by Zurich. On the other end of the scale, the Kazakh city of Almaty is the least expensive, with a WCOL index of 38, implying that general prices are 62 per cent cheaper than New York. Cities in South Asia are also highly represented in the bottom ten.

Five Australian cities are considered in the EIU measure. Sydney is the most expensive city in Australia according to the EIU measure, ranked 14th having risen 6 positions and with an index of 98 (2 per cent less than New York). This is followed by Melbourne, Brisbane and Adelaide. Perth is an interesting city among the 133 cities considered in 2017. It is currently ranked 49th, having risen by 7 positions. Perth's WCOL index is 78, or 22 per cent cheaper than New York. It has been as high as 12th in 2012 and has progressively become cheaper. The published prices are all expressed in US dollars, and so one reason for the lower rankings of Australian cities is the weaker Australian dollar.

According to the Economist Intelligence Unit, Sydney is the most expensive capital city in Australia. Perth is fifth.

Table 1 Top and bottom 10 most expensive cities in the world and Australian capital cities, 2017

Rank	City	Country	WCOL index	Rank movement
1	Singapore	Singapore	120	=
2	Hong Kong	Hong Kong	114	=
3	Zurich	Switzerland	113	-1
4	Tokyo	Japan	110	+7
5	Osaka	Japan	109	+9
6	Seoul	South Korea	108	+2
7	Geneva	Switzerland	107	-3
8	Paris	France	107	-2
9	New York	United States	100	-2
9	Copenhagen	Denmark	100	-1
...				
14	Sydney	Australia	98	+6
15	Melbourne	Australia	95	+6
31	Brisbane	Australia	84	+18
35	Adelaide	Australia	82	+18
49	Perth	Australia	78	+7
...				
124	Bucharest	Romania	47	-2
124	Kiev	Ukraine	47	-6
124	New Delhi	India	47	+2
127	Chennai	India	45	=
127	Mumbai	India	45	+4
129	Algiers	Algeria	45	=
130	Karachi	Pakistan	44	-3
131	Bangalore	India	42	+1
132	Lagos	Nigeria	39	-16
133	Almaty	Kazakhstan	38	-6

Note: The Worldwide Cost of Living (WCOL) index is calculated with New York set as a benchmark equal to 100 in 2017. The indicators exclude housing. Rank movements are relative to the last survey in 2015.

Source: Bankwest Curtin Economics Centre | Economist Intelligence Unit (The Economist 2017), Pash (Business Insider 2017), Probasco (Investopedia 2017), Smith (The Telegraph 2017).

It is worth returning to the point that the WCOL overall index excludes housing. It is a conscious decision by the Economist Intelligence Unit driven by the wide range of available housing in different parts of the world and the diversity prevents a straightforward way to integrating a standard housing unit into the index. Importantly, due to the intention of the index (to inform companies and expatriates on costs associated with spells abroad) housing (as well as school costs and medical packages) are provided by the companies in the relocation packages. This becomes an important issue since housing is perhaps the most important expenditure item in household budgets. If housing were to be incorporated into the index in one way or another the rankings would likely differ from what they are.

To provide some indication of house prices in a worldwide setting the Demographia International Housing Affordability Survey can shed some light on where Australian cities lie. The study covers 406 metropolitan housing markets in nine countries (Australia, Canada, China, Ireland, Japan, New Zealand, Singapore, the United Kingdom and the United States). Their third quarter 2016 results (Demographia, 2017) reveals that the 54 housing markets (cities) in Australia have a 'severely unaffordable' median multiple of 5.5. The median multiple (sometimes known as the

Price-Income ratio; see for example, Duncan *et al.* (2016)) is the median property price divided by median household income. Higher values indicate less affordability. It can be interpreted, if income is expressed annually, as the number of years a household would need to work to be able to afford the property. Table 2 shows the 30 least affordable housing markets from the survey. Note that this survey pertains only to housing costs (relative to income) in contrast to the broader Economist survey. Sydney retains its title as Australia's least affordable market (12.2 median multiple), followed by Melbourne (9.5 median multiple), Adelaide (6.6 median multiple), Brisbane (6.2 median multiple) and Perth (6.1 median multiple).

Table 2 Demographia Housing Affordability Survey, Housing markets over 1 million population, Q3 2016

Rank	Housing market	Country	Median price	Median income	Median multiple
			AUD	AUD	Ratio
1	Hong Kong	Hong Kong	\$939,691	\$51,993	18.1
2	Sydney, NSW	Australia	\$1,077,000	\$88,000	12.2
3	Vancouver, BC	Canada	\$842,630	\$71,564	11.8
4	Auckland	New Zealand	\$777,610	\$77,686	10.0
5	San Jose, CA	United States	\$1,345,000	\$140,015	9.6
6	Melbourne, VIC	Australia	\$740,000	\$78,200	9.5
7	Honolulu, HI	United States	\$1,002,429	\$106,121	9.4
8	Los Angeles, CA	United States	\$798,796	\$85,946	9.3
9	San Francisco, CA	United States	\$1,123,613	\$121,588	9.2
10	Bournemouth & Dorset	United Kingdom	\$481,005	\$54,272	8.9
11	San Diego, CA	United States	\$792,609	\$92,402	8.6
12	London (Greater London Authority)	United Kingdom	\$798,650	\$94,023	8.5
13	Toronto, ON	Canada	\$625,095	\$80,903	7.7
14	Plymouth & Devon	United Kingdom	\$390,250	\$55,179	7.1
15	London Exurbs (E & SE England)	United Kingdom	\$517,308	\$73,331	7.1
16	Adelaide, SA	Australia	\$435,000	\$66,000	6.6
17	Bristol-Bath	United Kingdom	\$462,854	\$74,783	6.2
18	Brisbane, QLD	Australia	\$495,000	\$79,400	6.2
19	Perth, WA	Australia	\$528,300	\$87,300	6.1
20	Miami, FL	United States	\$423,675	\$69,268	6.1
21	New York, NY-NJ-PA	United States	\$534,772	\$94,419	5.7
22	Riverside-San Bernardino, CA	United States	\$429,055	\$77,069	5.6
23	Seattle, WA	United States	\$567,725	\$103,431	5.5
24	Portland, OR-WA	United States	\$482,183	\$87,694	5.5
25	Denver, CO	United States	\$520,246	\$96,571	5.4
26	Boston, MA-NH	United States	\$585,479	\$108,273	5.4
27	Warrington & Cheshire	United Kingdom	\$335,796	\$65,707	5.1
28	Sacramento, CA	United States	\$439,815	\$86,215	5.1
29	Liverpool & Merseyside	United Kingdom	\$249,578	\$49,371	5.1
30	Leicester & Leicestershire	United Kingdom	\$317,645	\$63,892	5.0

Note: The original financial data expressed in local currency units have been converted to 2016 Australian dollars (rounded to nearest \$10). The Median multiple is the ratio between median (house) price and median (household) income.

Source: Bankwest Curtin Economics Centre | 13th Annual Demographia International Housing Affordability Survey (Demographia 2017).

Perth has a housing affordability median multiple rating of 6.1.

Part of the Worldwide Cost of Living study also includes the Economist Intelligence Unit's Liveability Survey. The survey, like the broader cost of living study, is designed to assist expatriates and their employers in their decision-making process when considering relocating to another city. The Liveability Survey comprises five categories and an overall rating. The five categories are stability, healthcare, culture and environment, education and infrastructure. As such, the findings can be used to shed light on the cost of living in the five Australian cities that are part of the survey.

Table 3 contains the ratings, indices and ranks for Perth and the Australian cities for the period July 2017. The liveability ratings are from 1 to 100 and the EIU's descriptions are as follows:

Rating, 1 to 100	Description
80-100	There are few, if any, challenges to living standards
70-80	Although, generally, day-to-day living is fine, some aspects of life may entail problems
60-70	Negative factors have an impact on day-to-day living
50-60	Liveability is substantially constrained
50 or less	Most aspects of living are severely restricted

One of the advantages for having a rating and scale system such as this is that it provides a quantitative scale for employers to work with in providing additional allowances to expatriates upon their move.

Table 3 Findings from the EIU Liveability Survey, July 2017

July 2017	Perth	Adelaide	Brisbane	Melbourne	Sydney
Overall liveability scale					
Liveability rating (1-100, 100 = Ideal)	96	97	94	98	95
Relative liveability index (New York = 100)	112	113	110	114	111
Liveability rank (out of 140 cities)	7	5	16	1	11
1. Stability					
Stability rating (1-100, 100 = Ideal)	95	95	95	95	85
Relative stability index (New York = 100)	146	146	146	146	131
2. Healthcare					
Healthcare rating (1-100, 100 = Ideal)	100	100	100	100	100
Relative healthcare index (New York = 100)	109	109	109	109	109
3. Culture and environment					
Culture and environment rating (1-100, 100 = Ideal)	89	94	94	95	94
Relative culture and environment index (New York = 100)	97	103	102	104	103
4. Education					
Education rating (1-100, 100 = Ideal)	100	100	92	100	100
Relative education index (New York = 100)	100	100	92	100	100
5. Infrastructure					
Infrastructure rating (1-100, 100 = Ideal)	100	96	89	100	100
Relative infrastructure index (New York = 100)	112	108	100	112	112

Source: Bankwest Curtin Economics Centre | Economist Intelligence Unit (The Economist 2017).

Overall, all Australian cities ranked highly in the liveability scale. Melbourne is the highest (98), followed by Adelaide and Perth. Brisbane, with a rating of 94, is the last of the five Australian cities. Since the WCOL study is benchmarked against New York City (set equal to 100) relative liveability indexes are also calculated which, in this case, is of the same rankings as the rating – for example, Perth’s relative Liveability index of 112 is the third highest among the Australian cities and is 12 per cent higher than New York City. Finally, all five Australian cities are in the top 20 of all (140) cities that were included in the study. Melbourne is the world’s most liveable city and has been so for the sixth consecutive year. Adelaide is fifth and Perth is, according to the EIU study, the world’s seventh most liveable city.

To dig deeper into the components of the overall rating, Table 3 also shows the stability, healthcare, culture and environment, education and infrastructure ratings and indexes. Stability comprises perceptions on the prevalence of petty and violent crimes, and threats of terrorism, civil unrests and military conflicts. Healthcare seeks to rate the availability and quality of public and private healthcare, over the counter pharmaceuticals and other general healthcare indicators.¹ Culture and environment captures the climate, ‘cultural hardship’ (corruption, social/religious restrictions, censorship), recreation in terms of sports, culture and food/drink, and the general availability of consumer goods and services. Education tracks the availability and quality of private education and general public education indicators. Finally, the infrastructure component is about the quality of transportation, availability of good quality housing and utilities.

In general, all five Australian cities fared very well in these component indicators. All cities have the same ‘High Stability’ rating of 95 with the exception of Sydney, which has a lower rating (Tolerable) for the prevalence of violent crimes and threat of terrorism. All five cities have a Healthcare rating of 100, 9 per cent higher than New York. Perth ranks the lowest in Culture and the environment, let down by an ‘Uncomfortable’ rating for Climate: Discomfort of environment to travellers. In terms of Education, all cities have the maximum rating of 100 with the exception of Brisbane, whose rating of 92 is due to the ‘Tolerable’ rating for the availability of private education. Finally, Perth, Melbourne and Sydney have the maximum rating of 100 for Infrastructure, with ‘Acceptable’ ratings for all sub-items.

A point repeated throughout this section is that of ‘fit for purpose’, in that the EIU surveys are not intended to reflect the cost of living for lower-income households. The section entitled ‘Can vulnerable households afford a basic standard of living?’ later in this report examines the cost of living for various vulnerable households in Western Australia.

¹ Note that the index captures the adequacy of health care in terms of availability rather than the costs.

Cost of living indicators - Australian Bureau of Statistics

The second cost of living indicator, and one which is specific to Australia, is the ABS' series of cost of living indexes. These estimate the distribution of inflation across households according to their main source of income, where inflation is measured for segments of the population that include employees, age pensioners and self-funded retirees.

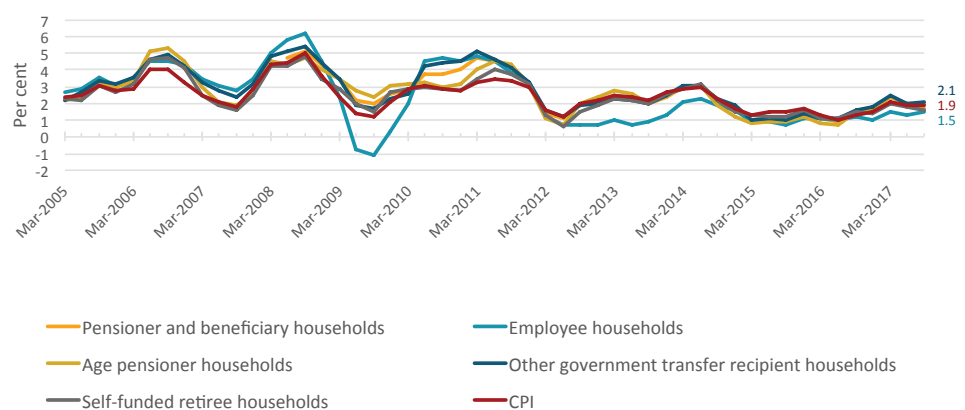
In particular the households are:

- Employee: Principal source of income is from wages and salaries
- Age pensioner: Principal source of income is the Age Pension or Veterans Affairs Pension
- Other government transfer recipient: Principal source of income is a government pension or benefit other than the Age or Veterans Affairs Pension
- Self-funded retirees: Principal source of income is superannuation or property income and where the Household Expenditure Survey defined reference person is 'retired' (not in the labour force and over age 55).

The broader *Pensioner and beneficiary households* (commonly abbreviated to PBLCI) is a measure of the effect of changes in prices on the out-of-pocket living expenses experienced by the two sub-groups: *Age pensioner and Other government transfer recipient households*. This measure was, until recently when it was replaced by the CPI, used in the indexing of Age Pension and other government benefits.

In particular these indices provide a measure of the impact of price change on out-of-pocket expenses incurred by the four household types to obtain a fixed basket of consumer goods. Figure 4 plots the indexes for the six groups from 2005 to 2017.

Figure 4 Selected cost of living indexes, Australia, 2005 to 2017



Source: Bankwest Curtin Economics Centre | ABS cat no 6467.0 Sep 2017 and 6401.0 Sep 2017.

The cost of living index growth for government transfer recipients and pensioner and beneficiaries currently exceed CPI inflation.

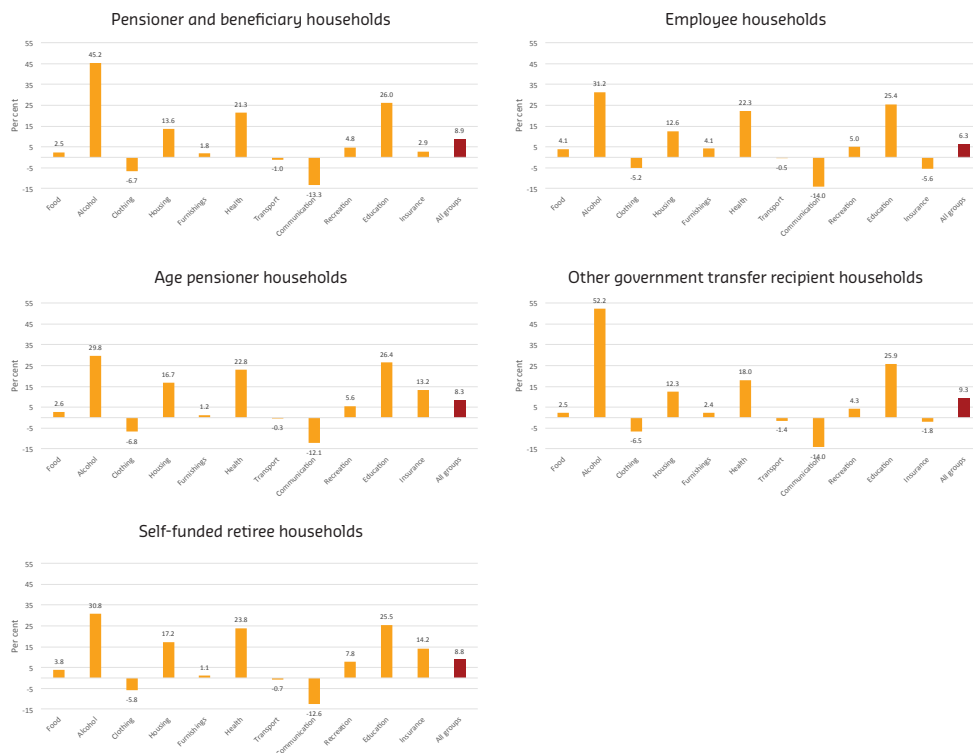
The latest September quarter 2017 data show the cost of living for *Other government transfer recipient households* (2.1%) and the broad *Pensioner and beneficiary holders* index (2.0%) both growing at a higher rate than the 1.9 per cent headline CPI inflation, while *Age pensioner households* (1.7%), *Employee households* (1.5%) and *Self-funded retirees* (1.6%) are currently growing slower than price inflation.

The *Employee household* cost of living index growth has in general been well below that of the CPI since March quarter 2012.

The cost of living index for *Self-funded retirees* has experienced similar growth to the CPI, with data for the last two quarters being marginally lower than CPI inflation.

Figure 5 tracks over time the cost of living for the commodity groups for each of the five household types for the past five years (since 2012). The growth in Food and non-alcoholic beverages has been interesting. While the costs for this category have grown over the past five years (affecting *Employee households* the most), they have fallen over the past year. Clothing and footwear, and Communication, have experienced a decline from September 2012 to September 2017, and also over the past year since September 2016. The index numbers for Transport have shown positive growth for all five household types over the past year but over the longer term, Transport has witnessed a decline.

Figure 5 Cost of living increase over previous five years, by type and category, 2012 to 2017



Source: Bankwest Curtin Economics Centre | ABS cat no 6467.0 Sep 2017.

Consumer price index and components

Having noted in the previous chapter that the CPI is not an ideal indicator of the cost of living, it can nevertheless be informative to examine the movements in the components of the CPI. When combined with an analysis of expenditure, trends in prices can reveal pressures faced by different households. Different households spend a greater or lesser proportion of their disposable income on different types of items – essential/necessities versus discretionary/luxury. If, for example, the cost of overseas holidays or new electronic gadgets go down the living standard of those who can afford these improves. On the other hand, when the price of food or utilities goes up, the impact on lower income households who spend a greater proportion of their income on these essentials are disproportionately affected.

We begin with trends in the main component groups of the CPI for Australia as a whole, calculated as the weighted-average of the eight capital cities. Figure 6 shows the four quarter ended percentage change in the CPI for Perth as compared to Australia for the 11 broad categories of goods and services that the CPI tracks. The last panel shows the overall (or all groups) inflation rate for Perth and Australia.

Figure 6 Growth in consumer prices, component groups, Perth and Australia, 2000 to 2017

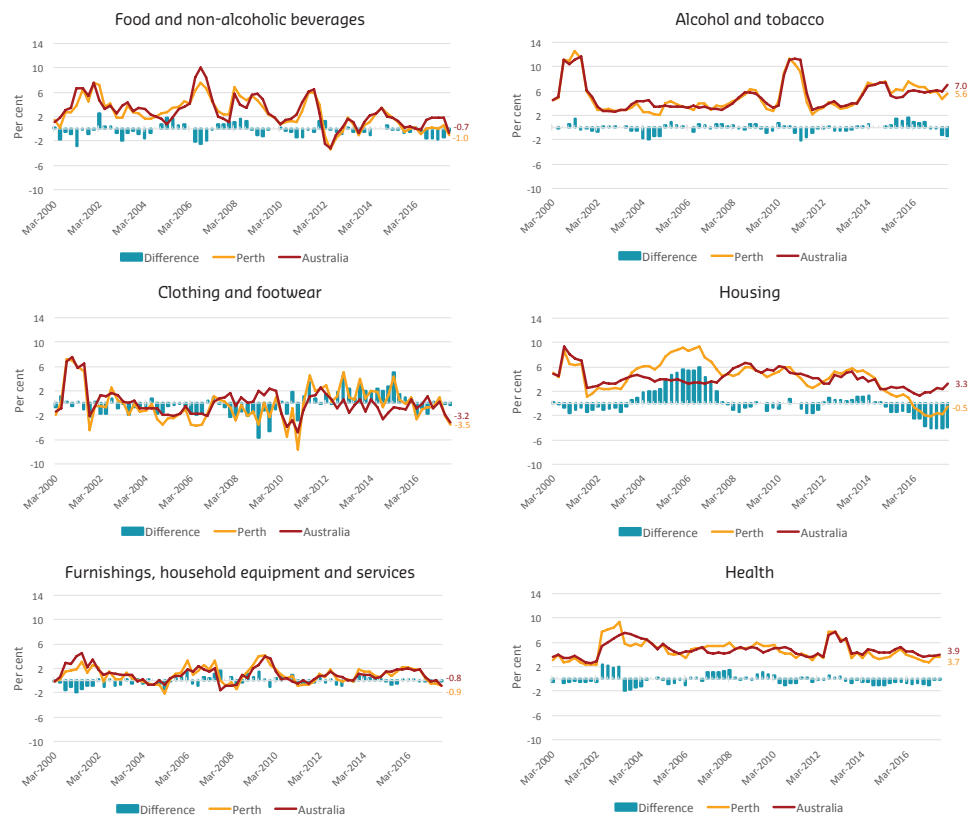
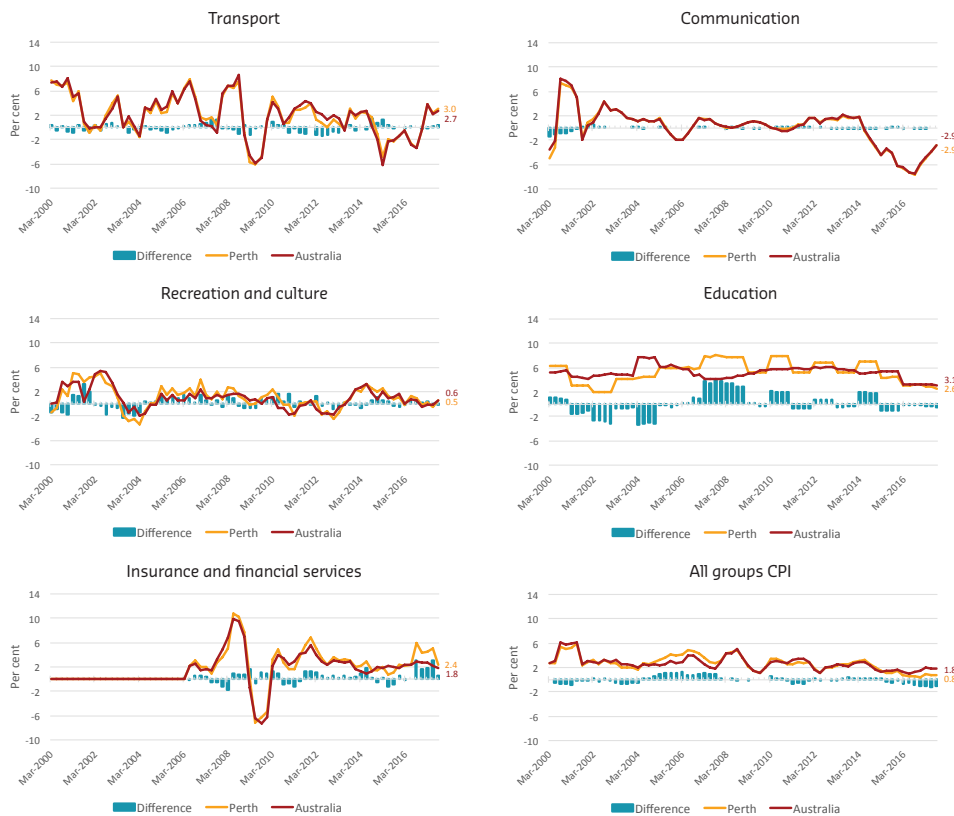


Figure 6 Growth in consumer prices, component groups, Perth and Australia, 2000 to 2017

Source: Bankwest Curtin Economics Centre | ABS cat no 6401.0, Sep 2017.

These charts are characterised as much by inflation in Perth being similar to that for Australia as by several groups where they diverge. Price growth for Furnishings, household equipment and services, Transport, and Communication is similar for both Perth and Australia. By contrast, groups such as Housing and Education see Perth with larger fluctuations in price growth than for Australia.

For the most recent quarters, groups where Perth is experiencing slower price growth than Australia in general are Food and non-alcoholic beverages, Alcohol and tobacco, Housing, Furnishings, household equipment and services, Health, Transport, Communication, and Education. By contrast Clothing and footwear, Recreation and culture, and Insurance and financial services in Perth have experienced faster price growth than for Australia more generally.

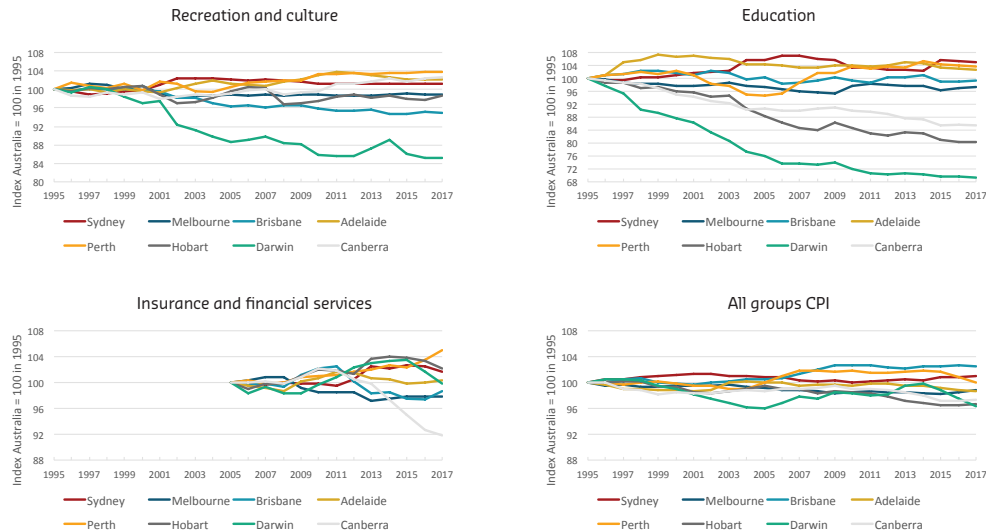
Figure 7 shows how the price indices for each of the 11 groups have moved over time for the eight capital cities. The price indices are expressed relative to Australia and are rebased so that the values for all indices are 100 in 1995.

The last panel of the charts show the price indices for all items for the eight capital cities relative to Australia. Since 2005, the general price level in Brisbane has been

higher than for Australia, with the latest data (March quarter, 2017) showing 2.4 per cent higher prices than for Australia. Darwin has had prices lower than Australia as a whole for longer than the other capitals. In 2005, prices were 4 per cent lower while they are currently 3.8 per cent lower than Australia. Prices in Perth have in general been higher than Australia for the entire period since 1995, with a divergence occurring around 2005 that has narrowed again over the past two years. Perth prices are currently (100.1) on par with the Australian level.

Figure 7 Disparity in component group prices, capital cities with respect to Australia, 1995 to 2017



Figure 7 Disparity in component group prices, capital cities with respect to Australia, 1995 to 2017

Note: Annual data aggregated from average the corresponding four quarters of CPI data. 2017 values are set to the average of the March, June and September quarters. Rebased to 1995 = 100. Data presented as percentage deviations from the Australian price level for each category. Price indices for insurance and financial services are only available from March quarter 2005 and, as such, they are rebased to 2005 = 100.

Source: Bankwest Curtin Economics Centre | ABS cat no 6401.0, Sep 2017.

Prices of commonly consumed goods and services







Twice a year the Economist Intelligence Unit (The Economist) compiles and publishes their Worldwide Cost of Living Index for over a hundred cities. Five Australian cities feature in their survey – Adelaide, Brisbane, Melbourne, Perth and Sydney. Appendix A shows the mid-range prices from the most recent survey for the five Australian cities as well as their differences to Perth.

With the rich dataset of unit price data from the Economist Intelligence Unit, this section undertakes an analysis of the cost of a typical ‘shopping trolley’ for households living in each of the five capital cities surveyed.

Figure 8 contains a list of items, organised by category, that might be part of a household’s typical shopping list. Apart from food items, a shopping list would also normally contain other household and personal care items. Naturally, the composition of the list and basket would depend on the frequency of purchases or ‘trips to the shop’. As an example, while on a weekly basis the basket would contain food items, on a fortnightly basis the basket would expand to items such as shampoo and laundry detergent - items that usually last a bit longer.

The purpose of framing an analysis of the cost of a typical weekly ‘shopping trolley’ on a fixed list of items is to ensure consistency for the comparison across the capital cities.

Figure 8 Representative weekly shopping trolley, capital cities, 2017

Grain	Meat	Vegetables and fruits	Dairy and eggs	Sugar and fat, Other food	Household items/ Personal care
					
White bread, 1 kg (x2)	Beef, stewing, shoulder, 1 kg (x2)	Potatoes, 2 kg	Butter, 500 g	Olive oil, 1 L	Soap, 100 g
White rice, 1 kg	Beef, mince, 1 kg	Onions, 1 kg	Milk, 1 L (x2)	Instant coffee, 125 g	Toilet tissue, two rolls
Spaghetti, 1 kg (x2)	Lamb, leg, 1 kg	Mushrooms, 1kg	Yoghurt, natural, 150 g (x2)	Orange juice, 1 L (x2)	Toothpaste, 120 g
Cornflakes, 375g (x2)	Pork, loin, 1 kg	Tomatoes, 1 kg		Wine, common table, 750 mL	
	Ham, whole, 1 kg	Carrots, 1 kg			
	Bacon, 1 kg	Lettuce, one			
	Chicken, frozen, 1 kg (x2)	Apples, 1 kg			
	Frozen fish fingers, 1 kg	Bananas, 1 kg			

Note: The shopping trolley is indicative.
Source: Bankwest Curtin Economics Centre | BCEC analysis.

Using prices data from the Economist Intelligence Unit, Table 5 shows the indicative costs of the shopping trolley for the five capital cities. The analysis also extends to two types of stores, that of supermarkets (generally lowest price) and mid-priced stores (for example independent grocers).

Table 4 Prices of representative weekly shopping trolley, capital cities, 2017

March 2017 AUD prices	Perth		Adelaide		Brisbane		Sydney		Melbourne	
Name	Supermarket	Mid-priced store	Supermarket	Mid-priced store	Supermarket	Mid-priced store	Supermarket	Mid-priced store	Supermarket	Mid-priced store
White bread, 1 kg	4.62	5.00	4.20	5.00	4.00	4.29	3.49	4.67	1.31	4.29
Butter, 500 g	2.54	2.73	4.00	4.60	4.00	8.51	4.00	4.60	4.60	5.78
White rice, 1 kg	2.85	3.45	2.00	3.00	2.00	2.16	2.59	2.69	2.68	2.74
Spaghetti, 1 kg	3.4	3.40	3.99	4.90	3.90	3.90	3.90	4.47	4.90	5.40
Cornflakes, 375 g	2.58	2.82	2.22	4.24	2.04	2.75	2.43	3.79	2.21	3.33
Yoghurt, natural, 150 g	0.73	0.73	0.75	1.50	1.26	1.44	1.17	1.65	1.73	1.83
Milk, pasteurised, 1 l	1	1.35	1.43	1.99	2.05	2.05	1.20	1.99	1.25	2.15
Olive oil, 1 l	10.45	12.50	15.15	17.33	15.98	18.67	13.00	15.80	15.99	17.32
Potatoes, 2 kg	6.4	6.40	3.25	5.00	7.50	8.00	5.98	7.00	7.00	8.00
Onions, 1 kg	2.85	2.85	1.60	2.80	3.50	3.99	2.90	3.95	1.40	2.90
Mushrooms, 1 kg	11.3	11.99	11.90	12.93	11.00	11.00	12.00	14.99	11.00	13.95
Tomatoes, 1 kg	5.45	5.99	4.50	6.99	4.99	5.27	6.50	7.90	5.50	6.90
Carrots, 1 kg	1.99	1.99	1.25	1.89	1.67	2.20	1.90	2.99	1.75	2.50
Apples, 1 kg	5.38	5.99	2.90	4.50	5.00	5.00	5.00	7.99	3.90	4.90
Bananas, 1 kg	3.9	4.00	2.50	3.10	2.50	3.00	3.50	4.79	2.80	3.50
Lettuce, one	2.85	2.85	2.25	2.50	2.00	2.90	2.50	3.40	2.70	3.43
Eggs, 12	4.5	4.99	4.99	6.99	4.89	5.00	4.60	7.24	4.60	5.90
Beef: stewing, shoulder, 1 kg	10.99	12.55	12.50	15.99	18.99	20.00	14.99	24.99	14.00	16.99
Beef: ground or minced, 1 kg	16	16.00	9.00	14.99	14.00	15.00	10.83	16.99	13.00	15.00
Lamb: leg, 1 kg	19.99	22.85	11.99	19.00	10.00	10.00	9.00	18.99	13.00	23.00
Pork: loin, 1 kg	10.99	12.99	10.99	16.00	8.99	9.00	10.99	20.47	12.00	22.90
Ham: whole, 1 kg	14.99	16.00	18.00	20.00	24.00	24.00	10.99	16.99	16.00	22.00
Bacon, 1 kg	12	15.00	12.00	14.99	12.00	12.00	12.30	18.20	12.00	18.75
Chicken: frozen, 1 kg	6.55	7.45	4.29	5.99	4.00	5.58	5.99	7.99	5.60	6.30
Frozen fish fingers, 1 kg	7.99	8.55	7.99	9.88	8.99	9.00	9.50	10.75	11.99	14.93
Instant coffee, 125 g	6.67	7.96	5.68	7.83	7.83	7.83	6.67	7.83	5.62	7.83
Orange juice, 1 l	3	3.13	2.15	2.25	2.40	2.40	3.35	3.66	2.40	3.35
Wine, common table, 750 ml	10.95	13.00	12.99	18.99	8.99	10.99	19.95	25.95	19.95	24.95
Soap, 100 g	1.45	1.65	0.85	1.08	0.82	0.85	0.78	0.79	0.79	0.79
Toilet tissue, two rolls	3.85	3.85	1.67	2.00	1.20	1.83	1.50	1.67	1.65	1.94
Toothpaste with fluoride, 120 g	3.65	4.25	3.82	4.42	2.24	2.25	2.33	3.57	2.12	4.42

Source: Bankwest Curtin Economics Centre | Economist Intelligence Unit.

Table 5 Indicative cost of weekly shopping trolley, capital cities

Capital city	Supermarket		Mid-priced store		Supermarket discount over		HES 2015-16 food and non-alcoholic beverages	
	\$/basket		\$/basket		Mid-priced store		Average weekly expenditure	
Perth	\$236.70	3	\$263.40	5	10.1%	4	\$239.80	3
Adelaide	\$217.20	5	\$288.50	3	24.7%	3	\$221.10	5
Brisbane	\$245.50	1	\$267.40	4	8.2%	5	\$239.50	4
Melbourne	\$241.30	2	\$325.90	2	26.0%	2	\$257.20	2
Sydney	\$234.80	4	\$335.90	1	30.1%	1	\$275.40	1

Note: Prices as at March 2017.

Source: Bankwest Curtin Economics Centre | BCEC analysis, ABS cat no 6530.0, 2015-16.

The cost of a typical shopping trolley in Perth is \$237 in a supermarket, which is 3rd most expensive among five Australian capital cities.

There are several interesting observations arising from the analysis in Table 5. Beginning with the costs of shopping at supermarkets, the same shopping trolley is most expensive in Brisbane, at \$245.50. Perth is ranked third. The difference between the most expensive city, Brisbane, and the least, Adelaide, is \$28.30.

Included in Table 5 is also the average weekly household expenditure on food and non-alcoholic beverages in the five greater capital city areas for reference. Note that the control basket in Figure 7 also includes some non-food items such as soap and toothpaste. Nevertheless the HES average expenditure amounts for most cases lie between the supermarket and mid-priced store levels.

The rankings are different when households shop at mid-priced stores. Sydney is the most expensive to purchase the contents of the control shopping trolley, at \$335.90. Perth in this case is the least expensive among the five capital cities, at \$263.40. For mid-priced stores the range between the most and least expensive is \$72.50.

Also of interest is the average discount that can be obtained by shopping in supermarkets as opposed to mid-priced stores for the same shopping trolley. On average, the savings amount to around 20 per cent. Sydney is where the greatest discount can be gained by purchasing the control shopping trolley in supermarkets as opposed to mid-priced stores (30.1%). The discount is least, at 8.2 per cent savings, in Brisbane.

Prices in regional Western Australia

The Department of Primary Industries and Regional Development (previously the Department of Regional Development) in Western Australia has compiled a Regional Price Index (RPI) which has been published since 1998. The aim is to create a spatial index that compares the prices, by location, for a common basket of goods, which fills a gap since the CPI is only compiled at the capital cities' level. Metropolitan Perth is set as the basis for comparison with each regional location.

In 2017, 27 locations were surveyed, intended to capture the majority of the population in each of the nine regions within Western Australia.

Prices are collected for a range of goods and services over 600 items in 2017, arranged in eight categories: Food, alcohol and tobacco, Clothing, Housing, Household equipment and operation, Health, Transportation, and Recreation and education. These broadly correspond to the categories in other household expenditure surveys and for the calculation of the CPI in general.

The RPI is calculated as a weighted index of the good or service sampled, with the weights taken for the CPI for Perth, which is the only published data available for consumer prices.

The RPI for each of the nine regions is in turn a weighted average of indices for the 27 regional centres, based on population shares.

The Department of Primary Industries and Regional Development Price Index shows the Kimberley as having the highest aggregate price level among WA's regions, having overtaken the Pilbara.

Figure 9 Department of Regional Development Regional Price Index, Overall, 2007 to 2017

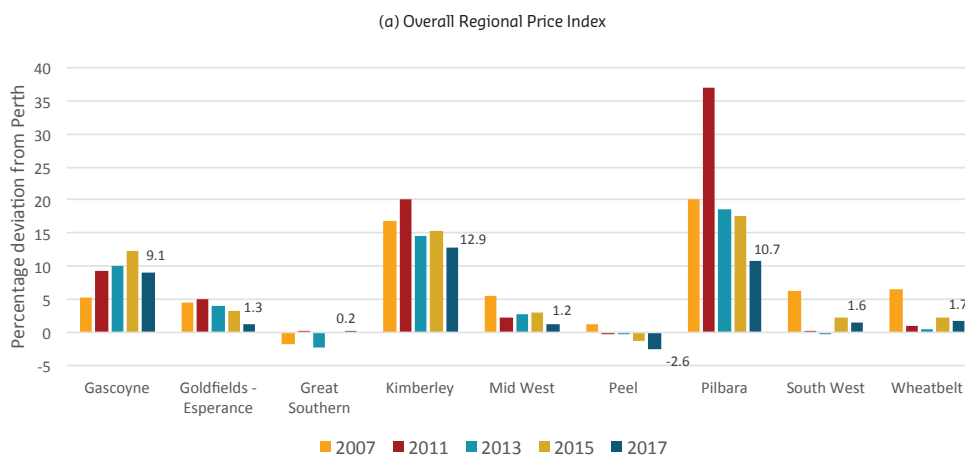


Figure 9 Department of Regional Development Regional Price Index, Overall, 2007 to 2017

(b) Map showing WA's regions for geographical reference



Note: The price index for Perth across all periods is indexed to 0. Regions above 0 indicate prices are above Perth, below 0 indicate prices are below Perth.
Source: Bankwest Curtin Economics Centre | Department of Primary Industries and Regional Development.

Figure 9 charts the overall price level, in index form, benchmarked against Perth, for the WA regions for the past five iterations spanning a decade of the RPI. Several observations can be gleaned from the data. First, at this aggregate level, the Peel and Great Southern regions are most similar to Perth. For the past four iterations of the index, prices in Peel have been lower than those in Perth. By contrast, further south, prices in the Great Southern region have been close to being on par with those in Perth. Second, the most notable aspect of the chart is the Pilbara in 2011 – the height of the iron ore boom. Aggregate prices were 37 per cent higher than those in Perth. Third, the Pilbara has had the highest prices relative to Perth in all except for the latest 2017 period, when it was overtaken by the Kimberley. In order to see which components of prices were responsible for the overall trends, Figure 10 examines the RPI for the WA regions by sub-categories.

Figure 10 Department of Regional Development Regional Price Index, 2007 to 2017

Note: The price index for Perth across all periods is indexed to 0. Regions above 0 indicate prices are above Perth, below 0 indicate prices are below Perth.
 * 2017 data omits pricing for the cost of education.

Source: Bankwest Curtin Economics Centre | Department of Primary Industries and Regional Development.

Prices for the Kimberley region in all eight sub-categories were higher than those in Perth.

The first category in the figure is Food, which comprises the main groups of meat and seafood, fruit and vegetables as well as snacks and confectionery, and takeaway foods. Food prices in the Peel and Great Southern regions have in the latest survey fallen below those in Perth. There has also been a large reduction in Pilbara food prices relative to Perth, falling from 17.6 per cent above Perth in 2015 to 10.3 per cent above Perth in 2017.

The next category is Cigarettes, tobacco and alcohol. Prices for this category were the highest in the Kimberley at 9.3 per cent above Perth, while the Great Southern and the South West were lower than Perth.

For the Clothing category, prices in the Gascoyne, Kimberley and South West have been progressively falling relative to Perth over the past three iterations though they are still higher than Perth. Clothing prices in the Peel region have fallen below Perth for the first time over the ten year span.

The most notable aspect of the chart for Housing, which includes rates and charges, rents, utilities and insurance/credit charges, is the Pilbara in 2011. The housing price index for the Pilbara in 2011 was 199.8 or almost twice that for Perth. This was a period at the height of the mining boom where demand for housing was so great that prices were pushed to an all-time high. Pilbara prices have since moderated significantly. Across the State in 2017, the Kimberley has the highest housing prices after the Pilbara, followed by Gascoyne. Wheatbelt, Great Southern, Goldfields – Esperance, Mid West and Peel have prices lower than those for Perth.

For the past two iterations of the RPI, regional prices for Household equipment and operation have been higher than Perth. This category includes kitchen utensils, household appliances and supplies, furniture and accessories, and household services and communication. In 2017, prices in the Kimberley is the highest, at 13.6 per cent higher than Perth. This is followed by Gascoyne (10.7% higher than Perth) and Wheatbelt (7% higher). The lowest, being Great Southern, is 0.6 per cent higher than Perth.

The Mid West has the lowest aggregate price for Health and personal care in the State, which in 2017 is 1.5 per cent less than Perth. Health and personal care comprises hospital, dental, optical and pharmaceutical services. The Peel region is the only other region where prices are lower than Perth (0.9% lower). By contrast, the top three highest are Pilbara (11.6% higher), Goldfields – Esperance (9.3% higher), and Gascoyne (7.9% higher).

Turning to Transport which comprises motor vehicles, fuel, parts and charges, the Kimberley is the highest in 2017 at an average of 6 per cent higher than Perth, and the lowest is Peel at 3.2 per cent lower than Perth. A consideration when discussing transport and its prices across WA is that of distance. Even when the price of fuel is held constant, the costs of transport will tend to be higher in regional WA as compared to Perth because of the greater distances involved in a typical trip.

The final category is Recreation and education. It is important to note that there has been a definitional change in this category in that it now excludes the cost of education. The implication of this is that care must be taken in comparing the values of this index over time. The index currently includes newspapers and magazines, audio and visual, computing equipment, sporting goods and services, toys and pets. In 2017, Peel again has the lowest relative price of recreation, at 2.1 per cent lower than Perth. The highest is the Gascoyne (10.7% higher), Pilbara (8% higher) and the Mid West (5.2% higher).

Earlier in this report, Table 2 showed the rankings of the top 30 least affordable housing markets in the nine countries surveyed by Demographia. The same survey also considers several WA regional cities. Table 6 lists the WA regional centres that are part of the survey and ranks the centres from least affordable to most affordable, according to the median multiple measure. With the exception of Mandurah, with the lowest median annual household income among the regional centres, all the other centres are regarded as more affordable than Perth.

Table 6 Demographia Housing Affordability Survey, WA regional housing markets, Q3 2016

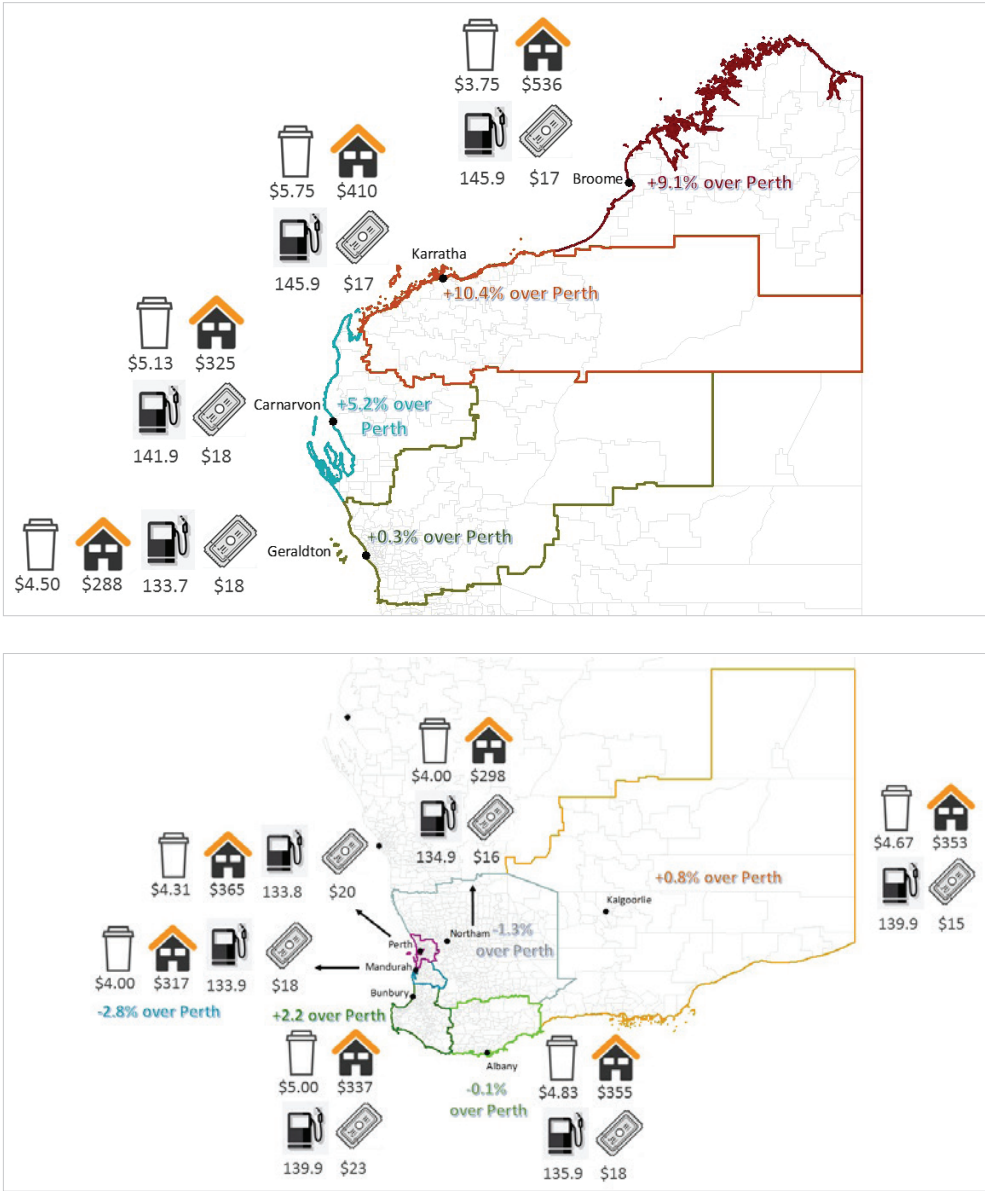
Rank	Housing market	Median price	Median income	Median multiple
1	Mandurah	\$402,000	\$59,400	6.8
2	Perth	\$528,300	\$87,300	6.1
3	Geraldton	\$345,000	\$73,700	4.7
4	Albany	\$340,000	\$84,300	4.0
5	Bunbury	\$340,000	\$84,300	4.0
6	Kalgoorlie	\$312,000	\$118,100	2.6
7	Port Hedland	\$390,000	\$168,700	2.3
8	Karratha	\$363,000	\$171,900	2.1

Note: The Median multiple is the ratio between median (house) price and median (household) income.

Source: Bankwest Curtin Economics Centre | 13th Annual Demographia International Housing Affordability Survey (Demographia 2017).

Finally, to obtain an indication of prices, as opposed to cost of living, in regional Western Australia, Figure 11 maps Perth and the regional centres and shows prices that consumers can expected to pay for several representative items. These items - a cup of takeaway coffee, median rent of a house, a litre of unleaded petrol and an adult international-release movie ticket at a typical cinema - are representatives from the weights in expenditure bundles for West Australians.

Figure 11 A comparison of prices of commonly consumed goods and services, Perth and regional centres, 2017



Note: Prices are averages for a takeaway coffee, median weekly house rental (average 2017Q1 and 2017Q2 to account for low volumes), a litre of 91RON petrol, and an adult movie ticket. Some Northam and Carnarvon prices are indicative. Percentage deviations from Perth are regional-centre data from the DPRID's Regional Price Index, 2017.

Source: Bankwest Curtin Economics Centre | REIWA, fuelwatch.wa.gov.au, numbeo.com, Department of Primary Industries and Regional Development.

Have

wages kept up with prices
in Western Australia?



Have wages kept up with prices in Western Australia?

This chapter compares trends in wages and income for West Australians. We ask whether wages are sufficient to sustain the cost of living of households in WA and track the extent to which incomes have been outpacing, lagging behind, or keeping up with price growth over time.

We begin by comparing average wages and prices in WA to provide a state-wide assessment of income growth relative to price growth. In order to do so, we compare the ABS Wage Price Index (WPI) with the CPI for WA. The WPI measures the quarterly changes in the price of wages and salaries in the Australian labour market, and it is available by state and territory, public versus private sector, and industry. The WPI and CPI are particularly comparable as the methodology used to construct the WPIs is similar to that used for the CPI. The WPI is based on data collected from a representative sample of employee jobs drawn from a sample of employing organisations (ABS 2017). Specifically, we apply an index constructed from total hourly rates of pay excluding bonuses.

By tracking the WPI and CPI trajectories from 2002 to 2017, we are able to assess the extent to which wages are tracking price growth in WA and how WA compares to other states and territories. However, wages do not adequately capture the financial circumstance of vulnerable groups, many of whom might be reliant on government transfers such as pensions and allowances as their primary source of income. Hence, the WPI-CPI comparisons are complemented by a separate comparison on the growth of pension and allowance rates against the CPI over the period 2002-2017.

This chapter also examines whether there are geographical variations in the extent to which incomes are tracking price growth over time across the nine regions in WA outside Perth. To do so, we drill down the regional level to compare the RPI against a Regional Income Index (RII). The latter is constructed using data on weekly gross household incomes from the 2006, 2011 and 2016 Censuses of Population and Housing to build a profile of median household income² at a regional level in Western Australia. The deviation in median household income from Perth is then calculated for each region so the RII for each region reflects its deviation from Perth. This allows us to achieve consistency in interpretation of the RII with the RPI.

The chapter concludes by drilling down to the household level to shed light on variations in real income growth across WA household types. Real income growth is growth income adjusted for price inflation. It therefore represents changes in the purchasing power of WA households over time. To the extent that real income growth varies across different population subgroups, it reflects variations in purchasing power across the WA population. Of particular interest is whether the income growth of financially vulnerable households is lagging behind the income growth of more financially secure households. For instance, if the rate of income growth of low-income households is falling further and further behind the average WA household, it suggests that the former are facing greater difficulty in coping with general cost of living pressures than the general WA population.

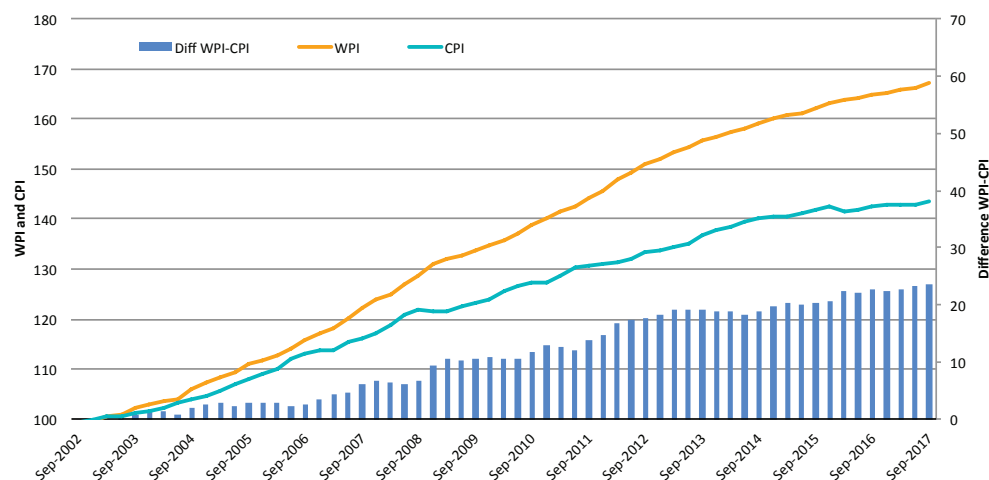
² Household income data at the LGA level (building blocks for regions) are not directly collected from the Census. Instead, the Census reports gross weekly household income in bands. We are able to observe which income band the median household is likely to fall into in each LGA. The estimated level of median household income is then pro-rated from this income band.

Figure 12 tracks the WPI movements in Western Australia between 2002 and 2017 against CPI movements in the State. The ABS currently sets the base years of the WPI and CPI as 2008-09 and 2011-12 respectively. To enhance comparability between the two index series, we reset the base year of both the WPI and CPI series to 2002-03 so that both series begin with a base index of 100 at the start of our timeframe of analysis.

The figure shows that in Western Australia, average wages represented by the WPI have grown at a steeper rate than prices between 2002 and 2017. Over this period, the WPI rose by over 60 per cent while the CPI rose by over 40 per cent. This converts to a quarterly percentage growth in WPI of nearly 0.9 per cent between 2002 and 2007 compared to a 0.62 per cent quarterly percentage growth in CPI. Hence, wage growth has in fact outpaced price growth on a state-wide basis, suggesting that the average employed West Australian is better able to cope with general cost of living pressures over time. However, these average trends do not, of course, capture variations across regions or different household types, so they should not be taken to reflect the position of all West Australians.

Average wages have risen at a steeper rate than prices in WA between 2002 and 2007. In this time, the WPI rose by over 60% while the CPI rose by over 40%.

Figure 12 Wage Price Index and Consumer Price Index movements in WA, 2002 to 2017



Note: The base year for the WPI and CPI has been reset to 2002-03.

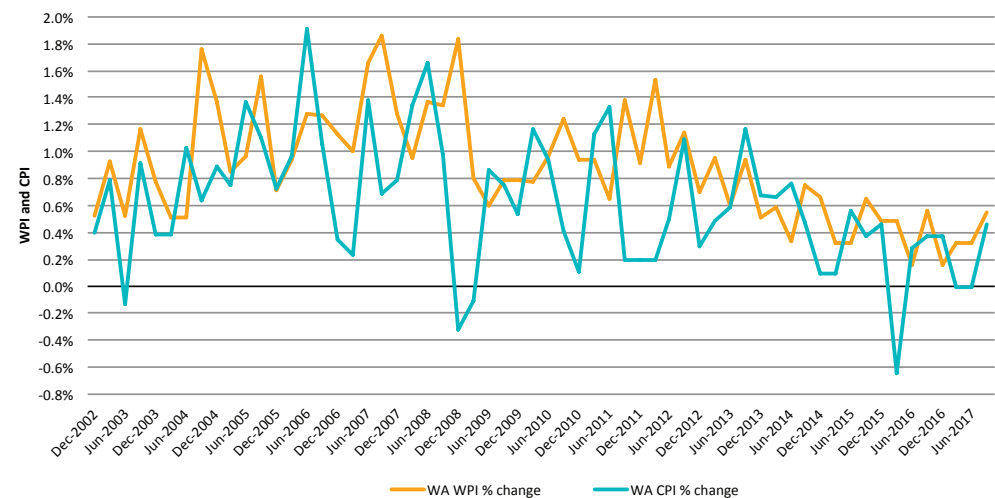
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Cat. No. 6401.0 and 6435.0.

Figure 12 tracks the WPI against the CPI in WA using quarterly percentage change measures. At first glance, there appears to be great volatility in the trends. However, upon closer inspection, some distinct patterns emerge across economic cycles, that is, the growth rate of wages and prices in WA appear to rise and fall in line with economic booms and downturns in the state. The rate of growth in both the WPI and CPI trended upwards during the economic boom of the first half of the 2000s. Wages and prices both fell during the GFC. However, both started trending upwards again in 2009 as the extended resources boom in WA helped cushion the State from the after-effects of the GFC. As noted in previous BCEC analysis of the State's economic trends, the extended resources boom had culminated in a spike in the WA's gross state product (GSP) in 2011-12, with its annual GSP growth rate reaching 9 per cent, nearly three times Australia's national gross domestic product (GDP) growth rate in

The growth rate of wages and prices in WA appear to rise and fall in line with economic booms and downturns in the State.

that year (Duncan et al., 2016). However, the state GSP started declining post-2012 and we observe a similar downward trend in both the state's WPI and CPI during the post-2012 era in Figure 13.

Figure 13 Quarterly percentage change in Wage Price Index and Consumer Price Index in WA, September 2002 to September 2017



Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Cat. No. 6401.0 and 6435.0.

How do real wage movements in WA compare to Australia as a whole?

Overall, the CPI in WA has trended very closely to the CPI in Australia as a whole. Between 2002-03 and 2016-17, the CPI in both the state and nation rose by around 43 per cent. The quarterly rate of growth in CPI was 0.62 per cent for both WA and Australia over this time period.

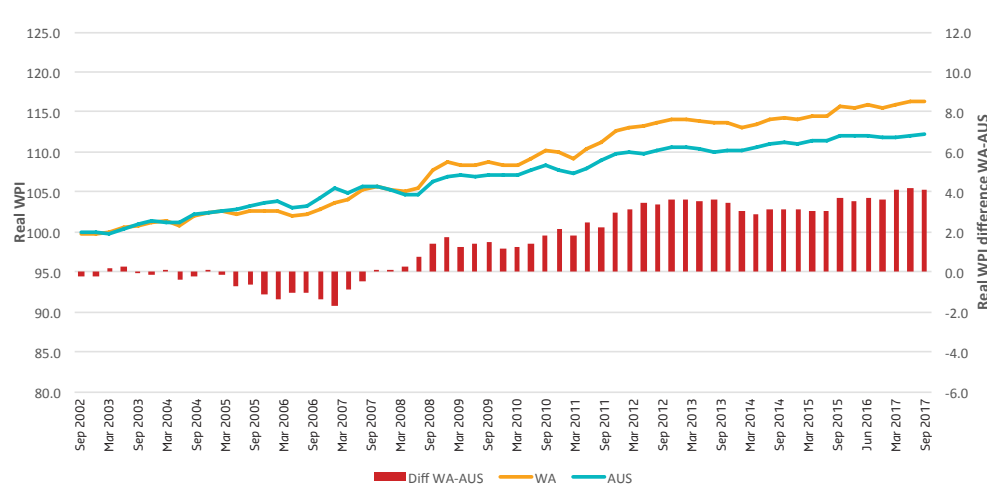
Hence, if the WPI movements in WA have outpaced Australia overall, it indicates the typical West Australian wage earner has become better positioned than the typical Australian wage earner in coping with general cost of living pressures over time. On the other hand, if the WPI movements in WA have lagged behind Australia, then the typical WA wage earner's ability to shoulder cost of living pressures has started to lag behind the typical Australian wage earner.

Up to this point, the analysis has focused on nominal WPI. However, in this section, we examine real WPI, that is, nominal WPI adjusted for general price level changes or CPI over time. The real WPI in fact collapses the nominal WPI and CPI trends in previous figures into a single trend that reflects changes in the typical wage earner's purchasing ability over time.

Figure 4 compares the real WPI in WA versus Australia between 2002 and 2017. Other than a brief period between 2005 and 2007 when the real WPI in Australia exceeded the real WPI in Western Australia, the latter has generally exhibited higher real WPIs than the former. The figure also shows that the real WPI, or purchasing ability, of West Australian wage earners has climbed at a steeper rate than Australia as a whole. The gap between the real WPI of WA and Australia has gradually widened over time, from around zero in 2008 to around four index points in 2012 during the peak of the WA resources boom. During the immediate post-boom years, the real WPI gap between WA and Australia narrowed slightly to around three index points but it has widened again to four index points in 2016.

The real WPI in WA has climbed at a steeper rate than Australia as a whole between 2002 and 2017. The gap between the real WPI of WA and Australia widened from zero to four points between 2008 and 2016.

Figure 14 Real Wage Price Index, WA versus Australia, 2002 to 2017



Note: The base year for the WPI and CPI has been reset to 2002-03.

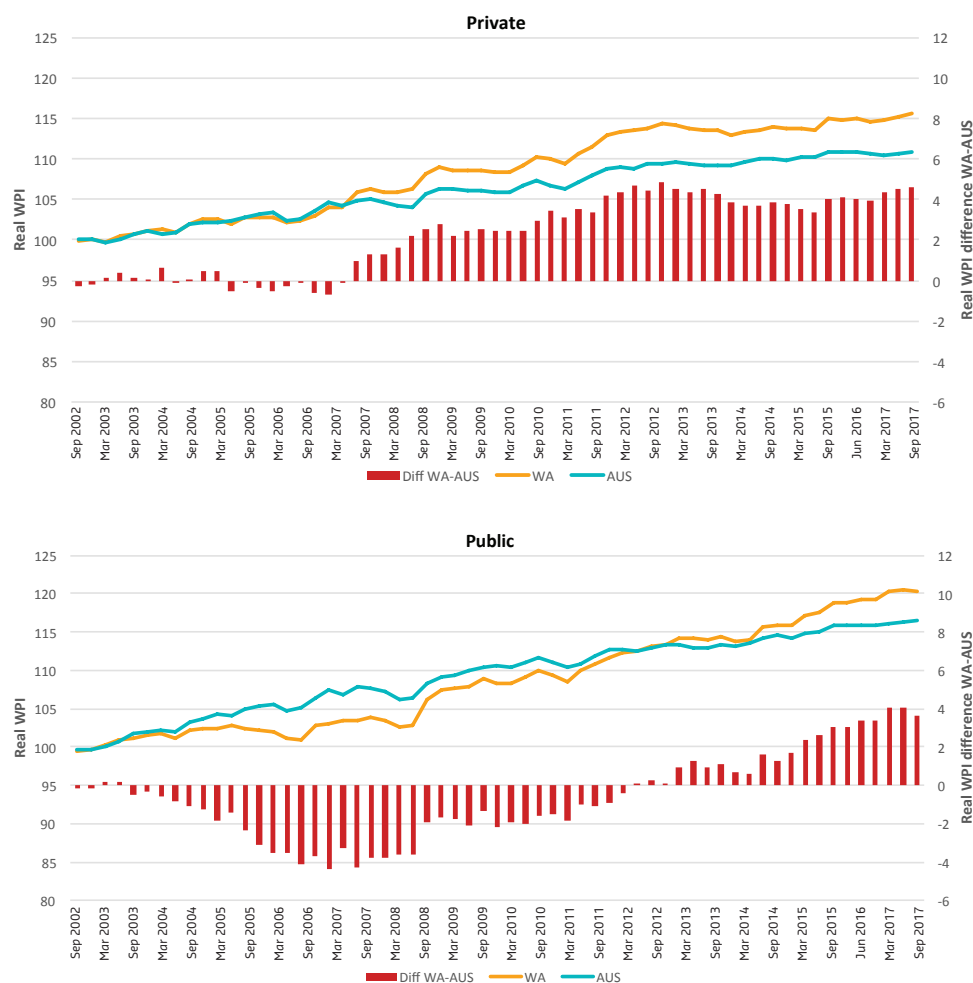
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Cat. No. 6401.0 and 6435.0.

The private sector real WPI in WA began surpassing Australia back in 2007. By 2013, the public sector real WPI in WA had also begun surpassing the public sector real WPI in Australia.

Interestingly, the widening gap in real WPI in favour of WA reflects a combination of state-national differences in the public and private sector. Figure 15 shows that the private sector real WPIs in both the state and nation trended closely together in the early 2000s. However, the private sector real WPI in WA began surpassing Australia back in 2007, with the size of the gap widening noticeably in favour of WA during the resources boom peak. By 2013, the public sector real WPI in WA had also begun surpassing Australia. It is also noticeable that the real WPI has climbed more steeply in the public sector than the private sector in WA in recent years.

Hence, the widening WA-Australia gap in real WPIs in Figure 14 was initially driven by trends in the private sector only. However, in more recent years, this gap has continued to widen due to increases in real WPI in WA beyond Australia in both the private and public sectors.

Figure 15 Real Wage Price Index by sector, WA versus Australia, 2002 to 2017



Note: The base year for the WPI and CPI has been reset to 2002-03.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Cat. No. 6401.0 and 6435.0.

Wages and price growth: State and territory comparisons

The previous section confirms that real WPI in WA has outpaced Australia overall, suggesting that the typical West Australian wage earner has become better positioned than the typical Australian wage earner in coping with general cost of living pressures over time. In this section, we delve deeper into WA's position relative to the rest of Australia by conducting comparisons of wage and price growth by state and territory.

Table 7 ranks the states and territories by real WPI growth over the period of the last 15 years. WA has experienced the highest real WPI growth rate among all states and territories over the period 2002-2017 at 0.26 per cent, per quarter. On the other hand, the three most populous states – New South Wales, Victoria and Queensland – have experienced the slowest real WPI growth rate at under 0.2 per cent per quarter.

The real WPI growth rate is driven by the relativities between two forces – the growth in nominal WPI and CPI growth. Firstly, it is clear that the nominal WPI growth rate has outpaced the CPI growth rate in every state and territory. However, there are differences in relativities between the two trends.

As shown in the table, WA experienced the highest nominal WPI growth rate among all states and territories of 0.88 per cent and the second highest ranking in terms of CPI growth rate at 0.62 per cent. However, WA's high nominal WPI growth rate has clearly outstripped its CPI growth by the greatest margin among all the states and territories to position it in the highest ranking in terms of real WPI growth.

Tasmania ranks rather low in terms of both nominal WPI growth at 0.82 per cent and CPI growth at 0.58 per cent. Mirroring WA trends, however, its nominal WPI growth has also outstripped CPI growth by a significant margin to make it the second most highly ranked state in terms of real WPI growth.

Like WA, Queensland and New South Wales have relatively high CPI growth rates at over 0.6 per cent. However, their nominal WPI growth rates of 0.83 per cent and 0.8 per cent respectively are not as high as WA's 0.88 per cent. Hence, New South Wales and Queensland have the two lowest rankings in real WPI growth among all states and territories.

WA has experienced the highest real WPI growth rate among all states and territories over the period 2002-2017 at 0.26% per quarter, while Queensland ranks the lowest at 0.17%.

Like WA, Queensland and New South Wales had relatively high CPI growth rates during 2002-2017. However, their nominal WPI growth rates of 0.83% and 0.8% respectively were not as high as WA's 0.88%.

Between 2002-2007 and 2007-2012 the real WPI in WA more than doubled from 0.22% to 0.42%. During the post-resources boom period of 2012-2017 WA's real WPI growth rate was just 0.1% per quarter.

Table 7 Quarterly percentage change in Wage Price Index and Consumer Price Index, by state and territory, September 2002 to September 2017

State	Real WPI growth		Nominal WPI growth		CPI growth	
WA	0.26%	1	0.88%	1	0.62%	2
TAS	0.24%	2	0.82%	4	0.58%	8
NT	0.22%	3	0.82%	3	0.60%	5
SA	0.21%	5	0.81%	5	0.61%	4
ACT	0.21%	4	0.81%	6	0.59%	7
VIC	0.19%	6	0.79%	8	0.60%	6
NSW	0.18%	7	0.80%	7	0.62%	3
QLD	0.17%	8	0.83%	2	0.66%	1
AUS	0.20%		0.81%		0.62%	

Note: The rankings are based on percentage change estimates expressed to four decimal places.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Cat. No. 6401.0 and 6435.0.

Interestingly, the real WPI growth over 2002-2017 also differ, considerably in the case of some states and territories, over the economic cycle. Table 8 breaks down the real WPI growth rate over 2002-2017 into five-year periods – 2002-2007, 2007-2012 and 2012-2017.

Between 2002-2007 and 2007-2012, the real WPI in WA more than doubled from 0.22 per cent to 0.42 per cent. However, the post-boom downturn has brought about much reduced wage growth; during 2012-2017, WA's real WPI growth rate was just 0.14 per cent per quarter or one-third the growth rate it experienced during the height of the resource boom in the preceding period.

Tasmania exhibited a similar (though milder) trend in real WPI growth as WA, with the real WPI growth rate peaking during 2007-2012. On the other hand, South Australia exhibited an opposite trend, with the real WPI growth rate dipping during 2007-2012.

In New South Wales, Victoria, Queensland and the Australian Capital Territory, real WPI growth rates have systematically declined over the three sub-periods in question. In Northern Territory, they have remained relatively constant over time.

Table 8 Quarterly percentage change in real Wage Price Index, by state and territory and period, September 2002 to September 2017

State	Sep-2002 to Sep-2017		Sep-2002 to Jun-2007		Sep-2007 to Jun-2012		Sep-2012 to Sep-2017	
WA	0.26%	1	0.22%	7	0.42%	1	0.14%	4
TAS	0.24%	2	0.25%	3	0.29%	2	0.19%	3
NT	0.22%	3	0.22%	8	0.23%	4	0.21%	1
SA	0.21%	5	0.23%	6	0.19%	7	0.20%	2
ACT	0.21%	4	0.28%	1	0.24%	3	0.11%	6
VIC	0.19%	6	0.24%	5	0.21%	6	0.13%	5
NSW	0.18%	7	0.28%	2	0.21%	5	0.05%	8
QLD	0.17%	8	0.25%	4	0.19%	8	0.09%	7
AUS	0.20%		0.26%		0.24%		0.10%	

Note: The rankings are based on percentage change estimates expressed to four decimal places.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Cat. No. 6401.0 and 6435.0.

Have incomes in WA regions kept pace with price growth?

This section shines a spotlight on intrastate variations in income and price growth by investigating whether there are geographical differences in the extent to which incomes are tracking price growth over time across the nine regions in WA outside Perth. To do so, we drill down the regional level to compare the RPI against a RII. As explained in greater detail earlier in this chapter, the RII is constructed using data on weekly gross household incomes from the Censuses of Population and Housing to derive an index for each region that reflects the percentage deviation in the region's median household income from Perth. This is consistent with the interpretation of the RPI, which reflects the percentage deviation of the region's price for a typical basket of goods and services from Perth.

Because the years for which the RPI and RII are available are not directly aligned, we conduct the RII – RPI comparisons using the closest years possible for which data are available. To be specific, the 2006 RII is compared with the 2007 RPI, the 2011 RII is compared with the 2011 RPI, and the 2016 RII is compared with the 2017 RPI.

Figure 16 combines the nine regions into four broad groups reflecting four main trends observed in regional income and price growth over the period 2006-07 to 2016-17. Each continuous line represents the RPI for a region, while each dotted line represents the RII for a region. The RPI and RII are expressed in percentage deviations from Perth, which has been assigned a base index of 100. So for instance, the upper left panel of the figure shows that the RII deviation from Perth for the South West region was 34.5 in 2006, indicating that in 2006 median income in the South West was 34.5 per cent higher than in Perth. Similarly, the South West's RPI deviation from Perth was 6.3 in 2007, indicating that prices in the South West were 6.3 per cent higher than in Perth in that year.

We first make some general observations before examining each panel in Figure 16 in detail.

Firstly, it would appear that prices in the regions tended to exceed prices in Perth during the three years of observation. To explain, it can be observed that the continuous line – representing each region's RPI deviation from Perth – remained above zero for all three years across all regions with only a couple of exceptions. In the Great Southern and Peel regions, the RPI deviation did dip below zero at times, but very slightly so.

Secondly, there are clearly significant inter-regional differences in RPI. These differences have already been described in detail earlier in the report. However, to reiterate, the resource-rich Pilbara region exhibited the greatest divergence from Perth in terms of RPI; in 2007, the Pilbara's prices were 20 per cent higher than in Perth, this spiked at 37 per cent in 2011 during the height of the resources boom. During these two years the price deviation between Pilbara and Perth was greater than any other region. The Pilbara's RPI deviation from Perth declined to 11 per cent in 2017. However, it is noteworthy that the Pilbara still ranked second in terms of price premium over Perth in 2017, after the Kimberley where the price premium over Perth was slightly higher at 13 per cent. At the other end of the scale, the Great Southern and Peel regions had price levels that closely mirrored Perth in all three years.

Thirdly, the regions exhibit clear differences in median income levels. Table 9 ranks regions by their real median household income levels. The Pilbara region had the highest median income in 2016 of \$2,400, well exceeding Perth's \$1,700. Other regional areas exhibit median income levels that are close to or below Perth's median income.

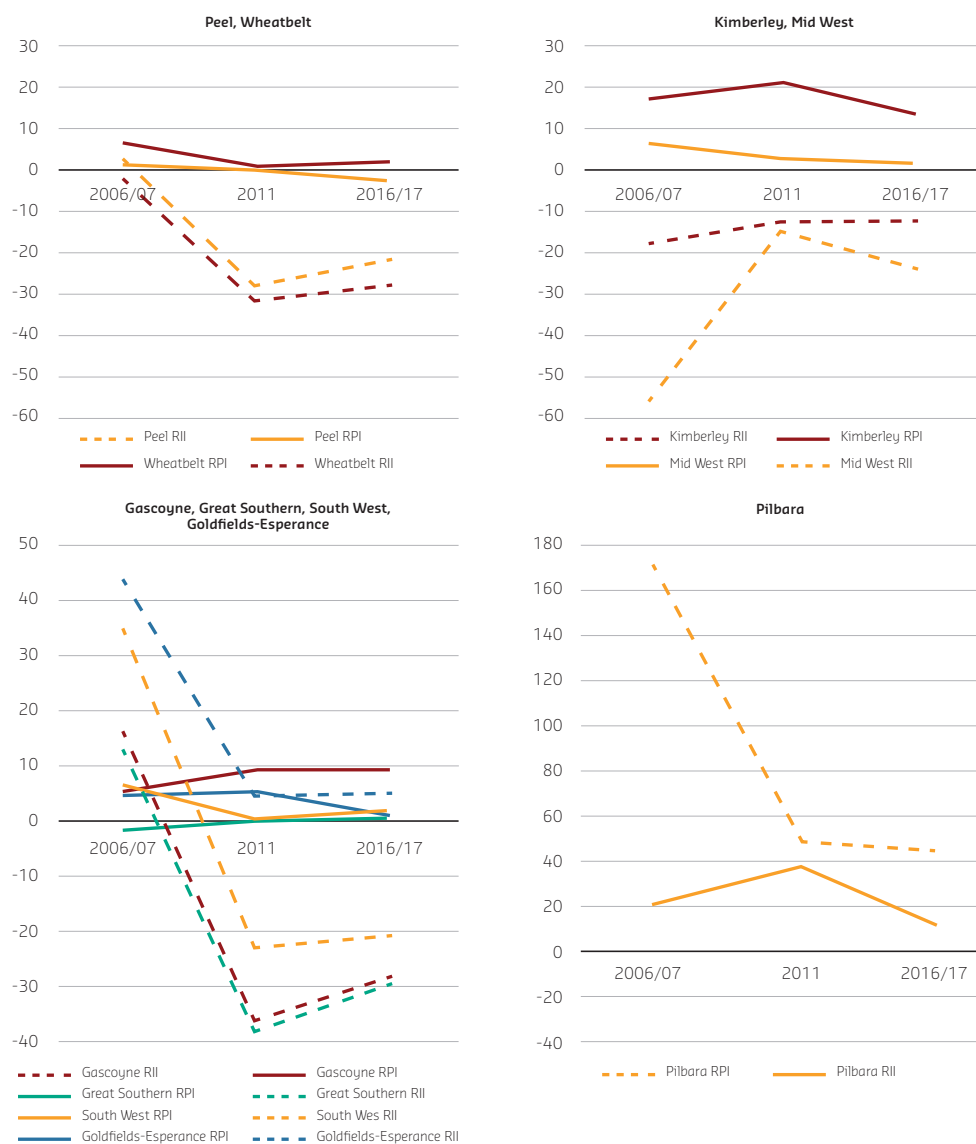
Fourthly, we can observe from Figure 15 that over the period of analysis, the regions' income movements relative to Perth were much more volatile than price movements. While price movements were volatile in all regions, some of this volatility can be attributed to significant price shifts in Perth over the period in question. As shown in

Regional income movements have been more volatile than regional price movements relative to Perth over the period 2006-07 to 2016-17.

Table 9, Perth's real median household income rose from \$800 to \$1,400 – a 75 per cent jump – between 2006 and 2011. Only two other regions exhibited greater volatility in income change; the real median household income in the Kimberley and Mid West regions jumped by 100 per cent and 300 per cent respectively between 2006 and 2011.

Next, we comment on each panel in Figure 16 in detail. As explained earlier, the figure groups the nine regions into four broad groups reflecting four main trends observed in regional income and price growth over the years 2006-07, 2011 and 2016-17. For each region, if the dotted line lies above the continuous line, it indicates that incomes are outpacing prices relative to Perth. If the dotted line lies below the continuous line, it shows that incomes are failing to keep pace with prices relative to Perth.

Figure 16 Regional Income Index and Regional Price Index, percentage deviation from Perth, 2006-07, 2011, 2016-17



Note: Due to data limitations, it is not possible to exactly align the years of comparisons between the RII and RPI. Hence, the 2006 RII has been paired with the 2007 RPI, the 2011 RII has been paired with the 2011 RPI, and the 2016 RII has been paired with the 2017 RPI in the figure. For reasons of space, the vertical axis is not perfectly aligned across the four panels. Hence, caution must be exercised when comparing estimates between panels.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Department of Regional Development and authors' estimates based on the 2006, 2011 and 2016 ABS Censuses of Population and Housing.

The two top panels capture regions where prices relative to Perth have generally exceeded incomes relative to Perth. At the top left, the Peel and Wheatbelt regions have exhibited some divergence between their price and income trajectories, with incomes relative to Perth dipping below prices relative to Perth after 2006-07. At the top right, the Kimberley and Mid West regions exhibited some convergence, with incomes relative to Perth rising to towards prices relative to Perth.

However, regardless of whether there has been divergence or convergence between incomes and prices, incomes relative to Perth still remained below prices relative to Perth throughout the period. This indicates that incomes have been failing to keep pace with prices relative to Perth.

The bottom left hand panel groups together the regions of Gascoyne, Great Southern, South West and Goldfields – Esperance. Within these groups, median incomes relative to Perth were outstripping prices relative to Perth during the economic boom of 2006-07. However, by 2011, incomes relative to Perth had declined to prices relative to Perth in Goldfields – Esperance. In the other three regions, incomes relative to Perth had fallen below prices relative to Perth, indicating that incomes in these regions have been failing to keep pace with prices.

Unlike the other three broad groups, the Pilbara is the only region where income relative to Perth strongly outstripped price relative to Perth in all three years of observation. While income relative to Perth has declined since the height of the resources boom, it remains higher than price relative to Perth in the most recent year.

Table 9 Approximate real median household income during 2006, 2011 and 2016, by region, at 2017 price levels

	2006	2011	2016	Percentage change 2006-2011	Percentage change 2011-2016
Perth	\$800	\$1,400	\$1,700	75.0%	21.4%
Pilbara	\$2,100	\$2,000	\$2,400	-4.8%	20.0%
Goldfields - Esperance	\$1,100	\$1,400	\$1,800	27.3%	28.6%
Kimberley	\$600	\$1,200	\$1,500	100.0%	25.0%
Mid West	\$300	\$1,200	\$1,300	300.0%	8.3%
Peel	\$800	\$1,000	\$1,300	25.0%	30.0%
South West	\$1,000	\$1,100	\$1,300	10.0%	18.2%
Gascoyne	\$900	\$900	\$1,200	0.0%	33.3%
Great Southern	\$900	\$900	\$1,200	0.0%	33.3%
Wheatbelt	\$800	\$900	\$1,200	12.5%	33.3%

Note: The estimates have been inflated to September 2017 price levels using the Perth CPI.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Cat. No. 6401.0 and Censuses of Population and Housing.

There has been some divergence between prices and incomes relative to Perth in the Peel and Wheatbelt regions, but some convergence in the Kimberley and Mid West.

In most regions, incomes relative to Perth have failed to keep up with price relative to Perth. The Pilbara is a clear exception, where income relative to Perth strongly outstripped price relative to Perth during 2006-07 to 2016-17.

Have real incomes grown at the same pace across different population subgroups in WA?

During 2003-09, low-income households' real income growth lagged behind high-income households, with the poorest 20% experiencing only an 11% increase in real income while the richest 20% in WA reaped income gains of nearly 60%.

All quintiles experienced a smaller real income growth in 2009-15 than back in 2003-09. However, the richest 20% of households experienced the greatest reduction in real income of 8%.

This chapter concludes by drilling down to the household level to shed light on variations in real income growth across WA household types. Real income growth is growth income adjusted for price inflation. It therefore represents changes in the purchasing power of WA households over time. To the extent that real income growth varies across different population subgroups, it reflects variations in purchasing power across the WA population.

Of particular interest is whether the real income growth of financially vulnerable households is lagging behind the income growth of more financially secure households. We compare gross household income growth rates by income bands, the main reported source of income for the household, and household type. To do so, we employ the ABS Survey of Income and Housing (SIH) for the years 2003-04, 2009-10 and 2015-16.

In order to derive income bands that allow us to distinguish between low-income and high-income households, we rank households in each year by their equivalised household disposable income and then divide these households into five equal groups or quintiles. The lowest quintile comprises the 20 per cent of households with the lowest equivalised household disposable incomes. The highest quintile comprises the 20 per cent of households with the highest equivalised household disposable incomes. The household incomes are equivalised in order to control for the effect of household size on their reported income. For instance, couple households are more likely to report higher incomes than a single person household due to the former having more adults in the households. If incomes were not equivalised before the households are ranked, then smaller sized households (e.g. single person households) would be over-represented in the bottom of the income distribution.

Figure 17 presents some vivid differences in income growth across the income distribution and between years. During 2003-09, healthy economic conditions underpinned strong income growth amongst the higher income quintiles. Low-income households' real income growth lagged behind high-income households, with the poorest 20 per cent experiencing only an 11 per cent increase in real income while the richest 20 per cent in WA reaped income gains of nearly 60 per cent. During 2003-09, income grew at increasingly higher rates as one moved up the income quintile. For instance, households in the third quintile reaped income gains of 18 per cent, those in the fourth quintile 32 per cent, and those in the highest quintile 58 per cent.

However, weaker economic conditions after 2009 saw a reversal of fortunes amongst higher income groups. During 2009-2015, the growth in real incomes narrowed on increasingly higher income quintiles, from 11 per cent in the third quintile, to 4 per cent in the fourth quintile, to negative growth of -8 per cent in the highest quintile. Of course, it is important to note that all quintiles suffered from a smaller income growth in 2009-15 than back in 2003-09. Among the poorest 20 per cent of households, real income growth narrowed from 11 per cent in 2003-09 to 6 per cent in 2009-15. However, the richest 20 per cent experienced the greatest reduction in income growth.

The SIH asks each household to report its main source of income. These are categorised into wage and salary, own unincorporated business income, government pensions and allowances, and other income. Those households that rely on government pensions and allowances as their main source of income will likely

be most financially vulnerable on the basis of their relatively low income levels. Government pensions and allowances are 'safety nets' that offer targeted assistance to those most in need. On the other hand, the business income and other income categories are potentially enlightening. Business income and other income (e.g. investment income) can tend to be more uncertain than wages and salaries or government pensions and allowances.

Figure 17 Percentage change in mean real gross weekly income of WA households, by household income quintile, 2003-04 to 2015-16



Note: The income quintiles are constructed by ranking WA households in the data according to equivalised household disposable income.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Surveys of Income and Housing.

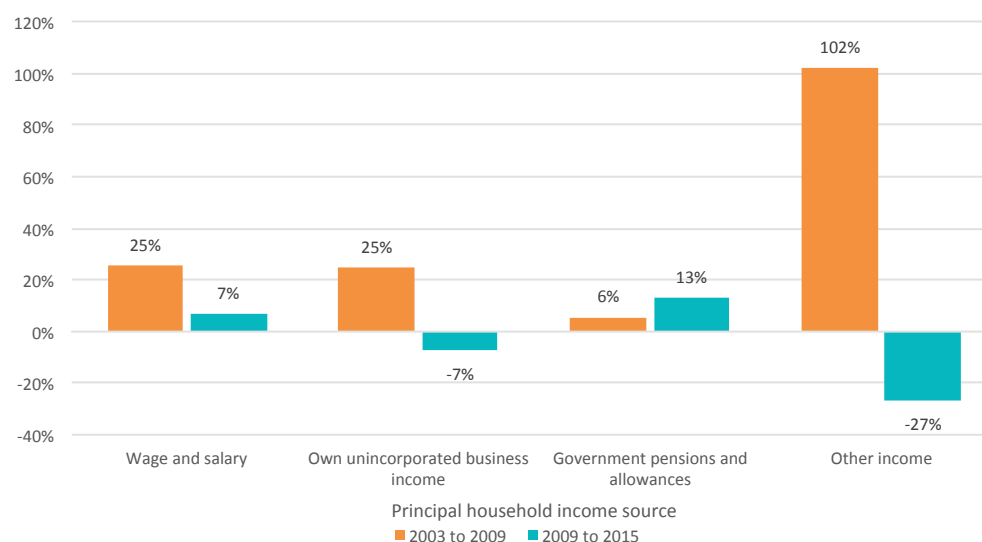
Figure 18 shows the proposition that low-income groups appear to lag behind high-income groups during periods of strong economic growth. During 2003-09, households relying on government pensions and allowances as their main source of income experienced a real income growth of just 6 per cent (equivalent to the magnitude of growth experienced by the lowest income quintile in Figure 16). However, households that rely on earnings via employee wages and salaries or business income enjoyed real income growth of 25 per cent. Strikingly, those who rely on other sources (e.g. investment income, superannuation annuities or lump sums) experienced an even greater real income growth of over 100 per cent.

During 2009-15, households with more volatile main sources of income (business and other income) suffered from a reduction in real income as economic conditions became more uncertain. Households that relied on other income as their main income source appear to be most susceptible to economic downturns, suffering a reduction in real income of 27 per cent, presumably because investment related income are directly affected by the movements of the economic cycle.

However, households that receive income streams from government income support or employers are typically less exposed to economic uncertainty. During 2009-15, government pension and allowance recipients, and wage and salary earners continued to experience real income growth of 13 per cent and 7 per cent respectively.

During 2009-15, households with more volatile main sources of income (business and other income) suffered from a reduction in real income as economic conditions became more uncertain.

Figure 18 Percentage change in mean real gross weekly income of WA households, by principal source of household income, 2003-04 to 2015-16



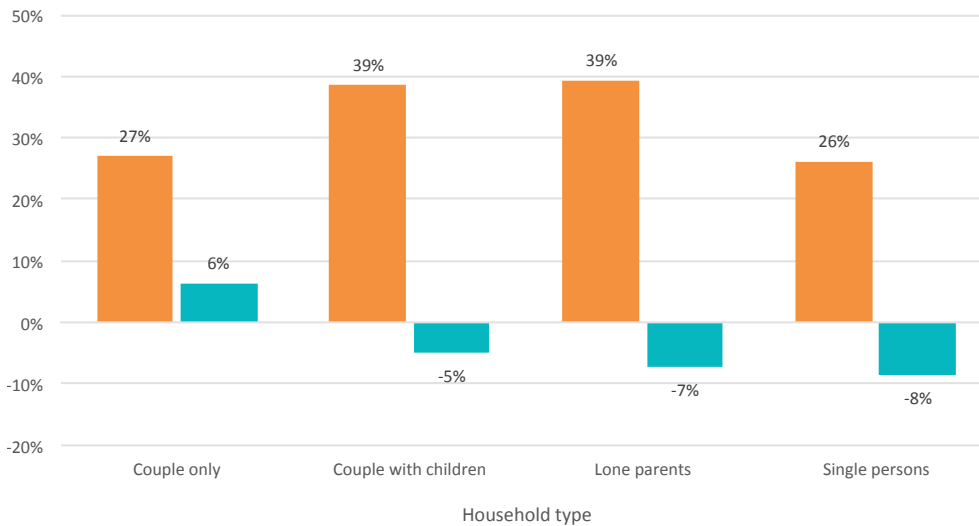
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Surveys of Income and Housing.

Government pension and allowance recipients also appear to be least exposed to the movements of the economic cycle, with real income growth rising from 6 per cent during 2003-09 to 13 per cent during 2009-15 even though the latter period reflects weaker economic conditions. The rise in real income growth can be at least partially attributable to the pension reforms that were implemented in September 2009 resulting in pensions being indexed to one the three benchmarks – CPI, Pensioner and Beneficiary Living Cost Index, or 41.76 per cent of the Male Total Average Weekly Earnings (MTAWE) for the combined couple rate – with the indexation method that achieves the highest real value retained. These pension reforms are described in more detail earlier in this chapter.

Lone parents and single person households suffered the largest reduction in real income among all household types during 2009-15 of 7% and 8% respectively.

Figure 19 highlights differences in real income growth across key household types in WA. The figure indicates that during 2003-09, households with children experienced the greatest increase in real household income of 39 per cent. On the other hand, households without children experienced a smaller increase of around 26-27 per cent. During 2009-2015, the patterns change significantly. While couples without children continued to experience positive real income growth, this growth was at a much reduced rate of 6 per cent compared to 27 per cent in 2003-09. The other three household types suffered from a reduction in real income, and this was greatest for lone parents and single person households: 7 per cent and 8 per cent respectively.

Figure 19 Percentage change in mean real gross weekly income of WA households, by household type, 2003-04 to 2015-16



Note: Group households are excluded due to a small sample size affecting the robustness of the estimate. Other household types are also excluded as the group comprises a heterogeneous mix of individuals that preclude meaningful observation of income patterns over time.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Surveys of Income and Housing.

Overall, the findings in this section indicate that WA households on low incomes or who rely on government pensions and allowances as their main income source experience relatively low real income growth during an economic boom. In contrast, households that are on high income or more volatile income sources such as business and investment income experience much higher growth in real income when the economy is doing well. It is to be expected that low income households are likely to find themselves struggling more with general cost of living pressures than high income households. However, this appears to be exacerbated during an economic boom.

During periods of economic slowdown, however, those on low incomes are better protected from income volatility and this is at least partially attributable to the protection that low income households receive from the safety nets provided by the government income support system. On the other hand, households on high or volatile income sources find themselves more susceptible to the downswings of the economy.

Lone parent and single person households are also more vulnerable to a decline in real income during an economic downturn, suggesting these groups are more financially vulnerable than couple households where income risks are shared across two adults.

Clearly, household real incomes have not grown at the same pace across different population subgroups in WA. This in turn reflects variations in the purchasing power across the WA population. However, while analysis of real income growth (and therefore purchasing power) goes some way towards unearthing the extent to which households are able to cope with price pressures, it is likely the case that different household types and income groups may manage their expenditure differently during periods of economic booms and busts. We therefore take a detailed look at household expenditure patterns among WA households in the next chapter.

A detailed

look at West Australians'
expenditure



A detailed look at West Australians' expenditure

This chapter examines expenditure on commonly consumed goods and services for West Australian households. We draw extensively on the ABS Household Expenditure Survey (HES), a nationally representative survey that contains a comprehensive range of variables on household expenditures on both essential and discretionary goods and services. The HES is released once every six years, so we are able to chart the real expenditure levels of households in WA over different phases of the economic cycle using data from the years 2003-04, 2009-10 and 2015-16. The years between 2003-04 to 2009-10 span a period of strong economic boom, while 2009-10 represented a period of slower economic growth. Not only did the global financial crisis hit Australia around 2009-10, resource prices peaked around 2011-12 and so the economy started slowing after 2012.

Using the HES, we are also able to conduct a detailed investigation into changes in the importance of common household expenditure items, including housing, domestic fuel and power, food, clothing and footwear, transport, health, education, communication, household furnishing and equipment, household services and operation, personal care, recreation, alcoholic beverages and tobacco products. We examine the importance of each of these items within WA households' expenditures by profiling how the expenditure share of each item has changed over time. This detailed examination also sheds light on whether households are increasingly shifting expenditure away from discretionary goods and services to fund basic needs to cope with cost of living pressures.

Patterns of expenditure for households in WA are compared to other states and territories. Regional differentiation in expenditure patterns within WA is also observed, with an emphasis on whether there are significant differences between regional WA and the capital city Perth. In this chapter, we also compare how expenditure patterns differ across household types in WA.

How different are household expenditure patterns in WA compared to the rest of Australia?

In Figure 20, the triangles show the average weekly dollar expenditure of households by state and territory in 2015-16. In order to track changes in expenditure values over time, the percentage change in real expenditure by state and territory is shown in bars for the years 2003-09 and 2009-15. In order to ensure comparability in the expenditure values between different periods, the expenditure values have been inflated to September 2017 price levels.

In terms of real weekly mean expenditure in 2015, it is important to point out that WA expenditure almost equals the mean expenditure of the overall country at around \$1,500 per week. The territories and New South Wales have the highest expenditure values at nearly \$1,800 and over \$1,600 respectively. On the other hand, Tasmania and South Australia have the lowest real expenditures at under \$1,300. In the mid-range lie WA, Queensland, and Victoria at around \$1,500 of average weekly expenditure.

Real total expenditure has increased from 2003 in all states and territories, but the rate of growth differs greatly between them, as indicated by the bars within the figure. In WA, as well as in Queensland, real household expenditure climbed by 25 per cent between 2003-04 and 2009-10, as the resources sector boomed. This significantly exceeded the national average rate of increase in real household expenditure of 16 per cent. On the other hand, after the peak of the mining boom, the growth rate of household expenditure decreased considerably in the same states, dropping to as low as 4 to 5 per cent during 2009-15. This was lower than the national average expenditure growth rate of 10 per cent.

More diverse economies such as those of New South Wales, Victoria and South Australia have experienced slower but steadier growth in real household expenditure values. These three states recorded a relatively low rate of increase in expenditure of under 15 per cent during 2003-09. Household expenditures in New South Wales and South Australia increased at a slightly faster rate during 2009-15 period than 2003-09. In Victoria, household expenditure growth rates declined slightly between 2003-09 and 2009-15.

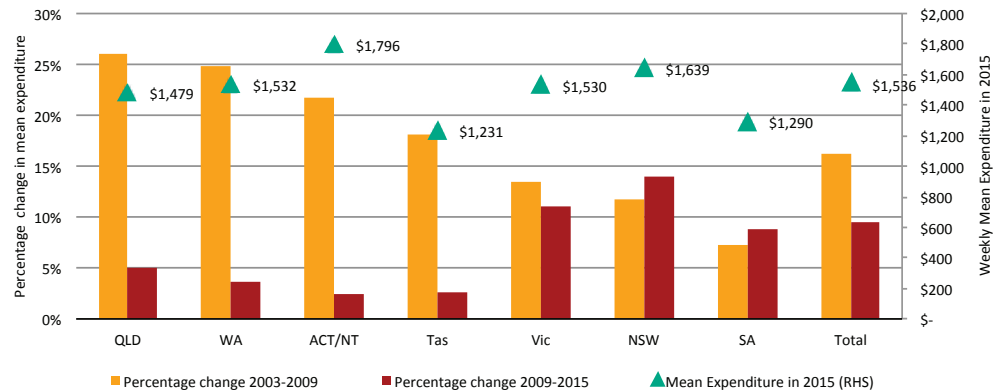
These state and territory differences reflect the workings of what appeared to be a 'two-speed economy', featuring stark differences in economic growth rates and households' purchasing powers between the resource-rich states of WA and Queensland and the rest of Australia.

Concerning Western Australia, these results corroborate the findings of Figure 12 and Figure 13 in chapter 3, where we observed that the trends of WPI and CPI followed the booms and downturns in the State. The significant increase in real wages in the 2003-2009 period has translated in a considerable increase in expenditure as observed in Figure 20. At the same time, the consumption growth rate has decreased from 2009-10 to 2015-16, as the slope of real WPI has flattened.

WA households' average weekly expenditure lies at around \$1,500, which is similar to the average weekly expenditure of Australia as a whole.

In WA and Queensland, real household expenditure increased by 25% compared to 16% for Australia during 2003-09. Expenditure values continued to increase in 2009-15, but at a lower pace than the rest of Australia.

Figure 20 Real mean household expenditure, by state, 2003-04 to 2015-16



Note: Expenditures have been updated to September 2017 prices.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Household Expenditure Survey, 2003-04, 2009-10 and 2015-16, and Cat. No. 6401.0.

Next we take a deeper look inside the typical WA household's expenditure basket, by breaking down total expenditure into 15 different categories according to the household's goal and consumption type. Figure 21 presents the average expenditure shares of WA households versus the rest of Australia in 2015-16. In general, we observe that expenditures in WA are comparable to those of the rest of Australia. Housing dominates the typical household's expenditure basket, contributing an expenditure share of around one-quarter. This is followed by food which contributes an expenditure share of around 18 per cent. These two essential expenditure items are followed by recreation, transport and health.

However, there are a few, albeit minor, differences between WA and the rest of Australia. Expenditure shares are slightly higher in WA than in the rest of Australia for housing, food, recreation and health categories. On the other hand, transport and domestic fuel and power make up smaller expenditure shares in WA than the rest of Australia. Transportation stands out as a unique category since the difference of expenditure between WA and the rest of Australia is much more striking, with WA households allocating 2-3 percentage points less of total expenditure to this item.

Figure 21 Expenditure shares for WA and rest of Australia, 2015-16



Note: Expenditures have been updated to September 2017 price level.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Household Expenditure Survey, 2003-04, 2009-10 and 2015-16, and Cat. No. 6401.0.

Expenditure shares in WA are comparable to the rest of Australia. However, expenditure shares are slightly higher for housing, food, recreation and health, but smaller for transportation and domestic fuel and power in WA than the rest of Australia.

Are there variations in household expenditure patterns between Perth and the rest of WA?

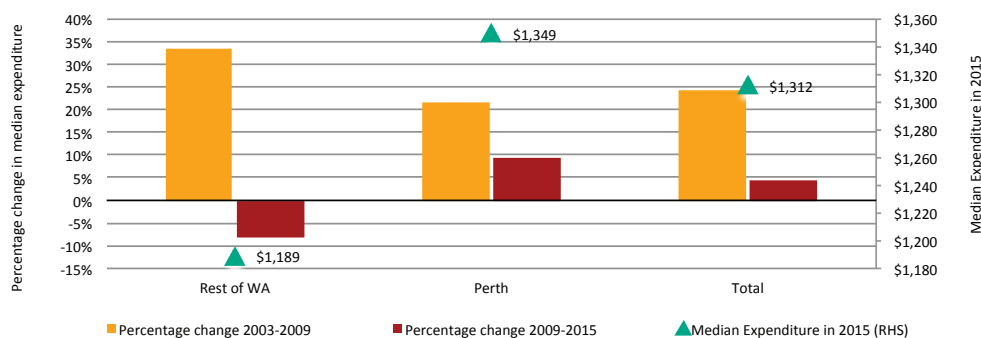
Clearly, geographical variations in household expenditure patterns exist between WA and the rest of Australia. Trajectories in household expenditure may also vary within WA. In this section, we compare household expenditures between Perth and in the rest of WA. As in the previous section, Figure 22 presents triangles which show the average weekly dollar expenditure of households in Perth and the rest of WA in 2015. The percentage change in real expenditure across the two regions are shown in bars for the years 2003-09 and 2009-15. Again, in order to ensure comparability in the expenditure values between different periods, the expenditure values have been inflated to September 2017 price levels.

In real terms, households in Perth outspent their regional WA counterparts in median expenditure by \$160 per week in 2015, which corresponds to a gap of approximately 12 per cent in expenditure. However, these snapshot estimates mask significant changes in spending patterns over prior periods.

During the 2003-09 period both Perth and the rest of the State experienced a significant growth in household expenditure, rising by 33 per cent for those living outside Perth and 22 per cent for those living in the capital. The economic slowdown during 2009-15 appears to have hit regional areas harder as they experienced an 8 per cent decline in median expenditure. Median household expenditure in Perth, on the other hand, has continued to increase in real terms, but at a lower rate from the previous period, reaching an 8 per cent growth rate in 2015-16.

The economic slowdown during 2009-15 appears to have hit the region harder as they experienced an 8% decline in median expenditure.

Figure 22 Real median household expenditure, Perth and rest of Western Australia, 2003-04 to 2015-16



Note: Expenditures have been uprated to September 2017 price level.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Household Expenditure survey, 2003-04, 2009-10 and 2015-16, and Cat. No. 6401.0

What is the balance of basic versus discretionary spending by WA households?

The gap between basic and discretionary expenditures has almost doubled between 2003 and 2015 for WA and Australian households.

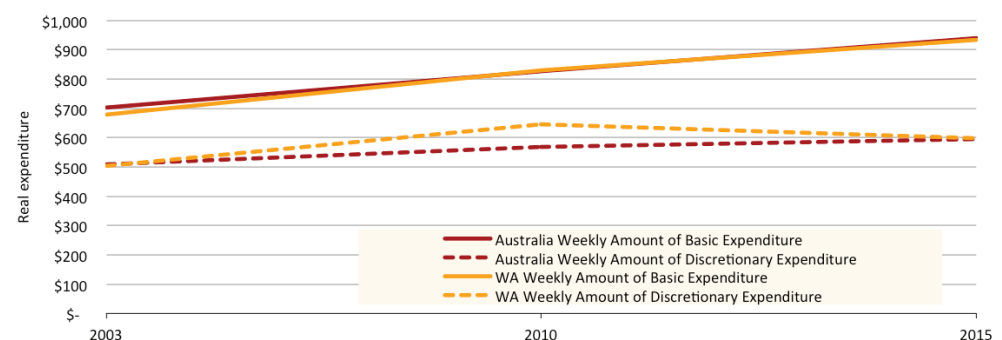
To have a broader sense of diverging trends in consumption expenditure of WA families, Figure 23 represents the average weekly expenditure on basic and discretionary goods and services from 2003-04 to 2015-16. We draw on the ABS HES categorisation of basic and discretionary expenditures. Items which are considered as basic needs include food, housing, domestic fuel and power, transportation and health care (ABS, 2017). The remaining categories are included under the discretionary expenditure group and all expenditures are expressed in real terms uprated to 2017 prices.

A glance at Figure 23 clearly shows that the gap in real values of basic and discretionary expenditure has broadened from 16 per cent in 2003-04 to roughly 22 per cent in 2015-16 for both West Australians and households in the rest of Australia. This implies that households may be shifting consumption away from goods considered as luxuries to expenditures directed to more vital needs to cope with cost of living pressures.

In real terms, we observe that the amount spent on basic necessities in WA and Australia is almost the same each year, with average households dedicating around \$700 per week in 2003 and \$935 by 2015. In 2003-04, households in both WA and the rest of Australia spent on average around \$500 per week on discretionary consumption. This increased slightly to \$600 in discretionary consumption per week in 2015-16. Hence, overall, the gap in discretionary and basic expenditure in both WA and the rest of Australia widened from around \$200 to \$335 between 2003-04 and 2015-16, expressed in 2017 prices.

On the other hand, we observe some interesting differences between WA and the rest of Australia in discretionary expenditure trends over time. In 2009-10, WA households increased their spending on discretionary items by \$77 per week compared to the rest of Australian households. This divergence between WA and the rest of Australia in 2009-10 may be due to the resources boom in WA, which continued to surge ahead in WA while economic conditions in other states and territories slowed in the aftermath of the global financial crisis. During 2009-10, WA households not only outpaced their fellow Australians in discretionary spending, they also narrowed the expenditure gap between discretionary and basic consumption by 3 per cent as a proportion of total expenditure. However, this trend in WA was short-lived, with the gap between discretionary and essential widening again after 2009-10. By 2015-16, the average weekly discretionary expenditure of WA households returned to the same level as the rest of Australia again.

Figure 23 Average weekly expenditure on basic and discretionary goods, WA and Australia, 2003-04 to 2015-16



Note: Expenditures have been uprated to September 2017 price level.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Household Expenditure Survey, 2003-04, 2009-10 and 2015-16, and Cat. No. 6401.0.

In order to further analyse the evolution in consumption during the expansion, peak and slowdown of the mining boom in WA, Figure 24 shows us the percentage change in expenditure shares for 2003-09 and 2015-16. After constructing the expenditures shares for each category and year, the percentage point change is calculated by subtracting the 2009-10 expenditure share to its counterpart in 2003-04 (respectively 2015-16 and 2009-10).

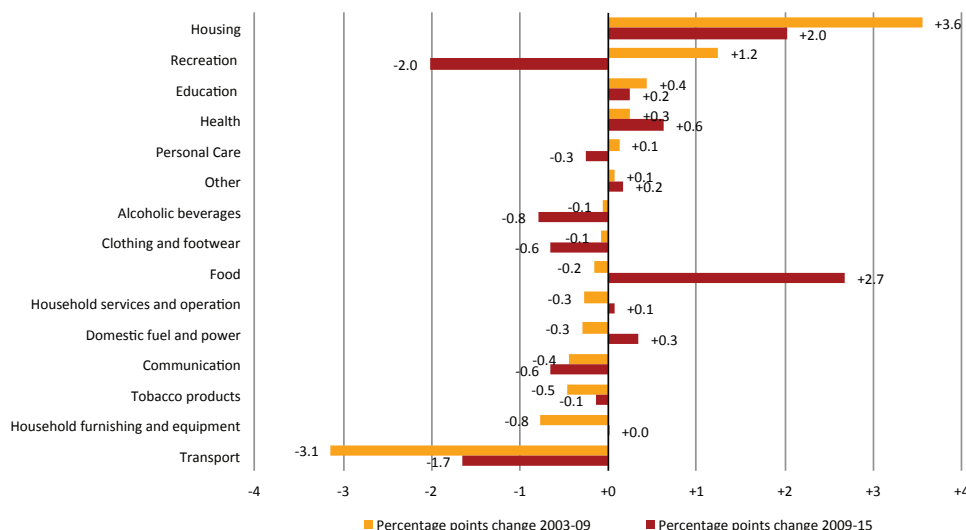
The figure shows that overall, households in WA have increased their share of expenditure in housing, education and health in both periods. While the increase in education and health expenditures has been minor, the share allocated to housing expenditures as a part of total spending is 3.5 percentage points higher in 2009-10 relative to 2003-04 and two percentage points higher in 2015-16 with respect to 2009-10. On the contrary, the share of consumption in clothing, communications, tobacco and alcoholic beverages have all reduced from 2003-04, while that of transport spending fell by 2.5 percentage points on average for the whole period.

Interestingly, expenditures in items such as food, households' services and domestic fuel and power seem to be countercyclical as their share of expenditure decreased during the boom period of 2003-09 between 2003-04 and 2009-10 and increased after the mining peak in 2009-15 from 2009-10 to 2015-16. This is most stark in the case of food which increased in share terms by nearly three percentage points between 2009-10 and 2015-16, to 18 per cent of total spending. The opposite occurred for recreation and personal care expenses, which increased in the booming period and decreased afterwards. The expenditure share occupied by recreation expanded by over one percentage point but declined by two percentage points between 2009-10 and 2015-16.

In fact, these findings follow general economic theory, which suggests that during expansionary periods with wage growth, expenditure on basic needs are expected to decrease as a share of total budget. At the same time, following the opposite trajectory, the share allocated to discretionary or luxury goods should increase with income growth as is the case here (personal care and recreation items are mostly considered as luxury goods).

During expansionary periods with wage growth, expenditure on basic needs such as food decreased as a share of total budget, while the share allocated to discretionary or luxury goods grew.

Figure 24 Percentage points change of expenditure shares, WA, 2003-04 to 2015-16



Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Household Expenditure survey, 2003-04, 2009-10 and 2015-16.

Households living in regional WA appear to divert greater shares of their expenditures to transport, food and domestic fuel and power. However, they also spend more on discretionary items such as tobacco, alcohol and recreation.

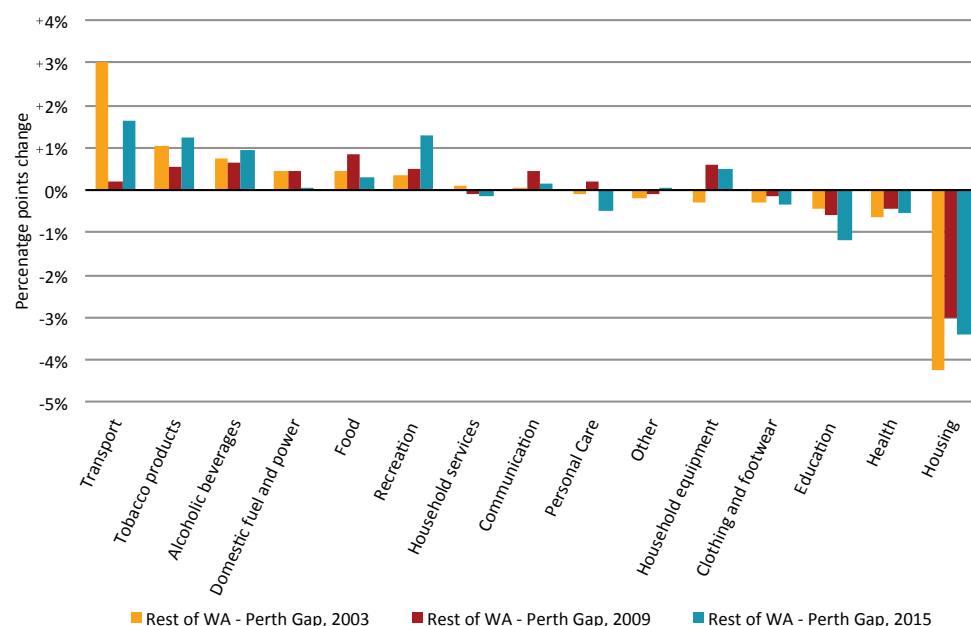
A deeper look into the changes and gaps in expenditures patterns of households in regional WA relative to Perth are shown in Figure 25. More specifically, the figure indicates the percentage point difference in the regional households' expenditure shares relative to Perth for the years 2003-04, 2009-10 and 2015-16. The gap has been calculated for each category by subtracting the budget shares of households living outside Perth to those in the state capital.

The widest gap between households in Perth and the rest of the State is in housing related expenditures, with housing's contribution to expenditure shares in Perth exceeding regional WA by around 3.5 percentage points for the whole period. Perth households also appear to spend greater shares of their budget than regional households on other basic needs like health and education.

At the other extreme, households living in the rest of WA appear to divert greater shares of their expenditures to transport, food and domestic fuel and power, presumably because many regional households have to travel further to access major town centres and essential services. Nonetheless the gap is narrowing over time.

However, households in regional WA also appear to spend more on discretionary items than Perth households, such as tobacco, alcoholic beverages and recreation. In the case of these discretionary expenditures, the gap between regional WA and Perth has overall expanded between 2003-04 and 2015-16.

Figure 25 Percentage points differences in expenditure shares, rest of WA relative to Perth, 2003-04 to 2015-16



Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Household Expenditure survey, 2003-04, 2009-10 and 2015-16.

A comparison of household expenditures by housing and household type

As we observed earlier in this chapter, housing expenses capture the biggest share of the total household budget. It is noteworthy that the share of expenditure in housing has increased almost 4 percentage points from 2003 to 2015, which translates in real terms to an extra \$105 per week in 2017 prices³. In order to gain a better understanding of the housing cost pressures faced by households that do not own their homes outright, Table 10 presents the expenditures shares in 2015 for families living in rentals or for owners having purchased a dwelling with a mortgage after 2009. The underling point is that, due to the increase in housing costs, renters and early buyers may have modified their expenditure patterns in order to access the housing market. Since these households are more likely to be at the mercy of variations in the real estate market, the increase in the housing cost may have hit them unequally harder. The first column in the Table 10 shows the mean expenditure shares for all Australian households, while the second to fifth columns show the same expenditures shares but only for households that rent or bought their home with mortgage after 2009. This comparison is given for WA versus Australian households, columns two and three respectively, and for Perth versus the Rest of WA households, columns four and five respectively.

Let's begin by comparing the first and second columns in the table. There is a striking difference between the distribution of expenditure shares of all households and households that either rent or owe an early mortgage. First of all, families living in rentals or having contracted a mortgage after 2009 spend over one-third of their budget on housing in WA. This is significantly higher than the one-quarter expenditure share that is observed when all households (including those bearing no mortgage) are included. Hence, households that rent or owe a recent mortgage have to engage in greater substitution of consumption away from non-housing expenditures to pay for their housing costs than those who do not owe a mortgage on their homes. The former devote on average, a smaller part of their budget on food, recreation, transportation and health than the latter.

However, when comparing the second and third columns in the table, we find that there are some clear differences between renter and recent mortgagor households in WA versus the rest of Australia. These two groups differ in respect to their budget allocation to recreational activities and transportation. Indeed, WA renter and early mortgagor households spend one-third less in transportation but one-third more in recreation compared to Australian renter and recent mortgagor households.

The two rightmost columns of Table 10 compare renter and mortgagor households having purchased a home after 2009 within WA – specifically between Perth and the rest of WA. Two main intrastate differences can be observed. First, households in Perth spend an extra 7 percentage points of their budget on housing relative to the rest of WA. Second, in order to meet the higher expenditure share occupied by housing costs, families living in Perth have to devote less of their household budget to a range of other items than households in the rest of WA. These items include food, health, domestic fuel and power, recreation, communication, household equipment, household services and tobacco products.

Renter or recent mortgagor households spend over one-third of their budget on housing in WA, which is significantly higher than the one-quarter expenditure share accounted for by housing in the general WA population.

3 Authors' estimates based on ABS Household Expenditure survey, 2003-04, 2009-10 and 2015-16, and Cat. No. 6401.0.

Perth households spend an extra 7 percentage points of their budget on housing than the rest of WA. This occurs at the expense of a range of other items including food, domestic fuel and power, transport and health.

Single parents exhibited the lowest spending level of \$732 per week on an equivalised basis among all household types during 2015-16.

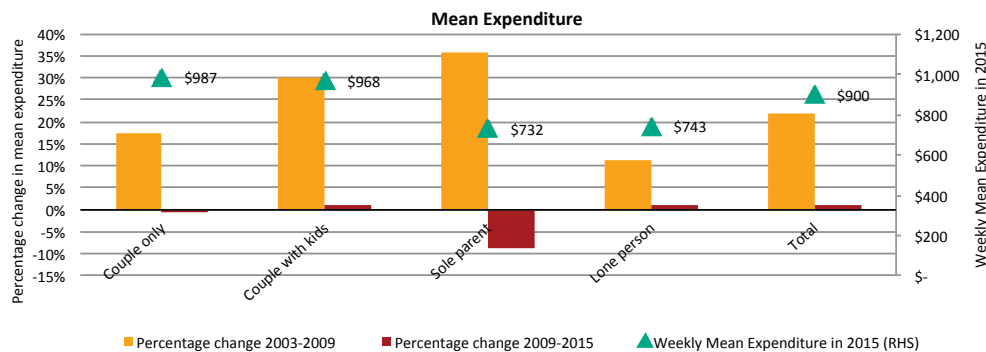
Table 10 Expenditure shares in 2015 for households with rental and mortgages contracted after 2009

Expenditure Group	All households	Households with Rentals and Mortgages Contracted after 2009		Households with Rentals and Mortgages Contracted after 2009	
	WA	WA	Rest of Australia	Perth	Rest of WA
Housing	26%	36%	34%	38%	31%
Food	18%	16%	16%	15%	16%
Recreation	11%	9%	6%	9%	11%
Transport	10%	8%	12%	8%	8%
Health	6%	4%	4%	4%	5%
Other	6%	5%	5%	5%	6%
Communication	4%	3%	4%	3%	4%
Household equipment	4%	3%	3%	3%	4%
Domestic fuel and power	4%	3%	4%	3%	4%
Household services	3%	2%	3%	2%	3%
Clothing and footwear	2%	2%	2%	2%	2%
Alcoholic beverages	2%	2%	2%	2%	2%
Education	2%	2%	2%	2%	1%
Personal Care	2%	2%	2%	2%	1%
Tobacco products	1%	1%	2%	1%	2%

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Household Expenditure Survey 2015-16.

Figure 26 reports mean and median real expenditures by household type in WA. The orange and red bars represent the percentage change in expenditure for the periods 2003-09 and 2009-15 respectively. The triangles represent the mean or median expenditure levels of households in 2015-16.

As with previous analysis in this chapter, expenditure values are expressed in real terms in 2017 prices. In addition we equivalise household expenditure values by the modified OECD equivalence scale when comparing expenditure values by household type. This is because smaller sized households, such as a lone person households, typically have lower expenditure values than larger households such as couples with children. Hence, actual reported expenditure values reflect to a large extent differences in household size between different household types. The application of the equivalence scale adjusts reported household expenditures by household size to facilitate comparison across households that is not biased by household size.

Figure 26 Real household expenditure in WA, by household type, 2003-04 to 2015-16

Note: Expenditures have been uprated to September 2017 price level and equivalized by the modified OECD scale.
 Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS' Household Expenditure Survey, 2003-04, 2009-10 and 2015-16, and Cat. No. 6401.0.

As shown in Figure 26, West Australian households spent on average \$900 per week on an equivalised basis. Couples had the highest mean expenditure levels, with couples only spending \$87 more than the average household in WA and couples with children spending \$68 more the average WA household. On the other hand, lone persons spent less than the average WA household at \$743. Sole parents exhibited the lowest spending levels of \$732 on an equivalised basis.

The percentage change in mean expenditure for the 2003-09 and 2009-15 period shows that sole parents are more affected by economic cycles compared to other household types. Indeed, during the resources boom that took place during 2003-09, sole parents experienced the highest growth in real mean expenditure of 35 per cent. This was a higher growth rate than other household types, suggesting that sole parents had to increase their expenditures to match price increases more than any other household type during the boom. Real average expenditures rose by 30 per cent for couples with children, 18 per cent for couples only, and 11 per cent for lone persons.

On the other hand, during the slowdown phase following the mining boom peak, sole parent households were the only group experiencing a decline in real expenditure, with mean expenditure falling by 9% between 2009-10 and 2015-16. All other household types experienced almost no change in real mean expenditure.

Digging a little deeper into the WA expenditure pattern by family composition, Figure 27 represents the percentage point gap in expenditure shares by household type relative to couples only in 2015-16. First, we itemised categories reflecting basic needs separately (housing, domestic fuel and power, food, health and transport). The remainder of the items were grouped into a discretionary category. Second, we extracted the budget shares for each category by dividing the expenditure allocated to each good with respect to total expenditure. Third, the expenditure share of couples with children for each category was subtracted from the expenditure share of each household type for the same category. So for instance, Figure 27 shows that the share of household budget that sole parents attribute to housing is 10 percentage points higher than couples only. For lone persons, the share of household budget attributed to housing is 6 percentage points higher than couples only.

During 2009-15, single parent households were the only household type to experience a decline in real expenditure, with mean expenditure falling by 9% over the period.

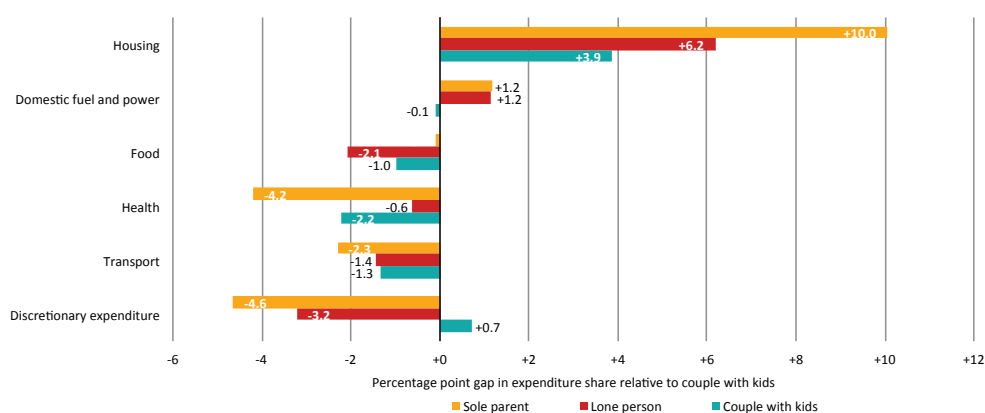
Single parents devote a noticeably larger share of their expenditure to housing than other household type, crowding out expenditure shares on health, transport and discretionary items.

An important finding arising from this figure is that sole parent households devote a noticeably larger share of their expenditure to housing than other household type. Both sole parents and lone persons also divert larger shares of their expenditures to domestic fuel and power. The share of household budget that sole parents and lone persons attribute to domestic fuel is 1.2 percentage points higher than couples only.

The expenditure shares that sole parents and lone persons devote to housing and utilities are offset by lower expenditure shares on discretionary items relative to couple only. While the expenditure share the couples with children divert to discretionary items is 0.7 percentage points higher than couples only, it is in fact 4.6 percentage points lower for sole parents and 3.2 percentage points lower for lone persons relative to couples only.

Worryingly, the large expenditure share that sole parents and lone persons devote to housing also appear to crowd out their expenditure shares on various other basic necessities. For instance, the household budget shares the sole parents divert to health and transport are 4.2 and 2.3 percentage points lower than couples respectively. Lone persons' expenditure share on food is 2.1 percentage points lower than couples only.

Figure 27 Percentage point gap in expenditure shares, by family composition relative to couple with children, 2015-16



Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Household Expenditure survey 2015-16.

The key finding is that households with lone parents with children devote a larger share of their expenditure in basic needs such as housing, food and domestic fuel and power, as well as a smaller share in discretionary expenditure than couples with children. One parent families and lone persons seem to follow the same trajectory in what concern housing expenditure, as they allocate 6 per cent and 2 per cent more towards housing costs than couples with kids. Moreover, the expenditure share in discretionary goods is 5 per cent and 4 per cent smaller for households with one parent only and lone persons than couples with children. This confirms our previous observations, as results point vulnerable households are substituting discretionary consumption by basic goods and services in order to keep up with the increasing cost of living. Finally, we observe that health expenses for lone parents with children are significantly lower compared to the rest of family types (-2 per cent with respect to

4 The specification between basic and discretionary items follow the ABS categorization of the Household Expenditure Survey 2015.

families with children and -4 per cent relative to couples). This is quite worrisome since health consumption is mostly composed by expenditures in private health insurance, meaning these households are not fully covered for medical attention, even though they are the most economically vulnerable families.

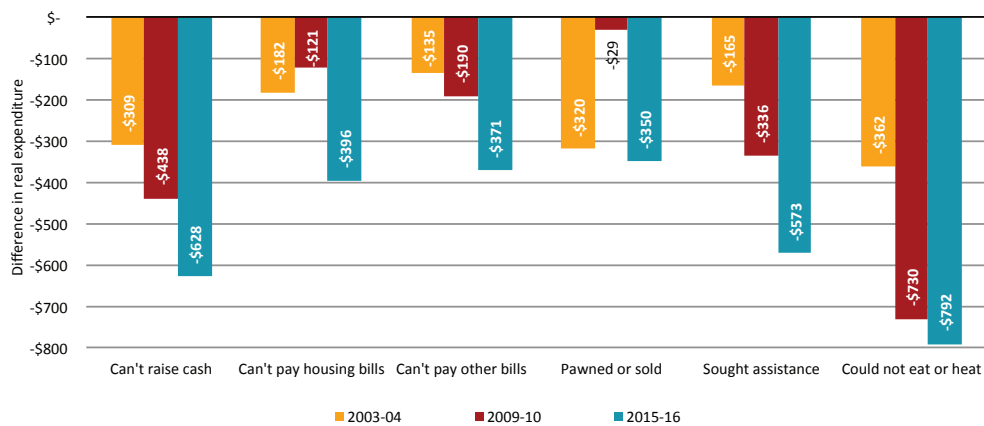
How has the expenditure of financially stressed households evolved over time?

The gap between households in financial stress and the rest of WA has deteriorated over time, doubling its size from 2003 to 2015.

As confirmed by earlier sections in this chapter, vulnerable households such as lone sole parents, renters and early mortgagors have likely modified their consumption behaviour in order to cope with the increasing cost of living. This section shed lights on the expenditure patterns of households experiencing financial stress to give us a better understanding on the substitutions and cutbacks undertaken by these families. The HES provides multiple indicators of financial stress that ranges from financial hardship and safety nets to deprivation measures of consumption. Financial hardship signals include in ability to raise cash in short periods, to pay for housing utilities and other related bills, and whether any family member pawned or sold something due to shortage of money. Deprivation measures indicate different levels of poverty and penury, and have been grouped into two different categories: households that seek financial assistance from family, friends or welfare institutions and households that could not eat or heat due to money shortages.

Figure 28 shows the difference in real expenditure of WA households experiencing any episode of financial hardship or deprivation from 2003-04 to 2015-16 relative to the rest of WA. As for previous figures of this chapter, real expenditure has been inflated to 2017 prices to ensure time comparability. We observe that households in financial stress (all measures combined) spend in 2015-16, an average of \$520 less per week than the rest of WA households. This means that they consume on average, a third less than other WA households. The evolution of the gap from 2003-04 reveals that the situation of households under financial pressure has been declining over time. Regardless of the measure considered, the gap has at least doubled during the last 12 years and their situation further deteriorated vis-à-vis the rest of the WA population.

Figure 28 Difference in real expenditure, households with financial hardship and deprivation measures, relative to the rest of WA households, 2003-04 to 2015-16



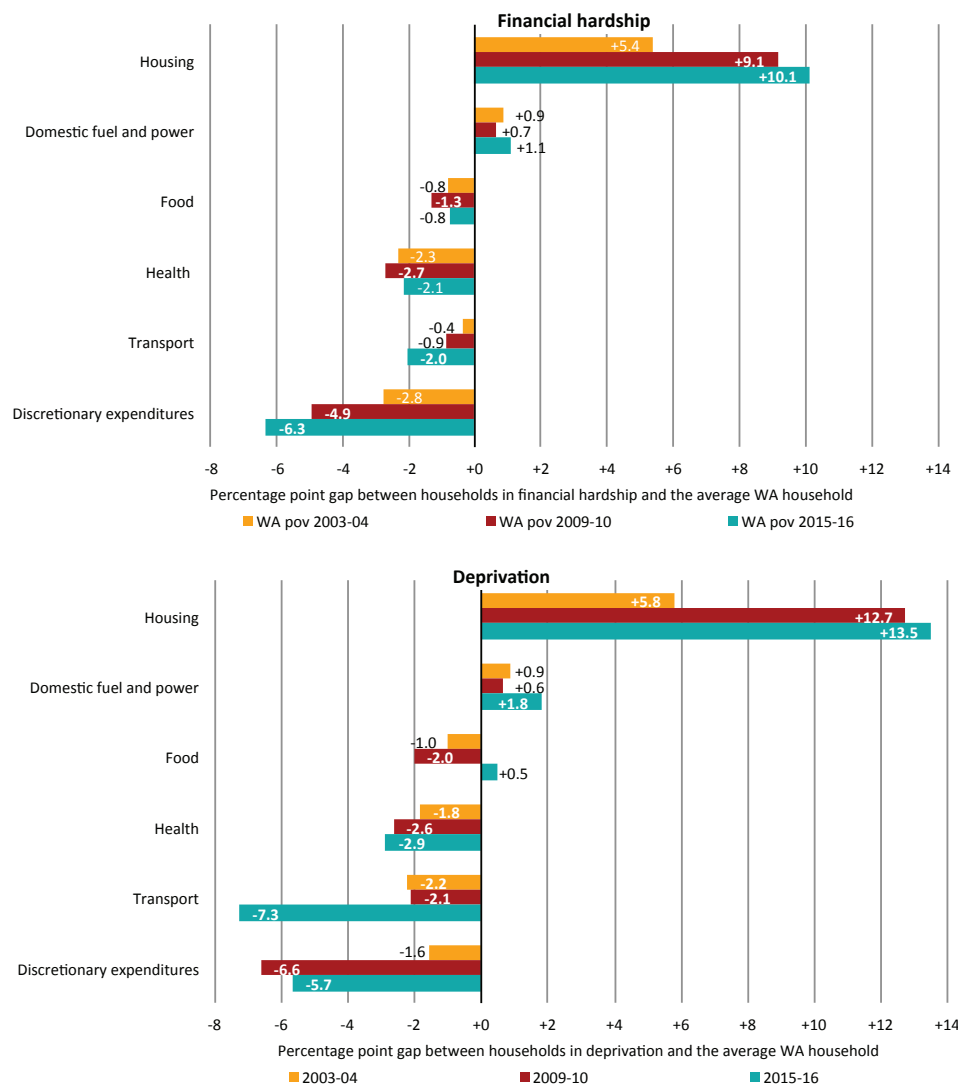
Note: Expenditures have been uprated to September 2017 price level.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Household Expenditure survey, 2003-04, 2009-10 and 2015-16, and Cat. No. 6401.0.

Due to the important increase in the gap of real expenditures, Figure 29 looks at the configuration of expenditures shares for households under financial hardship and families encountering any sort of deprivation. To achieve this analysis, Figure 29 shows the expenditure share gap between financially stressed households and the rest of WA for the 2003-2015 period. Consumption items of basic needs (housing, domestic fuel and power, food, transportation and health) have been represented independently, while discretionary expenditure has been regrouped into one category. The chart at the top indicates the expenditure gap for households in financial hardship and the one in the bottom shows those experiencing deprivation in consumption.

The two charts show similar consumption patterns but differ as to their magnitude. Overall, we observe that the population in financial stress spend, relatively, a bigger proportion on housing and domestic fuel and power and a smaller proportion on food, transportation, health and discretionary expenditures. The gap in expenditure share for these items has also increased during time, notably in what concerns housing and discretionary expenditures. Indeed, relative to the rest of WA, households in financial hardship have spent, in 2015, 10 per cent more of their budget on housing, which represents twice as much as it did in 2003.

Figure 29 WA gap in expenditure shares, households with financial hardship and deprivation measures, relative to the rest of WA households, 2003-04 to 2015-16



Note: Expenditures have been updated to September 2017 price level.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Authors' estimates based on ABS Household Expenditure survey, 2003-04, 2009-10 and 2015-16, and Cat. No. 6401.0.

Financially stressed households spend on average 10 - 12% more on housing compared to the rest of WA households. This increase in expenditure is mostly offset by a cutback in discretionary expenses of 6% on average.

This percentage has reached 13 per cent for households in financial deprivation. Most of the extra amount of money spend on housing seems to be offset by a decreasing amount allocated to discretionary expenditure. The gap with the rest of WA households has increased from -2 per cent in 2003 to -6 per cent on average in 2015. Finally, transport is an interesting case of study since there is an important difference between households in financial hardship and households in deprivation for the year 2015. In the previous periods of 2003-04 and 2009-10 both types of households have spent on average 2 per cent less than the rest of WA in health expenditure, but in 2015-16 deprived households decreased their consumption on transport by an extra 5 per cent.

Can vulnerable households afford a basic standard of living?

Another approach to understanding the cost of living is to simulate expenditure patterns of model low-income households and see how changes in living costs affect their household budgets. Households on lower incomes often have to ration their consumption and spend a greater proportion of their income on essential goods and services. As a result, they are likely to be disproportionately affected by price rises in key items such as housing, utilities, food and transport. Looking at how these costs impact on them can help us to formulate better policy and service responses, including concessions on State household fees and charges, as well as financial counselling and emergency relief services for those in financial hardship.

This section looks at the analysis undertaken for the WACOSS 2017 Cost of Living in WA Report (WACOSS, 2017). The model below is based on that developed by the Western Australian Council of Social Service (WACOSS) in 2009 and extended to three households in 2012 (see, for example WACOSS (2016)). It has since been adopted by other state Councils with most COSSes now producing their own state or territory reports (e.g. QCOS (2014)). The model has been further extended in 2017 to include an age pensioner couple household (including a comparison of home ownership versus rental versus costs). Four different representative households have been selected, with differences in household makeup, circumstances, income and consumption needs enabling us to consider how different kinds of low-income households are affected by changing economic circumstances.

Consumption patterns for each household are based on the average expenditure for similar households derived from the 2008-09 and 2015-16 ABS Household Expenditure Surveys, with 'live' representative costs at a state or regional level included for items such as housing, utilities, transport, food and health. The use of this 'live' data enables us to track the comparative impact of changes in different costs from year to year on the households (particularly in the years where HES data is not available). It is important to understand that low income households will change their consumption and expenditure patterns in response to changing costs – meaning that our model may provide an accurate reflection of living cost pressures for these households, but may not reflect changes in consumption and expenditure *patterns* by actual households in response to those changes in prices. This also means that the relative changes in costs between expenditure categories from year to year is more informative than the balance of income and expenditure in any given year in understanding the impact of the cost of living. The characteristics and assumptions for each household are shown in Table 11. They pertain to age, number of children, employment status and, supplementary income, housing and transport.

Table 11 Four model low-income West Australian households

	Single parent	Working family	Unemployed single	Aged pensioners
Household members	Single mother with two dependent children	Working family with two school aged children	Single, unemployed female	Couple, retired
Age	34 years old, with two children aged 7 and 8	2 adults aged 40 and 38 years, with two children aged 11 and 13	44 years old	2 adults aged 67 and 69 years
Income source	Mother works 18 hours a week for 39 weeks a year at minimum wage + casual loading. Eligible for government payments.	1 works full time (minimum wage + 33 per cent); the other casual (16 hours per week at minimum wage with casual loading). Eligible for government payments.	Newstart Allowance only	Aged Pension and supplements only
Housing	Rents a unit (85 per cent median unit rental).	Rents a house (85 per cent median house rental)	Shares a house with two other adults (paying one third of 85 per cent median house rental).	Renters: Rent a unit (85 per cent median unit rental). Owners: Own a house
Education	Both children attend a public primary school	Both children attend a public primary school	N/A	N/A
Transport	Owens a small car	Own a small car and uses public transport for 5 round trips per week.	Public transport is only mode of transport (5 round trips per week).	Renters: Public transport is only mode of transport (5 round trips per week).
Health	No private health insurance	Has basic private health insurance	No private health insurance	No private health insurance

Source: BANKWEST CURTIN ECONOMICS CENTRE | 'WACOSS Cost of Living Report 2017', WA Council of Social Service.

It is important to note that the assumptions we make about the expenditure patterns of our representative households can mask some difficult decisions and trade-offs made by real-world families. For instance, we assume the household is able to secure a rental property for 85 per cent of median rental, but affordable properties for low income households can be very hard to come by.⁵ Our family might not be able to find a place they can afford close to work or school – do they end up paying higher rent to stay in the same area, but having to cut corners on their food and transport costs to get by? Or do they move to a cheaper place out on the fringes of the city, only to find their transport costs go up drastically or that they are paying much more in utility costs to heat or cool a poorly built and insulated property (and missing out on access to jobs and services)?

The analysis below has also sought for the first time to partially model the comparative living costs for our four household models in the different regional centres of WA. To do so we are forced to make some assumptions about consumption and expenditure patterns that may require further analysis. We have used data on the comparative costs of regional goods and services derived from the RPI produced by the Department of Primary Industries and Regional Development (as discussed in Chapter 1, p 23) together with limited data on cost for the rest of the state from the Household Expenditure Survey. One place we have sought to make our consumption patterns more realistic is in relation to utility costs, as we are aware that significant differences in climate in the Northwest contribute to much higher utility costs for heating and air-conditioning. To this end we have used average consumption data for each region provided by Horizon Power, Synergy and the Water Corporation.

⁵ As demonstrated by the WA data in the 2017 Anglicare Rental Affordability Snapshot, Anglicare Australia (Anglicare, 2017).

Table 12 through to Table 15 show the WACOSS (2017) estimated weekly expenditure for the four households. The *single parent family* (Table 12) is comprised of a single parent with two primary school children.⁶ The parent works part-time, rents a unit, and owns a small car. The parent is assumed to already be working 18 hours a week for 39 weeks of the year while the children attend school. WACOSS' calculations assume that the parent is unable to work during school holidays in order to care for the children. This household is eligible to receive Parenting Payment Single (rather than being shifted to the much lower Newstart Allowance) due to one of the children being below the age of 8. Over the past three years, the single parent household has seen their 'bottom line' (total income less total expenditure) increase from \$6 to \$72 to \$103 per week. However, their income has been reduced in the current financial year by the cancellation of the Schoolkids Bonus (for which they received the last half-yearly payment in December) and is expected to fall further in the coming year as a consequence. WACOSS (2017) states that it is important to remember that these calculations make little allowance for the family to save, or for the parent to undertake training for improved future employment prospects, or enable the family to respond in unanticipated emergencies.

Table 12 Income and expenditure for single-parent family, WA, 2014-15 to 2016-17

Household = Single parent	2014-15	2015-16	2016-17	2016-17/ 2015-16	2016-17/ 2015-16
Weekly income					
Wage (gross)	\$394.30	\$402.60	\$410.30	\$7.70	1.9%
Parenting Payment	\$241.80	\$245.30	\$247.60	\$2.30	0.9%
Other regular government benefits	\$309.10	\$318.20	\$319.30	\$1.10	0.4%
Government supplements *	\$51.70	\$54.30	\$46.00	-\$8.30	-15.2%
Tax paid	\$58.70	\$48.20	\$50.10	\$1.90	3.9%
Total household income	\$944.10	\$978.00	\$979.00	\$1.00	0.1%
Weekly expenditure					
Rent	\$357.00	\$324.10	\$289.00	-\$35.10	-10.8%
Food and beverage	\$220.70	\$219.20	\$220.30	\$1.10	0.5%
Utilities	\$35.90	\$37.50	\$39.20	\$1.70	4.5%
Transport	\$55.20	\$54.80	\$56.80	\$2.00	3.6%
Other - housing and living costs	\$269.50	\$270.40	\$270.40	\$0.10	0.0%
Total household expenditure	\$938.20	\$905.90	\$875.70	-\$30.30	-3.3%
Weekly difference					
Total income	\$944.10	\$978.00	\$979.00	\$1.00	0.1%
Total expenditure	\$938.20	\$905.90	\$875.70	-\$30.30	-3.3%
Difference	\$6.00	\$72.10	\$103.30	\$31.20	43.3%

Note: * One off payments, converted to weekly figures.

Source: BANKWEST CURTIN ECONOMICS CENTRE | WACOSS Cost of Living Report 2017; WA Council of Social Service.

The *working family* (Table 13) consists of one parent working full time, one doing part-time casual employment, and two school aged children. The family rents a house, owns a small car, and use public transportation for five round trips a week. In 2016-17, WACOSS' calculations show that this family's weekly income surpassed their basic living costs by \$173 per week, which is an increase of \$42 from the year before. WACOSS (2017) further notes that while the continued improvement provides some allowance for the family to save or to cover unexpected expenditure, if either of the couple loses their job or have their hours reduced their financial position could be very different.

⁶ Noting that a similar outcome is achieved when the parent continues to work during school holidays to maintain employment, but effectively spends most of the additional income on child care costs.

Table 13 Income and expenditure for working family, WA, 2014-15 to 2016-17

Household = Working family	2014-15	2015-16	2016-17	2016-17/ 2015-16	2016-17/ 2015-16
Weekly income					
Combined wages (gross)	\$1,221.90	\$1,247.70	\$1,271.40	\$23.70	1.9%
Regular government benefits	\$254.10	\$262.40	\$263.00	\$0.60	0.2%
Government supplements *	\$58.90	\$59.30	\$47.00	-\$12.30	-20.8%
Tax paid	\$137.50	\$143.90	\$131.40	-\$12.50	-8.7%
Total household income	\$1,397.50	\$1,425.60	\$1,450.00	\$24.50	1.7%
Weekly expenditure					
Rent	\$376.10	\$344.30	\$316.60	-\$27.70	-8.0%
Food and beverage	\$316.60	\$314.70	\$316.30	\$1.60	0.5%
Utilities	\$53.90	\$56.20	\$58.60	\$2.30	4.1%
Transport	\$87.50	\$88.00	\$90.40	\$2.50	2.8%
Other - housing and living costs	\$487.40	\$491.50	\$495.20	\$3.80	0.8%
Total household expenditure	\$1,321.40	\$1,294.60	\$1,277.10	-\$17.60	-1.4%
Weekly difference					
Total income	\$1,397.50	\$1,425.60	\$1,450.00	\$24.50	1.7%
Total expenditure	\$1,321.40	\$1,294.60	\$1,277.10	-\$17.60	-1.4%
Difference	\$76.10	\$131.00	\$173.00	\$42.00	32.1%

Note: * One off payments, converted to weekly figures.

Source: BANKWEST CURTIN ECONOMICS CENTRE | *WACOSS Cost of Living Report 2017; WA Council of Social Service.

The next household is the *unemployed single person* (Table 14), whose only income derives from government allowances and benefits. This person is currently looking for work, lives in shared accommodation, and relies on public transport to get to appointments (such as with Centrelink or for interviews). In this latest iteration of the modelling, in 2016-17, the weekly income for the unemployed single person has only increased by 1 per cent, which translates to an extra \$3.10 per week to make ends meet. The weekly expenditure on basic living costs has decreased by 2.3 per cent (\$7.90) over the past 12 months, meaning they fall \$23.66 short of being able to achieve a basic standard of living in line with community expectations. The gap between income and expenditure, which has been negative for the past three years, means that in practice they have to make some very tough choices about which basic everyday living items are most essential in a given week. The ongoing, negative difference is a clear indication that this person is struggling to meet a basic standard of living in WA and is facing financial hardship (WACOSS, 2017).

Table 14 Income and expenditure for unemployed single, WA, 2014-15 to 2016-17

Household = Unemployed single	2014-15	2015-16	2016-17	2016-17/ 2015-16	2016-17/ 2015-16
Weekly income					
Newstart Allowance	\$257.70	\$261.80	\$263.30	\$5.50	2.1%
Rent Assistance	\$42.50	\$42.80	\$42.50	-\$0.30	-0.8%
Clean Energy Supplement	\$4.40	\$4.40	\$4.40	\$0.00	0.0%
Tax paid	\$0.00	\$0.00	\$0.00	\$0.00	0.0%
Total household income	\$304.70	\$309.00	\$312.10	\$3.10	1.0%
Weekly expenditure					
Rent	\$125.40	\$114.80	\$105.50	-\$9.20	-8.0%
Food and beverage	\$95.90	\$95.50	\$96.00	\$0.50	0.5%
Utilities	\$16.60	\$17.30	\$18.00	\$0.70	4.2%
Transport	\$13.00	\$13.30	\$13.80	\$0.50	4.1%
Other - housing and living costs	\$102.60	\$102.90	\$102.40	-\$0.50	-0.5%
Total household expenditure	\$353.50	\$343.70	\$335.70	-\$7.90	-2.3%
Weekly difference					
Total income	\$304.70	\$309.00	\$312.10	\$3.10	1.0%
Total expenditure	\$353.50	\$343.70	\$335.70	-\$7.90	-2.3%
Difference	-\$48.80	-\$34.70	-\$23.60	\$11.10	-32.0%

Source: BANKWEST CURTIN ECONOMICS CENTRE | 'WACOSS Cost of Living Report 2017', WA Council of Social Service.

WACOSS (2017) added an additional household - that of an *age pensioner couple* - in their latest modelling (Table 15). This is a retired couple aged 67 and 69. As retirees, the couple's only income is from the Age Pension and supplements. Two housing scenarios are provided: one where the couple rents a unit (at 85 per cent of the median unit rental cost), and the other where the couple owns a house. For weekly income the only difference between the two scenarios is the rent assistance of \$61.70 per week. This modest amount for the renters only partially offsets the \$289 additional spent on rent each week, which does not affect the home owners. Overall, WACOSS' (2017) modelling shows that the rental couple has a positive balance of only \$12.70 per week, while the home owners have a more healthy balance of \$230 per week. This suggests that home ownership is critical to the financial resilience of retirees, particularly those reliant on the aged pension.

Table 15 Income and expenditure for age pensioners, WA, 2016-17

Household = Aged pensioners	2016-17 Renters	2016-17 Home Owners
Weekly income		
Aged Pension	\$603.20	\$603.20
Rent Assistance	\$61.70	\$0.00
Clean Energy Supplement	\$10.60	\$10.60
Pension Supplement	\$49.30	\$49.30
Cost of Living Rebate	\$2.50	\$2.50
Tax paid	\$0.00	\$0.00
Total household income	\$727.10	\$665.40
Weekly expenditure		
Rates and charges	\$0.00	\$25.60
Rent	\$289.00	\$0.00
Food and beverage	\$181.10	\$181.10
Utilities	\$42.10	\$44.10
Transport	\$13.80	\$43.30
Other - housing and living costs	\$188.40	\$188.40
Total household expenditure	\$714.40	\$482.60
Weekly difference		
Total income	\$727.10	\$665.40
Total expenditure	\$714.40	\$482.60
Difference	\$12.70	\$182.90

Source: BANKWEST CURTIN ECONOMICS CENTRE | 'WACOSS Cost of Living Report 2017', WA Council of Social Service.

Taken together, the analysis of the four different WACOSS household models highlights the different ways that cost of living pressures impact on low-income households dependent on their makeup, circumstances and sources of income. We see that our low income working family remains more financially resilient (due primarily to a reduction in the median house rental price during a period where their income has remained flat), whereas at the other end of the scale, our unemployed single is facing significant financial hardship due to the inadequacy of their income from the Newstart Allowance.

The circumstances of our single parent household appear on the surface to be relatively stable (if they have managed in practice to secure a reduction in the cost of rental for their unit), however they face a further significant reduction in income in the coming year as a result of the cancellation of the Schoolkids Bonus. Taken in the context of the longer-term trends in income (Figure 23, p 50) and expenditure (Figure 30, p 72) their current housing, essential and discretionary spending patterns reflect the more dramatic reduction in discretionary spending experienced by lone parent households compared to couples (Figure 31, p 73).

Consideration of the circumstances of a retired couple on the aged pension highlights the significant disparity in financial resilience between those who own their own home on retirement (and can get by the most comfortably of our different low-income households) and those who are still struggling to find affordable rental in age, and continue to struggle to make ends meet. This is confirmed by the analysis of expenditure shares in Chapter 3 that highlight housing as the biggest single area of expenditure (Table 11, p 62) and the fastest rising area as a share of expenditure in recent years (Figure 28, p 59), particularly for households experiencing deprivation or financial hardship (Figures 33 & 34, p 76).

From a policy point of view, this highlights that the single most critical area for intervention to reduce rates of hardship and deprivation and to address child poverty is housing affordability. While State government concessions for transport and utilities remain critical in ensuring affordability and equity of access to these essential services by vulnerable groups, they are unlikely to reduce in any meaningful way the rates of financial hardship while housing costs remain so high – given their relative proportion of expenditure. Taken together with an increasing trend of fewer households owning their home on retirement, we are likely to see an increased risk of poverty and financial hardship in age over time, exacerbated by population ageing.

Vulnerable households living in regional WA

The tables below provide some analysis of essential living costs in regional areas taken from the *WACOSS 2017 Cost of Living Report*. Limitations of the data on detailed household expenditure patterns in the ABS Household Expenditure Survey mean there is insufficient detail to confidently extend the WACOSS household models to individual regions within WA. The data below accurately reflects the differences in costs of essential items, but we recognise that low income households living in these regions will change their actual expenditure patterns to compensate so they can balance their weekly budget.

Table 16 Weekly expenditure across the regions - Rent

Household type	Perth	Gascoyne	Goldfields - Esperance	Great Southern	Kimberley	Mid West	Peel	Pilbara	South West	Wheatbelt
Single parent and age pensioners	\$289.00	\$335.75	\$240.13	\$237.79	\$302.39	\$175.31	\$235.45	\$253.51	\$256.70	\$247.56
Working family	\$317.05	\$419.69	\$298.56	\$302.81	\$459.85	\$243.31	\$272.64	\$333.84	\$288.58	\$252.03
Unemployed person	\$105.54	\$164.58	\$117.08	\$118.75	\$180.33	\$95.42	\$106.92	\$130.92	\$113.17	\$98.83

Source: BANKWEST CURTIN ECONOMICS CENTRE | Calculations based on REIWA data.

Analysis of rental costs for the four WACOSS model households based on REIWA data is included in Table 16. It is important to note that availability can become a much more critical factor in regional areas with smaller housing markets and a more limited range of choice. So while our analysis reflects the actual costs of the type of appropriate housing assumed in the four models, real households may not be able to secure appropriate housing in some regional centres and forced to compromise on either the appropriate size for their household makeup or on affordability.

For our single parent and aged pensioner households (both of whom rent a 2 bedroom unit) median rental costs are significantly lower in the Midwest (\$112 less per week), and comparably lower in the Peel, Great Southern, Goldfields and Wheatbelt (between \$42 and \$54 less). Rental is also slightly lower in the Southwest and Pilbara (\$33 to \$36 cheaper, showing a big turn-around in rental costs from the peak of the resources boom) by comparison to those in Perth. Rental costs in the Kimberley are comparable but slightly higher (an extra \$13 per week), while the highest median rental cost for a two bedroom unit is in the Gascoyne (where it costs nearly \$50 more than the metro area) perhaps reflecting the lack of this kind of housing stock.

For our working family and single unemployed person (who are looking to rent or share a three bedroom house) the differences in housing costs are somewhat similar, with a few variations reflecting the comparative availability and demand for different types of housing stock. The most expensive housing is in the Kimberley (\$132 extra) and Gascoyne (\$102 extra) compared to Perth, with costs also slightly higher in the Pilbara (\$16 extra). In contrast, the lowest housing costs for our working family are in the Midwest (-\$74), Wheatbelt (-\$65) and Peel (-\$45) with the cost in other regions only slightly less to those in Perth metropolitan region.

Table 17 Weekly expenditure across the regions – Food and beverages

Household type	Perth	Gascoyne	Goldfields -Esperance	Great Southern	Kimberley	Mid West	Peel	Pilbara	South West	Wheatbelt
Single parent	\$202.83	\$220.07	\$220.48	\$202.63	\$227.98	\$215.81	\$201.82	\$223.72	\$204.66	\$211.55
Working family	\$291.68	\$316.48	\$317.06	\$291.39	\$327.85	\$310.35	\$290.22	\$321.73	\$294.31	\$304.23
Unemployed person	\$88.85	\$96.40	\$96.58	\$88.76	\$99.87	\$94.54	\$88.41	\$98.00	\$89.65	\$92.67
Age pensioners	\$177.70	\$192.81	\$193.16	\$177.52	\$199.74	\$189.08	\$176.81	\$196.01	\$179.30	\$185.34

Source: BANKWEST CURTIN ECONOMICS CENTRE | Calculations based on ABS 2015-16 HES and RPI data.

By comparison, weekly expenditure on food for our single parent household is comparable in the Perth, Pilbara, Great Southern and Southwest regions, and only marginally higher in the Wheatbelt (\$9 extra) and Midwest (\$13 extra). Food expenditure is higher in the Goldfields (\$18 extra) and Pilbara (\$21 extra), and highest in the Gascoyne (\$33 extra). The pattern of expenditure differences is very similar for the other households – with comparable food costs for the working family in the Perth, Pilbara, Great Southern and Southwest regions, marginally higher costs in the Wheatbelt (\$5 extra) and Midwest (\$19 extra). Food expenditure is higher in the Midwest (\$19 extra), Gascoyne (\$25 extra), Goldfields (\$26 extra), and Pilbara (\$30 extra), and highest in the Kimberley (\$36 extra).

The same pattern generally holds true for our aged pensioner couple and our unemployed single – with highest food costs in the Kimberley, Pilbara, Gascoyne and Goldfields, and only marginal differences in costs in the other regions.

Table 18 Weekly expenditure across the regions – Electricity

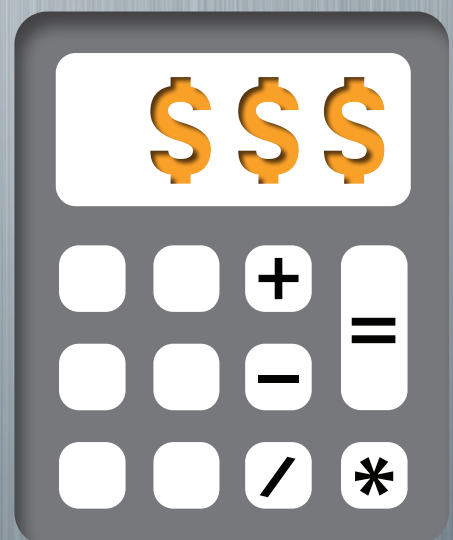
Household type	SWIS	NWIS	West Kimberley	Gascoyne/ Mid West	Esperance
Single parent	\$15.52	\$39.03	\$34.47	\$19.67	\$12.84
Working family	\$31.04	\$58.70	\$53.33	\$35.92	\$27.88
Unemployed person	\$8.85	\$18.07	\$16.28	\$10.48	\$7.80
Age pensioners	\$22.41	\$45.92	\$41.36	\$26.56	\$19.72

Source: BANKWEST CURTIN ECONOMICS CENTRE | Calculations based on data supplied by Synergy and Horizon Power.

The patterns of weekly expenditure on utilities show the most dramatic regional variations, with all household models consistently spending twice as much on electricity in the Northwest Interconnected System (Pilbara) and West Kimberley as they do in the Southwest Interconnected System (Perth, Peel and Southwest), only marginally more in the Gascoyne and Midwest, and slightly less in the Esperance region. While all our household models spend a comparatively small proportion of their overall weekly budget on utilities (around 4 - 5%) in the Perth region, the significant increase in regional electricity expenditure combined with the seasonal and intermittent nature of electricity bills is likely to mean that low-income regional households are much more at risk of bill shock, and more likely to get into utility debt during the peak summer period.

From

numbers to issues surrounding
the cost of living



From numbers to issues surrounding the cost of living

After analysing several datasets on prices, expenditure and cost of living indicators, this chapter examines in more detail a number of topical issues surrounding the cost of living in Western Australia. The first is the measurement of standard of living and cost of living adjustments.

The impact of the resources boom

This section seeks to understand the impact of the resources boom on the cost of living for West Australians. It is widely acknowledged that the boom brought along with record profits for Australia's multinational resources companies a significant increase in income for blue and white collar workers associated with the industry. This includes, apart from mining, construction, professional, technical and scientific services and financial and insurance services. Whilst income for a group of professions is commonly thought to have initiated an imbalance in the economy – a two speed economy – the downside is that prices have been pulled up for the general public.

When judged by trends in mining investment and commodity prices, the start of the boom can be dated to 2005, and lasting, by various measures, just under a decade by 2012-13. Two notable studies of the resources boom, one researched in the midst of the boom and one post event, are Garton (2008) and Tulip (2014)⁷. Garton (2008) discusses the 'two-speed economy' with the mining states (prominently featuring Western Australia) and the non-mining states. Tulip (2014) presents findings from a macroeconomic model on the impact of the mining boom on several macro indicators.

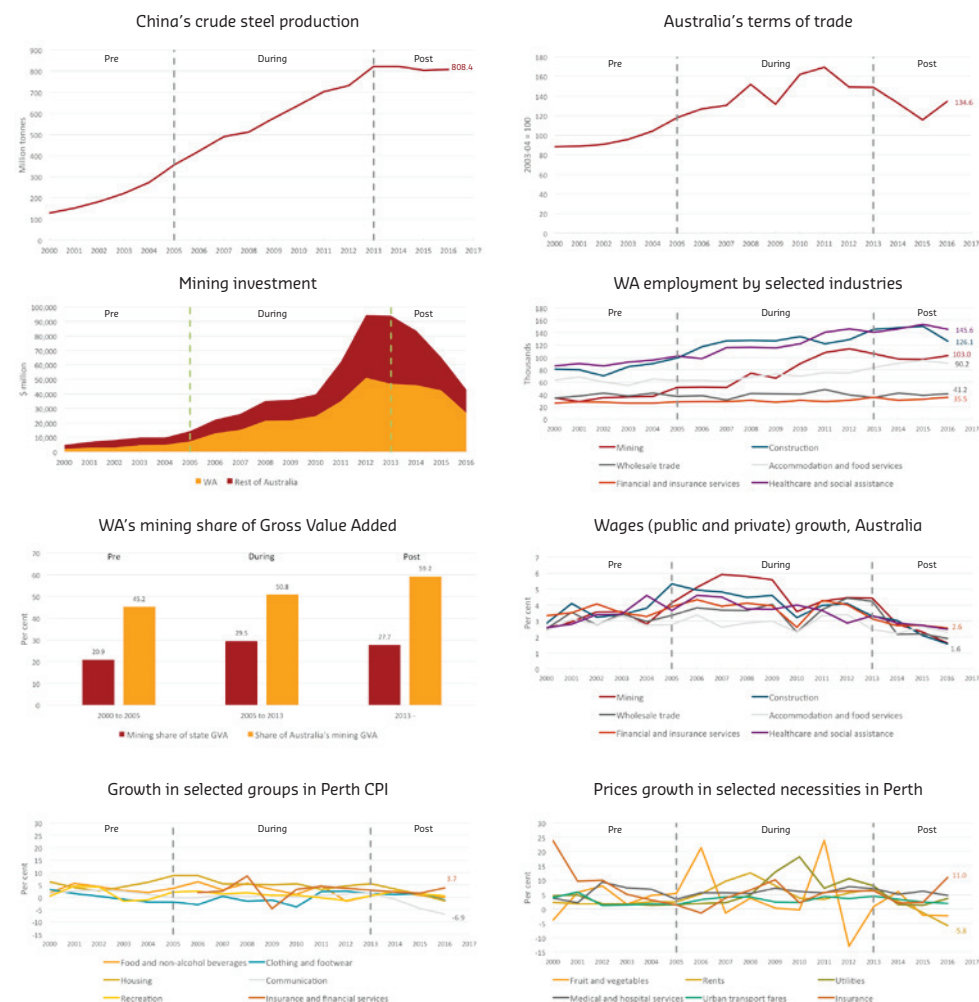
Figure 30 depicts indicators related to the resources boom from the source to measures of cost of living for Perth and Australia. Its aim is to trace the steps from the origins of the resources boom and its ultimate flow on through to the costs of living in Western Australia.

As part of China's push to grow its economy and further industrialise, the onset of rural-urban area migration led to a boost in steel production. Steel is used to feed infrastructure projects on residential and non-residential construction, roads and rail networks, as well as in other sectors such as machinery and shipbuilding. Australia, in particular Western Australia, is a beneficiary of this as one of the world's largest producer of iron ore, which is the main ingredient in steelmaking. The demand for iron ore is reflected in a rise in Australia's terms of trade (an index of export prices relative to import prices) during the mining boom years. Concomitantly, significant investment was undertaken in Western Australia on mining and related activities. New greenfield projects supplemented brownfield project expansions. Capacity was increased in rail and ports. This led to an uptick in employment in mining, construction and other related sectors. Along with this, wages, particularly in the mining and construction sectors, rose.

The bottom two panels of Figure 30 show growth rates in components of the CPI in the three phases – pre mining boom, during the boom, and post boom. Whilst there is an indication of increased volatility in prices growth in the broad CPI groupings, there is some evidence of the prices of several necessities increasing during the mining boom.

⁷ Tulip (2014) is a more accessible version of the study by Downes *et al.* (2014).

Figure 30 The resources boom: From Chinese growth to Perth and Australian prices



Note: Pre-boom is 2004 and prior, During-boom is 2005 to 2013, and Post-boom is 2014 and beyond. The terms of trade series is based on the last quarter of the calendar year and is rebased to 2003-04 = 100. Mining investment is expressed as the ratio of actual private new capital expenditure in mining to total actual private new capital expenditure, where the annual data is obtained by averaging the four quarters of the year. Employment is total employed by industry in Western Australia.

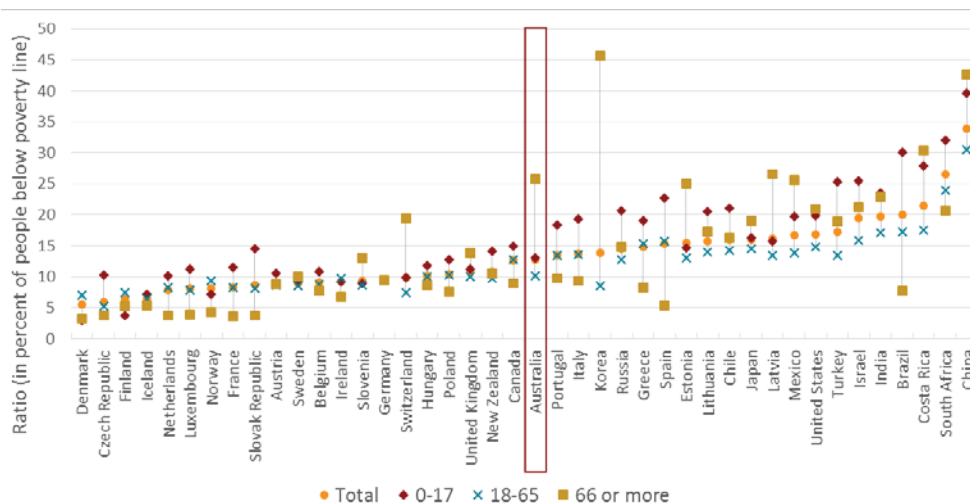
Source: BANKWEST CURTIN ECONOMICS CENTRE | Worldsteel Association, ABS cat no 5206.0, 5220.0, 5625.0, 6291.0, 55.003 and 6401.0.

On poverty, indebtedness and low-income households in WA

This section considers poverty and households in Western Australia that are doing it tough. A BCEC report in 2014 examined poverty and disadvantage in Australia in detail (Cassells *et al.*, 2014). This section will begin with an international comparison of rates of poverty. Following that, selected analyses for WA are highlighted. This includes an examination of a sample of data from households in WA who have sought financial counselling.

The OECD compiles data on the poverty rate for various age groups of its member countries. Figure 31 shows the rate (ratio of the number of people whose income falls below the poverty line⁸) for the entire population, 0-17 year olds, 18-65 year olds and 66 year-olds or more. In terms of total poverty rate, Australia falls around the middle of the group of countries, where Denmark has the lowest poverty rate and China has the highest. 2014 data for Australia reveals a total poverty rate of 12.8 per cent. Those in the 0-17 age group have a poverty rate of 13 per cent, 18-65 is 10.2 per cent, and those aged 66 and above is 25.7 per cent.

Figure 31 Poverty rate among OECD countries, total and by age segments



Note: Data sorted in ascending order of total poverty rates. Data are for the latest available year ranging from 2011 to 2016 (Australia, 2014).
Source: BANKWEST CURTIN ECONOMICS CENTRE | OECD.

A good definition of poverty is the situation where a household's income is inadequate to the extent that it precludes them from having an acceptable standard of living. There is of course much that are 'general' in this definition. Circumstances differ not only between different households but also across countries. A family that is considered as being in poverty in a first world country would be an aspiration to others in less developed nations.

The concept and measurement of poverty is often contested, for how we define it can have different implications for policy development and moral suasion. In simple terms 'income poverty' is when an individual, household or family's income fails to meet an established threshold – usually defined by what is generally considered a basic but 'acceptable' or 'decent' standard of living within a particular society. The analysis above of poverty rates in the OECD uses a relative measure of income poverty, defined as less than 50 per cent of median income (also known as the Henderson

⁸ Taken as half the median household income of the total population.

poverty line). Relative measures of poverty are sometimes contrasted with ‘absolute’ definitions of poverty based on the amount of money necessary to meet the most basic survival needs, such as food, clothing and shelter.⁹ Comparisons between first-world and third-world poverty often contrast the quality of life and life expectancy of those suffering resource deprivation in the ‘un-developed’ and ‘developing’ versus ‘developed worlds’. Such comparisons may be useful in making the case for increased overseas aid, but they do little to recognise the impacts of social and economic exclusion within our own society and our obligations to those less fortunate in our community arising from the social contract.

Table 19 Households with debt three or more times income, 2005-06 to 2015-16

States and territories	2005-06		2009-10		2011-12		2013-14		2015-16	
	Per cent	Rank	Per cent	Rank	Per cent	Rank	Per cent	Rank	Per cent	Rank
New South Wales	26.7	1	25.0	3	24.1	5	25.8	5	26.4	5
Victoria	23.6	2	22.9	5	22.2	7	25.2	6	26.2	6
Queensland	23.1	4	24.8	4	25.9	2	26.1	4	27.7	4
South Australia	19.8	7	21.0	7	22.8	6	23.1	7	26.0	7
Western Australia	23.6	2	28.4	1	29.6	1	31.5	1	31.9	2
Tasmania	14.2	8	15.1	8	18.0	8	17.9	8	18.8	8
Northern Territory	21.1	5	26.2	2	25.4	3	27.7	2	37.4	1
Australian Capital Territory	20.4	6	21.2	6	24.9	4	27.1	3	29.0	3
Australia	23.9		24.2		24.4		26.0		27.2	

Note: Income is current disposable household income annualised.

Source: BANKWEST CURTIN ECONOMICS CENTRE | ABS cat no 6523.0, September 2017.

There are three established methods for measuring poverty – relative income poverty (such as the Henderson line), relative deprivation (that is, lack of access to essential goods and services relative to established community standards) and subjective or experiential poverty (an individual’s perception of themselves as ‘poor’ or excluded). A high level of correlation has been demonstrated between relative and deprivation measures of poverty. Relative income poverty measures are considered more statistically reliable and are easier to measure, while deprivation measures are more difficult and expensive to collect but can provide useful insights into both community attitudes and lived experience of poverty. The concept of relative deprivation is linked to the capability or empowerment perspective, seen in the UN Development Program (see, for example, UNDP, 1997) and Amartya Sen’s work on capability deprivation (Sen, 2000). More recently the UN Sustainable Development Goals have extended the concept of ‘inclusive development’ to set targets for increasing the income of the bottom 40 per cent of households relative to the rest of society (hence reducing inequality) (Gupta and Vegelin, 2016).

Application of a 50 per cent poverty line in Western Australia by comparison to the national median income suggests that 14 per cent or 240,000 Western Australians are living in relative poverty (ACOSS, 2016). However, if the comparison is made in relation to state median income (which provides a better reflecting of both living standards and costs within the state) this figure rises to 17.6 per cent or around 360,000 Western Australian’s living in poverty – as shown in Table 20. Perth ranks sixth across all state capitals when comparing relative poverty rates at a standard 50 per cent measure, suggesting lower overall rates of poverty. However, it ranks second when we compare the number of households living in severe poverty (that is,

⁹ See for instance UNESCO definition of poverty:
<http://www.unesco.org/new/en/social-and-human-sciences/themes/international-migration/glossary/poverty/>

below 30 per cent of median income), indicating higher rates of inequality and a small subclass of citizens who are being left further behind.

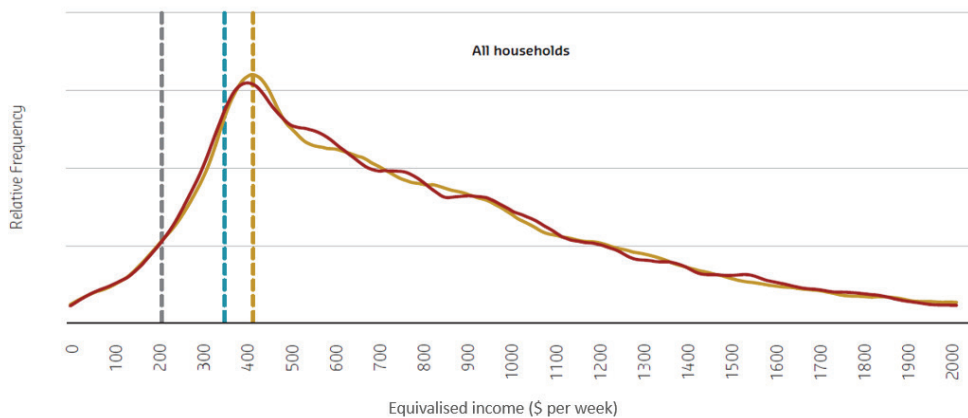
Table 20 Poverty rates using state-specific median incomes, 2003-04 to 2013-14

States and territories	Median equivalised disposable income by state/territory and year as a share of national median						National poverty line	State poverty line
	2003-04 Per cent	2005-06 Per cent	2007-08 Per cent	2009-10 Per cent	2011-12 Per cent	2013-14 Per cent	Per cent	Per cent
New South Wales	103%	99%	96%	98%	99%	99%	16.6%	16.6%
Victoria	103%	100%	104%	100%	97%	102%	16.6%	15.9%
Queensland	95%	100%	102%	98%	99%	96%	16.0%	14.6%
South Australia	95%	95%	95%	98%	92%	92%	14.9%	12.2%
Western Australia	99%	103%	108%	106%	112%	111%	14.1%	17.6%
Tasmania	92%	92%	86%	89%	89%	90%	16.7%	11.9%
ACT/NT	127%	134%	130%	138%	133%	135%	10.2%	15.8%

Source: BANKWEST CURTIN ECONOMICS CENTRE | Reproduction of Bankwest Curtin Economics Centre, 'Poverty Week Presentation', October 2016.

Figure 32 shows the distribution of equivalised incomes for Western Australia showing the 30 per cent (grey) extreme poverty, 50 per cent (blue) poverty line and 60 per cent (gold) at risk category, indicating that an additional 150,000 Western Australians are potentially vulnerable to financial hardship – should they experience an unforeseen crisis, like a loss of work income, a series accident or a rise in interest rates.

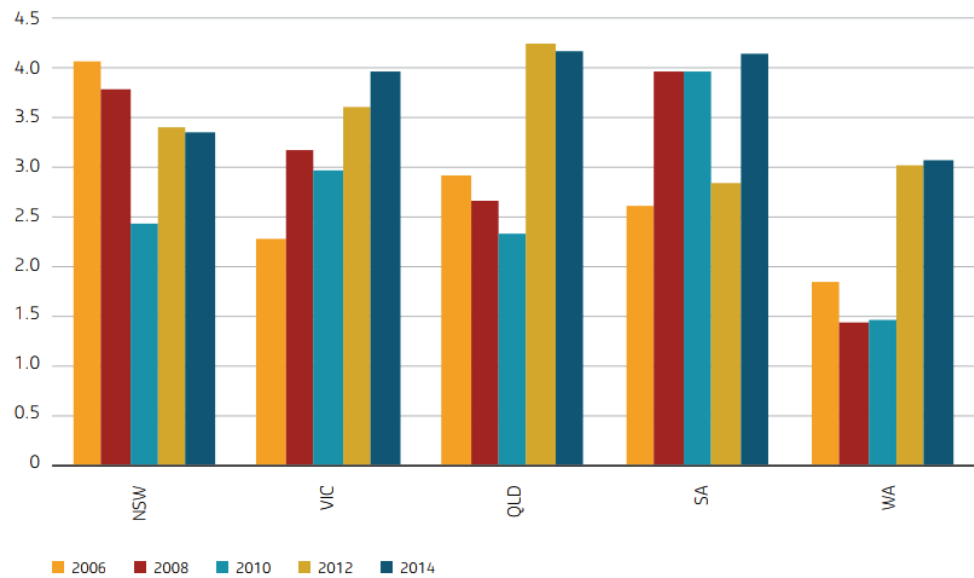
Figure 32 Distribution of equivalised incomes and poverty lines



Source: BANKWEST CURTIN ECONOMICS CENTRE | Reproduction of slide in Bankwest Curtin Economics Centre, 'Child Poverty: Prevalence and Progress', WACOSS Community Relief and Resilience Conference, Perth Zoo, 26 July 2017.

Figure 32 provides an analysis of HILDA data on self-reported employment vulnerability, showing a doubling of Western Australian households between 2010 and 2014 (from 1.5 to 5%) who fear they could lose their job in the coming year.

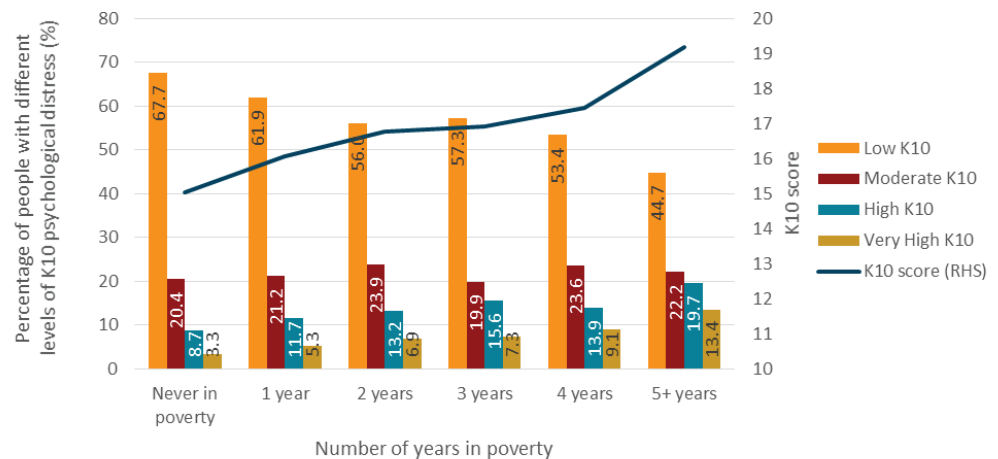
Figure 33 Share of employees who report more than 50 per cent likelihood of losing their job next year, five most populous states, 2006 to 2014



Source: BANKWEST CURTIN ECONOMICS CENTRE | Reproduction of Figure 37 of 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.

Poverty is a well-established social determinant of health, including psychological health (Marmot, 2005). Persistent poverty plays a demonstrable role in increasing levels of psychological distress (Figure 34).

Figure 34 Persistent poverty and psychological distress



Source: BANKWEST CURTIN ECONOMICS CENTRE | Reproduction of slide in Bankwest Curtin Economics Centre, 'Child Poverty: Prevalence and Progress', WACOSS Community Relief and Resilience Conference, Perth Zoo, 26 July 2017.

The effects of the minimum wage and underemployment on inequality

Conversations on poverty in developed countries typically involve discussions on the minimum wage. The national minimum wage is currently set at \$18.29 per hour which translates to \$694.90 before tax of a 38 hour week. Table 21 shows OECD data on the minimum (hourly) wage for Australia and other member countries. The wage data are expressed in US dollars fixed at 2015 prices. In 2016, Australia has the second highest minimum wage behind France.

Table 21 Hourly minimum wages, 2015 US dollars, 2012 to 2016

Country	2012		2013		2014		2015		2016	
	\$/hour	Rank	\$/hour	Rank	\$/hour	Rank	\$/hour	Rank	\$/hour	Rank
Australia	10.80	3	10.83	3	10.86	3	10.99	3	11.12	2
Belgium	10.35	4	10.44	4	10.41	4	10.35	4	10.15	5
Canada	7.73	9	7.78	9	7.83	9	7.95	10	8.07	10
Chile	2.50	26	2.70	26	2.80	27	2.80	28	3.00	28
Czech Republic	3.50	21	3.52	21	3.61	21	3.91	22	4.15	22
Estonia	2.84	25	3.05	23	3.39	24	3.74	23	4.12	23
France	10.97	1	11.02	1	11.08	2	11.17	2	11.22	1
Germany	..	..	..	..	..	..	10.30	5	10.25	4
Greece	4.65	15	4.54	17	4.60	17	4.68	19	4.72	19
Hungary	3.76	20	3.90	20	4.04	20	4.17	21	4.39	21
Ireland	8.64	6	8.60	7	8.58	7	8.61	8	9.11	8
Israel	5.17	13	5.27	13	5.25	13	5.60	14	5.85	14
Japan	7.02	11	7.12	11	7.07	11	7.16	12	7.35	11
Korea	4.56	17	4.78	16	5.06	15	5.38	16	5.76	16
Latvia	2.97	23	2.92	25	3.27	25	3.66	24	3.75	25
Luxembourg	10.88	2	11.00	2	11.28	1	11.22	1	11.00	3
Mexico	0.86	30	0.87	30	0.86	31	0.88	32	0.91	32
Netherlands	9.76	5	9.64	5	9.69	5	9.70	6	9.86	6
New Zealand	8.50	7	8.60	6	8.73	6	9.05	7	9.30	7
Poland	4.63	16	4.89	15	5.14	14	5.40	15	5.74	17
Portugal	4.16	19	4.15	19	4.20	19	4.31	20	4.50	20
Slovak Republic	3.46	22	3.46	22	3.46	22	3.46	27	3.46	27
Slovenia	6.81	12	6.87	12	6.90	12	6.96	13	6.96	13
Spain	4.98	14	4.94	14	4.95	16	5.00	17	5.06	18
Turkey	4.36	18	4.44	18	4.50	18	4.82	18	5.79	15
United Kingdom	8.00	8	7.94	8	8.00	8	8.23	9	8.44	9
United States	7.48	10	7.38	10	7.26	10	7.25	11	7.16	12
Colombia	2.30	27	2.40	27	2.40	28	2.40	29	2.40	29
Costa Rica	..	..	..	..	3.40	23	3.60	26	3.70	26
Lithuania	2.89	24	2.96	24	3.12	26	3.64	25	3.92	24
Brazil	1.90	28	2.00	28	2.00	29	2.00	30	2.00	30
Russian Federation	1.39	29	1.47	29	1.46	30	1.35	31	1.31	31

Note: Data expressed in 2015 constant price USD (PPP).
Source: BANKWEST CURTIN ECONOMICS CENTRE | OECD.

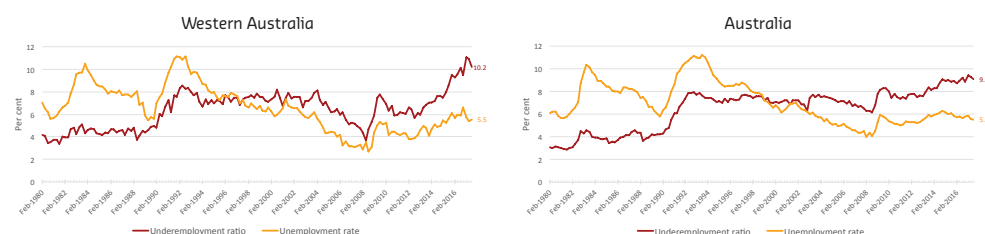
Australia and Western Australia have maintained a comparatively high minimum wage level. This has historically had a strong redistributive effect, mitigating the growth of inequality within our society. However, in recent years this impact has been undermined by a combination of low wage growth and growing underemployment (in contrast to growing rates of return on capital and the disconnect between productivity growth and wages). This combination of circumstances now means that,

According to OECD data Australia's hourly minimum wage has been between 2nd and 3rd highest over the past 5 years.

despite our minimum wage settings remaining comparatively high, we have seen growing inequality within our community linked to under-employment and precarious work.

The nature of work within our community has changed dramatically in the last two decades, with increasing levels of short-term and insecure employment, increasing uncertainty in hours worked and income received from week to week, and increasing levels of underemployment. Over the last ten years, Western Australia has seen a significant increase in levels of underemployment, reaching a seasonally adjusted rate of 11.1 per cent in February 2017 before falling to the current level of 10.2 per cent (Figure 35).

Figure 35 Trends in underemployment and unemployment rates, WA and Australia, 1980 to 2017



Note: Seasonally adjusted.
Source: BANKWEST CURTIN ECONOMICS CENTRE | ABS cat no 6202.0, Sep 2017.

The Western Australian labour market has seen a shift away from full-time to part-time employment, with full-time employment growth declining since the end of the mining boom, and a rise in the part-time employment growth rate to a recent high of 9.3 per cent in 2015-16, before witnessing a modest decrease of 0.5 per cent in 2016-17 (refer to Duncan *et al.*, 2016 for a comprehensive discussion of employment and the future of WA's economy). This trend has been particularly pronounced in WA's female labour force, where the growth in part-time work is outpacing the rest of Australia.

On releasing this data the ABS commented that: 'In recent years Australia's unemployment rate has been trending downwards while the underemployment rate has been trending upwards. This rise in the underemployment rate has led to a growing sentiment that the level of slack in Australia's labour market is not wholly represented by the unemployment rate, and that it is increasingly important to consider additional measures of labour underutilization like the underemployment rate. Since February 2015 there has been increasing divergence between the rates. While the unemployment rate has decreased 0.5 percentage points to 5.7 per cent, the underemployment rate has remained at 8.5 per cent, a series high.'

Western Australia is also seeing both a faster and greater growth in the share of casual employees than the rest of Australia, rising to 22.5 per cent in 2014.

Historically, Australia's strong minimum wage settings have meant that anyone who is gainfully and substantially employed would expect to be able to maintain a modest but decent standard of living, keep ahead of changes in the cost of living and have some resilience on the face of financial hardship. The changing nature of employment, with higher rates of underemployment and precarious employment, and more frequent transitions in and out of work, has reduced financial resilience, putting more working individuals and families at risk of poverty or financial hardship, and leading to increasing inequality within our community (as discussed below).

The 2012 Employment Outlook for Australia by the OECD Division for Employment Analysis focused specifically on their concerns with this growing trend of underemployment. They concluded that an underlying international trend towards underemployment had been greatly exacerbated by domestic policy settings. In effect, we are reporting higher employment and participation rate outcomes at the expense of under employment.

Studies have shown that underemployment, like unemployment, can lead to poor mental health outcomes as a result of a financial hardship and a lack of a sense of mastery and social support. The lack of adequate employment can lead to high levels of distress, which may in turn hinder employment and educational opportunities (Crowe *et al.*, 2016).

The link between minimum wage levels and rates of unemployment and under employment is contested, with employer organisations claiming that increasing minimum wages will lead to job losses (CCIWA, 2017). The Low Pay Commission in the United Kingdom recently reported research conducted over the last 15 years demonstrated that increases in the minimum wage in the UK have had no significant effect on employment or hours at an aggregate level (Low Pay Commission, 2016). It is worth noting that this period included introduction of a minimum wage setting mechanism in the UK resulting in comparatively large increases in minimum wage settings, coming off a very low base. An Australian study of youth labour markets also found that there was no evident correlation between youth unemployment rates and minimum wage rises in Australia (Junankar, 2015).

The negative impact of inequality on growth

A 2015 OECD report found:

‘Drawing on harmonised data covering the OECD countries over the past thirty years, the econometric analysis suggests that income inequality has a sizeable and statistically significant negative impact on growth, and the achieving greater equality in disposable income through redistributive policies has no adverse impact on growth.’ (OECD, 2015)

In fact, the OECD reported that between 1985 and 2005 income inequality rose by more than 2 Gini points on average across 19 OECD countries, which is estimated to have resulted in cumulative growth between 1990 and 2010 being 4.7 percentage points lower.

This study reinforces the findings by Ostry *et al.* (2014) from the International Monetary Fund’s (IMF) Research Department, who released a significant report on the topic of inequality in 2014. Titled Redistribution, Inequality, and Growth, one of the report’s key conclusions is that ‘lower net inequality is robustly correlated with faster and more durable growth, for a given level of redistribution.’

‘Inequality continues to be a robust and powerful determinant both of the pace of medium-term growth and of the duration of growth spells, even controlling for the size of redistributive transfers’

Financial stress, exclusion and resilience

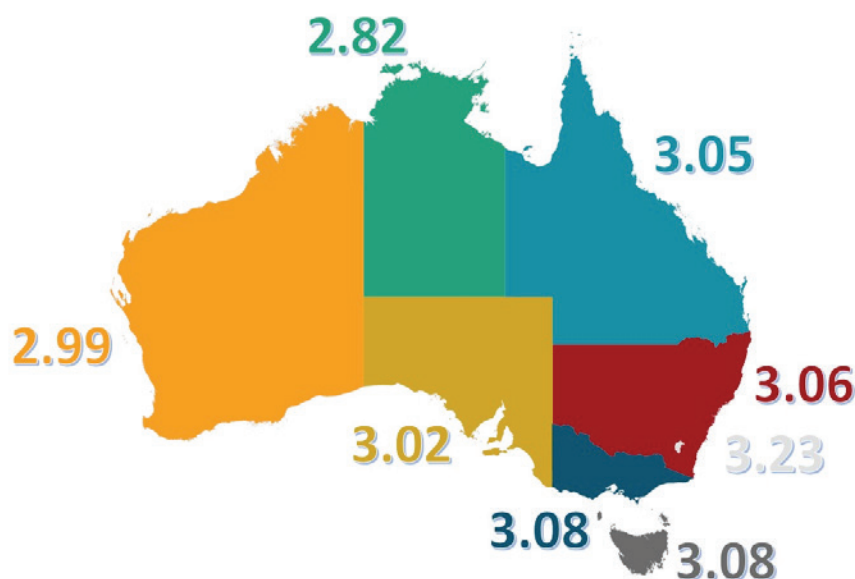
Despite an unprecedented two decades of continuous growth in the Australian economy, an increasing number of Australians report high levels of financial stress and more Australian households are considered to be in a precarious financial position. In 2016, 2.4 million Australian adults were financially vulnerable and experienced high or severe financial stress (close to 13%) and less were considered financially secure (35.7 to 31.2%) (Centre for Social Impact, 2017). Almost 1 in 5 could not raise \$2,000 in a week to deal with an emergency, and almost one in three adults had no savings or were just two pay packets away from serious financial stress if they lost their job.

'Financial stress' can refer both to the objective consideration of the proportion of disposable income taken up to meet essential living costs and service debt, and to the subjective experience of worrying about making difficult financial decisions to make ends meet from week to week. Analysis of expenditure patterns can tell us the proportion of the weekly budget taken up by housing, food or utilities costs (i.e. measures of 'housing stress' or 'food stress'), but it is by surveying the views of the community and experiences of individual households that we get an insight into the extent to which the stress of balancing the weekly budget or servicing ongoing debts is actually impacting on psychological well-being (Centre for Social Impact, 2017).

'Financial resilience' is defined as 'the ability to access and draw on internal capabilities and appropriate acceptable and accessible external resources and supports in financial adversity' whereas 'financial exclusion' is defined as 'a lack of access to appropriate and affordable financial services and products' (Connolly, 2014 and Muir *et al.*, 2016).

On a scale of 1 to 4, with 1 being severe financial stress and 4 being financial security, Australia has an overall financial resilience mean of 3.06. WA, however, not only has a lower level of financial resilience than the overall mean, but in fact has the second lowest level out of every state and territory (Figure 36, Muir *et al.*, 2016).

Figure 36 Financial resilience, states and territories, 2015



Note: Numbers indicate the mean financial resilience scores for each state and territory.
Source: BANKWEST CURTIN ECONOMICS CENTRE | Reproduction of Figure 38 in Muir *et al.* (2016).

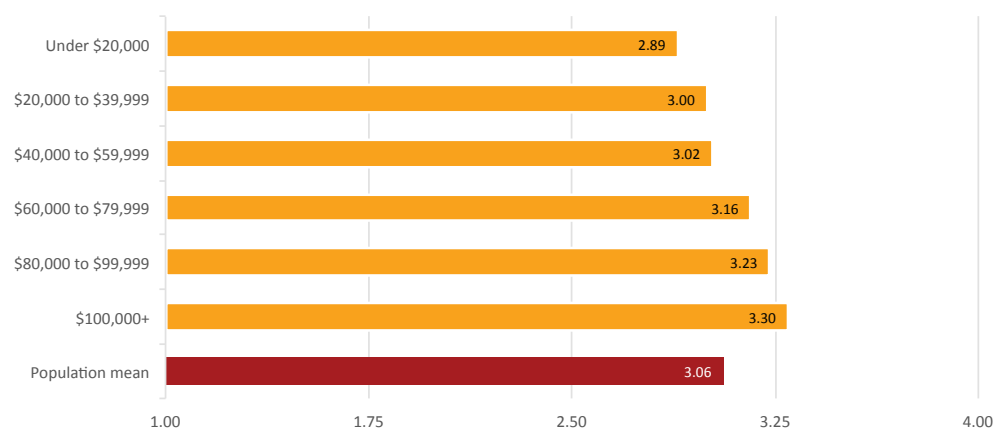
Poor financial resilience for low income households can mean that just one emergency or crisis could find them facing severe financial shock and becoming over-indebted.

Poor financial resilience for low income households can mean that just one emergency or crisis, such as crises related to their health, employment or living situation, could find them facing severe financial shock and becoming over-indebted.

Financial resilience also provides an indication of a household's workforce responsiveness. Those who are unable to draw upon resources and supports in a time of financial adversity have a lower capacity to weather periods of unemployment or underemployment, or to have enough financial independence to be able to effectively seek a new job.

As can be seen in Figure 37, those on the lowest incomes across Australia have higher levels of financial stress and vulnerability.

Figure 37 Financial stress versus income, Australia, 2015



Note: Numbers indicate the overall mean financial resilience scores for six personal income brackets.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Reproduction of Figure 4.1 in Muir *et al.* (2016).

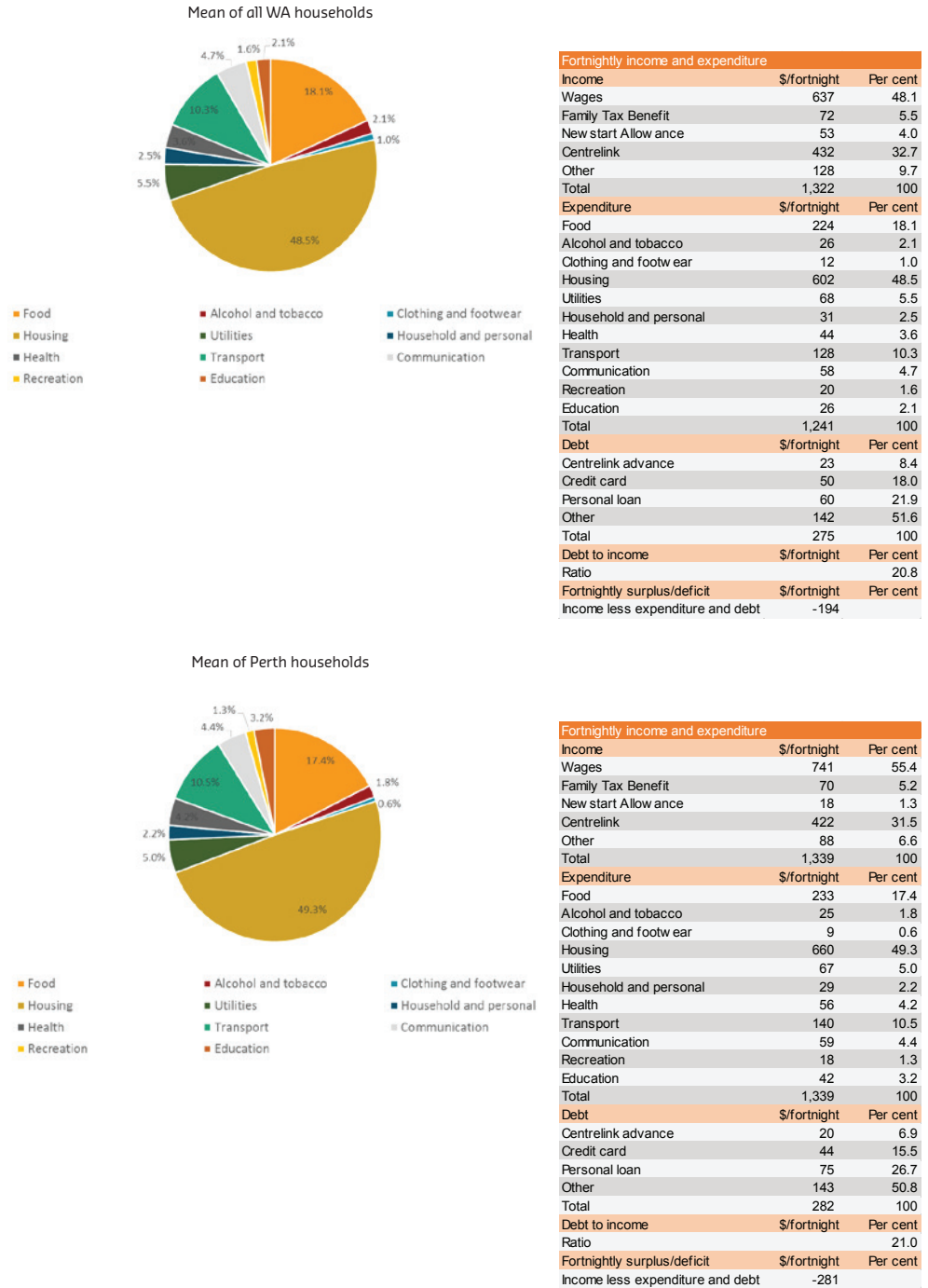
Analysis of households experiencing financial hardship

Households experiencing severe financial stress who find themselves in circumstances where they face mounting personal debt and are unable to meet their basic weekly living costs can seek the assistance of a not-for-profit community-based financial counselling service. A qualified financial counsellor will work through their weekly household income and expenditure with them to provide expert advice on how to tackle their financial challenges, producing a weekly budget. Certified financial counsellors are also able to contact their creditors to halt or defer debt-recovery proceedings, negotiate debt waivers or reductions and put in place a payment plan. They may also be able to provide access to emergency relief in the form of charitable donations or food parcels to help them through an immediate crisis.

This section compares the weekly income and expenditure data of 265 households who sought the assistance of the WA Financial Counselling Network during the week of the 2017 WA State Budget (4 to 10 September 2017) to household expenditure patterns captured by the 2016 ABS Household Expenditure Survey. This is the first time that this type of analysis has been undertaken, and the results provide some important insights into the key factors and cost of living pressures leading to financial hardship. Of the 265 returns, 100 are from Perth and its surrounds and 165 from regional WA.

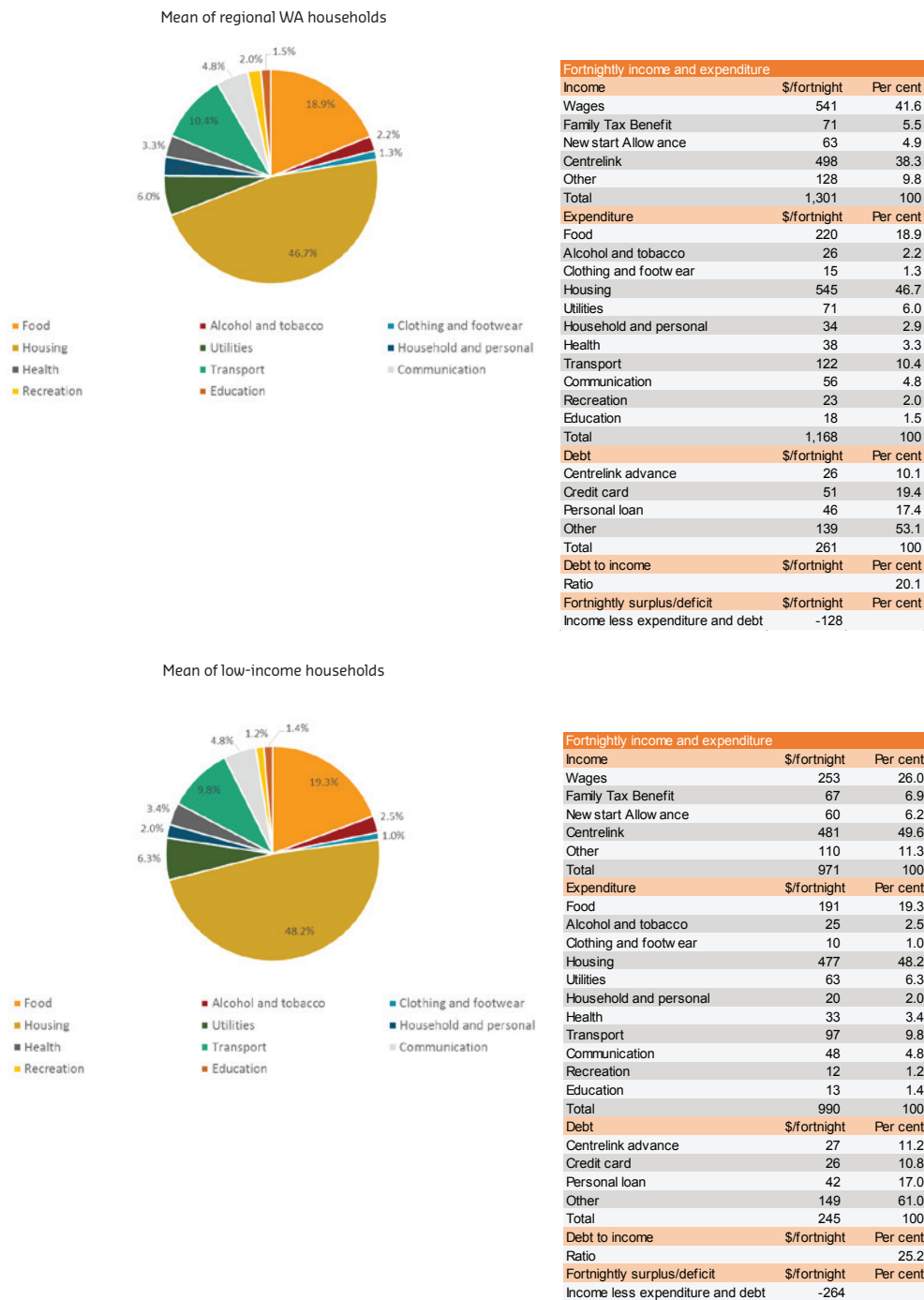
Figure 38 provides a summary of the income, expenditure and debt profiles of the 265 total returns, and sub-groups thereof, comprising Perth only households, regional WA households, low-income households calculated using the Henderson (50% of median income) principle, households with wages as their only source of income, and finally households where Centrelink payments and Newstart allowances are the primary source of income.

Figure 38 Fortnightly expenditure of households who sought financial counselling, 2017



Note: Low-income households calculated as the average of all households below the Hendersen definition (50% of median income) of the WA median gross income, which is \$1,791 per fortnight.

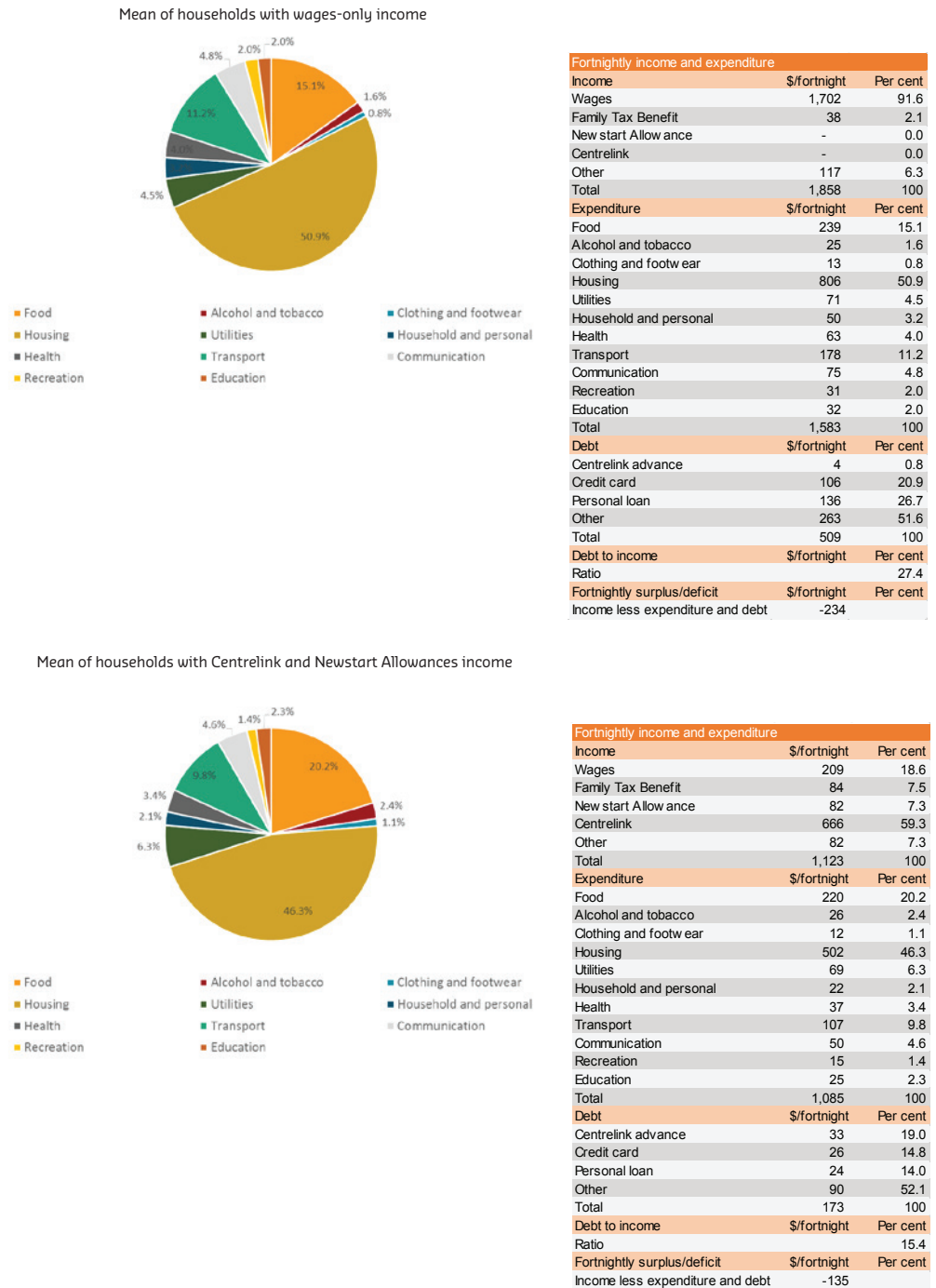
Source: BANKWEST CURTIN ECONOMICS CENTRE | WA Financial Counselling Network, BCEC analysis.

Figure 38 Fortnightly expenditure of households who sought financial counselling, 2017

Note: Low-income households calculated as the average of all households below the Hendersen definition (50% of median income) of the WA median gross income, which is \$1,791 per fortnight.

Source: BANKWEST CURTIN ECONOMICS CENTRE | WA Financial Counselling Network, BCEC analysis.

Figure 38 Fortnightly expenditure of households who sought financial counselling, 2017



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Source: BANKWEST CURTIN ECONOMICS CENTRE | WA Financial Counselling Network, BCEC analysis.

Figure 39 Balance sheet for Perth households who sought financial counselling, 2017

**Summary of income and
expenditure:
Households in Perth**

FINANCIAL COUNSELLING SERVICE

INCOME

Income

Wages (after tax)	\$ 741.35
Family Tax Benefit	\$ 69.76
New start allowance	\$ 17.70
Centrelink payments	\$ 421.92
Tenant/board	\$ 26.95
Other income	\$ 61.34
TOTAL	\$ 1,339.01

EXPENDITURE

Accommodation

Rent	\$ 273.93
Mortgage payments	\$ 311.43
Council rates	\$ 27.55
Water rates and bills	\$ 24.97
Home and contents insurance	\$ 17.02
Other accommodation	\$ 5.36
TOTAL	\$ 660.26

Utilities

Electricity	\$ 45.59
Gas	\$ 21.85
Other utilities	\$ -
TOTAL	\$ 67.44

Household

Phone/internet/mobile	\$ 59.41
Other household exp	\$ -
TOTAL	\$ 59.41

Food and non-alcoholic bev

Groceries	\$ 221.27
Other food	\$ 11.71
TOTAL	\$ 232.98

Alcohol and tobacco

Alcohol	\$ 13.23
Cigarettes	\$ 11.35
TOTAL	\$ 24.58

Clothing and footwear

Clothing and footwear	\$ 8.62
TOTAL	\$ 8.62

Client's signature

FORTNIGHTLY

INCOME & EXPENDITURE

Name: *Mean values for households in Perth, WA*Date: *Fortnight encompassing Budget week 2017*Personal expenditure

Haircuts	\$ 3.46
Pet expenses	\$ 8.63
Birthdays and Christmas	\$ 3.05
Other personal expenditure	\$ 13.99
TOTAL	\$ 29.13

Sport and recreation

Sport/Recreation	\$ 7.26
Entertainment	\$ 9.49
Other sport/recreation	\$ 0.82
TOTAL	\$ 17.57

Education

Fees/Books	\$ 11.93
General school exp.	\$ 15.64
Other education	\$ 14.77
TOTAL	\$ 42.34

Health

Health supplies	\$ -
Med/dent/chemist	\$ 27.11
Medication	\$ 2.43
Health/Life/Funeral insurance	\$ 21.52
Other health	\$ 4.68
TOTAL	\$ 55.75

Transport

Car registration and insurance	\$ 41.68
Car running expense	\$ 74.33
Services	\$ 4.30
Public transport	\$ 10.39
Parking	\$ 1.79
Other transport	\$ 7.96
TOTAL	\$ 140.44

Debt

Centrelink advance	\$ 19.52
Credit card	\$ 43.70
Personal loan	\$ 75.26
Other loans	\$ 5.84
Fines	\$ 6.30
Vehicle loan	\$ 66.19
Other debt	\$ 64.94
TOTAL	\$ 281.74

SURPLUS/DEFICIT

INCOME	\$ 1,339.01
LESS EXPENDITURE	\$ 1,620.25
BALANCE	-\$ 281.24

DEBT TO INCOME RATIO

21.0%

Note: The Expenditure value in this balance sheet includes debt and therefore differs from that in Figure 37.
Source: BANKWEST CURTIN ECONOMICS CENTRE | WA Financial Counselling Network, BCEC analysis.

Figure 40 Balance sheet for regional WA households who sought financial counselling, 2017

Summary of income and expenditure: Households in regional WA		FORTNIGHTLY INCOME & EXPENDITURE Name: <i>Mean values for households in regional WA</i> Date: <i>Fortnight encompassing Budget week 2017</i>	
FINANCIAL COUNSELLING SERVICE			
INCOME		Personal expenditure	
<u>Income</u>		Haircuts	\$ 4.60
Wages (after tax)	\$ 540.76	Pet expenses	\$ 5.84
Family Tax Benefit	\$ 70.98	Birthdays and Christmas	\$ 11.88
New start allowance	\$ 63.14	Other personal expenditure	\$ 11.28
Centrelink payments	\$ 498.45	TOTAL	\$ 33.60
Tenant/board	\$ 32.16		
Other income	\$ 95.53	Sport and recreation	
TOTAL	\$ 1,301.02	Sport/Recreation	\$ 5.63
		Entertainment	\$ 16.42
		Other sport/recreation	\$ 1.09
		TOTAL	\$ 23.15
EXPENDITURE		Education	
<u>Accommodation</u>		Fees/Books	\$ 8.01
Rent	\$ 251.29	General school exp.	\$ 2.10
Mortgage payments	\$ 239.32	Other education	\$ 7.52
Council rates	\$ 11.03	TOTAL	\$ 17.63
Water rates and bills	\$ 17.67		
Home and contents insurance	\$ 13.67	Health	
Other accommodation	\$ 11.93	Health supplies	\$ 0.01
TOTAL	\$ 544.92	Med/dent/chemist	\$ 18.01
		Medication	\$ 1.17
<u>Utilities</u>		Health/Life/Funeral insurance	\$ 12.50
Electricity	\$ 45.84	Other health	\$ 6.27
Gas	\$ 19.70	TOTAL	\$ 37.96
Other utilities	\$ 4.99		
TOTAL	\$ 70.54	Transport	
		Car registration and insurance	\$ 38.96
<u>Household</u>		Car running expense	\$ 66.02
Phone/internet/mobile	\$ 55.34	Services	\$ 9.94
Other household exp	\$ 1.00	Public transport	\$ 3.09
TOTAL	\$ 56.34	Parking	\$ 3.41
		Other transport	\$ 0.29
<u>Food and non-alcoholic bev</u>		TOTAL	\$ 121.71
Groceries	\$ 214.41		
Other food	\$ 5.99	Debt	
TOTAL	\$ 220.40	Centrelink advance	\$ 26.47
		Credit card	\$ 50.65
<u>Alcohol and tobacco</u>		Personal loan	\$ 45.51
Alcohol	\$ 5.20	Other loans	\$ 4.86
Cigarettes	\$ 20.88	Fines	\$ 5.65
TOTAL	\$ 26.08	Vehicle loan	\$ 60.84
		Other debt	\$ 67.24
<u>Clothing and footwear</u>		TOTAL	\$ 261.22
Clothing and footwear	\$ 15.46		
TOTAL	\$ 15.46		
Client's signature		SURPLUS/DEFICIT	
		INCOME	\$ 1,301.02
		LESS EXPENDITURE	\$ 1,429.02
		BALANCE	-\$ 128.00
		DEBT TO INCOME RATIO	20.1%

Note: The Expenditure value in this balance sheet includes debt and therefore differs from that in Figure 37.
Source: BANKWEST CURTIN ECONOMICS CENTRE | WA Financial Counselling Network, BCEC analysis.

As the single largest living cost for WA households, housing is also the biggest contributor to financial hardship and the biggest risk factor for financial crisis for those on low and fixed incomes.

Analysis of the data provided by Western Australian financial counselling services through the Financial Counselling Network indicates that households who are experiencing severe financial hardship and have sought the assistance of a not-for-profit financial counselling service have significantly higher housing costs as a proportion of weekly expenditure. As shown in Table 22, households who have sought financial counselling spend on average 48.5% of their household budget on housing costs as compared to an average of 19.2% across all HES households.

Table 22 Comparison of Financial Counselling and ABS Household Expenditure Survey data

Expenditure group	Financial Counselling data, Budget week 2017							
	All	Perth	Rest of WA	Lowest quintile	Income: Centrelink and NSA only	Income: Wages only	Housing: Rent only	Housing: Mortgage only
Current housing costs	48.5	49.3	46.7	48.2	46.3	50.9	44.2	55.2
Food and non-alcoholic beverages	18.1	17.4	18.9	19.3	20.2	15.1	20.5	15.0
Transport	10.3	10.5	10.4	10.4	9.8	11.2	10.4	9.9
Utilities	5.5	5.0	6.0	6.3	6.3	4.5	6.4	4.3
Communication	4.7	4.4	4.8	4.8	4.6	7.6	5.1	4.1
Health	3.6	4.2	3.3	3.4	3.4	6.4	3.5	3.5
Personal care	2.5	2.2	2.9	2.0	2.1	5.1	2.7	2.3
Education	2.1	3.2	1.5	1.4	2.3	3.2	2.0	2.0
Recreation	1.6	1.3	2.0	1.2	1.4	3.2	1.5	1.5
Clothing and footwear	1.0	0.6	1.3	1.0	1.1	1.3	1.1	0.7

Source: BANKWEST CURTIN ECONOMICS CENTRE | BCEC analysis using data from the Financial Counselling Network.

One thing to note is that those households in financial hardship whose income is derived solely from wages are spending more than half (50.9%, or an average of \$806.20 per week) of their disposable income on housing costs – the highest proportion of all of the household types seeking financial counselling support. By comparison, those reliant on Centrelink income support payments such as Newstart Allowance are spending a lower proportion on housing (46.3%, or \$501.96 per week).

Regional comparisons show that the housing costs of those in financial hardship eat into a larger share of household budgets in Perth than regional WA. Perth households in financial hardship are spending 49.3 per cent on housing and regional households in hardship 46.7 per cent.

Comparison between those households in financial hardship who have a mortgage and those only paying rent strongly suggests that the size of their mortgage is likely to be the reason the former group are in financial trouble, given they are spending well over half (55.2%) of their weekly budget on housing alone (as opposed to 44.2% for renters in financial hardship). For some households, this may be an indication that their circumstances have changed, a loss of employment and a reduction of income may have placed them in circumstances where they are struggling to keep hold of their home and could be forced to sell it if their circumstances do not improve or if interest rates rise.

Expenditure on utilities are slightly higher for households in financial hardship than for an average household.

While expenditure on food is the second largest ongoing weekly commitment for all household types (see Figure 21), the patterns of expenditure on food between average households and those in financial hardship do not vary that significantly. This reflects the fact that a certain unavoidable level of expenditure on food is essential for daily life.

By comparison, rates of expenditure on utilities are slightly higher for households in financial hardship (5.5% versus around 3% for an average household in Figure 21). Those in hardship on the lowest incomes and reliant on income support payments spend proportionately even more (both 6.3%).

This suggests that higher utility costs may contribute to financial hardship overall, but nowhere near the extent that housing costs do. However, examination of the distribution of fortnightly electricity charges highlights a sub-set of households that have abnormally high electricity bills (rates of \$150 up to \$288 compared to an average of \$45 per fortnight), indicating severe rates of utility hardship in some households. This may include some instances where households are servicing historic energy debts as well as paying for (comparatively high) ongoing energy usage. The most likely causes of disproportionately high consumption are poor quality housing (lack of thermal efficiency), inefficient appliances, and a poor understanding of energy usage requiring behavioural change.

It is important to note that the regional financial counselling data represents 165 households in regional centres in the Southwest, Wheatbelt and Great Southern regions (including Albany, Bunbury, Busselton, Collie, Esperance, Manjimup, Merriwa and Rockingham). This analysis does not include households in the Kimberley, Pilbara, Midwest and Goldfields where more extreme climactic conditions result in heavier reliance on air conditioning and proportionately higher utility bills and rates of utility hardship.

Data on average household electricity consumption supplied by Horizon Power and Synergy for regional areas highlights significantly higher energy consumption in the north west (Table 23), with average consumption in the Pilbara twice that for the metropolitan and southwest regions. Households living in poor quality rental or public housing with old and inefficient air conditioning may be consuming and paying significantly more.

Table 23 Average yearly electricity consumption, WA regions, 2017

	SWIS	Esperance	Gascoyne/ Mid West	West Kimberley	NWIS (Pilbara)
Average use (kW hour)	5,444	4,821	6,405	9,833	10,890
Average cost	\$1,618	\$1,453	\$1,873	\$2,780	\$3,060

Note: Average cost = (Average consumption) x A1 tariff (\$0.2647) + Daily supply charge rate (\$0.4860) x 365.
Source: Bankwest Curtin Economics Centre | BCEC analysis using data from Horizon Power and Synergy.

A recent report 'Heatwaves, homes and health: Why household vulnerability to extreme heat is an electricity policy issue' by the Centre for Urban Research at RMIT (Nicholls *et al.*, 2017) highlights the significant risk posed to vulnerable households by the increasing prevalence of extreme heat, particularly in our tropical northerly climactic regions. It raises concerns about policy initiatives in the National Electricity Market (which does not include Western Australia or the Northern Territory) that aim to reduce peak electricity demand via 'price signals' which would make energy significantly more expensive during heatwaves, indicating significant risks to the health and well-being of vulnerable population groups (including seniors, infants and those with medical conditions such as thermo-regulatory dysfunction).

Research currently being conducted by Bankwest Curtin Economics Centre, WACOSS and Horizon Power (Houghton and Twomey, 2017) analyses the responses of vulnerable households to proposed electricity tariff structures ('power plans' with a peak consumption rate allowance, similar to mobile phone contracts) designed to encourage reduced peak consumption. The product links smart meter data to a mobile phone app to send an alert to consumers when they are approaching their peak consumption rate allowance, prompting them to reduce consumption or risk losing a financial reward. The trials suggested that, while the majority of consumers including vulnerable consumers could benefit from this approach, there was a third of vulnerable customers who struggled to maintain reduced consumption and would be financially worse off. It also highlighted increased anxiety among some vulnerable consumers, and the risk that some may suffer excessive discomfort in an effort to stay within their peak allowance, potentially putting their health and wellbeing at risk.

In both examples discussed above it is clear that it is important to balance the desire to reduce peak electricity consumption rates (to avoid the need for additional generation capacity and reduce the overall cost of electricity), against the essential service it delivers to maintain the health and well-being of vulnerable consumers in the face of climactic extremes. Households living in poor quality housing with inefficient appliances have limited capacity to reduce their exposure to extreme heat, and older households may underestimate their vulnerability to adverse health outcomes (Houghton and Twomey, 2017). It is likely that there is sufficient scope to achieve the desired electricity policy outcome of reducing peak consumption using pricing mechanisms if the majority of consumers are included and engaged, but vulnerable and concessional households are excluded from adverse affordability impacts. Current medical cooling concessional arrangements currently do not adequately address the health and financial risks for those reliant on air conditioning, and this situation will be exacerbated as our population ages and the number of extreme weather events continues to increase. Local communities should also consider initiatives to make available cool public places as 'heat refuges' where vulnerable citizens can congregate and achieve some relief (such as public libraries or public spaces in shopping malls).

To examine debt in more detail Figure 40 plots the debt to income ratios for all households, i.e. those who sought financial counselling. Debt here is distinguished between credit card and personal loans, and also for mortgage repayments. The aim is to understand the extent of these two types of debts (where credit card debt and personal loans can be considered more short-term in nature), as a percentage of income, across households of different income profiles. The debt to income ratios are presented by household income quintiles.

Analysis of the fortnightly debt to income ratio of households in financial hardship clearly indicates that households in the bottom quintile (1-20% of household incomes) incur more credit card, personal loan, mortgage and non-mortgage debts as a percentage of their income than the following quintile (i.e. 20-40%) which, in turn, is higher than that for the third quintile (i.e. 40-60%).

Across all forms of debt, the first quintile is incurring considerably more debt per fortnight than the other quintiles, despite possessing the least accessibility to financial offerings and the least capacity to pay the debt back. This data suggests that households in the lower quintiles may be turning to payday loans and other fringe financial lending to help resolve short-term financial problems, only to result in increasing levels of longer term financial stress. These households are least able to secure standard lower-interest rate loans and are to some degree 'forced' into borrowing funds from questionable short-term lenders to deal with immediate financial crises, exacerbating their financial hardship.

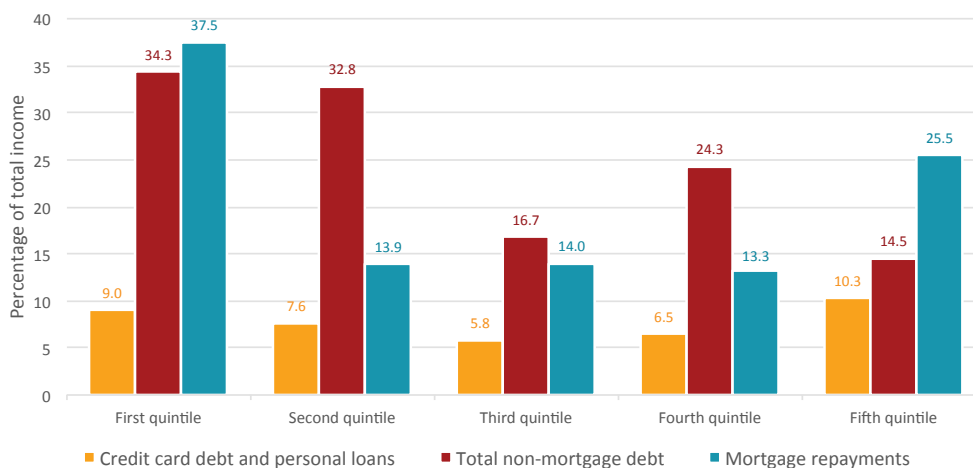
Households pursuing this type of credit simply to resolve other debts and cover everyday expenses pay a significant premium for access to instant-cash and may be vulnerable to misleading and predatory lending practices that can lead to further spiralling debt (SACOSS Consumer Credit Legal Service Scoping Study p.15). These households are also more susceptible to being burdened with non-mortgage debts accumulated through traffic fines, court fines, rent and bills, Centrelink debt and

more. A lack of financial literacy increases their vulnerability, and high levels of stress puts them at greater risk of poor decision making.

Those of the lowest quintile of households who have a mortgage are also challenged with the highest relative mortgage repayments with 37.5 per cent of weekly expenditure spent solely on servicing the mortgage, a clear indicator of housing stress.

Those households in financial hardship with wages only income have higher levels of debt to those with Centrelink only income (\$510 p/f vs \$173 p/f) with their sources of debt spread more or less evenly across credit cards (21%) personal loans (27%) vehicle loan (24%) and other debt (25%). By comparison, those with Centrelink income only generally have less credit card (15%) and personal loan (14%) debt, and higher levels of vehicle loan (23%) and other debt (23%).

Figure 41 Fortnightly debt to income ratio by total household income quintiles, 2017

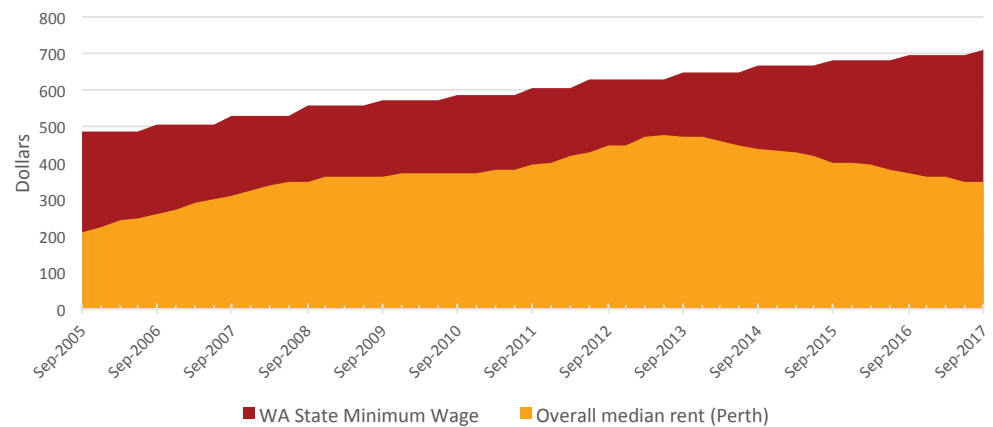


Note: Total income comprises wages, Family Tax Benefits, Newstart Allowances, Centrelink payments, tenant/board income and other income. Credit card debt and personal loans are a component of Total non-mortgage debt.

Source: BANKWEST CURTIN ECONOMICS CENTRE | WA Financial Counselling Network, BCEC analysis.

As can be seen in Figure 42, while the overall median rent does not now consume as much of the State minimum wage as it did during the peak of the economic boom 2013, it still accounts for over 51 per cent. For those households in the bottom 40 per cent of Australia's income distribution, they are considered to be in "housing stress" when their housing costs exceed 30 per cent of their income – meaning that if a household earning a minimum wage is in the bottom 40 per cent of equivalised disposable income and is paying 51 per cent of their income on rent, they will most certainly qualify as being in severe housing stress.

Figure 42 State minimum wage versus overall median rent, 2005 to 2017



Source: BANKWEST CURTIN ECONOMICS CENTRE | WA Department of Commerce, REIWA.

It is important to recognise that the median rental price is a measure of the amount paid for new rental contracts rather than ongoing ones. Many lower income earners are not in a position to negotiate their rents down due to a lack of experience and confidence or as a result of their precarious financial situation (that is, they report being fearful of indicating to their landlord they may have trouble paying the rent in the future as they might be perceived as a 'risky' tenant). Furthermore, many are unable to find available and affordable alternative rental options within their community, making the prospect of moving unfeasible and hence depriving them of a negotiating position.

The annual Anglicare Rental Affordability Snapshot takes a 'snapshot' on a given day of the rental market and examines whether the properties being advertised are affordable for a range of different low income types (Anglicare, 2017).

The 2017 WA Rental Affordability Snapshot found that a couple with two children in the Perth metropolitan area, where both parents were receiving the minimum wage and Family Tax Benefit Part A, were able to find 5,817 affordable and appropriate rental properties, which accounted to 46.8 per cent of those being advertised.

That number more than halves as soon as only one of the parents has access to the minimum wage, down to only 2,244 affordable and appropriate properties or only 18 per cent of those advertised.

For a single parent of two children on the minimum wage and receiving Family Tax Benefit Part A and B, their options are even fewer, with only 764 properties affordable and appropriate or only 6.1 per cent of those advertised. A single person on the minimum wage would only be able to find 124 or just 1 per cent of rental properties advertised that were affordable and appropriate, which included boarding houses or renting a room in a share house.

Summary

and conclusions



Summary and conclusions

The cost of living is an issue of great interest to Western Australians, and continues to be a hot topic for political debate. Housing and energy costs, retail prices for food, clothing and communications, medical expenses, the price of travel, holidays and recreational activities, all have a fundamental role to play for many of us in providing a good standard of living for ourselves and our families.

Yet for perhaps too many households in financial stress or on low incomes, the issue is more about keeping a roof over their families' heads, and being able to afford the basic necessities of life on a day-to-day basis. Indeed, for some the choices that need to be made – not just on discretionary spending but between critical needs – can impact negatively on the most basic standard of living, and standards of dignity.

A better understanding of cost of living pressures requires a nuanced examination of price relativities and movements between Perth and other capital cities, and across urban and regional areas. Detailed analysis of the income and expenditure trends and patterns of different types of households provides us with some insights into the comparative well-being of families in different socio-economic circumstances, and helps us separate fact from fiction. These are the issues that form the core motivation for this tenth report in BCEC's *Focus on Western Australia* series.

Perth actually ranks relatively well on a broad comparison of living costs with other capital cities across Australia, counter to the popular perceptions that remain as a hangover from the resources boom. Perth also ranks moderately well on 'liveability' – defining us as a 'liveable' city and a desirable place to live.

Perth ranks fifth in Australia on an index of overall affordability, behind Sydney as Australia's most expensive city but also behind Melbourne, Brisbane and Adelaide. Sydney has the second-most expensive housing market internationally after Hong Kong, while Perth's housing costs – although still high – have been falling since the heat came out of the market post-resources boom.

Such broad rankings can be misleading, and tend to focus on the lifestyles and interests of those in comfortable financial circumstances. They provide less insights into the living cost pressures and essential needs of those on lower incomes.

BCEC analysis also shows that Perth ranks fifth on a measure of the costs of a typical 'basket of goods' in mid-prices retail stores, suggesting that independent retail outlets in the West deliver relatively good value to customers compared with other state capitals.

Interestingly, supermarket prices paid by shoppers in many East Coast capitals offer larger discounts than in Perth. A typical basket of goods in a Sydney supermarket is around 30 per cent cheaper than the same basket of goods in a mid-priced store in the NSW capital. Melbourne enjoys a similar 'supermarket discount', some 26 percent.

In comparison, the supermarket discounts in Perth are somewhat lower – around 10 percent – which indicates that the fierce competition following the advent of cut-price supermarket outlets on the East Coast are yet to take full hold in Western Australia. However, this does indicate that the growing retail competition in the supermarket sector in Perth could drive prices down further.

Consideration of a range of cost of living indexes highlights some of the variation in cost pressures and spending patterns across the country in different areas of our economy. Brisbane and Darwin residents are traditionally big spenders on transport,

while Adelaide has consistency recorded the lowest per-capita spending on health. Perth has seen an increase in spending on clothing and footwear since 2009, and a big reduction in housing costs in the past four years coming off the back of significant cost growth during the resources boom.

While average West Australian households are experiencing lower cost of living pressures, with growth in wages keeping well ahead of the rise in goods and services, increasing financial inequality has meant a sub-group of our community are continuing to struggle to make ends meet. Income from private sector wages is clearly more volatile and responsive to prevailing economic conditions, while public sector wages tend to lag economic conditions and be upwardly sticky. Income from benefits and pensions tends to be more stable, falling behind the big upswings in the economy, but staying relatively steady during the downturns.

Modelling of the living costs of a range of low income household types has highlighted the crucial role of housing affordability in the cost of living and quality of life of vulnerable groups within our community. The circumstances facing typical working families have improved slightly in recent years with steady income and falling housing costs. However, to remain resilient into the future requires that they can maintain access to regular wages in the face of increasingly precarious employment.

Single-parent households are especially exposed to rising living costs, and have little financial resilience against real reductions in income. This highlights the importance of protections afforded to single parents through government support payments to cover childcare costs, and through adequacy in welfare payments generally. In this regard, the cancellation of the School Kids Bonus in the coming year creates extra vulnerabilities for single parents. The plight of an unemployed single person is more stark, with their income continuing to fall behind the cost of a basic standard of living and forcing them to make difficult decisions about what to go without from week to week.

Analysis of the comparative living costs of a couple on the aged pension has highlighted the crucial role of home ownership as a buffer against financial hardship in retirement. A retired couple who own their own home can afford to run a small car and still have around \$230 to spend each week after they've met their essential living costs. In contrast, a similar couple still living in private rental housing cannot afford a car and have very little to spare at the end of the week (\$12) once they've met their basic living costs.

New BCEE analysis of the recently released Household Expenditure Survey (HES) for 2015-16 shows that spending on housing and food as a share of total household expenditure has been rising consistently over the last six years since the previous HES survey in 2009-10. This is particularly the case for single parent families on middle incomes, and couples with children over the full income range.

On average, nearly 70 per cent of the spending of households in financial hardship is devoted to the basic necessities of life – housing, fuel and power, and food. This figure has risen by some 17 percentage points over the last six years. In fact, analysis of spending patterns shows that low-income households and those in financial stress are cutting back significantly on health spending, transport and recreational activities in order to keep afloat, spending less in these areas than they have in the past, and much less than the average household.

The share of households who report that they spend some money on gambling has fallen substantially over the last decade – down from 43 per cent in 2003-04 to 27 per cent in 2015-16. The two mining states of Queensland and WA show the greatest prevalence of gambling expenditure, at 30 per cent, with average gambling expenditure in Western Australia rising 38 per cent in real to \$21.98 in 2015/16.

In a recent speech, John Durkan, Managing Director of the Coles supermarket chain, suggested that high living costs, especially fuel costs, were forcing consumers to compromise on healthy food options by buying less fresh food, and more cheaper options. What support do we see for this claim?

New analysis in this report shows that spending on fresh food is broadly comparable between the full population of households in WA and those in the lowest income quintile. However, households under financial stress spend far more on fast foods – some 5 per cent of their total spending – and less on fresh foods than the average expenditure share for typical households.

Unique analysis by BCEC of data from local financial counselling services in Western Australia confirms these findings. The data provide weekly budget breakdowns for households in financial crisis, and again throw a spotlight onto the role of high housing costs in financial hardship – with many households locked into spending at least half of their income on housing. This is the first time this analysis has been undertaken in Australia, and the results reinforce the pressing for affordable housing options to relieve the cost of living pressures faced by low income households in particular.

Rising prices affect us differently depending on our circumstances, where we live, the sources and reliability of our income, and our spending decisions (whether out of choice or necessity). Essential living costs all contribute to our quality of life, financial resilience and risk of hardship. Most Australian and Western Australian households have continued to do reasonably well in recent years, with incomes rising much faster than living costs. Income growth has slowed in recent times, but average Australian families are still pretty lucky.

Yet the same is clearly not true for some vulnerable groups within our community – those on low and fixed incomes have struggled to keep up with the cost of living in recent years. As our society has become more unequal the number of households in financial stress has increased.

The cost of housing emerges as the greatest single living cost for most Australian households and the most critical factor in the risk of financial hardship for those on low and fixed incomes. Policy makers need to tackle the vexed issue of housing affordability if they wish to have an impact on poverty and financial resilience within our community and ensure fewer vulnerable members of our community are left behind.

Appendix



Appendix: Mid-range prices for commonly consumed goods and services

March 2017 AUD prices	Perth			Adelaide		Brisbane		Sydney		Melbourne	
Food	\$	\$	Diff. Perth	\$	Diff. Perth	\$	Diff. Perth	\$	Diff. Perth	\$	Diff. Perth
White bread, 1 kg	5.00	5.00	0.00	4.29	-0.71	4.67	-0.33	4.29	-0.71		
Butter, 500 g	2.73	4.60	1.87	8.51	5.78	4.60	1.87	5.78	3.05		
Margarine, 500g	2.99	3.30	0.31	3.30	0.31	2.99	0.00	3.29	0.30		
White rice, 1 kg	3.45	3.00	-0.45	2.16	-1.29	2.69	-0.76	2.74	-0.71		
Spaghetti, 1 kg	3.40	4.90	1.50	3.90	0.50	4.47	1.07	5.40	2.00		
Flour, white, 1 kg	2.55	3.00	0.45	1.50	-1.05	3.00	0.45	3.29	0.74		
Sugar, white, 1 kg	1.85	2.30	0.45	1.80	-0.05	2.15	0.30	2.15	0.30		
Cheese, imported, 500 g	12.55	27.48	14.93	16.80	4.25	30.00	17.45	32.25	19.70		
Cornflakes, 375 g	2.82	4.24	1.42	2.75	-0.07	3.79	0.97	3.33	0.51		
Yoghurt, natural, 150 g	0.73	1.50	0.77	1.44	0.71	1.65	0.92	1.83	1.10		
Milk, pasteurised, 1 l	1.35	1.99	0.64	2.05	0.70	1.99	0.64	2.15	0.80		
Olive oil, 1 l	12.50	17.33	4.83	18.67	6.17	15.80	3.30	17.32	4.82		
Peanut or corn oil, 1 l	3.15	6.99	3.84	6.99	3.84	4.76	1.61	7.47	4.32		
Potatoes, 2 kg	6.40	5.00	-1.40	8.00	1.60	7.00	0.60	8.00	1.60		
Onions, 1 kg	2.85	2.80	-0.05	3.99	1.14	3.95	1.10	2.90	0.05		
Mushrooms, 1 kg	11.99	12.93	0.94	11.00	-0.99	14.99	3.00	13.95	1.96		
Tomatoes, 1 kg	5.99	6.99	1.00	5.27	-0.72	7.90	1.91	6.90	0.91		
Carrots, 1 kg	1.99	1.89	-0.10	2.20	0.21	2.99	1.00	2.50	0.51		
Oranges, 1 kg	3.28	3.55	0.27	3.93	0.65	4.99	1.71	3.80	0.52		
Apples, 1 kg	5.99	4.50	-1.49	5.00	-0.99	7.99	2.00	4.90	-1.09		
Lemons, 1 kg	2.99	8.00	5.01	7.45	4.46	7.99	5.00	6.40	3.41		
Bananas, 1 kg	4.00	3.10	-0.90	3.00	-1.00	4.79	0.79	3.50	-0.50		
Lettuce, one	2.85	2.50	-0.35	2.90	0.05	3.40	0.55	3.43	0.58		
Eggs, 12	4.99	6.99	2.00	5.00	0.01	7.24	2.25	5.90	0.91		
Peas, canned, 250 g	1.53	1.09	-0.44	0.92	-0.61	1.13	-0.40	1.18	-0.35		
Tomatoes, canned, 250 g	0.88	0.88	0.00	0.88	0.00	0.99	0.11	1.10	0.22		
Peaches, canned, 500 g	3.42	2.44	-0.98	2.12	-1.30	2.70	-0.72	3.14	-0.28		
Sliced pineapples, canned, 500 g	3.32	3.07	-0.25	2.82	-0.50	3.28	-0.04	3.57	0.25		
Beef: filet mignon, 1 kg	28.00	41.99	13.99	39.99	11.99	56.99	28.99	44.90	16.90		
Beef: steak, entrecote, 1 kg	23.00	28.00	5.00	33.00	10.00	30.99	7.99	30.00	7.00		
Beef: stewing, shoulder, 1 kg	12.55	15.99	3.44	20.00	7.45	24.99	12.44	16.99	4.44		
Beef: roast, 1 kg	16.85	12.99	-3.86	15.99	-0.86	19.47	2.62	16.99	0.14		
Beef: ground or minced, 1 kg	16.00	14.99	-1.01	15.00	-1.00	16.99	0.99	15.00	-1.00		
Veal: chops, 1 kg	18.00	21.99	3.99	23.99	5.99	26.99	8.99	19.99	1.99		
Veal: fillet, 1 kg	28.00	22.99	-5.01	22.99	-5.01	23.99	-4.01	25.00	-3.00		
Veal: roast, 1 kg	17.45	33.99	16.54	16.99	-0.46	33.99	16.54	28.99	11.54		
Lamb: leg, 1 kg	22.85	19.00	-3.85	10.00	-12.85	18.99	-3.86	23.00	0.15		
Lamb: chops, 1 kg	15.99	21.50	5.51	19.99	4.00	23.46	7.47	26.00	10.01		
Lamb: Stewing, 1 kg	12.85	10.50	-2.35	13.00	0.15	29.99	17.14	26.99	14.14		
Pork: chops, 1 kg	15.55	20.99	5.44	19.00	3.45	20.99	5.44	21.00	5.45		
Pork: loin, 1 kg	12.99	16.00	3.01	9.00	-3.99	20.47	7.48	22.90	9.91		
Ham: whole, 1 kg	16.00	20.00	4.00	24.00	8.00	16.99	0.99	22.00	6.00		
Bacon, 1 kg	15.00	14.99	-0.01	12.00	-3.00	18.20	3.20	18.75	3.75		
Chicken: frozen, 1 kg	7.45	5.99	-1.46	5.58	-1.87	7.99	0.54	6.30	-1.15		
Chicken: fresh, 1 kg	11.85	6.67	-5.18	5.50	-6.35	10.99	-0.86	12.20	0.35		
Frozen fish fingers, 1 kg	8.55	9.88	1.33	9.00	0.45	10.75	2.20	14.93	6.38		
Fresh fish, 1 kg	25.00	29.90	4.90	35.99	10.99	44.99	19.99	44.95	19.95		
Instant coffee, 125 g	7.96	7.83	-0.13	7.83	-0.13	7.83	-0.13	7.83	-0.13		
Ground coffee, 500 g	11.99	23.00	11.01	15.00	3.01	24.98	12.99	32.93	20.94		
Tea bags, 25 bags	3.11	1.35	-1.76	2.15	-0.96	2.00	-1.11	2.00	-1.11		
Cocoa, 250 g	3.99	3.24	-0.75	6.01	2.02	3.56	-0.43	5.95	1.96		
Drinking chocolate, 500 g	5.10	5.60	0.50	5.80	0.70	5.60	0.50	6.20	1.10		
Coca-Cola, 1 l	2.20	2.32	0.12	2.28	0.08	2.28	0.08	2.28	0.08		
Tonic water, 200 ml	0.47	0.55	0.08	0.86	0.39	0.38	-0.09	0.83	0.36		
Mineral water, 1 l	2.60	4.00	1.40	3.00	0.40	4.07	1.47	4.48	1.88		
Orange juice, 1 l	3.13	2.25	-0.88	2.40	-0.73	3.66	0.53	3.35	0.22		

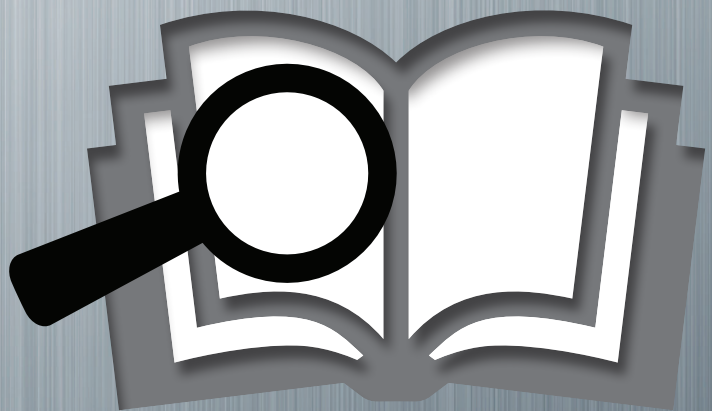
March 2017 AUD prices	Perth	Adelaide		Brisbane		Sydney		Melbourne	
Alcohol and tobacco	\$	\$	Diff. Perth	\$	Diff. Perth	\$	Diff. Perth	\$	Diff. Perth
Wine, common table, 750 ml	13.00	18.99	5.99	10.99	-2.01	25.95	12.95	24.95	11.95
Wine, superior quality, 750 ml	28.00	32.99	4.99	15.00	-13.00	42.95	14.95	39.95	11.95
Wine, fine quality, 750 ml	125.00	95.00	-30.00	98.10	-26.90	120.00	-5.00	98.00	-27.00
Beer, local brand, 1 l	7.67	10.13	2.46	7.11	-0.56	9.87	2.20	8.87	1.20
Beer, top quality, 330 ml	4.45	4.25	-0.20	3.00	-1.45	3.67	-0.78	4.20	-0.25
Scotch whisky, six years old, 700 ml	34.00	41.30	7.30	42.00	8.00	52.50	18.50	55.95	21.95
Gin, Gilbey's or equivalent, 700 ml	35.00	42.00	7.00	42.00	7.00	47.95	12.95	45.00	10.00
Vermouth, Martini & Rossi, 1 l	14.67	17.00	2.33	18.00	3.33	18.00	3.33	18.19	3.52
Cognac, French VSOP, 700 ml	78.00	95.00	17.00	86.00	8.00	89.00	11.00	90.00	12.00
Liqueur, Cointreau, 700 ml	48.00	59.00	11.00	57.00	9.00	62.95	14.95	64.20	16.20
Cigarettes, Marlboro, pack of 20	25.00	29.50	4.50	23.96	-1.04	25.95	0.95	26.50	1.50
Cigarettes, local brand, pack of 20	24.00	22.42	-1.58	22.83	-1.17	23.80	-0.20	24.85	0.85
Pipe tobacco, 50 g	50.00	55.60	5.60	67.00	17.00	52.61	2.61	71.54	21.54
Clothing									
Socks, wool mixture	19.00	21.95	2.95	32.95	13.95	29.95	10.95	26.95	7.95
Child's jeans	60.00	89.95	29.95	69.95	9.95	89.00	29.00	139.00	79.00
Child's shoes, dresswear	65.00	134.95	69.95	69.98	4.98	139.95	74.95	139.95	74.95
Child's shoes, sportswear	65.00	84.95	19.95	79.95	14.95	149.95	84.95	89.00	24.00
Girl's dress	55.00	115.95	60.95	59.95	4.95	189.95	134.95	229.95	174.95
Boy's jacket, smart	65.00	99.95	34.95	89.95	24.95	189.95	124.95	189.95	124.95
Boy's dress trousers	55.00	109.00	54.00	54.95	-0.05	114.95	59.95	169.95	114.95
Man's business suit, two piece, medium weight	985.00	1,299.00	314.00	1,695.00	710.00	1,299.00	314.00	899.00	-86.00
Man's business shirt, white	95.00	149.00	54.00	169.95	74.95	199.00	104.00	119.00	24.00
Man's shoes, business wear	140.00	299.00	159.00	439.00	299.00	379.00	239.00	459.00	319.00
Man's raincoat, Burberry type	450.00	479.00	29.00	699.00	249.00	799.00	349.00	1,099.00	649.00
Woman's dress, ready to wear, daytime	240.00	389.00	149.00	929.00	689.00	385.00	145.00	579.00	339.00
Woman's shoes, town	145.00	299.00	154.00	474.95	329.95	449.00	304.00	370.00	225.00
Woman's cardigan sweater	185.00	249.00	64.00	109.95	-75.05	279.00	94.00	479.00	294.00
Woman's raincoat, Burberry type	399.00	369.00	-30.00	800.00	401.00	799.00	400.00	1,495.00	1,096.00
Woman's tights, panty hose	17.00	15.95	-1.05	14.95	-2.05	16.95	-0.05	22.95	5.95
Housing rents									
Furnished residential apartment: 1 bedroom	800	2,340	1,540	2,080	1,280	4,290	3,490	3,250	2,450
Furnished residential apartment: 2 bedrooms	950	2,820	1,870	3,033	2,083	4,810	3,860	4,330	3,380
Unfurnished residential apartment: 2 bedrooms	950	2,600	1,650	2,687	1,737	6,250	5,300	2,900	1,950
Unfurnished residential apartment: 3 bedrooms	950	3,680	2,730	3,900	2,950	8,230	7,280	5,630	4,680
Unfurnished residential apartment: 4 bedrooms	1,500	3,800	2,300	3,683	2,183	8,620	7,120	5,200	3,700
Furnished residential house: 3 bedrooms	1,900	3,900	2,000	3,337	1,437	7,800	5,900	6,500	4,600
Unfurnished residential house: 3 bedrooms	1,800	2,900	1,100	4,116	2,316	7,780	5,980	6,500	4,700
Unfurnished residential house: 4 bedrooms	2,400	3,680	1,280	4,550	2,150	12,570	10,170	7,580	5,180
Utilities									
Telephone line, monthly rental	55.00	47.00	-8.00	32.00	-23.00	44.00	-11.00	47.00	-8.00
Telephone, charge per local call from home, 3 mins	0.48	0.30	-0.18	0.30	-0.18	0.33	-0.15	0.33	-0.15
Electricity, monthly bill for family of four	285.00	157.59	-127.42	390.00	105.00	374.85	89.85	255.17	-29.84
Gas, monthly bill for family of four	112.50	69.58	-42.93	280.00	167.50	237.15	124.65	208.55	96.05
Water, monthly bill for family of four	95.00	163.50	68.50	94.00	-1.00	104.36	9.36	236.73	141.73
Household supplies									
Soap, 100 g	1.65	1.08	-0.57	0.85	-0.80	0.79	-0.86	0.79	-0.86
Laundry detergent, 3 l	25.65	26.75	1.10	33.00	7.35	26.25	0.60	30.00	4.35
Toilet tissue, two rolls	3.85	2.00	-1.85	1.83	-2.02	1.67	-2.18	1.94	-1.91
Dishwashing liquid, 750 ml	6.30	5.79	-0.51	5.63	-0.67	5.79	-0.51	6.65	0.35
Insect-killer spray, 330 g	8.15	11.59	3.44	9.24	1.09	9.98	1.83	7.79	-0.36
Light bulbs, two, 60 watts	10.50	8.80	-1.70	8.97	-1.53	7.39	-3.11	7.92	-2.58
Batteries, two, size D/LR20	5.55	6.25	0.70	6.13	0.58	5.49	-0.06	6.97	1.42
Frying pan, Teflon or good equivalent	33.00	69.95	36.95	20.50	-12.50	52.95	19.95	69.95	36.95
Electric toaster, for two slices	22.00	129.00	107.00	50.00	28.00	84.95	62.95	69.00	47.00
Laundry, one shirt	17.50	6.40	-11.10	5.50	-12.00	10.00	-7.50	8.00	-9.50
Dry cleaning, man's suit	29.00	27.00	-2.00	35.00	6.00	29.15	0.15	19.00	-10.00
Dry cleaning, woman's dress	30.00	18.00	-12.00	24.30	-5.70	20.00	-10.00	15.50	-14.50
Dry cleaning, trousers	15.00	13.20	-1.80	15.40	0.40	15.50	0.50	9.90	-5.10

March 2017 AUD prices	Perth	Adelaide		Brisbane		Sydney		Melbourne	
International schools, health and sports	\$	\$	Diff. Perth	\$	Diff. Perth	\$	Diff. Perth	\$	Diff. Perth
American /English school: annual tuition, ages 5-12	20,500	18,095	-2,405.00	17,447	-3,053.00	17,850	-2,650.00	22,871	2,371.25
American/English school: annual tuition, ages 13-17	26,200	24,185	-2,015.00	19,698	-6,502.00	23,375	-2,825.00	28,878	2,678.00
American/English school: extra costs, ages 5-12	2,650.00	4,462.50	1,812.50	3,548.00	898.00	2,300.00	-350.00	1,899.00	-751.00
American/English school: extra costs, ages 13-17	6,000.00	4,930.00	-1,070.00	4,022.00	-1,978.00	2,350.00	-3,650.00	3,610.00	-2,390.00
American/English school: kindergarten annual fees	1,625.00	9,440.00	7,815.00	15,976.00	14,351.00	15,750.00	14,125.00	16,137.00	14,512.00
Routine checkup at family doctor	105.00	92.00	-13.00	76.50	-28.50	77.50	-27.50	85.00	-20.00
One X-ray at doctor's office or hospital	202.50	120.00	-82.50	94.28	-108.23	114.50	-88.00	117.50	-85.00
Visit to dentist (one X-ray and one filling)	235.00	247.50	12.50	451.50	216.50	170.00	-65.00	275.00	40.00
Green fees on a public golf course	65.00	32.00	-33.00	40.00	-25.00	32.50	-32.50	218.10	153.10
Hire of tennis court for one hour	25.00	26.00	1.00	21.00	-4.00	22.50	-2.50	39.00	14.00
Cost of six tennis balls eg Dunlop, Wilson	31.00	22.98	-8.02	22.47	-8.54	30.45	-0.56	47.80	16.80
Entrance fee to a public swimming pool	6.93	7.60	0.68	5.40	-1.53	7.15	0.23	6.15	-0.77
Personal care									
Aspirins, 100 tablets	6.25	17.92	11.67	17.50	11.25	22.00	15.75	26.50	20.25
Razor blades, five pieces	13.85	28.13	14.28	18.89	5.04	24.38	10.53	28.13	14.28
Toothpaste with fluoride, 120 g	4.25	4.42	0.17	2.25	-2.00	3.57	-0.68	4.42	0.17
Facial tissues, box of 100	3.74	2.11	-1.63	2.48	-1.26	2.51	-1.23	1.66	-2.08
Hand lotion, 125 ml	4.09	6.11	2.02	8.69	4.60	6.67	2.58	8.75	4.66
Shampoo & conditioner in one, 400 ml	12.55	9.99	-2.56	7.91	-4.64	6.25	-6.30	15.71	3.16
Lipstick, deluxe type	39.00	53.00	14.00	53.00	14.00	53.00	14.00	53.00	14.00
Man's haircut, tips included	31.00	42.50	11.50	39.00	8.00	85.00	54.00	65.00	34.00
Woman's cut & blow dry, tips included	64.00	76.00	12.00	87.48	23.48	89.00	25.00	85.00	21.00
Transport									
Low priced car, 900-1299 cc	20,895	23,965	3,070	22,571	1,676	23,340	2,445	17,990	-2,905
Compact car, 1300-1799 cc	26,990	28,340	1,350	22,778	-4,213	37,705	10,715	35,245	8,255
Family car, 1800-2499 cc	63,995	58,645	-5,350	68,436	4,441	99,128	35,133	70,350	6,355
Deluxe car, 2500 cc upwards	236,000	213,515	-22,485	237,282	1,282	274,028	38,028	270,335	34,335
Yearly road tax or registration fee	745.00	861.00	116.00	723.40	-21.60	429.00	-316.00	771.60	26.60
Cost of a tune up (but no major repairs)	387.50	372.50	-15.00	577.50	190.00	575.00	187.50	610.00	222.50
Annual premium for car insurance	860.00	1,995.00	1,135.00	1,203.14	343.14	3,620.00	2,760.00	3,355.00	2,495.00
Regular unleaded petrol, 1 l	1.32	1.24	-0.08	1.28	-0.04	1.33	0.01	1.32	-
Taxi: initial meter charge	5.85	3.70	-2.15	2.90	-2.95	3.60	-2.25	3.20	-2.65
Taxi rate per additional kilometre	2.55	1.84	-0.71	2.17	-0.38	2.19	-0.36	1.62	-0.93
Taxi: airport to city centre	65.00	24.00	-41.00	52.00	-13.00	55.00	-10.00	96.00	31.00
Recreation									
Compact disc album	22.50	25.99	3.50	17.00	-5.50	31.45	8.96	27.45	4.96
Television, colour, 66 cm	1,052.50	1,048.00	-4.50	924.00	-128.50	1,072.00	19.50	947.00	-105.50
Personal computer, 64 MB	1,449.00	2,048.00	599.00	1,874.50	425.50	1,747.50	298.50	1,747.50	298.50
Cost of developing 36 colour pictures	18.00	14.95	-3.05	20.90	2.90	14.99	-3.01	16.65	-1.35
International foreign daily newspaper	6.85	7.50	0.65	-	-6.85	8.50	1.65	8.50	1.65
Daily local newspaper	1.80	1.50	-0.30	1.50	-0.30	2.70	0.90	2.20	0.40
International weekly news magazine (Time)	7.85	8.00	0.15	8.00	0.15	8.00	0.15	8.00	0.15
Paperback novel, at bookstore	35.00	29.99	-5.01	24.99	-10.01	34.99	-0.01	34.95	-0.05
Three-course dinner at top restaurant for four people	775.00	575.00	-200.00	644.34	-130.67	865.00	90.00	775.00	0.00
Four best seats at theatre or concert	835.00	731.57	-103.43	563.28	-271.73	1,079.60	244.60	642.34	-192.67
Four best seats at cinema	130.00	61.00	-69.00	63.00	-67.00	86.00	-44.00	81.00	-49.00
Domestic help									
Hourly rate for domestic cleaning help	35.00	20.50	-14.50	39.85	4.85	28.00	-7.00	22.00	-13.00
Maid's monthly wages, full time	2,600.00			3,271.00	671.00	2,500.00	-100.00	1,850.00	-750.00
Babysitter's rate per hour	32.00	18.00	-14.00	38.00	6.00	24.00	-8.00	20.00	-12.00
Business trip costs									
Business trip, typical daily cost	675.05	601.80	-73.25	660.00	-15.05	792.10	117.05	841.60	166.55
Hilton-type hotel, single room, one night including breakfast	320.00	360.00	40.00	335.00	15.00	467.00	147.00	450.00	130.00
Moderate hotel, single room, one night including breakfast	265.00	170.00	-95.00	239.00	-26.00	208.00	-57.00	279.00	14.00
One drink at bar of first class hotel	13.50	18.50	5.00	25.50	12.00	22.00	8.50	22.00	8.50
Two-course meal for two people	260.00	225.00	-35.00	227.50	-32.50	287.50	27.50	330.00	70.00
Simple meal for one person	65.00	60.00	-5.00	92.50	27.50	107.50	42.50	94.00	29.00
Fast food snack: hamburger, fries and drink	5.50	9.50	4.00	9.95	4.45	9.70	4.20	7.90	2.40
Hire car, weekly rate	480.00	808.00	328.00	586.09	106.09	796.91	316.91	770.66	290.66
Regular unleaded petrol, 1 l	1.29	1.23	-0.06	1.28	-0.01	1.33	0.04	1.31	0.02
Taxi: initial meter charge	5.85	3.70	-2.15	2.90	-2.95	3.60	-2.25	3.20	-2.65
Taxi rate per additional kilometre	2.55	1.84	-0.71	2.17	-0.38	2.19	-0.36	1.62	-0.93
Taxi: airport to city centre	65.00	24.00	-41.00	52.00	-13.00	55.00	-10.00	96.00	31.00
International foreign daily newspaper	6.85	7.50	0.65	0.00	-6.85	8.50	1.65	8.50	1.65
Daily local newspaper	1.80	1.50	-0.30	1.50	-0.30	2.70	0.90	2.20	0.40
International weekly news magazine (Time)	7.85	8.00	0.15	8.00	0.15	8.00	0.15	8.00	0.15
One good seat at cinema	32.50	15.25	-17.25	15.75	-16.75	21.50	-11.00	20.25	-12.25

Note: Prices are mid or average prices from the Economist Intelligence Unit's source dataset. Where only Low and High prices are available the average is reported.

Source: BANKWEST CURTIN ECONOMICS CENTRE | Economist Intelligence Unit.

Glossary



Glossary

Cost of living indicators

Theoretical indicators that seek to measure the expenses required for individuals or households to maintain a specified standard of living.

Consumer price index (CPI)

An index with the value of 100 in the base period that measures the aggregate price level in the economy. The price level is track for a constant group or 'basket' of goods and services. To ensure that the constant basket is representative of the expenditure of households they are weighted with expenditure patterns from the Household Expenditure Survey. The CPI is constructed at the capital city level and data for Australia is a weighted-average of the eight capital cities.

Household Expenditure Survey (HES)

A sixth-yearly survey of households on their expenditure patterns. The survey collects at a detailed level information about the expenditure, income, assets, liabilities and household characteristics of resident Australian households.

Median multiple

Often used in the context of housing affordability it is the ratio of the median property price to median household income. Higher values indicate lower affordability. It is sometimes known as the Price-Income ratio.

Quintile, Income

A quintile in statistical reporting is 20 per cent of a surveyed group. Quintile distribution data are typically presented as first (bottom 20%), second, third (includes the median), fourth and fifth (upper 20%) of the data. Income quintiles, as used in this report, are household income data arranged in quintiles.

Poverty rate

The ratio of the number of people (in a particular age group) whose income falls below the poverty line, usually taken as 50 per cent of median household income.

Terms of trade

The ratio of an aggregate index measure of a country's export prices to its import prices. In the context of the report, the terms of trade is used to depict the rise in commodity (particularly iron ore) prices before, during and post the mining boom.

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