THE DEPARTMENT OF TRAINING AND WORKFORCE DEVELOPMENT

Western Australian employment trends and prospects

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Contents

Purpose

The aim of this paper is to highlight Western Australia's employment trends over recent years, as well as their short to medium term prospects, based on modelling provided by the Centre of Policy Studies (CoPS)[1].

Employment growth is analysed on two separate four year timeframes, examining the historical period between 2008–09 and 2012–13 (based on Australian Bureau of Statistics (ABS) data), and the forecast period between 2012–13 and 2016–17 (using ABS data as the base and extrapolating forward using the CoPS employment growth projections).

It is envisaged that this publication will be used by both employers and job seekers to provide an understanding of current employment trends and the prospects of future jobs growth. However, caution should be exercised in interpreting the employment forecasts. The forecasts should be treated as an indicative picture of what the State's future labour market may look like given expected growth trajectories.

The labour market information and forecasts in this publication are a useful tool for making informed decisions about job prospects and career paths. However, this information should not be the sole basis for making such decisions, as labour market forecasts are not always accurate (see shaded box titled 'Forecast caution' on page 5 for further information). In addition, a person's current skills, aptitudes and interests should also be important considerations for career decisions.

There is a wealth of additional information on occupations and industries that can also be very helpful to this end (such as typical working conditions and salary levels, training options, possible career paths, and similar). This information can be found online at the Western Australian Government's Career Centre at http://www.careercentre.dtwd.wa.gov.au (or by phoning 13 23 98 or (08) 9224 6500). The Career Centre is also able to assist in providing free and independent career guidance to individuals.

The paper has three main sections focusing on employment at the industry, occupation and qualification levels.

Summary

According to the ABS, 1.32 million people were employed in Western Australia at the end of 2012–13, representing 11.5% of the national total.

Currently, nearly a third of all people employed in the State are working in the three biggest employing industry sectors: healthcare and social assistance; retail trade; and construction.

[1] The parts of this paper referring to the outlook for various employment categories have been based on detailed labour market projections taken from the Monash model (and based on information available as at September 2013), developed by the Centre of Policy Studies (previously based at Monash University and now based at Victoria University). It should be noted that there is a certain degree of uncertainty attached to any forecast — see Appendix A for more information.

Even so, demand for labour in the State is strongly associated with the resources sector. While the 114 600 people directly employed in the State's mining industry in 2012–13 means it currently ranks as Western Australia's fourth largest employer, the industry also has important flow on effects to other industries, creating additional jobs throughout the economy.

The significant expansion of the resources sector in the latter part of the last decade saw the State record strong employment growth. The impetus provided from the State's expanding resource sector over the past half decade resulted in above-trend employment growth in all years except 2009–10 (when employment growth fell to an annual rate of only 0.3%, due to the post-Global Financial Crisis economic downturn).

Consistent with this, ABS data shows the largest growth in employment levels in the State for the four years to 2012–13 was led by the mining industry (49 600 additional jobs) and professional, scientific and technical services (29 200 additional jobs). However, not all growth was resource related, with the healthcare and social assistance industry increasing by 21 500 additional jobs. These three industries accounted for 73.9% of all jobs growth during the period.

During the same four year period, a few industries recorded declining employment levels, most notably manufacturing (7 900 less jobs) and agriculture, forestry and fishing (with a decline of 7 500 jobs).

On an occupational basis, strong employment growth over the four years to 2012–13 was recorded for professionals (48 900 persons), technicians and trades workers (25 300 persons), and community and personal service workers (20 600).

On a qualification basis[2], the biggest increases in employment levels were persons with certificate III or IV training (62 200 persons), persons with a bachelor degree (34 700), and persons with no post-school qualifications (22 000 persons). Job levels for persons with certificate I or II fell by 6 800.

Outlook

The Western Australian economy is backed by very high levels of investment activity on projects either already underway or committed to. Deloitte Access Economics' *Investment Monitor* shows the State had $244.6 billion worth of confirmed or potential major investment projects as at December quarter 2013. However, rising costs, weaker commodity prices and uncertainty around the iron ore price have somewhat moderated the outlook for resource projects, with a commensurate slowdown in the number of new projects being announced.

The outlook for the State remains broadly positive, due to above average population growth, and the existing pipeline of resource construction work still

[2] Historical data for qualifications employment in this paper are based on the back-cast results provided from the Monash model, as detailed comparable data from the ABS is not available.

to come (albeit with many large projects moving into their production phases over coming years meaning overall resources labour demand is expected to moderate). Additionally, some more recent depreciation in the Australian dollar and the current environment of record low interest rates is expected to assist the State economy transition away from investment led growth to more broader based growth.

According to the CoPS projections for the four years to 2016–17, the largest growth in employment levels is expected to occur in mining (13 300 additional jobs, at an annual average growth rate of 2.8%); manufacturing (7 200 jobs, at 1.9% annual average growth); retail trade (2 900 jobs, at 0.5%); and financial and insurance services (2 900 jobs, at 2.1%). Together, these four industries are projected to account for over half of all new jobs for the period.

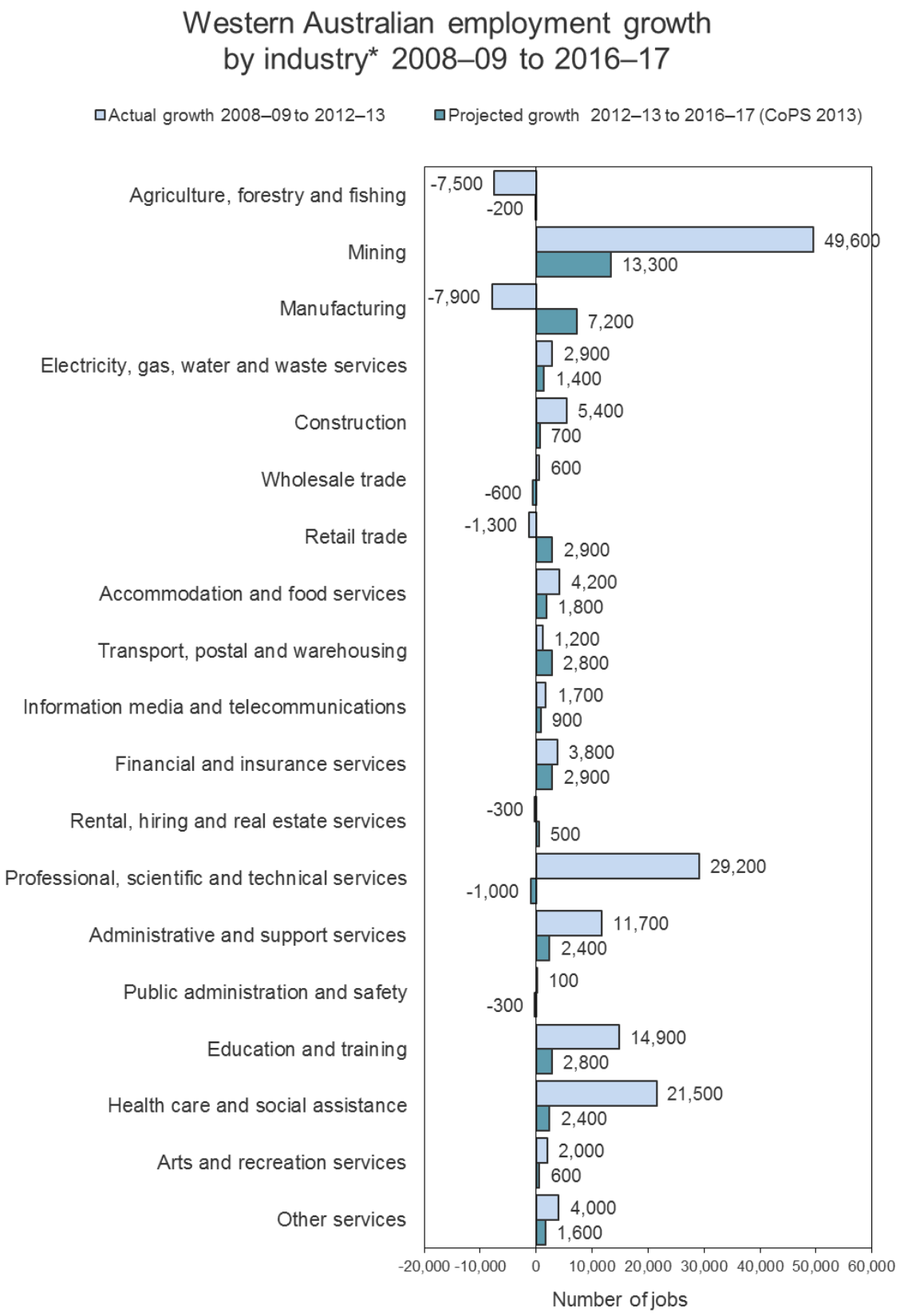
However, four industries are projected by CoPS to record decreases in employment over the forecast period to 2016–17 – professional, scientific and technical (1 000 less jobs); wholesale trade (600 less jobs); public administration and safety (300 less jobs); and agriculture, forestry and fishing (200 less jobs).

Forecast caution

It is cautioned that in the current changing economic environment, it is very difficult for forecasters to predict in detail specific movements in employment growth, particularly in the medium or longer term, as there are many uncertainties to be considered.

Care should therefore be exercised when interpreting forecast movements (particularly the detailed employment forecasts and especially the further out in time such forecasts go). The forecasts should be treated as an indicative picture of what the State's future labour market may look like given expected growth trajectories.

See Appendix A for more detail.



Source: CoPS (2013) and ABS Cat. 6291.0
Note: Figures are rounded to the nearest 100.
*Industry is classified according to the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006.

Over the forecast period for the four years out to 2016–17 based on CoPS, the three occupational groupings expected to experience the strongest increases in employment growth are professionals (12 700 additional jobs, at an average annual growth rate of 1.2%); technicians and trades workers (6 500 jobs, at 0.7%); and managers (6 300 jobs at 1.0%). Together, these groups are predicted to account for 61.4% of jobs growth in the next four years.

Based on the CoPS forecasts for the four years to 2016–17, persons with the following qualifications are expected to lead future jobs growth: bachelor degree (21 100 additional jobs, at an annual average growth rate of 2.2%); certificate III or IV (20 600 jobs, at 1.7%); and diploma (13 900 jobs, at 2.6%). Those people with no post school qualifications are projected to experience a decline in employment of 28 900 jobs.

Further detail in relation to growth profiles specific to industries, occupations and qualifications is contained in the following sections of this document.

For more information on the State's economy and labour market (including by industry and regions) see the Department of Training and Workforce Development's website under the *Western Australia profile* section: www.dtwd.wa.gov.au.

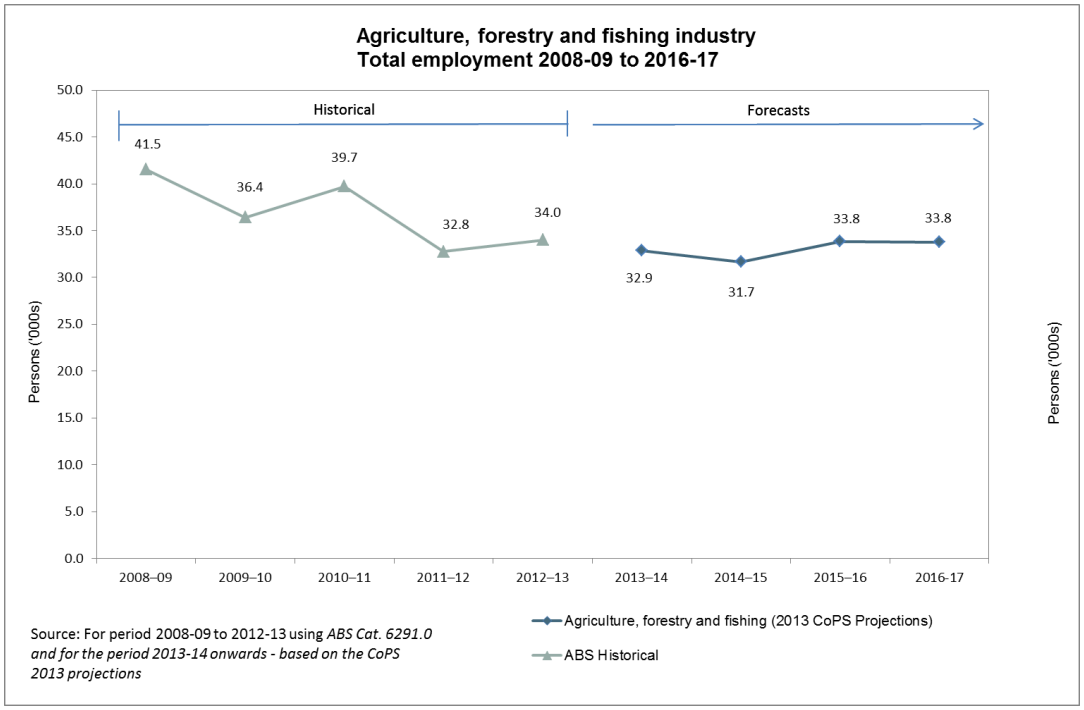
Employment growth by industry, 2008–09 to 2016–17[3]

Agriculture, forestry and fishing

In 2012–13, average employment in the agriculture, forestry and fishing industry was around 34 000 persons, or 2.6% of all persons employed in Western Australia. The industry is made up of agriculture; aquaculture; forestry and logging; fishing, hunting and trapping; and agriculture, forestry and fishing support services.

Over the four year period to 2012–13, this industry experienced a fluctuating downward trend in employment, losing 7 500 jobs. Employment has fluctuated as climate factors and business uncertainty impacted the industry. The closure or downsizing of some food processing and manufacturing businesses, particularly in the south west of the State, has impacted local primary producers. International issues surrounding live export and grain sales have also added uncertainty to the industry. Declines may continue as cost pressures mount on an industry that competes heavily with resources projects for regionally based labour.

[3] The levels shown in the charts in the following sections are averages across the full financial year (rather than the employment level at the end of each calendar year).



By 2016–17, the CoPS forecasts show that there will be 33 800 Western Australians working in this industry. This represents a further decline in employment of around 200 jobs during the period.

The declining growth in employment is expected to be driven by the agriculture sector of the industry. There are various reasons for the forecasted decline in employment, including a relatively high Australian dollar (reducing the competitiveness of export oriented industries like agriculture) and the high degree of capital intensity in the industry. The agriculture sector is also expected to achieve improved productivity into the future through the take-up of technology and better work practices that will be less labour intensive[4].

Mining

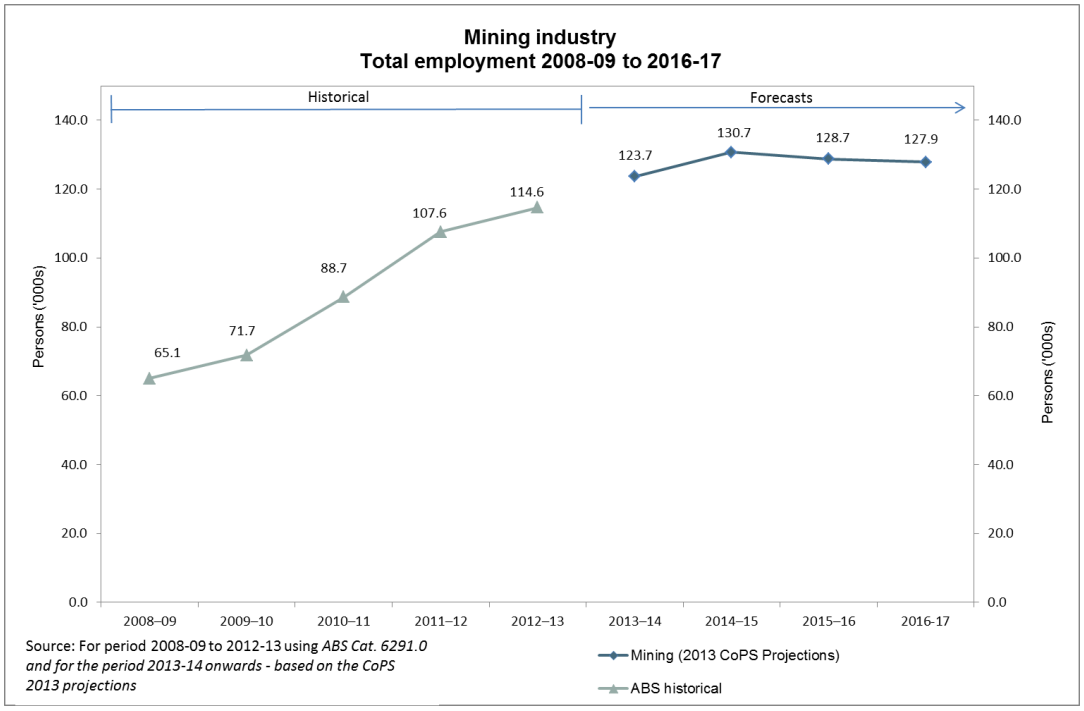
Western Australia's economy has a significant mining and resources sector, largely driven by extraction, processing and exporting of a diverse range of mineral and petroleum commodities. The mining industry covers oil, gas and minerals such as iron ore, coal, uranium, nickel, bauxite, gold, lead, copper, zinc, mineral sands and diamonds.

In 2012–13, the mining industry in the State directly employed 114 600 persons (8.7% of total employment)[5]. The mining industry comprises the following five sectors: coal mining; oil and gas extraction; metal ore mining;

[4] Australian Workforce and Productivity Agency, Future focus - Australia's skills and workforce needs, Discussion paper, July 2012.

[5] Resource related processing industries include conversion of bauxite into alumina. However, employment in this industry is classified as manufacturing (see next section). Similarly, while the construction phases of mining projects are typically more labour intensive than their operational phases, the employment directly related to the development of such projects gets classified as belonging to the construction industry, rather than mining (see section on construction employment further on in this document).

non-metallic mineral mining and quarrying; and exploration and other mining support services. Mining's contribution to Gross State Product (GSP) [6] is the highest of all industries, providing 29.2 % of GSP in 2012–13, yet it only ranks as the fourth largest employer due to its capital intensive nature.



Over the four year period to 2012–13, this industry experienced exceptionally strong growth in employment, gaining 49 600 jobs. This represents a 76.2% increase, the strongest employment growth of all industries in percentage terms in the four year period to 2012–13. The biggest increase was in metal ore mining, as major construction projects were completed and new mines and expansions became operational.

Growth is expected to continue as further major projects complete construction over the following years and enter operations. Iron ore sales in the State are forecast to grow by 35% to 692 million tonnes between 2012–13 and 2016–17. LNG sales are expected to grow from 20 million tonnes in 2012-13 to almost 50 million tonnes by 2016–17[7]. Despite these positive signs the industry is heavily exposed to international market conditions and price fluctuations in commodities can lead to quick employment changes, as seen during the global economic downturn in 2008–09 and more recently in the second half of 2012.

Figures show the majority of the growth is likely to come from metal ore mining and non-metallic mineral mining and quarrying. Oil and gas extraction is a growth industry with significant major projects still under construction in the State's northwest set to be completed in the coming years. Employment in this part of the industry is expected to grow, though overall numbers will

[6] ABS Cat. No. 5220.0, *State Accounts, 2012–13* (current prices).
[7] Western Australian Department of State Development, *WA Economic Profile*, *December 2013*.

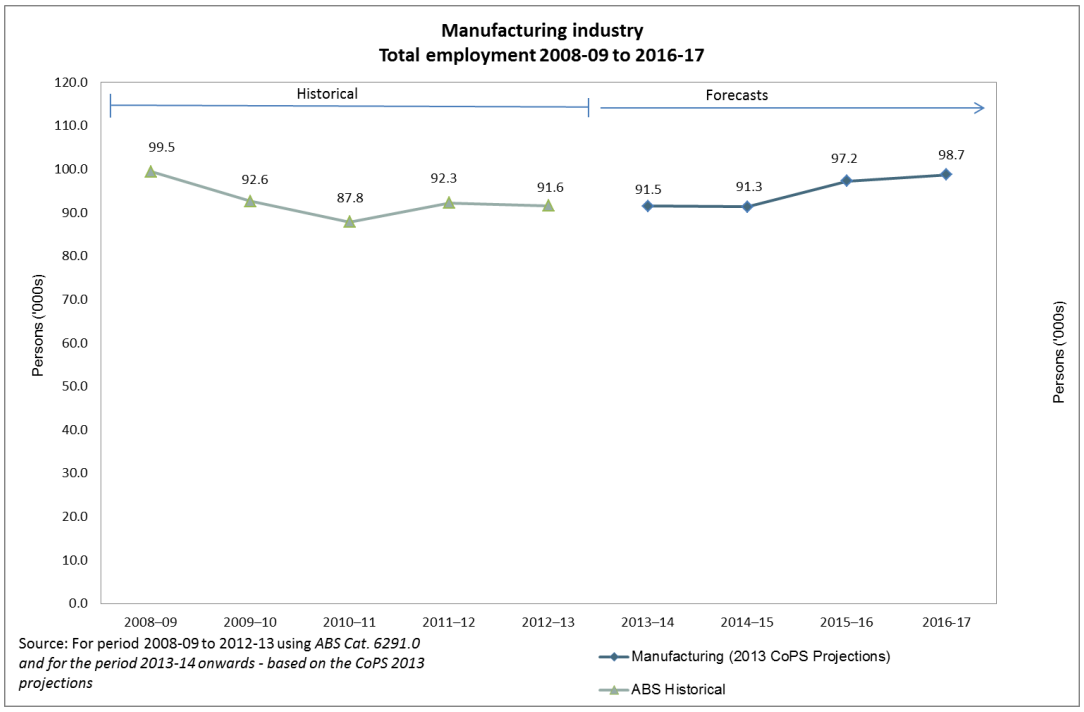
remain relatively low compared to metal ore mining due to the capital focused nature of extraction.

By 2016–17, CoPS is predicting that there will be 127 900 Western Australians working in this industry. This represents an increase in employment of 13 300 jobs.

According to Deloitte Access Economics' *Investment Monitor*, around $133.8 billion worth of mining projects were either committed to or under construction in the State as at December 2013. Correspondingly, the operational phases of these projects, once completed, are expected to boost employment levels in the industry.

Manufacturing

In 2012–13, the manufacturing industry employed 91 600 persons or 6.9% of persons employed in the State. The manufacturing industry consists of 15 sectors including food product manufacturing; beverage and tobacco product manufacturing; textile, leather, clothing and footwear manufacturing; transport equipment; machinery and equipment; and petroleum product manufacturing.



Over the four years to 2012–13, manufacturing employment in the State fell by 7 900 jobs (down 8.0%). This was by far the biggest decline in employment in terms of jobs lost recorded by any industry in the State during this period. The sectors which experienced the largest declines were in food product manufacturing and fabricated metal product manufacturing.

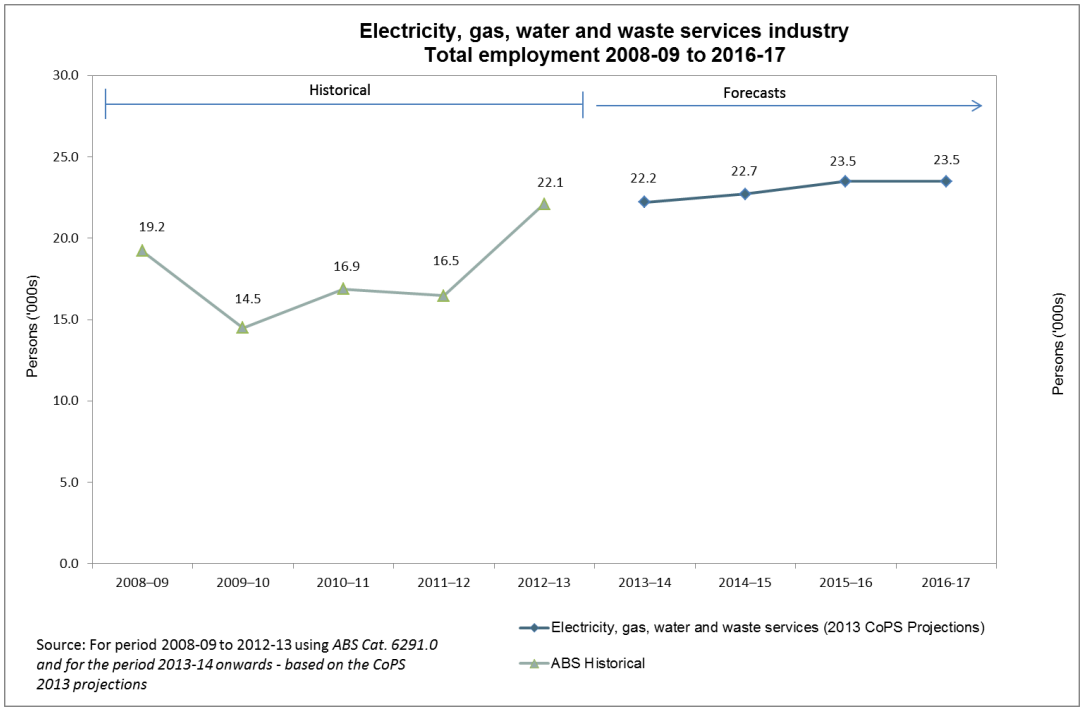
The strongest growth reported in the four years to 2012–13 was for primary metal and metal product manufacturing.

By 2016–17, CoPS predicts that there will be 98 700 employed in the State's manufacturing industry, representing an increase in employment of 7 200 jobs.

Basic chemical product manufacturing, and transport and machinery equipment manufacturing are expected to experience growth over the next four years to 2016–17. However, parts of the manufacturing industry are expected to experience continued challenging conditions during the forecast period due to factors like the relatively high Australian dollar (making Western Australian manufactured exports less competitive) and related to this, increased competition from the major countries that Australia typically imports manufactured goods from.

Electricity, gas, water and waste services

In 2012–13, the electricity, gas, water and waste services industry employed 22 100 persons (1.7% of all employment in Western Australia). This is a very capital intensive and highly automated industry, thus making it the State's second smallest employer (after the information media and telecommunications industry). This industry is divided into four sectors: electricity supply; gas supply; water supply, sewerage and drainage services; and waste collection, treatment and disposal services.



Over the four year period to 2012–13, the electricity, gas, water and waste services (utilities) industry in Western Australia grew by 2 900 jobs or 13.7%. A significant proportion of these jobs came from waste collection, treatment and disposal services; and electricity supply, reflecting the demand from strong population growth in the State in the same period.

Demand is largely dependent on population levels and public spending on utilities and related services at the State and local government level.

However, this industry is also in demand by employers from the resources sector which operate small privately held utilities, particularly power generation.

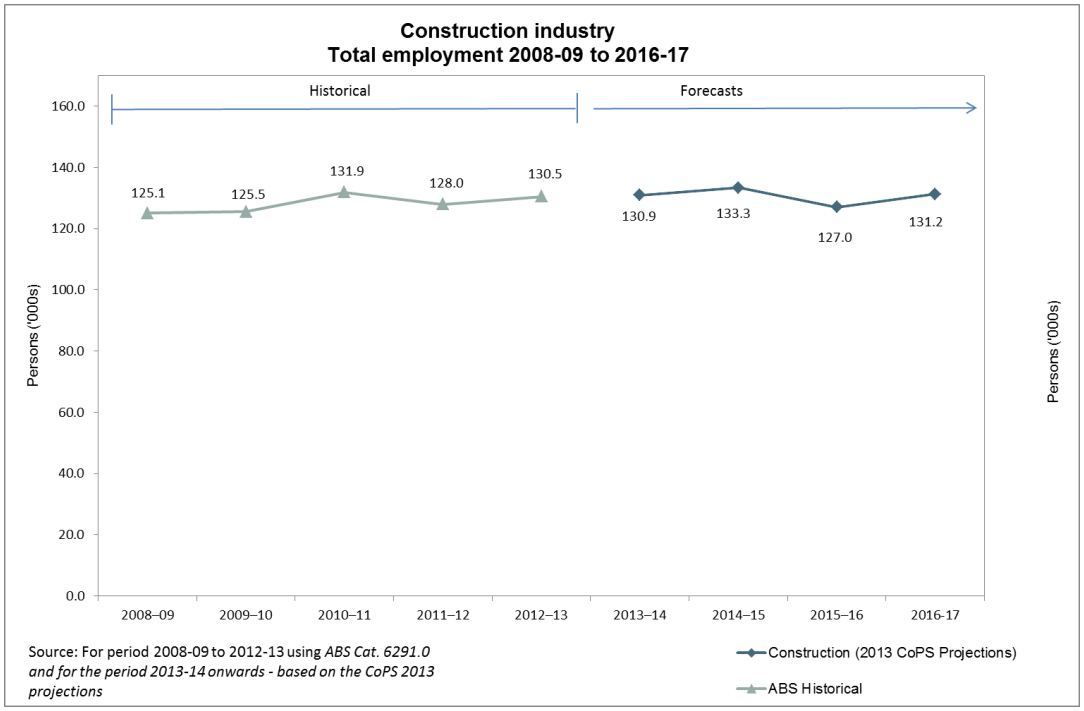
According to Deloitte Access Economics *Investment Monitor Decembe*r 2013, there were a number of major utility infrastructure projects underway in the State valued around $1.9 billion, including BHP Billiton's Yarnima power station, Rio Tinto's power infrastructure upgrades and a range of Western Power transmission line upgrade projects. However, once operational, these types of projects are typically technology driven rather than being labour intensive.

By 2016–17, CoPS is predicting that there will be 23 500 Western Australians working in this industry, an overall increase of 1 400 jobs.

Construction

In 2012–13, the construction industry employed 130 500 persons or 9.9% of persons employed in Western Australia, making it the State's third largest employing industry. The construction industry is divided into: building construction; heavy and civil engineering construction; and construction services.

Over the four year period to 2012–13, the construction industry in Western Australia grew by 5 400 jobs or 4.3%. Most of this growth came from heavy and civil engineering construction, while other construction sectors contracted due to subdued conditions in the residential sector. The expansion in the mining sector itself resulted in a sizable construction program (mainly in civil and heavy engineering).



By 2016–17, CoPS is forecasting that there will be 131 200 Western Australians employed in this industry, representing modest employment growth of 700 people.

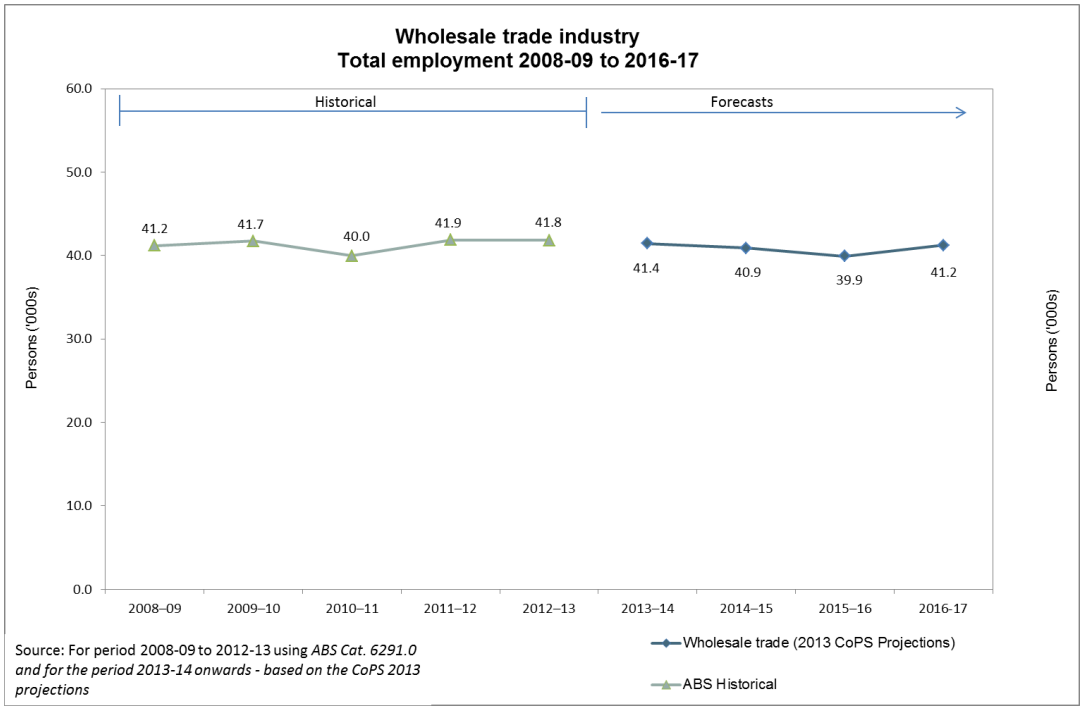
Future employment growth in this industry is underpinned by improved prospects for the residential sector, while the demand decreases for engineering construction related to the State's resources sector.

Wholesale trade

In 2012–13, the wholesale trade industry employed 41 800 persons or 3.2% of all persons employed in Western Australia. The industry is divided into six sectors: basic material wholesaling; machinery and equipment wholesaling; motor vehicle and motor vehicle parts wholesaling; grocery, liquor and tobacco product wholesaling; other goods wholesaling; and commission based wholesaling.

Over the four year period to 2012–13, the wholesale trade industry in Western Australia grew by 600 jobs or 1.5%. While most of the sectors in the industry recorded employment growth over this period, grocery, liquor and tobacco product wholesaling; motor vehicle and other vehicle parts wholesaling; and other goods wholesaling recorded declines.

By 2016–17, CoPS is predicting that there will be 41 200 Western Australians employed in this industry.



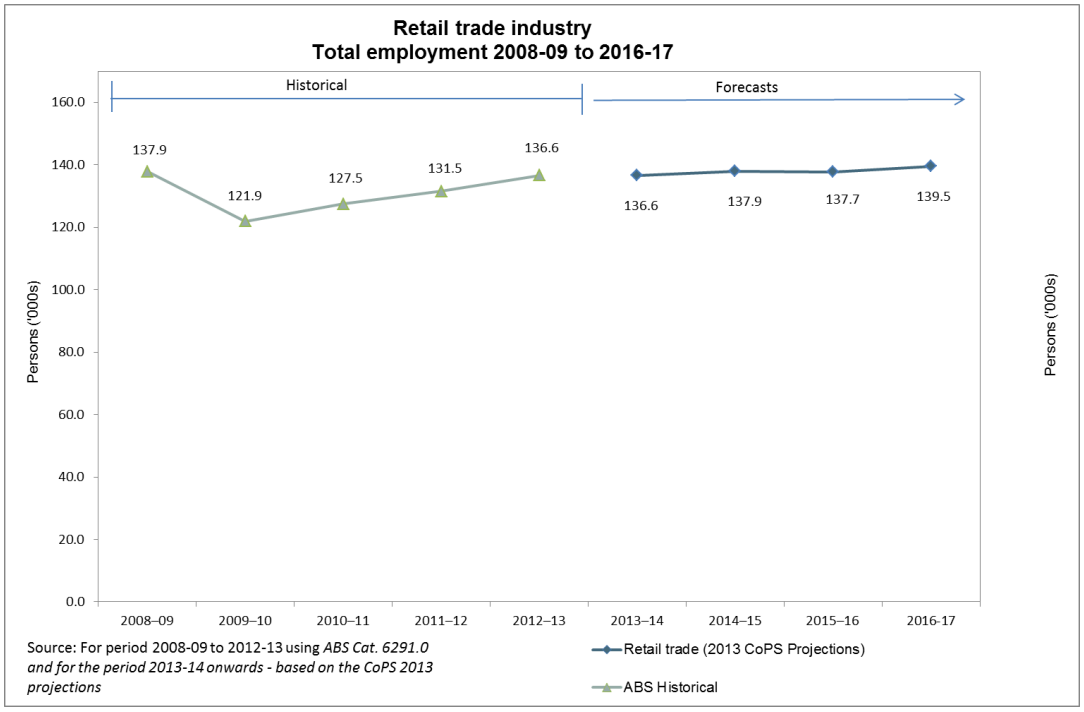
Retail trade

In 2012–13, the retail trade industry employed 136 600 persons, or 10.4% of the workforce, making it the second largest employer in the State. The industry consists of five broad sectors, including motor vehicle and motor

vehicle parts retailing; fuel retailing; food retailing; other store based retailing; and non-store retailing and retail commission based buying and/or selling. Growth in retail trade is relatively closely correlated with the economic cycle given the industry relies heavily on consumer spending[8].

Over the four years to 2012–13, the retail trade industry in Western Australia decreased by 1 300 jobs, (or -0.9%). Most sectors recorded a decrease in employment growth, apart from strong growth in food retailing.

Recently retail trade has been seceded by health care and social services as the highest employing industry. The Reserve Bank of Australia[9] has noted a change occurring in household spending behavior towards increasing savings and reducing debt. Recent uncertainty regarding the local economic future by consumers and the continuing rise of online shopping and digital product purchases have all contributed to the changing trend for employment in this industry. Trended ABS retail sales figures for Western Australia support this, with strong growth in turnover for food related businesses[10], but only modest gains for other retail sectors that rely on discretionary spending[11].



In the four year period to 2016–17, CoPS is forecasting that there will be 139 500 Western Australians employed in this industry. This represents an increase in employment of 2 900 jobs, or growth of 2.1%.

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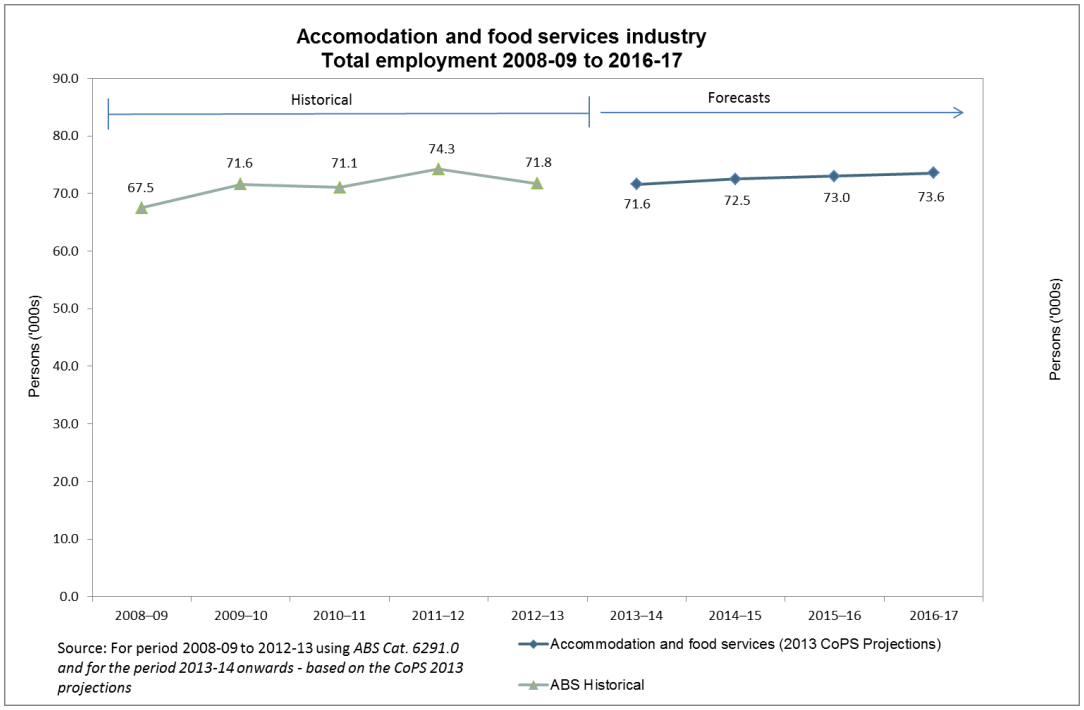
[8] Retail trade industry profile, report commissioned by Australian Fair Pay Commission, 2009
[9] Reserve Bank of Australia, The Changing Structure of the Australian Economy and Monetary Policy, Phillip Lowe, Address to the Australian Industry Group 12th "Annual Economic Forum, March 2012.
[10] Note: Retail sales figures for takeaway food services, cafes, restaurants and catering services etc. lead to employment growth under the accommodation and food services industry under ANZSIC.
[11] ABS Cat. No. 8501.0, Retail Turnover; State by Industry Subgroup, Trend data.

Accommodation and food services

In 2012–13, the accommodation and food services industry employed 71 800 persons or 5.4% of total employment in the State. The industry is divided into two sectors: accommodation; and food and beverage services. The majority of workers in accommodation and food services do not hold post-school qualifications reflecting the industry's role as an entry point to the labour market for school leavers, students and part time workers[12].

Over the four years to 2012–13, the accommodation and food services industry in Western Australia grew strongly by 4 200 jobs, or 6.3%. All of this jobs growth came from the food and beverage services sector of the industry (this includes cafes, restaurants, food services and pubs). ABS retail figures for Western Australia relating to food services have seen combined turnover increase by approximately 80% over the past four years[13]. Employment in accommodation declined over the same period.



By 2016–17, CoPS predicts there will be 73 600 Western Australians employed in the industry, representing an increase in employment of 1 800.

Most of the jobs growth is expected to come again from the food and beverage services sector. However, the segments of the industry relating to tourism are being impacted negatively by a relatively high Australian dollar.

Transport, postal and warehousing

In 2012–13, the transport, postal and warehousing industry employed 64 000 persons or 4.9% of total employment. The transport, postal and warehousing industry is divided into road transport; rail transport; water transport; air and space transport; other transport; postal and courier pick up

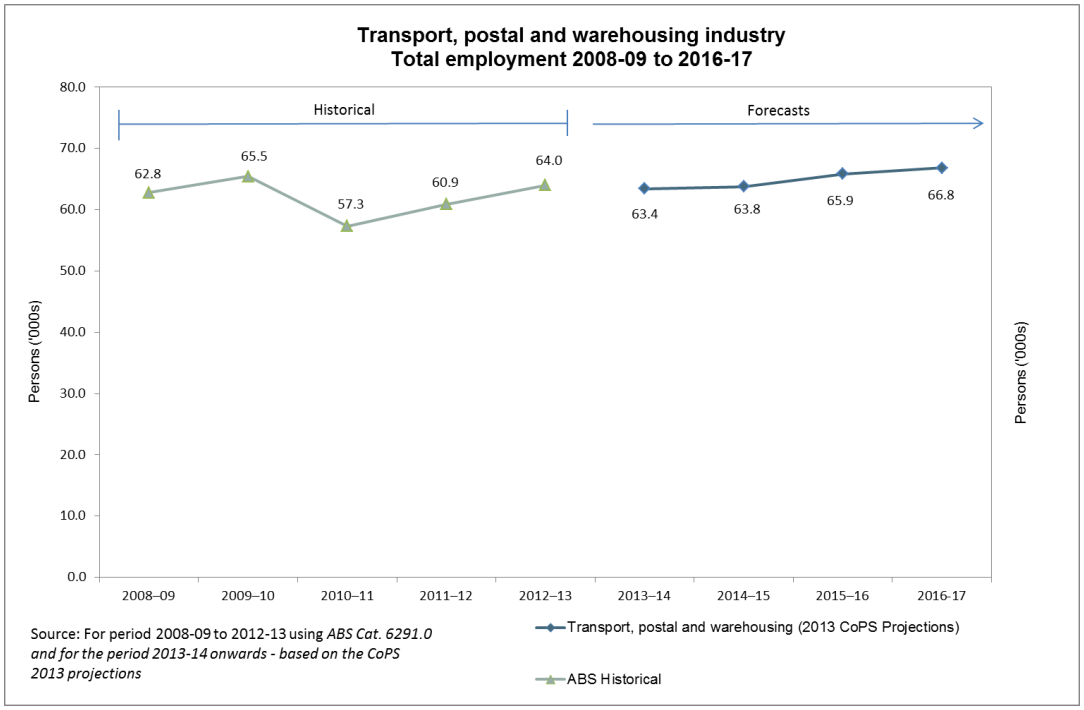
[12] Skills Australia, 2010. Industry Snapshots, Accommodation and Food Services.
[13] ABS Cat. No. 8501.0, Retail Turnover; State by Industry Subgroup, Trend data.

and delivery services; transport support services; and warehousing and storage services.

Over the four years to 2012–13, the transport, postal and warehousing industry in Western Australia grew by 1 200 jobs (or 1.9%), with air and space transport; and road transport experiencing stronger growth. Postal and courier pick up and delivery services recorded a decline in employment over the same period.

By 2016–17, CoPS forecasts that there will be 66 800 Western Australians employed in this industry. This represents an increase in employment of 2 800 jobs.

Consistent with the development of major resource and infrastructure projects throughout the State, most of the jobs growth is expected in the road transport sector.

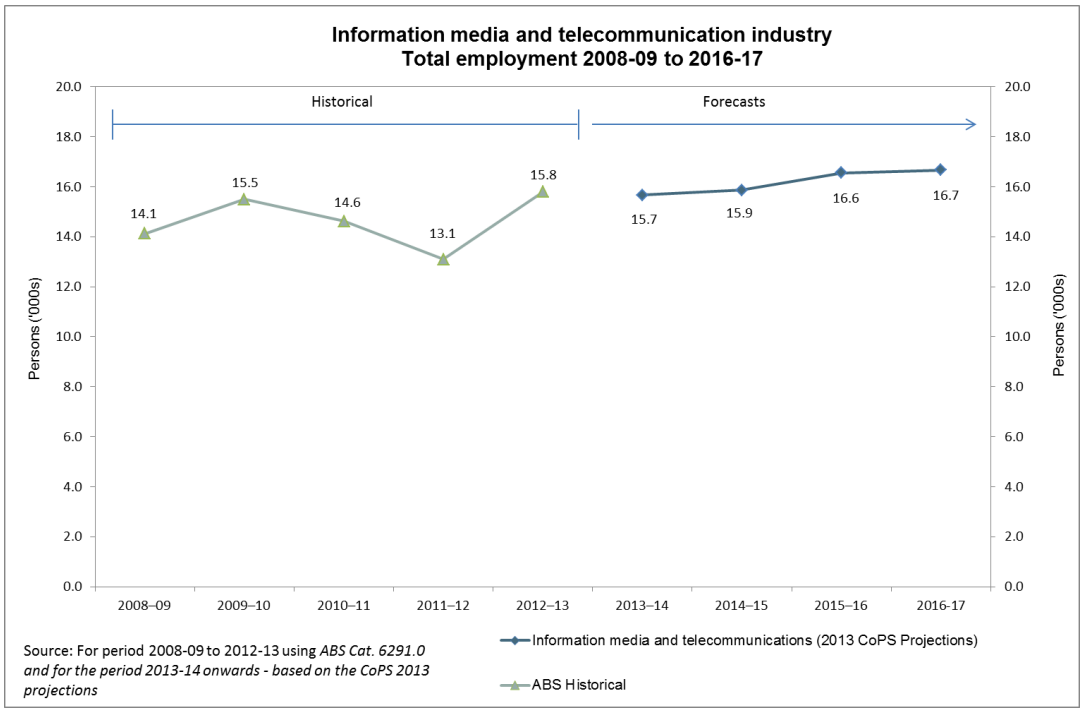


Information media and telecommunications

In 2012–13, the information media and telecommunications industry employed 15 800 persons (1.2% of total employment), making it the smallest employing industry in the State. This industry consists of seven sectors: publishing (except internet and music publishing); motion picture and sound recording activities; broadcasting (except internet); internet publishing and broadcasting; telecommunications services; internet service providers, web search portals and data processing services; and library and other information services.

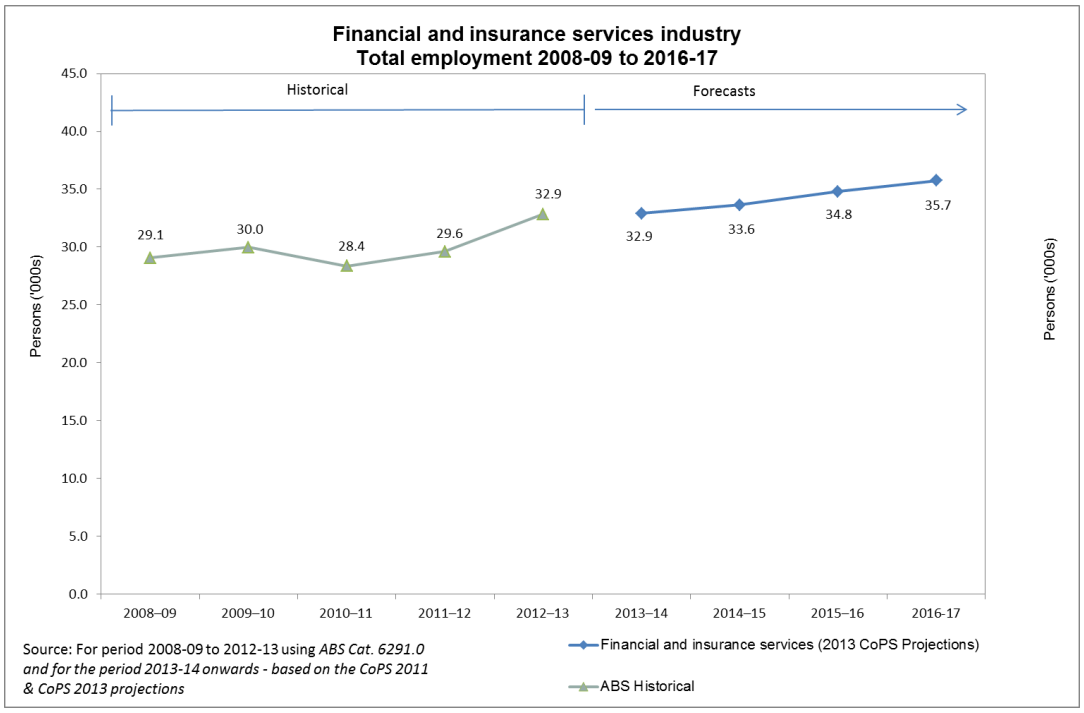
Over the four years to 2012–13, employment in the information media and telecommunications industry in Western Australia increased by 1 700 persons (or 11.9%).

By 2016–17, CoPS is predicting that there will be 16 700 Western Australians employed in this industry. This represents an increase in employment of 900 jobs.



Financial and insurance services

In 2012–13, the financial and insurance services industry employed 32 900 persons or 2.5% of the persons employed in the State. The industry is divided into three sectors: finance; insurance and superannuation funds; and auxiliary finance and insurance services.



In the four years to 2012–13, employment in the State's financial and insurance services industry increased by 3 200 (or 11.0%). The bulk of the growth was in insurance and superannuation funds.

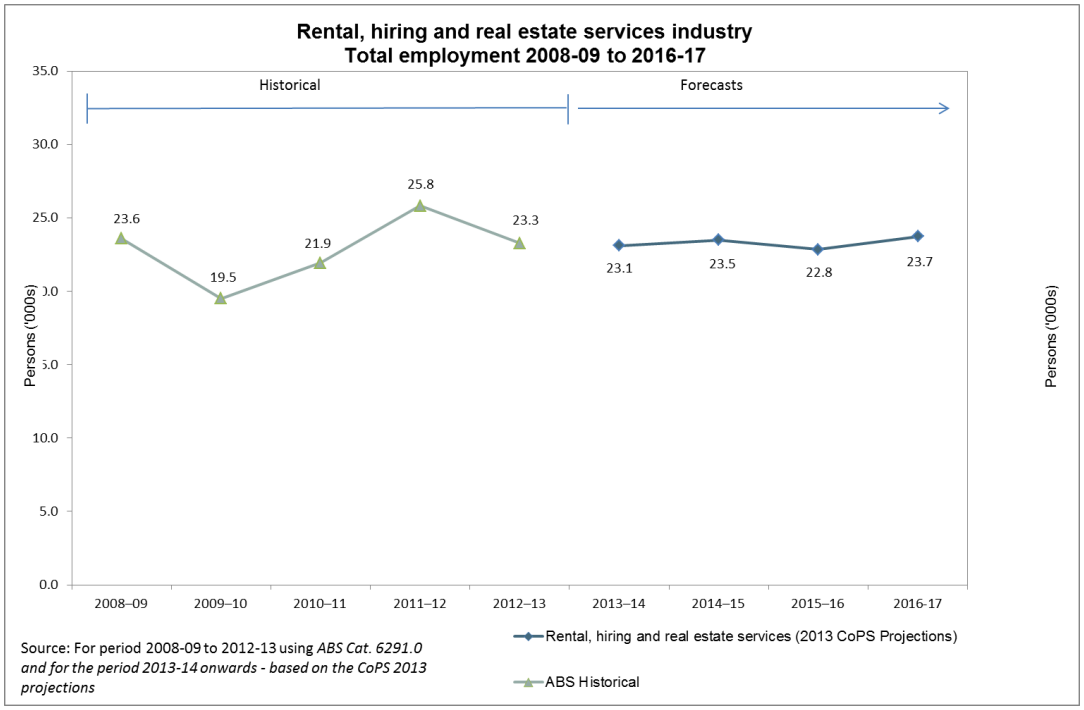
By 2016–17, CoPS forecasts that there will be 35 700 Western Australians employed in this industry. This represents an increase in employment of 3 800 jobs.

Rental, hiring and real estate services

In 2012–13, the rental, hiring and real estate services industry employed 23 300 persons or 1.8% of the persons employed in the State. This relatively small industry is divided into two main sectors: rental and hiring services (excepting real estate services); and property operators and real estate services.

Over the four years to 2012–13, employment in the rental, hiring and real estate services industry in Western Australia decreased by 300 jobs, (representing a -1.3% decrease). However, strong growth occurred in the property operators and real estate sector of the industry. It should be noted that the property operators and real estate sector was particularly affected by the global economic downturn, but has made a strong recovery since then.

By 2016–17, CoPS estimate that there will be 23 700 Western Australians working in the industry, an increase of 500 jobs (with stronger growth coming from the real estate sector).



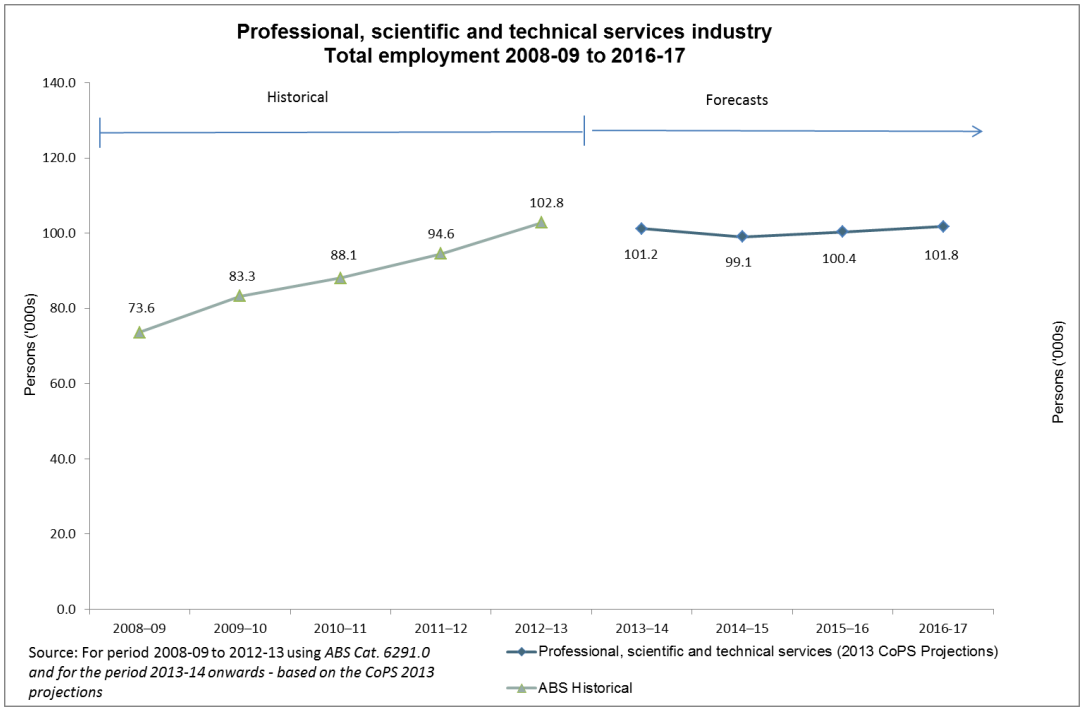
Professional, scientific and technical services

In 2012–13, the professional, scientific and technical services industry employed 102 800 persons or 7.8% of all persons employed in the State. This industry is divided into two sectors: professional, scientific and technical services; and computer system design and related services.

The professional, scientific and technical services industry in Western Australia includes a large number of high level skilled occupations working for companies providing architectural, engineering, technical services, legal and accounting services.

Over the four years to 2012–13, employment in the professional, scientific and technical services industry increased by 29 200 jobs or 39.6%.

The State's resource sector has contributed to strong demand for engineering and scientific professions. Increased and widespread use of information and communication technology has also lead to a steady increase in the need for computing relation professionals.



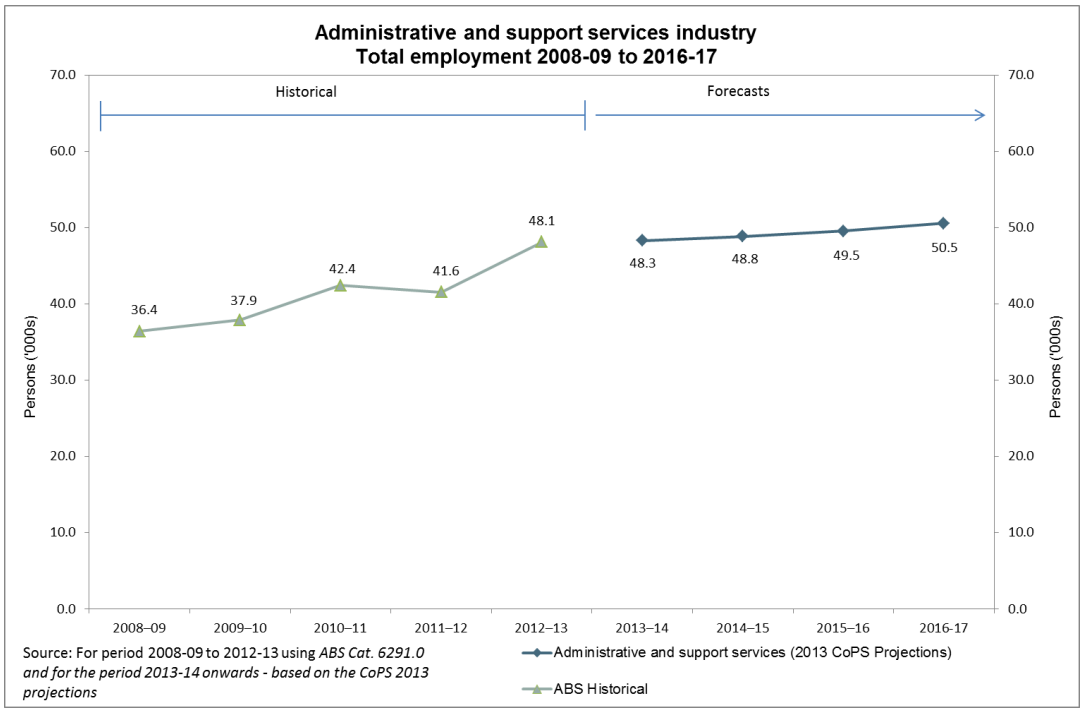
By 2016–17, CoPS forecasts that 101 800 Western Australians will be employed in this industry, representing a decrease of 1 000 jobs. This is tied to the moderation in employment associated with resource sector projects in the State.

Administrative and support services

In 2012–13, the administrative and support services industry employed 48 100 persons or 3.6% of persons employed in the State. This industry is divided into two sectors: administrative services; and building cleaning, pest control and other support services.

Over the four years to 2012–13, employment in the administrative and support services industry increased by 11 700 people or 32.2%. Building cleaning, pest control and other support services sector experienced strong employment growth.

By 2016–17, CoPS is forecasting that there will be 50 500 employed in the industry in Western Australia. This represents a growth in employment of 2 400 employees.



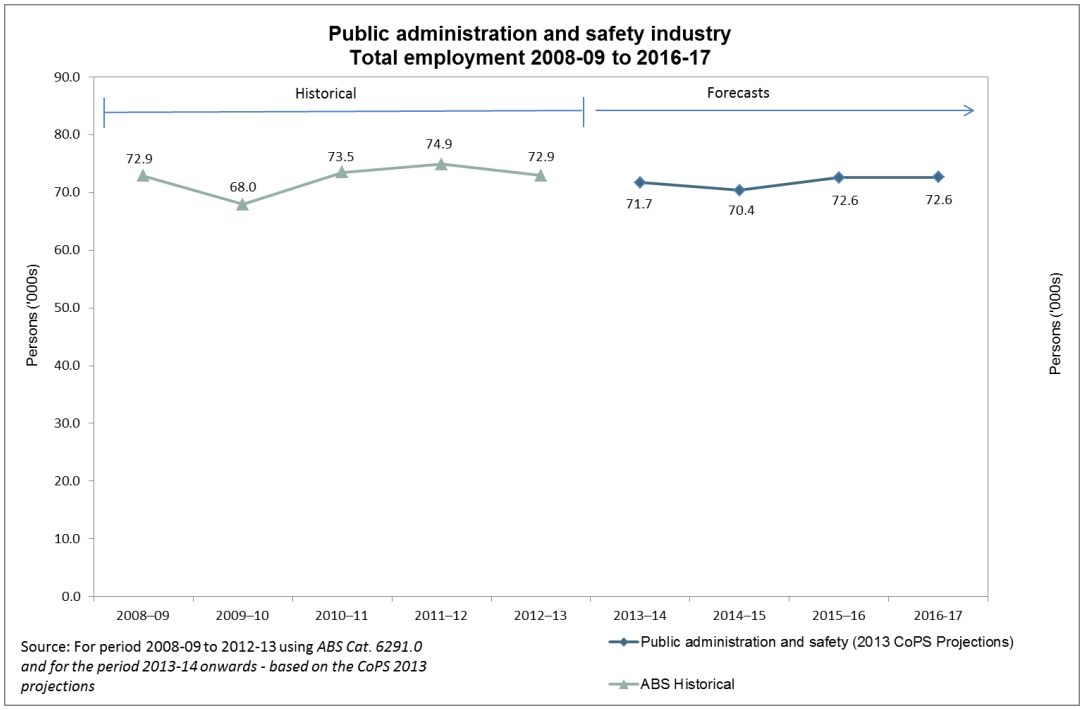
Public administration and safety

In 2012–13, the public administration and safety industry employed 72 900 persons or 5.5% of all persons employed in Western Australia. This industry consists of three sectors: public administration; defence; and public order, safety and regulatory services.

Over the four years to 2012–13, employment levels in this industry have been variable, but have decreased overall by 100 persons.

The Western Australian State government is the main employer of public servants in the State, typically accounting for around 82% of total public sector employment in 2012–13, with the local government sector accounting for 12% and the Commonwealth Government around 6%[14]. While the majority of jobs in this industry are within the public sector, some of the public order/safety services positions are from the private sector (for example, armoured car services, locksmith services, security guard services and similar).

[14] Source: ABS catalogue number 6248.0.55.002 - *Employment and Earnings, Public Sector, Australia, 2011–12.*



By 2016–17, CoPS is forecasting employment levels in public administration and safety to decrease to 72 600 jobs, representing a marginal decrease of 300 jobs over the period. The flat growth trajectory is consistent with the State Government's commitment to maintaining a ceiling on full time equivalent (FTE) positions[15].

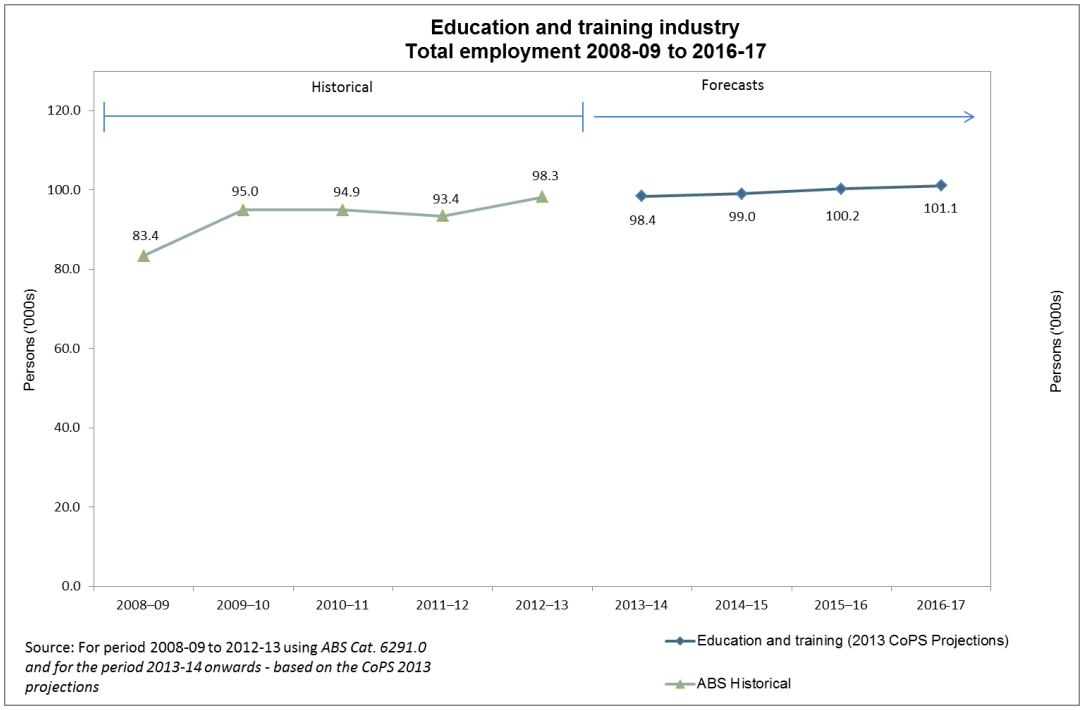
Education and training

In 2012–13, the education and training industry employed 98 300 persons or 7.5% of all persons employed in the State, making it the sixth largest employer in the State. This industry is divided into three sectors: preschool and school education; tertiary education; and adult community and other education.

Employment in this industry is influenced by a number of factors including the number of school age children in the population, school retention rates, government policy, average class size and developments in private school education, including specialist schools[16].

Over the period 2008–09 to 2012–13, employment in the education and training industry rose by 14 900 persons or 17.8%. The largest employment growth was in preschool and school education; and adult, community and other education sector (with strong demand for post school level training through both the vocational education training and higher education sectors). The majority of employment in the industry is for the preschool and school education sector.

[15] Western Australian Department of Treasury, 2012–13, *Government Mid-year Projections Statement, December 2012*.
[16] Source: DEEWR (2010), Employment outlook for Education and Training



By 2016–17, CoPS forecasts show employment levels growing by 2 800 persons to 101 100 employees, with increases in employment levels in all sectors.

This reflects the strong population growth that has been occurring in the State. The higher education sector may be moderated by a persistently high Australian dollar impacting the demand from international students.

Health care and social assistance

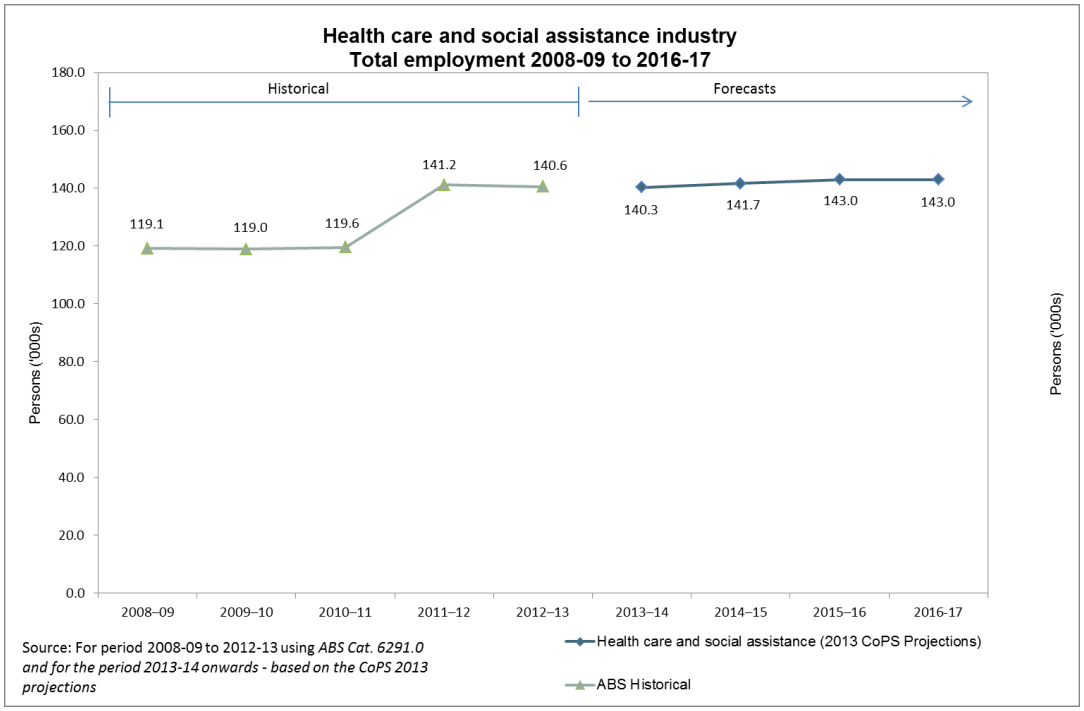
In 2012–13, the health care and social assistance industry employed 140 600 persons or 10.7% of the persons employed in the State, making it the largest employer in Western Australia. This industry consists of four sectors: hospitals; medical and other health care services; residential care services; and social assistance services.

Over the four years to 2012–13, the health care and social assistance industry grew strongly by 21 500 jobs or 18.0%. Most of the jobs growth occurred in medical and other health care services; social assistance services; hospitals and residential care services sectors. Some of the growth can be attributed to an increase in assistance services for aged and disabled care.

Employment in the health care and social assistance industry is influenced by many factors such as the ageing of the population, the demand for new and improved health services, technological changes, government budget pressures, the growth of community and home based services and the continuing growth in demand for child care services[17]. The Western Australian Government has invested in building health infrastructure, spearheaded by the Fiona Stanley Hospital in Murdoch and a new Children's Hospital in

[17] Source: DEEWR (2010), Employment outlook for healthcare and social assistance

Nedlands. These projects and others are likely to increase the demand for hospital staff in the coming years.



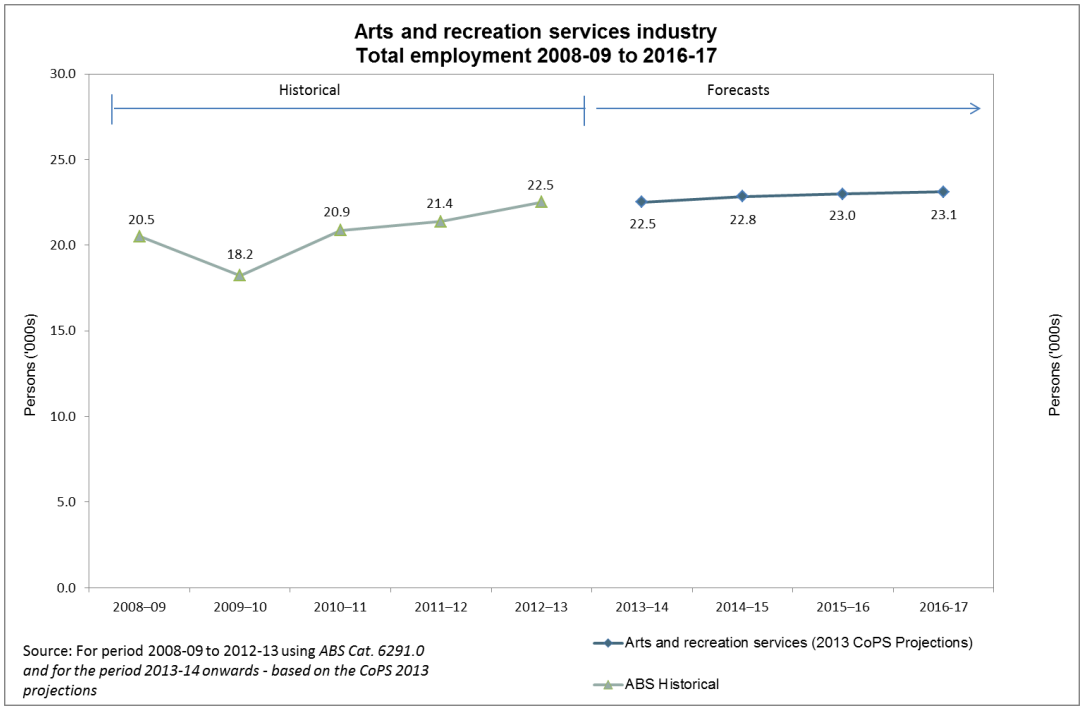
By 2016–17, CoPS is forecasting employment in this industry to increase by 2 400 persons to 143 000 employees.

Arts and recreation services

In 2012–13, the arts and recreation services industry employed 22 500 persons or 1.7% of persons employed in the State. This industry is divided into four sectors: heritage activities; creative and performing arts activities; sports and recreation activities; and gambling activities.

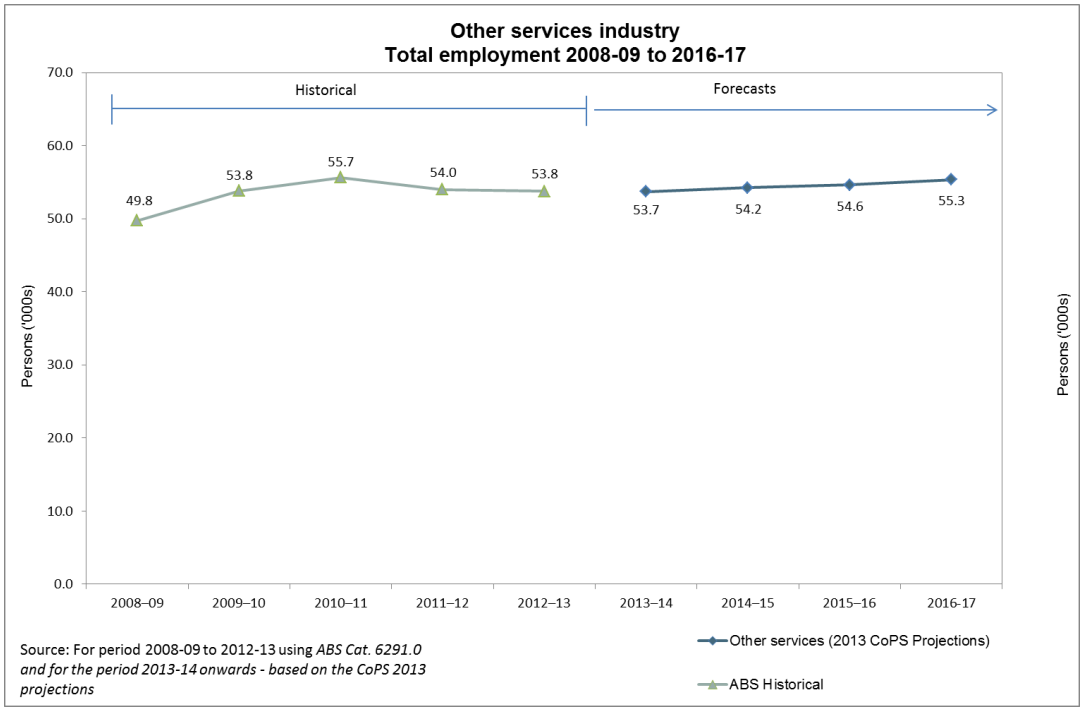
Between 2008–09 and 2012–13, the level of employment in arts and recreation services fluctuated quite significantly, but in aggregate declined by 2 000 or 9.7% over the period. Most of the growth occurred in gambling activities.

By 2016–17, CoPS forecasts employment in this industry to increase by 600 persons to a level of 23 100 jobs.



Other services

In 2012–13, the other services industry employed 53 800 persons or 4.1% of persons employed in the State. This industry consists of three sectors: repair and maintenance; personal and other services; and private households employing staff and undifferentiated goods and service producing activities of households for own use.



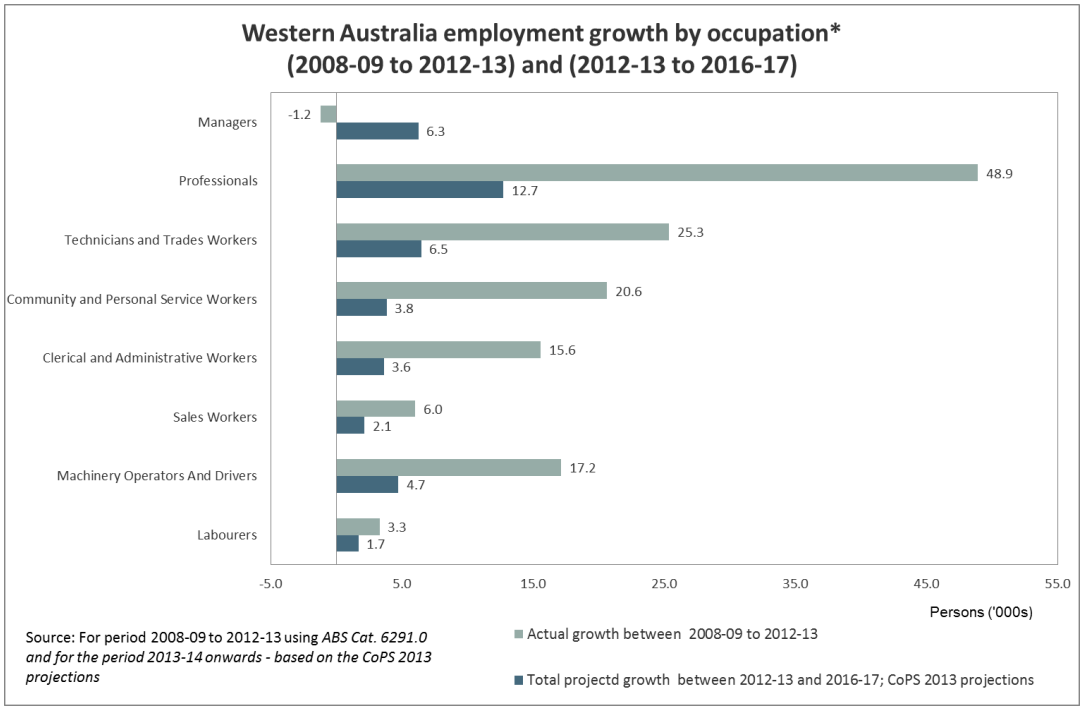
Over the four years to 2012–13, employment within this industry grew by 4 000 or 8.0% in total. The largest employment growth was in the repair and maintenance sector and personal and other services. Demand for

employment in these industries can be linked to population growth. Some of this demand is also from the resources sector that requires skilled workers from these areas such as motor mechanic and machinery service personnel.

By 2016–17, CoPS forecasts employment in this industry to increase to 55 300 jobs, corresponding to total growth of 1 600 additional jobs.

Occupational employment growth

The graph below shows a comparison of employment growth across the main occupational divisions in Western Australia for the period 2008–09 to 2012–13 (using historical ABS data) and 2012–13 to 2016–17 (using forecast employment data produced by the Centre of Policy Studies for 2013).



* Occupation is classified according to the Australian and New Zealand Standard Classification of Occupations (ANZSCO) 2006.

Generally, employment prospects are dependent on a number of factors including the general economic environment, opportunities within industries and occupations, and the level of employment demand for specific skills.

Between 2008–09 and 2012–13, professionals experienced the highest increase in the number of new jobs at 48 900. This was followed by technicians and trades workers with 25 300 new jobs, and community and personal service workers at 20 600.

Based on the CoPS projections, by 2016–17, professionals; technicians and trades workers; and managers are anticipated to collectively account for 61.6% of jobs growth in the State. Professional level occupations are anticipated to account for 30.7% of employment growth, followed by technicians and trade workers at 15.7% and managers at 15.2%.Strong projections for employment growth for these occupation groups may be tied to expected continued strong demand from the mining industry and industries across the board which employ many occupations from these higher skill levels.

Projected growth for lesser skilled occupation groups like sales workers and labourers is expected to remain small. This indicates the importance of gaining skills via post school level education or training, either through a University or the Vocational Education and Training system, to improve a

person's employment opportunities within the Western Australian labour market.

The section below highlights the top ten jobs growth by specific occupation (at the four digit ANZSCO level of classification) for both the historical period and the forecast period.

Top 10 jobs to 2012–13

The top 10 occupations which experienced the greatest number of additional jobs growth in the four year period to 2012–13 (accounting for 54.4% of total growth) include:

- commercial cleaners (8 800 additional jobs);
- metal fitters and machinists (8 500);
- registered nurses (8 000);
- drillers, miners and shot firers (6 800);
- primary school teachers (5 800);
- receptionists (5 800);
- aged and disabled carers (5 500);
- sales assistants (4 800);
- other building and engineering technicians (4 500); and
- architectural, building and surveying technicians (4 500).

Top 10 jobs to 2016–17

From the CoPS forecasts, the top 10 occupations expected to grow by the greatest number of additional jobs in the four year period to 2016–17 (accounting for 37% of total growth) include:

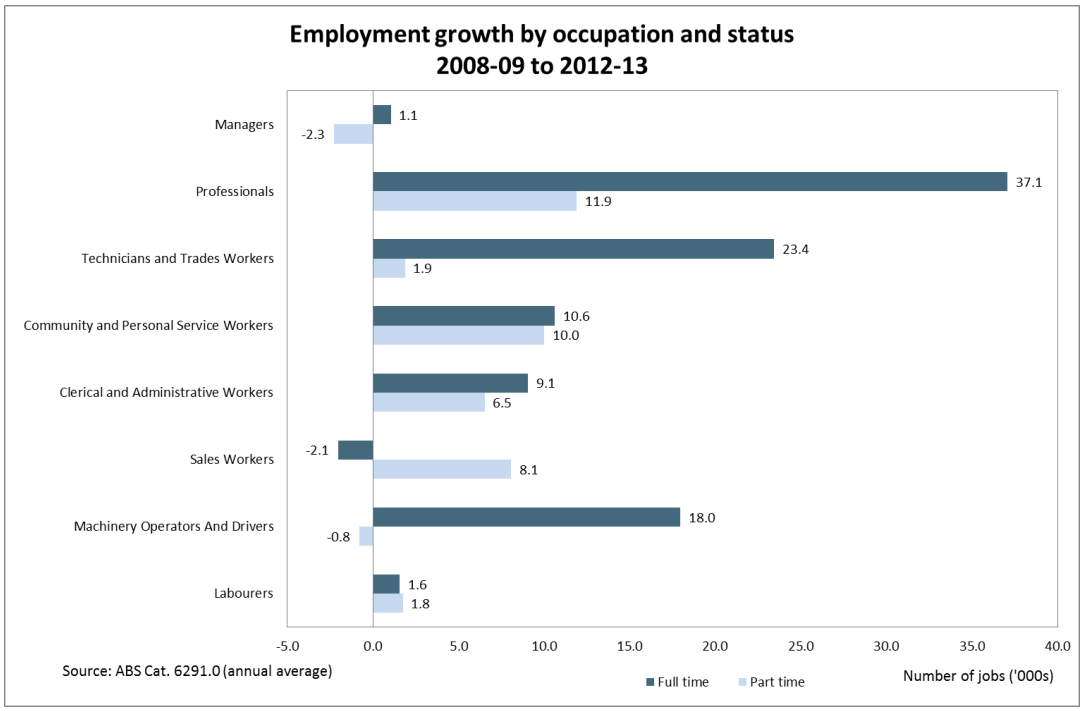
- other building and engineering technicians (2 600 additional jobs);
- drillers, miners and shot firers (1 900);
- metal fitters and machinists (1 500);
- truck drivers (1 400);
- contract / project administrators (1 400);
- education aides (1 400);
- crop farmers (1 300);
- aged and disabled carers (1 200);
- mining engineers (1 300); and
- accountants (1200).

As can be seen by the list above, the growth in these occupations is relatively consistent with growth in mining operations and broader industry growth projected for Western Australia. For more information on occupations with good employment prospects, see Appendix B.

Employment growth by working arrangements

In line with national and international trends, the proportion of people working part time in Western Australia continues to rise. In the last 30 years, the proportion of people working part time increased from 18.2% to 27.3% currently. Consequently, the proportion of workers in full time jobs in the State declined from 81.8% in 1981–82 to 72.7% currently.

The graph below shows historical employment growth by occupation and part time and full time status.



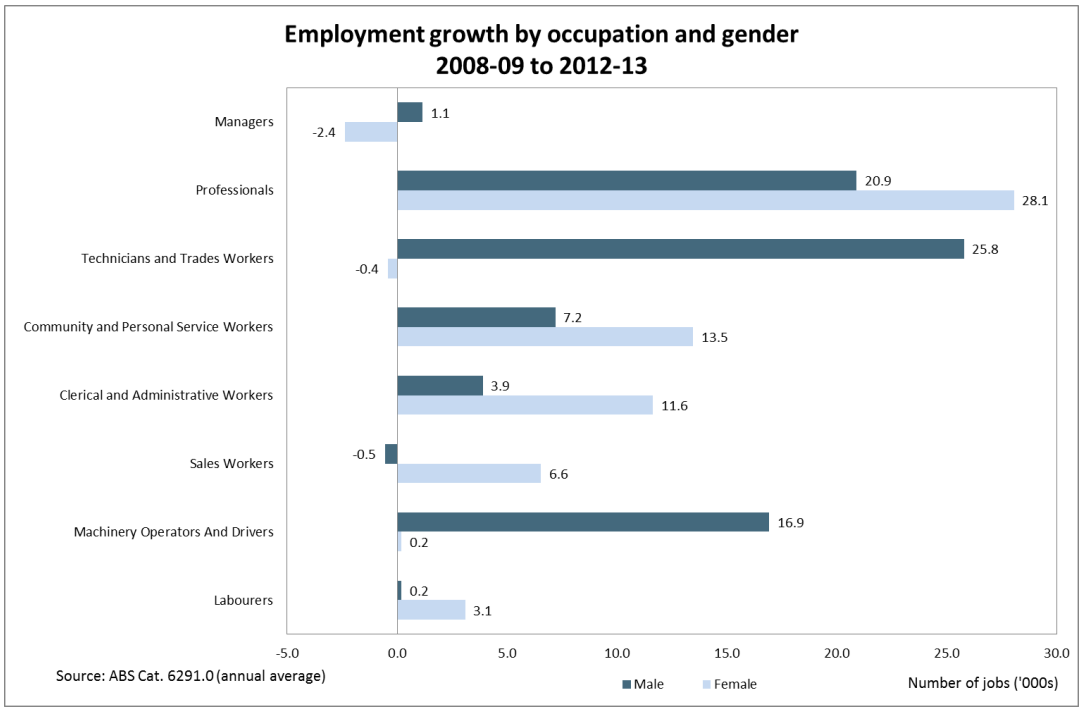
Even with the relative increase in part time jobs, about 72.1% of all jobs growth in the past four years was on a full time employment basis. Around 62.4% of full time jobs were in the higher skilled occupational groups of managers (1 100 jobs); professionals (37 100); and technicians and trades workers (23 400). However, machinery operators and drivers also captured a large part of the growth (18.1% or 18 000 jobs) in the full time sector in the last four years.

Part time jobs growth was strong for professionals (11 900 jobs); community and personal service workers (10 000 jobs) and also for sales workers (8 100 jobs).

Over the last four years, all of jobs growth for the sales workers was on a part time basis, suggesting that these occupational groups tend to offer more flexibility in terms of working hours. Furthermore, the only job losses that occurred in the past four years in Western Australia were full time positions for sales workers (2 100 loss) and part time jobs for managers (2 300 loss) and machinery operators and drivers (800 loss).

Employment growth by gender

The graph below shows historical employment growth by occupation and gender.



In the four year period to 2012–13, male employment growth accounted for 55.6% (75 500 jobs) of total jobs growth.

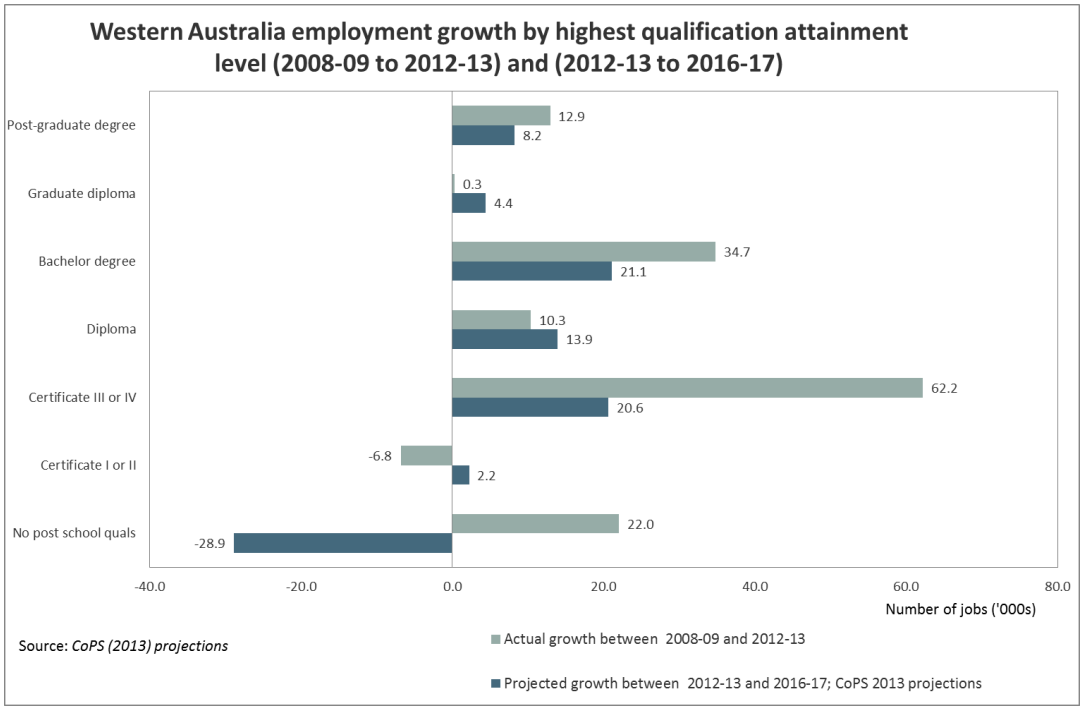
Male employment growth was the strongest in technicians and trades workers; professionals; and machinery operators and drivers occupational groupings. On the other hand, females experienced the strongest growth in the professionals; and community and personal service workers categories.

Technicians and trades workers positions; and machinery operators and drivers; and are still dominated by males with employment growth of 25 800 and 16 900 jobs respectively.

Interestingly, employment growth in the professional occupational group was stronger for females (28 100 jobs) compared to males (20 900). Females in the community and personal service workers category also experienced strong employment growth at 13 500 new jobs.

Employment growth by highest qualification attainment level

The graph below illustrates employment growth by highest qualification attainment levels in Western Australia for the period 2008–09 to 2012–13 (historical) and 2012–13 to 2016–17 (forecast), produced by CoPS for 2013.



Between 2008–09 and 2012–13, the largest increase in employment was for persons holding a certificate III or IV (62 200 jobs or 43.8% of total employment increase). Persons with a bachelor degree experienced the second largest increase in employment (34 700 jobs).

Based on the CoPS forecasts for the four year period out to 2016–17, the largest employment growth is expected for individuals holding a bachelor degree (21 100 jobs), followed by those with a certificate III or IV (20 600 jobs).

In contrast, individuals without post school qualifications are projected to experience a decline in employment of 28 900 jobs in comparison to the growth of 22 000 jobs in the historical period to 2012–13. This projected decline in employment is likely to be a reflection of industry's increased demand for skills and qualifications, particularly given the high level of qualifications typically required for most of the key growth occupations listed on the previous page.

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Appendix A: Labour market data, forecasts and uncertainty

The labour market forecasts referred to in this document are primarily taken from the results of Monash model, developed by the Centre of Policy Studies. These forecasts are conducted within an economy-wide framework, which integrates:

- a macro model (which determines aggregate employment);
- an applied general equilibrium model (called 'Monash'[18], which determines employment by industry); and
- a labour market extension (which determines employment by occupation).

In respect to this system of labour market modelling, the Centre of Policy Studies cautions that:

> *So far the development of the system has focused primarily on the demand for labour. A particular concern has been the effect in recent years of technological and social change on the structure of the economy and the implications for future labour demand. A complementary supply side forecasting system is currently in preparation.*

In addition, the current dynamic economic environment makes it very difficult for any forecasting model to predict in detail specific movements in employment growth, particularly in the medium or longer term, as there are many uncertainties to be considered.

As an example, notwithstanding the forecast fall in employment levels in the State's agriculture, forestry and fishing industry (presented above), employment in the industry could instead remain at current levels or possibly even grow if the industry experiences very favourable outcomes (for example, the Australian dollar falls; global food prices remain high; the State experiences ideal weather for growing conditions in coming years; and the industry is successful in retaining/gaining labour when in competition with the resources sector).

While the forecasts referenced in this paper have been compiled with due care and diligence, forecasts can differ due to differences in factors like data sources used; models and modelling techniques used; underlying assumptions; and many others. Also, the frequently changing level of expected resource sector investment and demand for labour in a State like Western Australia means employment forecasts can date very quickly.

Due care should therefore be exercised when interpreting forecast movements (particularly in respect to the detailed employment forecasts). The forecasts should be treated as indicative picture of what the State's future labour market may look like given expected growth trajectories (and on an assumption that the key downside risks to the State's economic growth do not eventuate).

[18] Monash is a detailed dynamic applied general equilibrium model of the Australian economy, which identifies 112 industries in 56 regions. For more detailed technical information, see: http://www.monash.edu.au/policy/elecpapr/ip-76.htm

Unless otherwise stated, historical employment data in this paper are based on the monthly Labour Force survey conducted by the Australian Bureau of Statistics (ABS). This survey is based on a sample of private dwellings (houses, flats, apartments, etc) and non-private dwellings (hotels, motels, institutions, etc), and covers the civilian population[19] aged 15 years and over. The sample size the ABS uses translates to a coverage of about 1 in 312 persons (0.32%) of the civilian population aged 15 years and over in Australia, with a somewhat higher coverage of approximately 1 in 295 persons (or 0.34%) in Western Australia. The survey results are then extrapolated up to independent estimates of the civilian population aged 15 years and over.

All data presented in this publication are derived from original estimates, smoothed using a 12 month average system where possible. In the case topics where data is released quarterly, such as employment by Industry, original figures are averaged over the previous four quarters. This method ensures the final data point of all topics in this paper is an average across the 2012–13 financial year.

Please note, this method of smoothing the original estimates is different to how labour force data is published by the ABS, which provides seasonally adjusted and trended data for most labour force survey topics. This may lead to small discrepancies when comparing this publication and ABS released materials.

For further information regarding the ABS Labour Force Survey and Statistics, please visit the ABS website.

Further note on annual averages

'Annual average' growth rates compare the most recent four quarters (one year's worth) of data against the corresponding four quarters worth of data from a year ago.

As the measure therefore incorporates eight quarterly observations, it reduces the level of volatility that arises with the two observations that get incorporated into a 'through the year' growth measure (for instance, a single data observation from one month, relative to that same month a year ago).

However, notwithstanding that annual averages reduce the month to month or quarter to quarter volatility typically associated with a 'through the year' (or monthly/quarterly) measure, they are usually not the best measure for picking turning points in data.

[19] This means the survey excludes members of the permanent defence forces, certain diplomatic personnel of overseas governments customarily excluded from census and estimated population counts, overseas residents in Australia, and members of non-Australian defence forces (and their dependants) stationed in Australia.

Appendix B: List of occupations with projected good employment growth for the period 2012–13 to 2016–17 in WA

ANZSCO Code	Occupation name
3129	Oth Building & Engineering Technicians
7122	Drillers/Miners/Shot Firers
3232	Metal Fitters & Machinists
7331	Truck Drivers
5111	Contract/Project Administrators
4221	Education Aides
1212	Crop Farmers
4231	Aged & Disabled Carers
2336	Mining Engineers
2211	Accountants
3513	Chefs
5511	Accounting Clerks
1335	Production Managers
3411	Electricians
1311	Advertising & Sales Managers
1499	Other Hospitality Retail & Service Managers
2544	Registered Nurses
2412	Primary School Teachers
6211	Sales Assistants (General)
1323	Human Resource Managers
3223	Structural Steel & Welding Trades
1421	Retail Managers
6311	Checkout Operators etc
2513	Occupational & Envrionmental Health Professionals
4315	Waiters
2247	Management/Organisation Analysts
1111	Chief Executives & Managing Directors
7129	Other Stationary Plant Operators
1399	Other Specialist Managers
2335	Industrial Mechanical & Production Engineers
7213	Forklift Drivers
1336	Supply & Distribribution Managers
2723	Psychologists
1112	General Managers
2324	Graphic & Web Designers
2333	Electrical Engineers
2254	Technical Sales Reps
2713	Solicitors
8112	Commercial Cleaners
5911	Purchasing/Logistics Clerks
2725	Social Workers
5311	General Clerks
1411	Cafe & Restaurant Managers
2223	Financial Investment Advisers etc
3312	Carpenters & Joiners
2231	Human Resource Professionals
3242	Vehicle Body Builders etc
5421	Receptionists