

# Ai GROUP Response

Inquiry into gender segregation in  
the workplace and its impact on  
women's economic equality

**Finance and Public Administration  
References Committee**

May 2017

## **About Australian Industry Group**

The Australian Industry Group (Ai Group) is a peak industry association in Australia which along with its affiliates represents the interests of more than 60,000 businesses in an expanding range of sectors including: manufacturing, engineering, construction, automotive, food, transport, information technology, telecommunications, call centres, labour hire, printing, defence, mining equipment and supplies, airlines, health, community services and other industries. The businesses which we represent employ more than one million people. Ai Group members operate small, medium and large businesses across a range of industries. Ai Group is closely affiliated with many other employer groups and directly manages a number of those organisations.

## Ai Group reply to Questions on Notice

### Question 1

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#### 1. HANSARD, Page 47

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**CHAIR:** Is that something you are actively working on with government at the moment or is that something that you are doing independently and it happens to intersect with the government agenda?

**Ms Vaccaro:** That is something we are doing more independently through our networks and forums—for example, our Women in Industry Forum and in our diversity inclusion networks.

**CHAIR:** Are you working with government on anything to do with gender pay?

**Ms Vaccaro:** Not on anything to do with gender pay, but we are working with government with regard to getting more females into STEM not just simply through the education piece that I mentioned but at all different levels. Our education and training team is working quite closely with government on that STEM piece in trying to get more females interested in that area and trying to assist the building of skills necessary as the economy goes forward in identifying those skills.

**CHAIR:** Did you say the office of the Chief Scientist was your principal partner in that project?

**Ms Vaccaro:** That was just one particular project. That was the particular project of how to get educators to communicate the STEM message to females in schools at the primary and secondary level. I can take the question on notice and get back to you with the further collaborations our education team might have with government on issues around science and technology. In specifically my work in the workplace relations area, we are communicating the business case more independently with our membership. You would appreciate that a lot of our larger members have diversity inclusion teams where this is a big focus for them. It is bringing our members together to talk and swap ideas—'What is working in your company? This is what is working in ours.' They are the networks we are supporting at the moment.

**CHAIR:** Thank you.

### Ai Group Response

Below is a list of Ai Group STEM (Science, Technology, Engineering, and Mathematics) activities, including initiatives supporting women in STEM:

#### Progressing STEM Skills in Australia

In 2015 Ai Group released the policy document, *Progressing STEM Skills in Australia*. The policy document highlighted the increasing importance of STEM skills in the Australian economy, provided employers' views and recommended actions. It highlighted particular concerns about the low levels of participation by girls in STEM-related subjects and called for different pedagogies to be used to engage female students in STEM curriculum.

#### Industry 4.0 Higher Apprenticeships project

This two-year Australian Government-funded pilot project is addressing STEM skill needs by incorporating emerging technologies in a work-based learning model. It involves 20 participants undertaking a new Diploma and Associate Degree of Applied Technologies, whilst wholly employed as trainees at Siemens Ltd. A particular focus was put on recruiting women into the pilot program.

### **Strengthening School – Industry STEM Skills Partnerships Project**

This two-year Office of the Chief Scientist-funded project has recently completed. It mapped current school - industry STEM skills programs Australia-wide resulting in a published index of programs. Specific programs for girls were identified during the project. Pilot programs and case studies were also undertaken to raise the participation of schools and industry in the provision of STEM skills.

### **Chair of Industry Advisory Group for Successful Work Integrated Learning in Science Project**

Ai Group chairs the Industry Advisory Group of a national Work Integrated Learning in Science project funded by the Office of Learning and Teaching, which is embedding participation in work for all science and mathematics higher education students.

### **Partner in CSIRO Scientists and Mathematicians in Schools (SMiS) program**

Ai Group is a partner in the CSIRO SMiS program which provides skilled volunteers as mentors who aim to make a difference in STEM education.

### **Forum on girls and women in STEM**

In May Ai Group has been invited to attend a Forum organised by the Invergowrie Foundation, a charitable trust whose mission is to advance the education of girls and women in Victoria. The Forum aims to initiate the development of a roadmap to leverage STEM education at all levels, particularly for women.

### **Other Ai Group initiatives**

As well as the collaboration with member Siemens, outlined above, Ai Group's Education and Training Policy team has collaborated with Lockheed Martin on STEM activities, has discussed STEM concerns with Google, and is currently discussing potential joint STEM skilling initiatives with CISCO.

## **Question 2**

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### **1. HANSARD, Pages 49–50**

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**Senator HANSON-YOUNG:** I am not sure if you were in the room or not, but the previous witnesses—and it was detailed in a number of the submissions—talked about where the future of work and the economy is going over the next several decades and the industries that are going to grow and the industries that we can already see are going into decline because of automation and technology. What is the Ai Group's view on that in terms of the sectors that primarily employ women currently? Do you agree that there is going to be a growth in those sectors into the future? If so, has your organisation mapped how you will ensure that women do not get squeezed out of those roles just because they might happen to then become a larger part of the economy?

**Ms Vaccaro:** I will answer that question with an introductory piece and then I will probably take the rest on notice.

**Senator HANSON-YOUNG:** Sure.

**Ms Vaccaro:** We are doing a lot of work on the internet of things, the fourth wave of the industrial revolution, how work is changing and what that is looking like. We are working with a whole range of industries on that. I will take that on notice so I can get you a more detailed answer to that question.

**Ai Group Response – Questions on Notice, Inquiry into gender segregation in the workplace and its impact on women's economic equality**

**Senator HANSON-YOUNG:** That would be good. In that response, could we have a bit of a snapshot. Obviously your group represents bigger businesses and industries in Australia but also smaller ones. Amongst those larger ones and those you have talked about being able to perhaps have their own programs because they are larger, how many of those larger industries, companies and corporations are going to be in the category where jobs are going to decline and how many are going to be in the category where jobs are going to grow? Does that make sense to you? It is so we can have a bit of a horizon view.

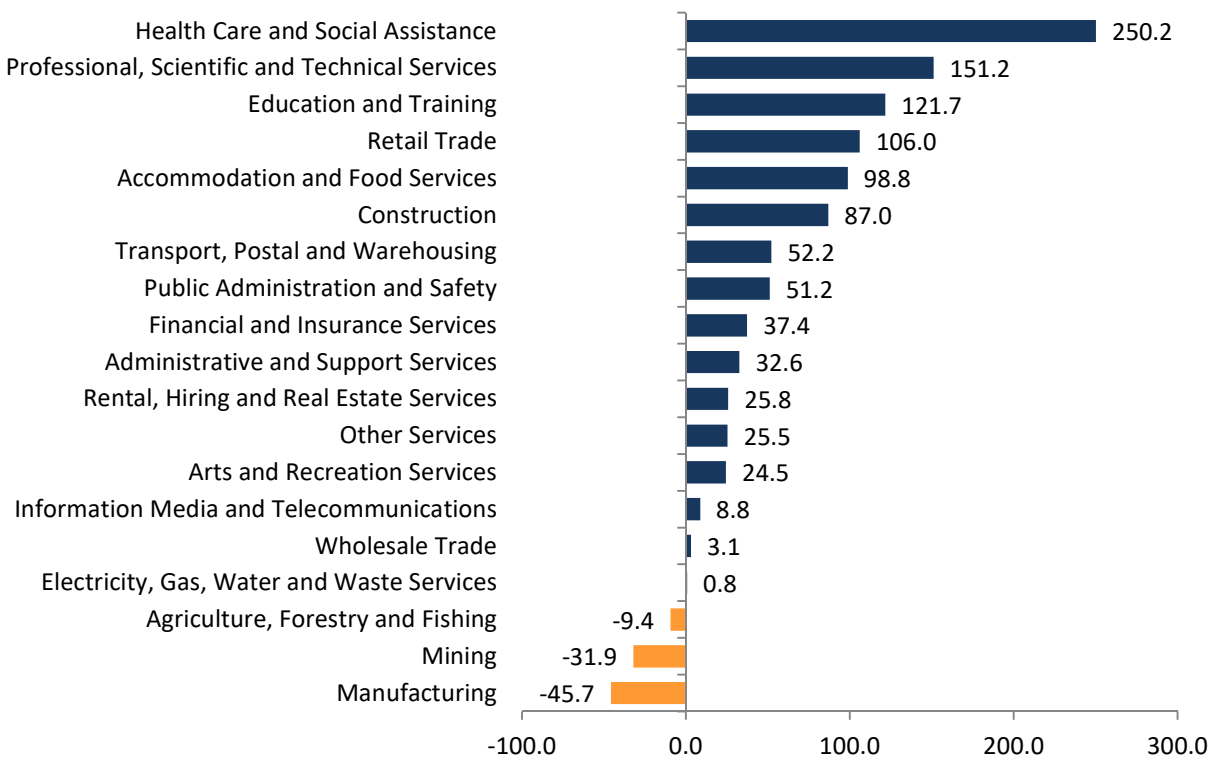
**Ms Vaccaro:** So you are looking for pretty much how the economy is moving in different industries?

**Senator HANSON-YOUNG:** Yes, thank you. I do not know whether the directors group would like to comment on any of those questions. I could see you scribbling away and I thought maybe you had something to tell me.

**Ai Group response**

The Department of Employment has released its *Employment Outlook to November 2020 (Attachment 1)*. The data details a projected increase in employment numbers in *Health Care and Social Assistance* and a decline in *Agriculture, Forestry and Fishing, Mining, and Manufacturing*. The below table is extracted from the Department of Employment report:

*Figure 2: Projected employment growth by industry – five years to November 2020 ('000)*





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# Employment Outlook to November 2020

*Based on the Department of Employment's 2016 employment projections*

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## Introduction

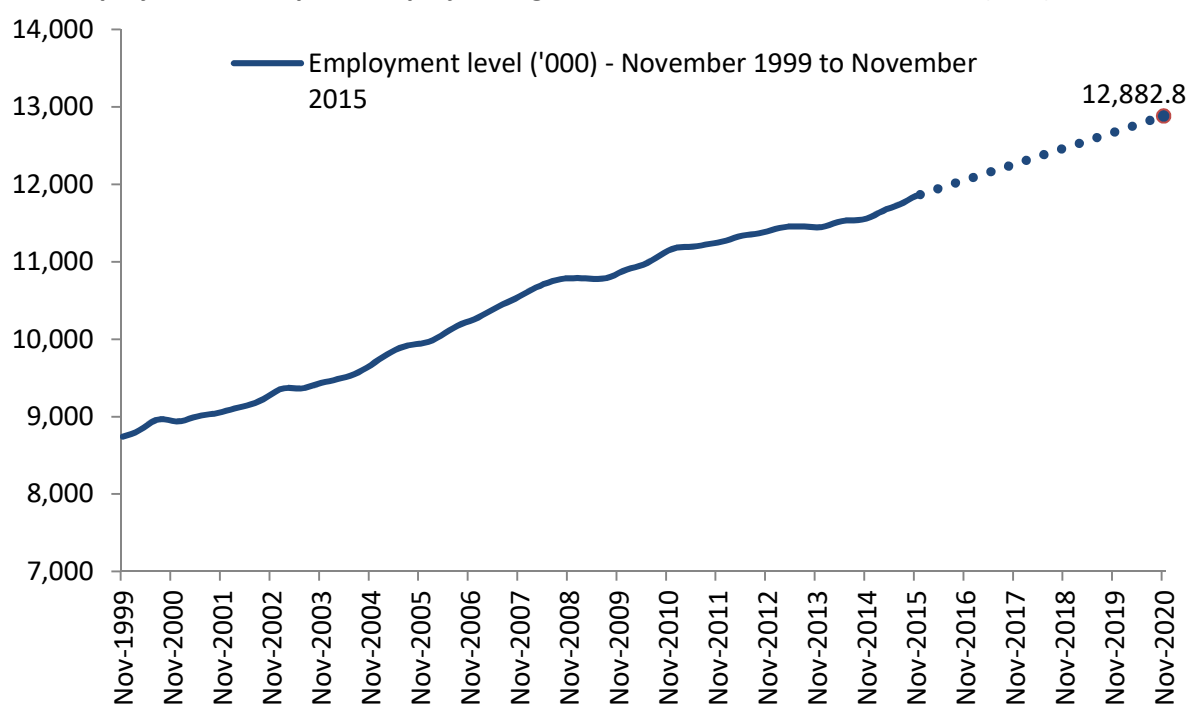
Following the peak of the Mining boom around mid-2011, employment growth, in the main, was relatively soft up until the beginning of 2015, when labour market conditions strengthened significantly. Over 2015, for instance, the level of trend employment increased by a robust 298,300 (or 2.6 per cent), well above the decade average rate of 1.8 per cent per annum at that time.

Over the first six months of 2016, however, the pace of employment growth has slowed considerably, with the level of employment rising by just 53,300 (or 0.4 per cent) to stand at 11,933,400 in June 2016.

Consistent with the ongoing structural shift towards services industries, a number of services industries have made particularly substantial contributions to employment growth over the five years to May 2016 (latest available industry employment data). Health Care and Social Assistance and Professional Scientific and Technical Services have accounted for just over half of the growth over this period. By contrast, employment has fallen most in Manufacturing (down by 70,000 or 7.3 per cent) and Wholesale Trade (28,400 or 7.0 per cent). The strong employment growth in Mining to August 2012 was largely reversed by subsequent employment declines, particularly through 2014, resulting in Mining contributing only 11,300 to employment growth over the last five years.

Looking ahead, total employment is projected to increase by 989,700 (8.3 per cent or 1.6 per cent per annum)<sup>1</sup> over the five years to November 2020. The distribution of this growth is projected to vary across industries, occupations, skill levels, states and territories, and regions. This report outlines the employment outlook across these categories, based on employment projections produced by the Department of Employment for the period November 2015 to November 2020.

**Figure 1: Employment level, past and projected growth to November 2020, Australia ('000)**

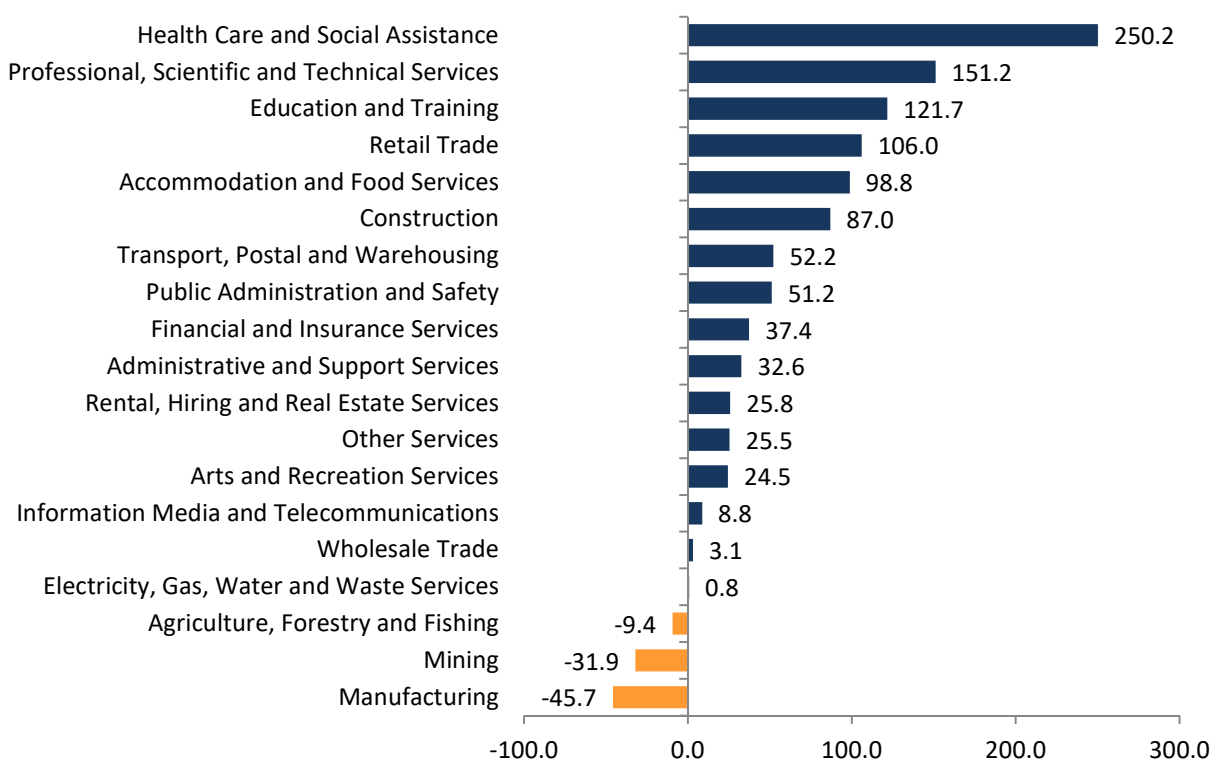


<sup>1</sup> All employment projections used in this analysis are Department of Employment Projections to November 2020 based on the forecasts and projections for total employment published in the December 2015 Mid-Year Economic and Fiscal Outlook (MYEFO).

## Projected employment growth by industry

Over the five years to November 2020, employment is projected to increase in 16 of the 19 broad industry groups, with declines in employment projected for Agriculture, Forestry and Fishing; Mining; and Manufacturing.

**Figure 2: Projected employment growth by industry – five years to November 2020 ('000)**

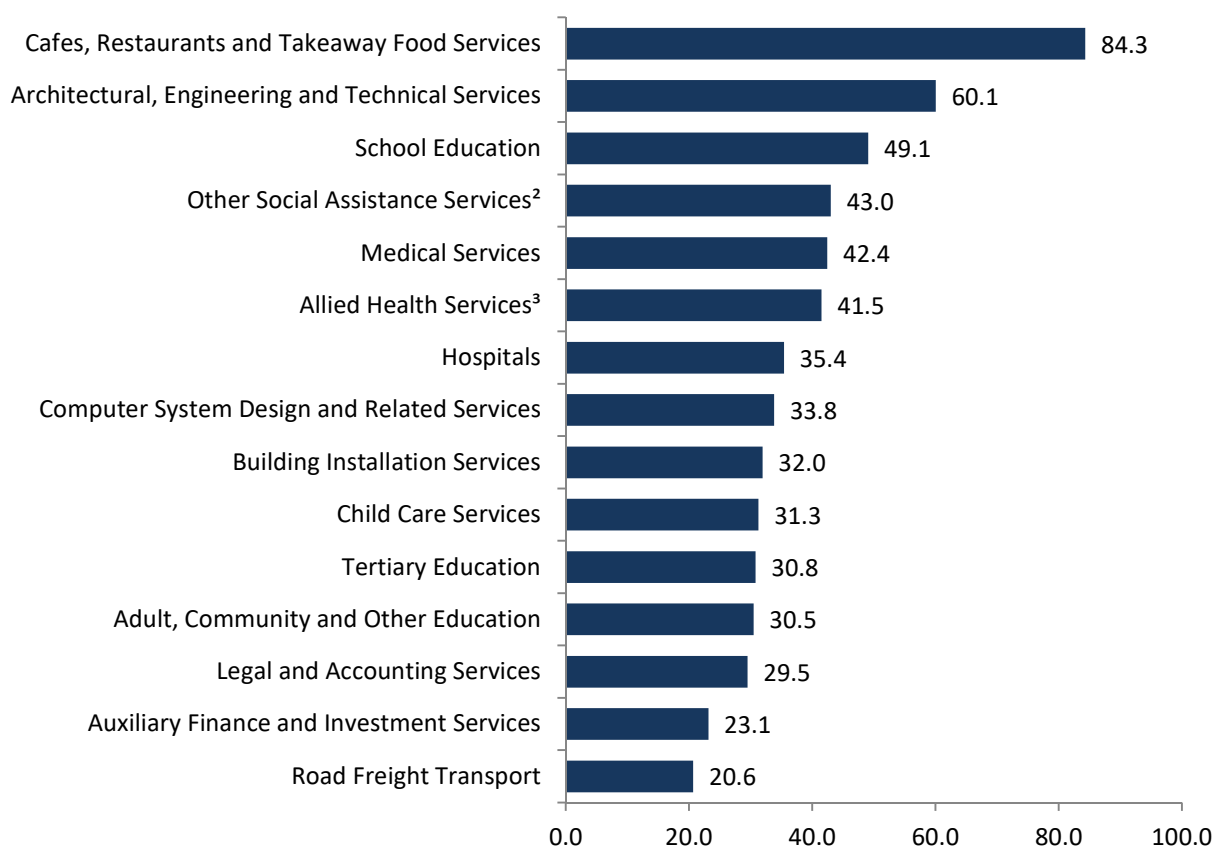


Health Care and Social Assistance is projected to make the largest contribution to employment growth (up by 250,200 or 16.4 per cent), underpinned by Australia's ageing population and increasing demand for childcare and home based care services as well as being stimulated by the implementation of the National Disability Insurance Scheme. The second largest contribution is from Professional, Scientific and Technical Services, where employment is projected to increase by 151,200 (or 14.8 per cent) reflecting ongoing strength in demand for business services, strong housing construction activity and infrastructure investment. The next largest increase in employment is projected to come from Education and Training (121,700 or 13.0 per cent) as it responds to continued growth in the school age population, followed by Retail Trade (106,000 or 8.4 per cent), reflecting low interest rates. Professional, Scientific and Technical Services; Education and Training; and Retail Trade are expected to receive a positive contribution from the lower Australian dollar stimulating net exports of business services, education and tourism. Together, these four industries are projected to provide almost two-thirds of the employment growth to November 2020.

By contrast, employment in manufacturing is projected to decline by 45,700 (or 5.3 per cent) in line with long term structural change in the labour market and plant closures by major car manufacturers. Employment in Mining is also projected to decline by 31,900 (or 14.1 per cent) over the five years to November 2020. This is against the backdrop of firms responding to falling commodity prices by cutting costs and reducing capital expenditure as projects are progressively completed and new mines transition to a less labour intensive operational phase. Employment in Agriculture, Forestry and Fishing is projected to fall by 9,400 (or 3.1 per cent), in line with its longer term history of employment declines driven by technology advancements.

At the more detailed sector level, Australia's largest employing industry sector - Cafés, Restaurants and Takeaway Food Services, also supported by domestic tourism and further increases in international arrivals, is projected to make the largest contribution to growth over the five years to November 2020 (up by 84,300 or 14.9 per cent). The top 15 projected growth sectors generally reflect the projections at the broader industry level, with sectors in Health Care and Social Assistance; Professional, Scientific and Technical Services; and Education and Training particularly prominent. Against the backdrop of Australia's ageing population, the implementation of the NDIS and increased demand for childcare services, large increases in employment are projected for Other Social Assistance Services<sup>2</sup> (up by 43,000 or 19.3 per cent), Medical Services (42,400 or 26.8 per cent), Allied Health Services<sup>3</sup> (41,500 or 22.2 per cent), Hospitals (35,400 or 8.9 per cent) and Child Care Services (31,300 or 19.2 per cent). Reflecting the broader shift to service industries and continuing strong demand for business services, professional services are projected to grow strongly across a wide range of service sectors such as Computer System Design and Related Services (33,800 or 17.3 per cent); Legal and Accounting Services (29,500 or 10.9 per cent); and Auxiliary Finance and Investment Services (23,100 or 21.4 per cent). Despite growth having slowed over the past five years due to the passing of the mining investment boom, there are strong employment growth projections for Architectural, Engineering and Technical Services (60,100 or 19.5 per cent) and Road Freight Transport (20,600 or 11.2 per cent). Strong growth is also projected for School Education (up by 49,100 or 10.3 per cent), Tertiary Education (30,800 or 13.0 per cent) and Adult, Community and Other Education (30,500 or 18.8 per cent), supported by above average growth in the school aged population and continuing growth in non-teaching staff and part-time workers in the sector.

**Figure 3: Top 15 industry sectors – ranked by projected growth to November 2020 ('000)**

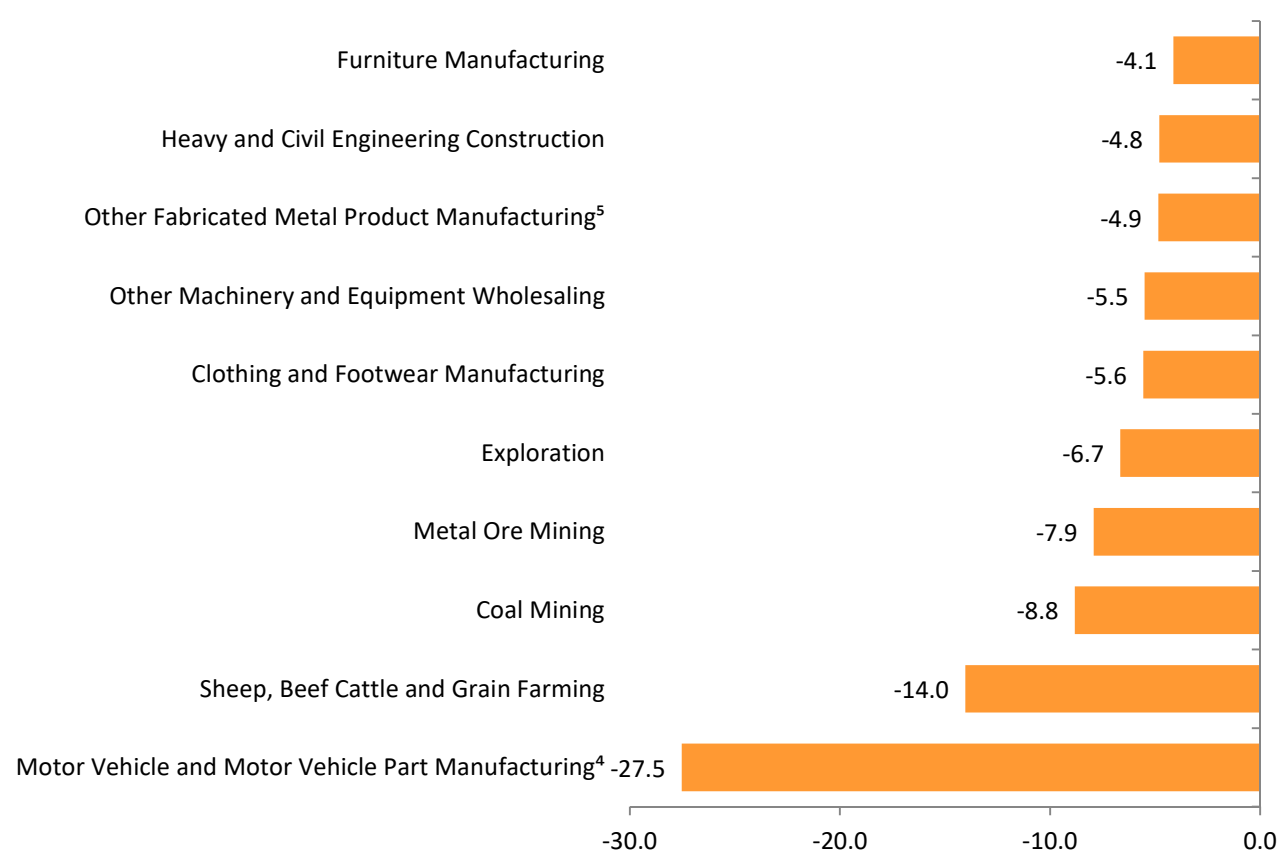


<sup>2</sup> Other Social Assistance Services includes Aged Care Assistance Services, Disabilities Assistance Services, Youth Welfare Services and Welfare Counselling Services.

<sup>3</sup> Allied Health Services includes Dental Services, Optometry and Optical Dispensing, Physiotherapy Services and Chiropractic and Osteopathic Services.

A number of industry sectors are projected to record a decline in employment over the five years to November 2020. The largest fall across all sectors is projected for Motor Vehicle and Motor Vehicle Part Manufacturing<sup>4</sup> (down by 27,500 or 58.3 per cent), following the announced plant closures by major car manufacturers. A number of other sectors in Manufacturing are projected to decline such as Clothing and Footwear Manufacturing (5,600 or 34.6 per cent), Other Fabricated Metal Product Manufacturing<sup>5</sup> (4,900 or 7.7 per cent) and Furniture Manufacturing (4,100 or 11.6 per cent). Employment is projected to decline for a number of mining-related sectors. The largest decline is projected for Coal Mining (8,800 or 20.5 per cent), reflecting weak global demand. Employment is also projected to decline in Metal Ore Mining (7,900 or 11.9 per cent), Exploration (6,700 or 18.0 per cent), Heavy and Civil Engineering Construction (4,800 or 6.5 per cent) and Other Mining Support Services<sup>6</sup> (3,000 or 15.4 per cent). Sheep, Beef Cattle and Grain Farming is also projected to record one of the largest falls over the period (14,000 or 16.3 per cent).

**Figure 4: Bottom 10 industry sectors – ranked by projected decline to November 2020 ('000)**



<sup>4</sup> Motor Vehicle and Motor Vehicle Part Manufacturing includes the manufacture of cars, vans, buses, trucks, trailers and caravans, as well as motor vehicle engines, bodies, electrical components and motor vehicle parts not elsewhere classified.

<sup>5</sup> Other Fabricated Metal Product Manufacturing includes metal coating and finishing and the manufacturing of products such as springs, wires, nuts, bolts, screws and rivets.

<sup>6</sup> Other Mining Support Services includes directional drilling and redrilling; mining, draining and pumping services; and oil and gas field support services.

## Projected employment growth by occupation

Employment is projected to increase in seven of the eight major occupational groups over the five years to November 2020. Consistent with structural shift toward the service industries, very strong employment growth is projected to continue for Professionals (up by 396,400 or 14.5 per cent) and Community and Personal Service Workers (231,600 or 19.0 per cent). Together, these two occupational groups are expected to account for well over half of the total growth in employment over the next five years. Above average growth is projected for Managers (140,500 or 9.2 per cent) and Sales Workers (104,900 or 9.3 per cent). Below average growth is projected for Technicians and Trades Workers (95,900 or 5.5 per cent) while much weaker growth is projected for Clerical and Administrative Support Workers (27,300 or 1.6 per cent) and Machinery Operators and Drivers (25,500 or 1.0 per cent). The employment level of Labourers is projected to fall by 14,600 (or 1.3 per cent) in the five years to November 2020.

**Figure 5: Projected employment growth to November 2020 ('000), by major occupational group**

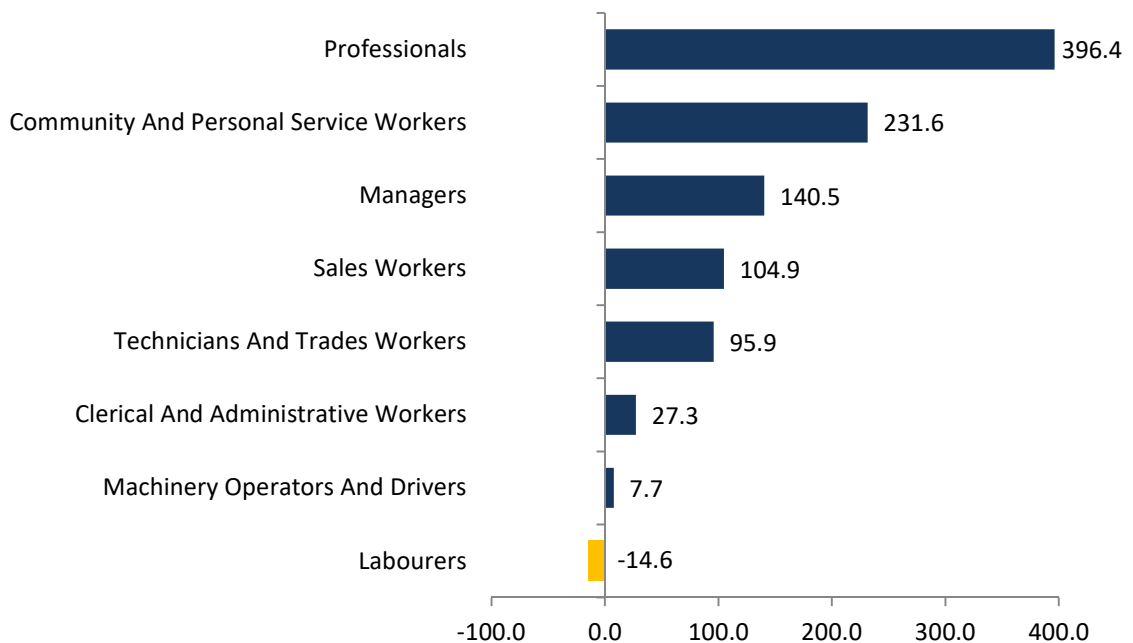
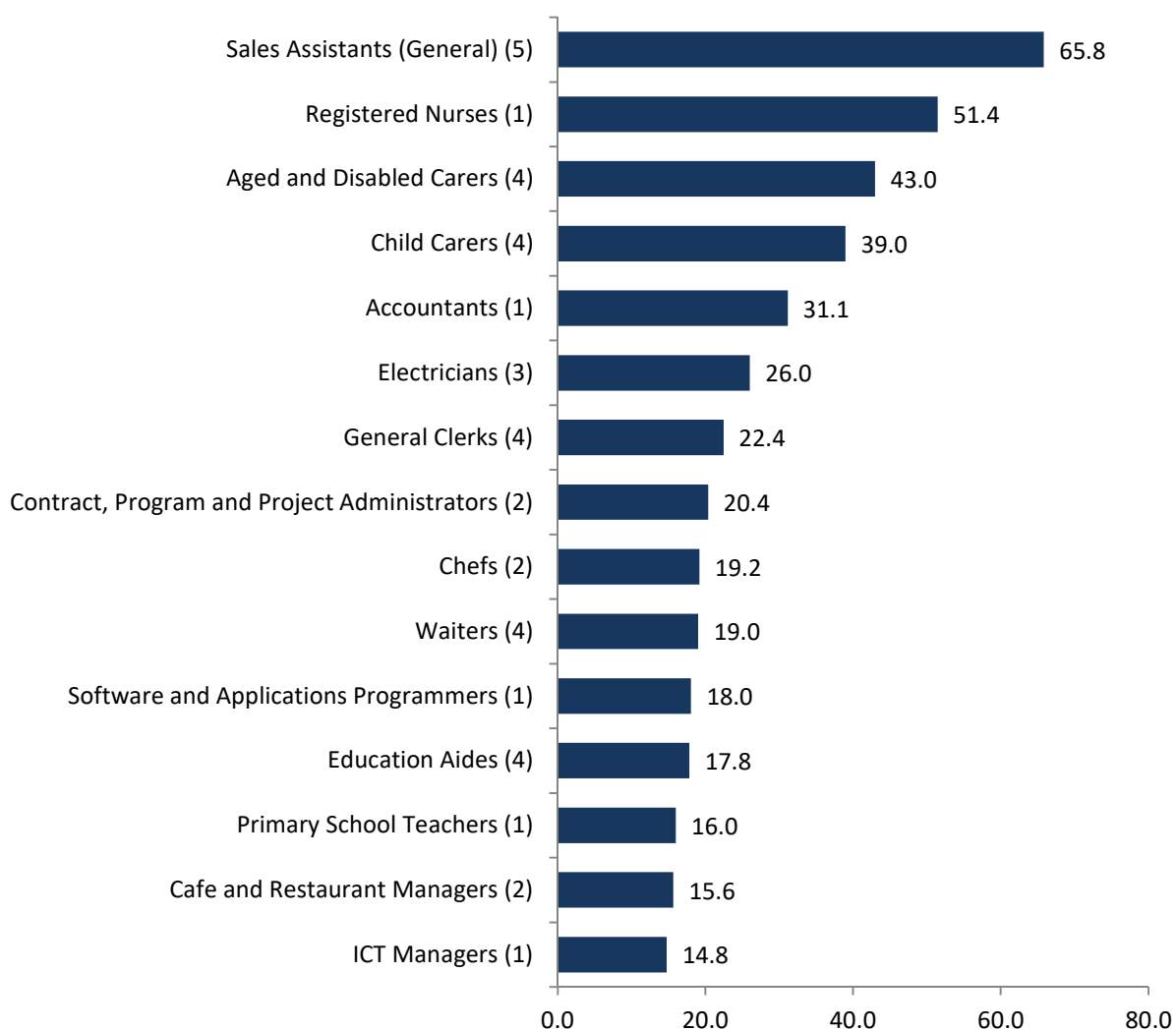


Figure 6 shows the 15 occupations that are projected to contribute the most to employment growth over the five years to November 2020. Employment in most of these occupations is concentrated in industries with above average employment growth projections. The largest projected increase is for Sales Assistants (General) (up by 65,800 or 11.9 per cent), the bulk of whom are employed in Retail Trade. Healthcare workers and carers are strongly represented with employment projected to increase by 51,400 (or 20.0 per cent) for Registered Nurses, 43,000 (or 30.6 per cent) for Aged and Disabled Carers, and 39,000 (or 26.1 per cent) for Child Carers.

**Figure 6: Top 15 occupations (skill level<sup>7</sup>) – ranked by projected growth to November 2020 ('000)**



In contrast, employment is concentrated in industries that are projected to decline for only three of the 10 occupations over the five years to November 2016. That being said, the large majority of Drillers, Miners and Shot Firers, projected to record the largest decline in employment (12,300 or 25.3 per cent), are employed in Mining. Overall, the majority of the occupations projected to decline fall within the lowest skill levels, with seven of the bottom 10 occupations have a skill level commensurate with a Certificate III or lower (for example Product Assemblers and Bookkeepers). The remaining three of the 10 bottom occupations have a skill level commensurate with Certificate IV or Certificate III with at least two years on-the-job training (Secretaries, Structural Steel and Welding Trades Workers and Metal Fitters and Machinists).

<sup>7</sup> Skill levels, as defined by the ABS, are outlined in the *Projected employment growth by skill level* section.

## Projected employment growth by skill level

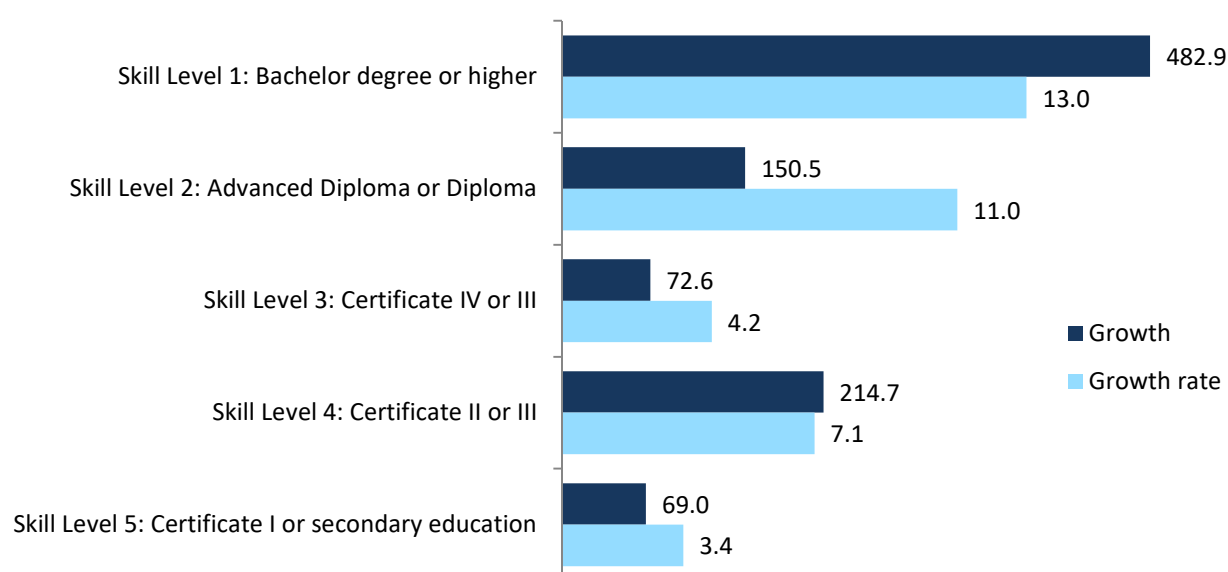
Over the past few decades the Australian economy has continued to shift away from lower skilled jobs towards a higher skilled, service based economy. Employment in higher skilled occupations has grown strongly and those with higher qualifications have experienced lower unemployment rates. The evolution of the labour market towards higher skilled occupations is projected to continue over the five years to November 2020, with the strongest employment growth, in percentage terms, projected for those with Diploma or higher qualifications. This highlights the importance of educational attainment not only for those in the workforce seeking career advancement, but also for potential first time labour market entrants looking to improve their employment prospects.

The Australian Bureau of Statistics (ABS) classifies occupations according to five skill levels commensurate with the following qualification(s)<sup>8</sup>:

- Skill level 1: Bachelor degree or higher qualification
- Skill level 2: Advanced Diploma or Diploma
- Skill level 3: Certificate IV or Certificate III with at least two years on-the-job training
- Skill level 4: Certificate II or III
- Skill level 5: Certificate I or secondary education

Employment for skill level 1 occupations is projected to increase strongly by 482,900 (or 13.0 per cent), with skill level 2 also projected to grow by 150,500 (or 11.0 per cent). While Employment for skill level 4 is projected to grow at a lower rate (7.1 per cent) than all occupations (8.3 per cent), its employment is projected to increase by 214,700 providing lower skilled opportunities for job seekers. More subdued growth is projected for skill level 3 (72,600 or just 4.2 per cent), with weak or negative growth projected for several occupations within this classification, including for some Automotive and Engineering Trades, and Printing, Clothing and Wood Trades, as well as for Secretaries and Personal Assistants. The weakest employment growth is projected for skill level 5 (up by 69,000 or 3.4 per cent).

**Figure 7: Projected employment growth to November 2020 ('000 and per cent), by skill level**



<sup>8</sup> In some cases relevant work experience may be a substitute for formal qualifications, or relevant work experience and/or on-the-job training may be required in addition to formal qualifications and training.

## Projected employment growth by state and territory

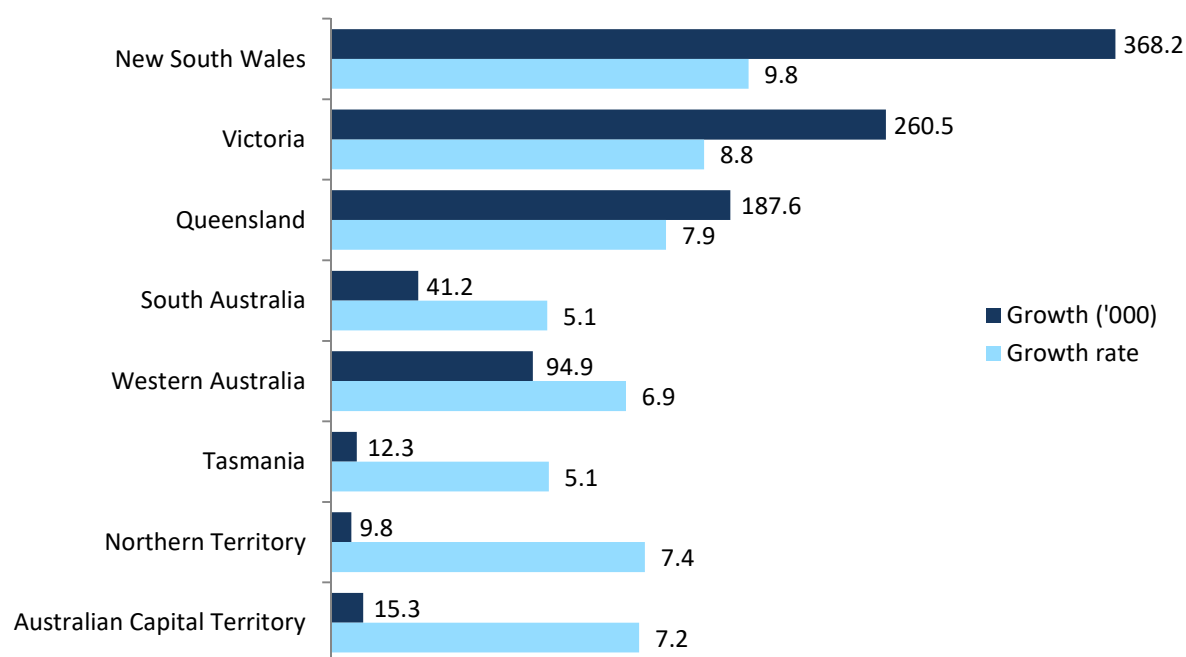
Over the five years to November 2020, employment is projected to increase in all states and territories. The relative strength in projections across states reflects the ongoing structural shift in the labour market. New South Wales and Victoria, with high concentrations of service industries, now provide the largest contribution to growth in both percentage and absolute terms. The contraction of mining-related activity has dampened the growth of resource-rich states which are projected to contribute below average growth in employment over the next five years.

New South Wales, Victoria and Queensland are projected to make the largest contributions to employment growth over the five years to November 2020. Employment is projected to increase by 368,200 (or 9.8 per cent) in New South Wales and by 260,500 (or 8.8 per cent) in Victoria. Queensland, where weakness in the mining industry is expected to be outweighed by growth in construction and tourism, is projected to grow by 187,600 (or 7.9 per cent), a little below the national average of 8.3 per cent.

Against the backdrop of an expected decrease in Mining investment, employment growth in Western Australia and the Northern Territory is expected to slow from the rates recorded over the past five years. Employment is projected to grow by less than the national average with increases of 9,800 (or 7.4 per cent) in the Northern Territory and 94,900 (or 6.9 per cent) in Western Australia over the five years to November 2020. The Australian Capital Territory (up by 15,300 or 7.2 per cent) is also projected to record a below average rate of growth, constrained by a projected slower rate of growth in Public Administration and Safety.

Employment growth is projected to be the most subdued in South Australia (41,200 or 5.1 per cent) and Tasmania (up by 12,300 or 5.1 per cent) over the five years to November 2020. While in line with the persistence of softer labour market conditions in these states, it is a faster growth rate than that recorded over the five years to November 2015.

**Figure 8: Projected employment growth by state/territory – five years to November 2020 ('000 and per cent)**



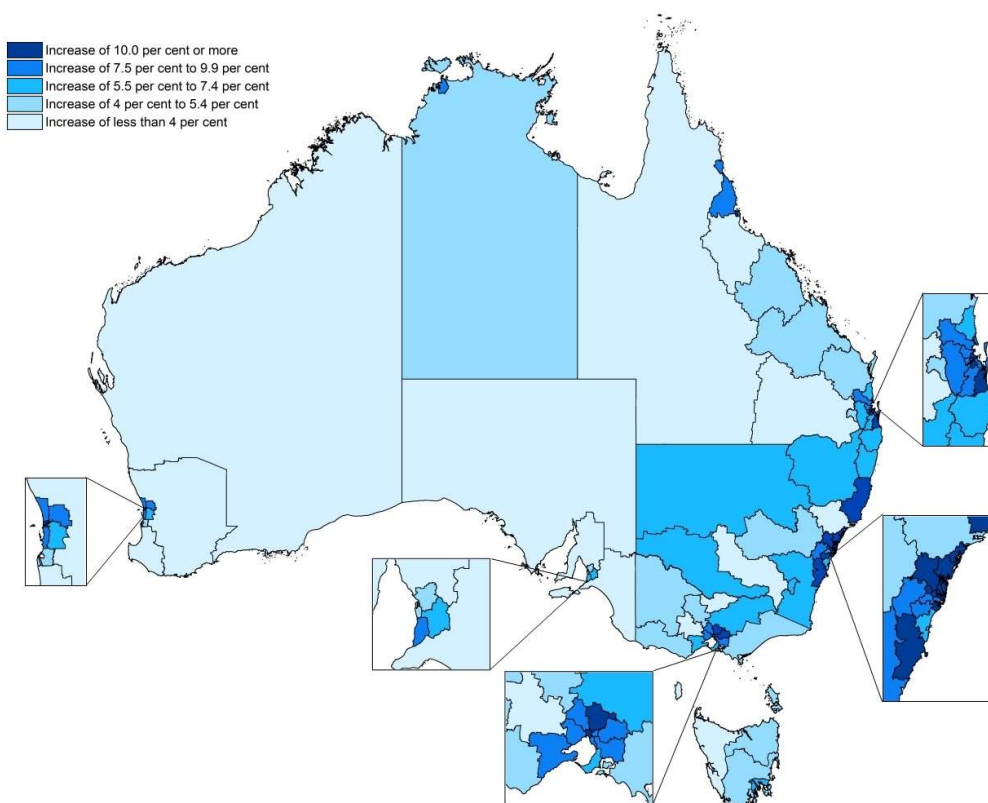
## Projected employment growth by region

The geographic pattern of projected employment growth is consistent with structural changes in the labour market favouring service industries which tend to be concentrated in eastern capitals. It is also consistent with the direct and indirect effects of the contraction of mining related activity dampening growth in the resource rich states despite low interest rates and depreciation in the Australian Dollar.

Employment is projected to increase in all but one of the ABS SA4 Regions over the five years to November 2020 with only South Australia - Outback projected to decline. Employment in metropolitan areas is projected to increase by 9.5 per cent over the period, compared with 5.8 per cent projected for regional Australia. Of the metropolitan areas, employment growth is projected to be strongest in Greater Sydney (up by 280,400 or 11.1 per cent) and Greater Melbourne (226,100 or 9.8 per cent), while below average growth is projected for Greater Adelaide (37,800 or 5.9 per cent) and Greater Hobart (6,500 or 6.1 per cent). Of the regional areas, employment growth is projected to be strongest (in percentage terms) in regional NSW (87,800 or 7.1 per cent) and regional Queensland (79,900 or 6.7 per cent). Employment growth is projected to be weakest in Regional Western Australia (4,900 or 1.7 per cent), followed by Regional South Australia (3,400 or 1.9 per cent).

At the more detailed regional (SA4) level, employment growth is projected to be strongest (in percentage terms) in Sydney - North Sydney and Hornsby (up by 35,200 or 15.1 per cent) and Sydney - Eastern Suburbs (23,600 or 14.4 per cent), while the largest projected increases in employment (in thousands) are for Melbourne - Inner (48,400 or 13.9 per cent) and Gold Coast (35,700 or 11.4 per cent). By contrast, employment is projected to fall by 300 (or 0.7 per cent) in South Australia - Outback and very weak growth is projected for Queensland - Outback (100 or 0.2 per cent) and Western Australia - Wheat Belt (600 or 0.9 per cent).

**Figure 9: Projected employment growth by region – five years to November 2020 (%)**



## Background and methodology

Each year, the Department of Employment produces employment projections by industry, occupation, skill level and region for the following five years, the latest being the five years to November 2020. These projections are designed to provide a guide to the future direction of the labour market. However, like all such exercises, they are subject to an inherent degree of uncertainty. Caution should be exercised when using these projections. All efforts have been made to ensure these projections are as accurate as possible, however data used is inherently volatile and there are a large number of very small series.

The projections have been derived from best practice time series models that summarise the information that is in a time series and convert it into a forecast. The projections are made by combining forecasts from autoregressive integrated moving average (ARIMA) and exponential smoothing with damped trend (ESWDT) models, with some adjustments made to take account of research undertaken by the Department of Employment and known future regional and industry developments. These projections are produced using detailed Australian Bureau of Statistics (ABS) employment data from the November 2015 Labour Force Survey. As such, they do not reflect labour market developments since November 2015. The projection for total employment growth is consistent with the Government's forecasts and projections for total employment growth, as published in the latest Mid-Year Economic and Fiscal Outlook (MYEFO).

The projections for total employment by state and territory are not directly comparable with the forecasts and projections published in state and territory budgets, which typically have shorter forecast horizons and different base periods. The Department of Employment's projections are also medium term and point-in-time projections, and are thus not indicative of expected employment growth in the short term.

Further information on Department of Employment's projections, including downloadable spreadsheets, can be found at: <http://lmip.gov.au/default.aspx?LMIP/EmploymentProjections>.

Additional labour market information can be obtained from the following links:

- Job Outlook ([joboutlook.gov.au](http://joboutlook.gov.au))
- Labour Market Information Portal (LMIP) (<http://lmip.gov.au>)
- Australian Jobs ([http://docs.employment.gov.au/system/files/doc/other/australian\\_jobs\\_2015.pdf](http://docs.employment.gov.au/system/files/doc/other/australian_jobs_2015.pdf))

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Labour Market Research and Analysis Branch

Department of Employment

August 2016