

Submission to the Senate Select Committee on the Future of Work and Workers

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1. Introduction

The Australian labour market is undergoing rapid change, fuelled by a combination of disruptive markets and technologies, the ageing population and workforce globalisation. New jobs and markets are being created and new ways of doing business emerging every day.

As consumers, we now have access to other people's assets and skills like never before through online platforms such as Uber, Airbnb, Airtasker, Upwork and Fiverr. And as producers, we have the ability to sell our assets and skills through these channels and secure work or additional income that we may have otherwise never been able to.

As new technologies take over some of the tasks previously performed by labour and industries move offshore, the service sector continues to forge ahead as the major player in Australia's future of work. Our ageing and ailing population is also fuelling this shift, with massive increases in the type of jobs that are needed to support these social changes.

Having a job that provides an adequate wage and security is a right that should be available to everyone. It can mean the difference between poverty and just getting by, being able to lead an independent life, and to just feel useful and belong somewhere.

Is the future of work really all about robots? Are we placing too much emphasis on technology and not enough on the quality of jobs that we should strive to create in our future workplaces? Will we be happy and healthy in our jobs? Is work becoming more precarious? What type of jobs will give workers the security and stability that they need?

Is now the time for workers to return to education and begin re-skilling? What kinds of careers can our children expect and where should they focus their education? And will robots really take our jobs?

The sixth report in the Bankwest Curtin Economics Centre's *Focus on the States* series, [Future of Work in Australia: Preparing for tomorrow's world](#), seeks to provide insights into a number of these questions. The report was published in April 2018, and examines the way in which the organisation of work is changing – from workforces to workplaces, changes in the quality of jobs over time, how technology is affecting labour market opportunities, and how best to prepare for the future.

This submission brings together the main findings from the BCEC's Future of Work report. The analysis presented in the report draws on a wide range of data sources, including the ABS Census, OECD and ABS labour market statistics, the Household Income and Labour Dynamics in Australia (HILDA) survey, the World Values Survey, as well as a unique new composite index of precarious work developed by

the BCEC. Selected figures and tables are included in this submission, with the full suite of charts and tables available through the link to the [Future of Work in Australia: Preparing for tomorrow's world](#) report.

The submission covers the following several areas relevant to the inquiry's terms of reference:

- a. the future earnings, job security, employment status and working patterns of Australians;
- b. the different impact of that change on Australians;
- c. the wider effects of that change on inequality, the economy, government and society;
- d. the adequacy of Australia's laws, including industrial relations laws and regulations, policies and institutions to prepare Australians for that change;
- e. any related matters.

2. Changes in employment

2.1 We are (still) a society built around work

Work is important. It provides us with most of our income, occupies a significant part of our time, provides friendships, can be a source of satisfaction or stress, can be intellectually or physically challenging – or dull and boring. Our work also forms a large part of our identity. If work changes, then we change, and society changes too.

Some trends in labour participation rates are long-standing, and we can be reasonably confident they will continue into the future. But other features are less certain.

At an aggregate level, more of us are employed than ever before. The labour force participation rate in Australia is around 77 per cent, six percentage points above the OECD average, and has been rising for decades – primarily driven by increases in female labour force participation.

However, while participation may be increasing, the number of hours we spend at work each week has been falling overall. Full-time workers are working less – since 1999, men have reduced their weekly full-time hours by 2.7 hours per week, while women have dropped their hours by 1.6 hours per week.

2.2 Men and women converge

Labour force participation trends are not the same for men and women. The entry of women into the labour market has been a key ongoing feature of society for over 30 years, with female labour force participation rising from 40 to 60 per cent. Male participation has fallen over the same period from 80 to 70 per cent. If these trends continue – and there is no reason to suspect they won't – then there may well be a convergence between female and male labour force participation rates in the relatively near future, for the first time in our history.

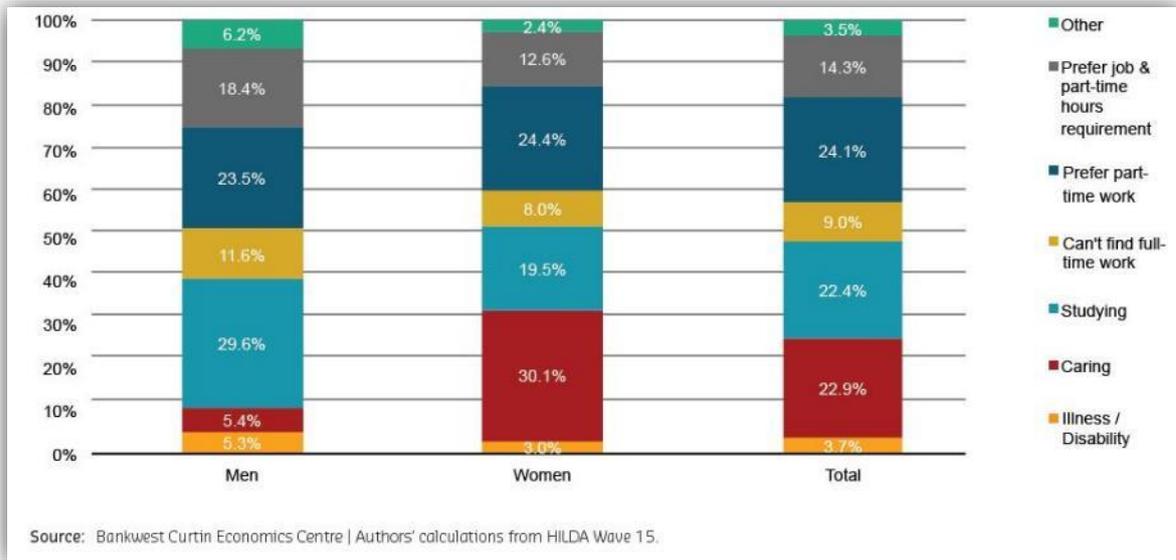
However, the overall pattern of participation by men and women is not the same. Almost half (47%) of women work part-time, compared to less than one in five (18%) of men. But things are changing even on this front, and the likelihood that they will completely converge is slim, at least in the short to medium term.

2.3 Part-time work: the new normal?

Part-time work has doubled from 15 per cent of all employees in 1978 to 31 per cent in 2018. This is mainly a result of women entering the workforce, but the trend is upwards for both men and women. Indeed, it is growing faster for men (from 5% to 18% since 1978).

Traditionally, the main reason women worked part-time was because of caring duties, and while this is still the case, its extent is declining (35% in 2002, 30% in 2015). For men, studying was the main reason for working part-time, but that too has dropped by around five percentage points. For both sexes, a preference for part-time work has been increasing as the main reason given for why they are working part-time rather than full-time. Not being able to find full-time work is not a significant factor. Instead, it appears that people are finding the flexibility afforded by part-time work, and the opportunity it provides for leisure and other pursuits, may be more important.

Figure 1: Main reason for working part-time rather than full-time, 2015



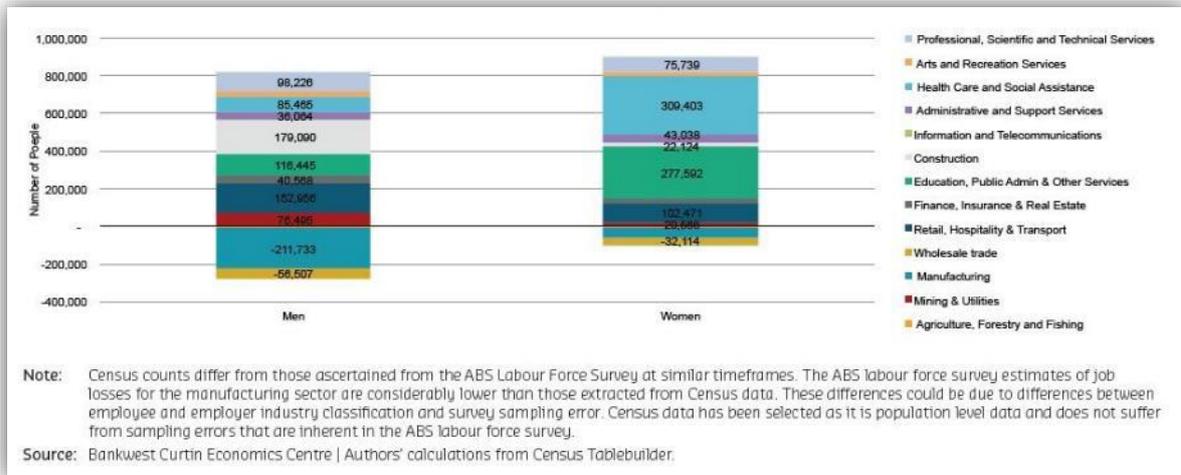
2.4 Female dominated sectors are growing faster

A key reason for the contrasting trends in men's and women's employment is to be found in Australia's shift to a service economy. In essence, industry sectors in which women dominate are growing fastest, while the situation for men is more mixed.

Health Care and Social Assistance is the biggest growth sector, reflecting our ageing population and the growing demand for childcare, aged care and disability services. Education, Public Administration and Other Services have also grown rapidly. Combined, these sectors added almost 800,000 jobs between 2006 and 2016 – and just under 75 per cent of these went to women.

By contrast, male dominated industries had contrasting fortunes. Manufacturing continued its long-term slide and lost 270,000 jobs (almost 80% of whom were men), but this was balanced out by growth in Construction, Mining and Utilities, which added around 300,000 jobs (over 90% men). But this only means male-dominated industries stood still overall, while female-dominated industries grew substantially.

Figure 2: Job losses and gains by sector, men and women, 2006 to 2016



Further, Construction and Mining are also subject to greater uncertainty, relying on the state of the economy and the level of government infrastructure spending, whereas the care sector is likely to continue to grow irrespective of the economy, as demand for these services grows.

The impact of automation is also likely to be greater in Mining, making men potentially more vulnerable in the labour market. This makes the issue of the potential for Australia to grow its own advanced manufacturing and ICT-based industries even more important.

2.5 Rise of the professionals

Occupational changes largely reflect industry changes. There is evidence of a fall in traditional manual occupations such as technicians and trades, labourers and machinery operators and drivers. Employment of personal assistants and secretaries has also dropped dramatically. The big winners over the past twenty years have been professionals, who now comprise the largest occupational grouping, at almost 24 per cent. They have overtaken trades and technicians, who dropped from 17.8 per cent to 14.4 per cent over the same period.

Figure 3: Top ten growth occupations (volume), 2006 to 2016

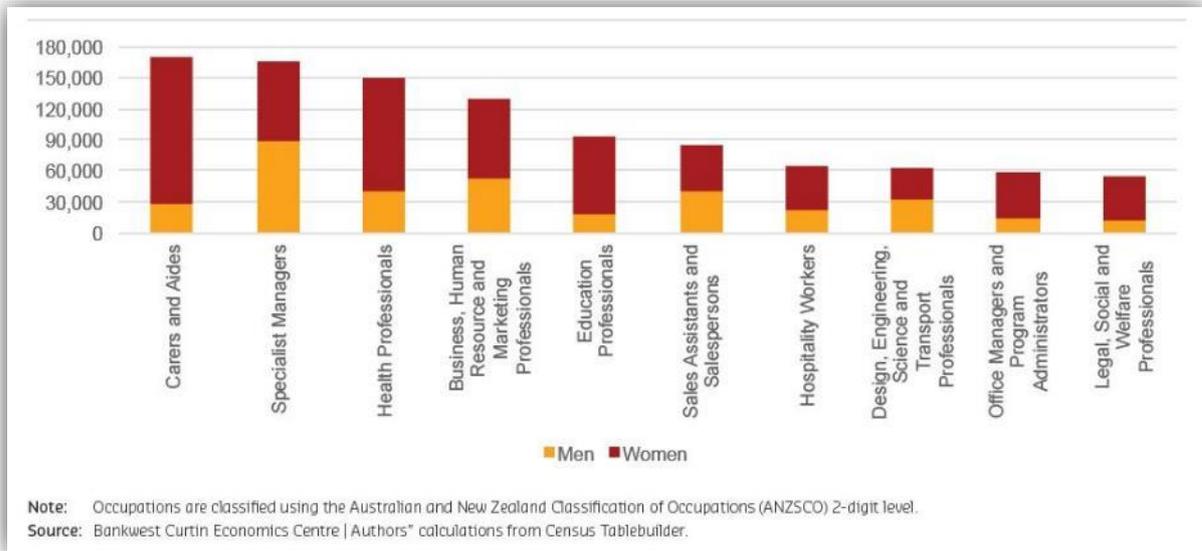
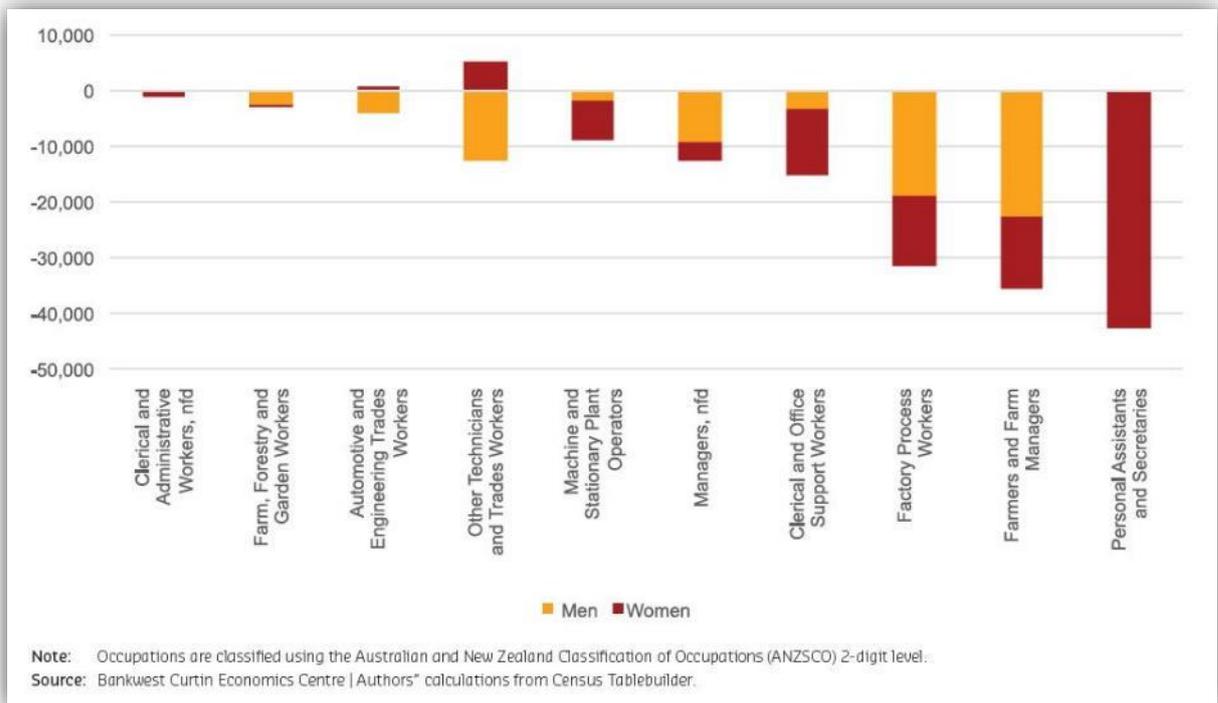


Figure 4: Bottom ten growth occupations (volume), 2006 to 2016



2.6 Job polarisation?

One of the primary concerns of what the future of work will look like, is the hollowing out of medium-skilled workers. While there has been a decrease in predominately medium-skilled occupations over time, such as technicians and trade workers, the rapid growth in community and personal service workers (a combination of low-medium skilled workers) is likely to go some way towards narrowing the division between high and low-medium skilled workers. However, the gendered nature of changes in medium-skilled workers needs to be considered, with far more women occupying community and personal service worker jobs than men.

2.7 The Gig Economy and more flexible working patterns

The gig or freelance economy has received a large amount of attention, but there is an absence of compelling evidence on the size of the freelance sector. Recent estimates from Upwork suggesting that 30 per cent of Australian workers are freelancing are likely to overstate the scale of the market. The prevalence of independent contractors - some 1.2 million workers nationally on latest estimates - has grown among younger cohorts, but is an imperfect proxy for freelancing, and likely reflects more the greater demand for outsourcing and contract work by Australian businesses.

Similarly, working from home and multiple job holdings - two measures that may offer some signals of a growing freelancing sector - have not increased substantially. Women are more likely to hold multiple jobs, as are younger workers, but less than 1 in 10 workers overall are in this position. Yet anecdotes of these forms of work abound, and it is unclear whether it is a case of statistics failing to catch up with reality or whether Australia is yet to really experience an increase in new forms of employment. There is also a lack of good research on the extent to which the boundaries between 'work' and 'home' are being blurred through the rapid adoption of smart phones and social media. This reinforces the need for time-use and other surveys to be undertaken and for more use of data analytics in order to find out what is really happening.

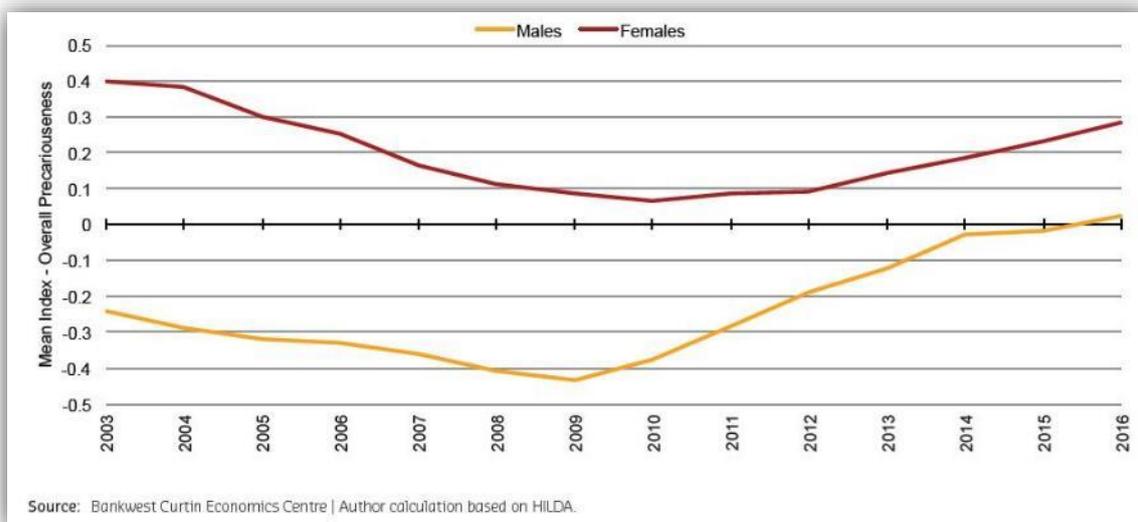
3. Quality of jobs

3.1 *There are signs that precarious employment is increasing*

The extent to which work is becoming precarious is an issue that has been attracting increasing attention. The BCEC has developed a precariousness index using HILDA data based on a range of dimensions of employment relating to job insecurity, control over working hours and conditions, and the extent of employment protections and other working conditions, especially relating to leave entitlements.

The prevalence of precarious employment has been rising more rapidly for men than women since the end of the Global Financial Crisis (GFC). The calculated index showed that the overall state of the economy has a significant impact on the level of precariousness in the labour market. Between 2003 and 2009, precariousness dropped, but since then it has increased. For men, precariousness is now above 2003 levels, and while still below the levels for women, the two are beginning to converge.

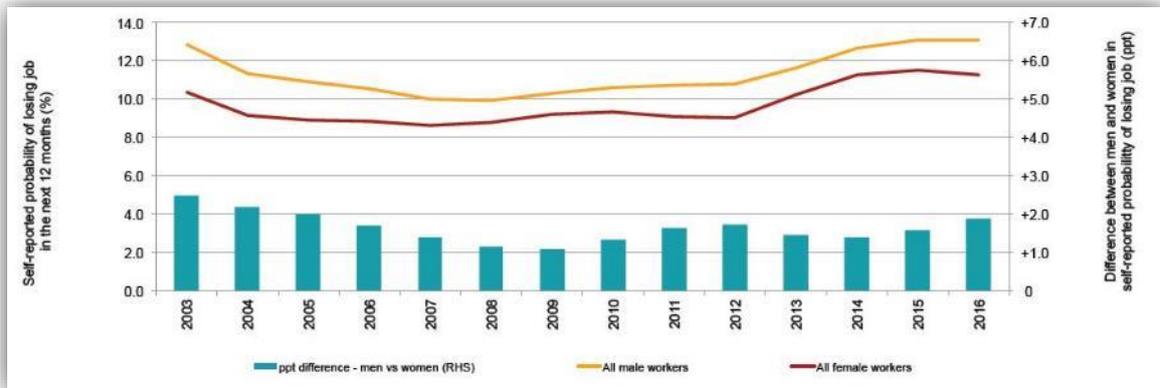
Figure 5: Precariousness across genders, 2003 to 2016



The major source of this trend is an increase in the self-reported probability of losing one's job, and accompanying dissatisfaction with job security. This is the case especially for men, and among the lower-skilled workforce. Despite relatively stable and low levels of unemployment, people seem to be increasingly concerned that their jobs are at risk.

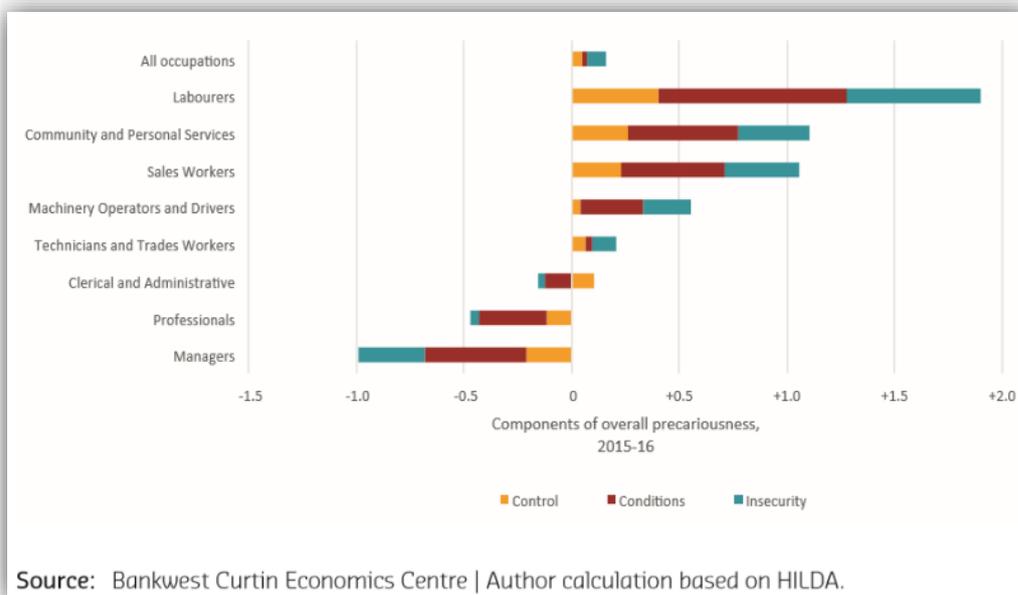
The same holds true for satisfaction with job prospects, which dropped significantly post-GFC and has yet to recover.

Figure 6: Worker's self-reported risk of losing job: by gender, 2003 to 2016



The distribution of precariousness across occupations and industries is as expected, with the industry people work in generally being a more significant influence than their occupation. Higher skill occupations such as professionals and managers have more stable employment, while labourers, sales workers, community workers, personal services workers, machinery operators and drivers are typically in the most precarious job circumstances.

Figure 7: Drivers of precarious employment: by domain and occupation, 2015-16



Notes: The BCEC precarious employment index is centred on the overall index average across all occupations and industries (as represented by zero). Negative numbers correspond to lower employment precarity relative to the average, positives convey greater precarity. Occupations are sorted in descending order of overall precariousness.

Table 1: Precarious employment by industry and occupation: 2015-16

| | Managers | Professionals | Technicians and Trades | Community and Personal Care | Clerical and Administrative | Sales Workers | Machinery Operators | Labourers | All occupations |
|--|----------|---------------|------------------------|-----------------------------|-----------------------------|---------------|---------------------|-----------|-----------------|
| Accommodation and Food Services | 0.15 | | 1.25 | 3.73 | 1.13 | 3.67 | | 4.22 | 2.70 |
| Agriculture, Forestry and Fishing | -0.27 | | 3.42 | | | | 2.36 | 3.58 | 2.28 |
| Arts and Recreation Services | -1.43 | 0.75 | 1.31 | 3.13 | 1.37 | | | 1.53 | 1.45 |
| Administrative and Support Services | -0.08 | -0.70 | 2.43 | 1.91 | 0.67 | 1.30 | | 2.41 | 1.32 |
| Retail Trade | -1.21 | 0.40 | 1.07 | | 0.01 | 1.27 | 2.00 | 0.84 | 0.72 |
| Construction | -1.21 | -0.09 | 0.31 | | 0.65 | | 0.98 | 2.08 | 0.53 |
| Other Services | -0.68 | -0.95 | -0.34 | 3.74 | 0.16 | | | 1.49 | 0.46 |
| Rental, Hiring and Real Estate | -0.91 | -0.59 | | | 0.78 | 0.31 | | | 0.40 |
| Transport, Postal and Warehousing | -1.09 | -0.22 | 0.77 | -0.45 | -0.25 | -0.83 | 0.32 | 1.80 | 0.05 |
| Manufacturing | -1.33 | -0.60 | 0.03 | | -0.01 | 1.21 | 0.38 | 1.00 | 0.03 |
| IT Media and Telecommunications | -0.92 | 0.36 | 0.34 | | -0.25 | | | | -0.04 |
| Mining | -0.46 | -0.33 | -0.02 | | 0.24 | | -0.04 | | -0.05 |
| Education and Training | -0.96 | -0.33 | 0.45 | 1.60 | 0.25 | | | -0.25 | -0.07 |
| Professional, Scientific and Technical | -1.07 | -0.22 | 0.40 | | 0.74 | | | | -0.11 |
| Health Care and Social Assistance | -1.25 | -0.84 | -0.54 | 0.60 | -0.29 | | | 0.73 | -0.20 |
| Wholesale Trade | -1.21 | -0.68 | -0.12 | | -0.58 | -0.70 | 0.65 | 2.44 | -0.36 |
| Electricity, Gas, Water and Waste | -0.85 | -0.55 | -0.93 | | 0.09 | | 0.03 | | -0.41 |
| Financial and Insurance Services | -0.85 | -0.61 | | | -0.66 | -1.32 | | | -0.66 |
| Public Administration and Safety | -1.14 | -0.80 | -0.88 | -1.02 | -0.41 | | | 4.03 | -0.73 |
| All industries | -0.99 | -0.47 | 0.20 | 1.10 | -0.05 | 1.06 | 0.56 | 1.90 | - |

Notes: The BCEC precarious employment index is centred on the overall industry average (as represented by zero). Negative numbers correspond to lower employment precarity than the average, positives convey greater precarity. Industries are sorted in descending order of overall precariousness.

Industries with the lowest levels of precarious employment are Public Administration, Financial and Insurance Services, and Utilities. Working for government, a bank or insurance company appears to still be a relatively ‘safe’ option. By contrast, Accommodation and Food, Agriculture, Forestry and Fishing, and Arts and Recreation Services are much more precarious for their employees. Mining and to a lesser extent Education have become more precarious in recent years.

Several factors are at play in driving these outcomes.

Some industry sectors, such as manufacturing, construction or mining, have a greater exposure to economic downturns and labour market forces. For example, workers in the Mining industry used to be among the most secure, with their optimism fueled by strong demand for labour during the heart of the resources boom. But our index shows that precarious work in mining is on the rise as the sector shifts to a less labour intensive production phase, and as global resource prices remain volatile.

Work in other sectors – particularly in Hospitality, Arts and Recreation or Agriculture – is shown to be intrinsically more precarious by nature, with irregular or uncertain hours, casual contracts and relatively low pay contributing to feelings of job insecurity among workers.

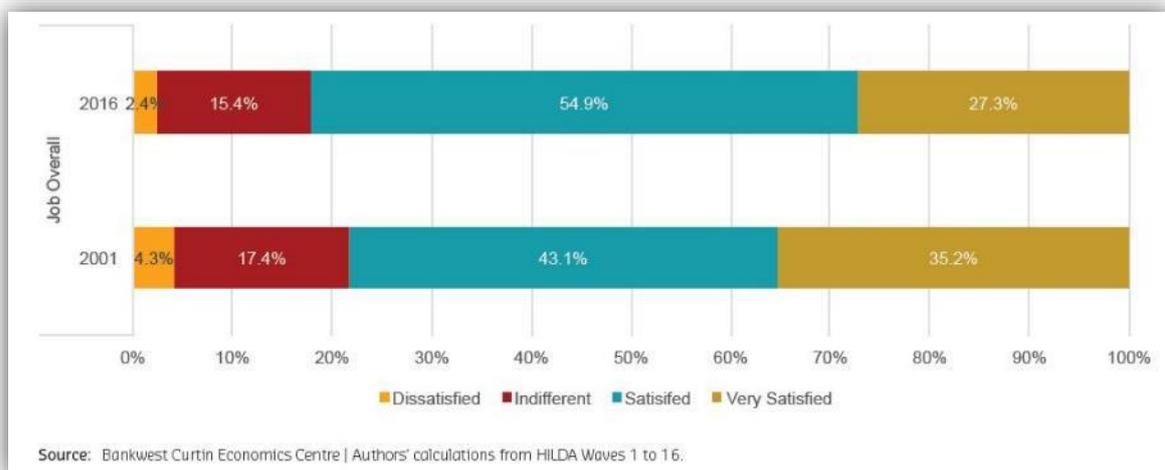
This highlights the need to ensure that workers can access retraining and education opportunities that smooth their transition to new, higher skilled jobs, or into other forms of employment. And the

responsibility should be shared between governments, employers, and education and training organisations as well as workers to ensure that no-one is left behind.

3.2 But are we happy in our work?

Measuring levels of satisfaction reported by workers in the HILDA survey allows us to see the extent to which workplaces are 'happy and healthy'. In general, it would appear that more workers are satisfied than 15 years ago although the percentage of 'very satisfied' workers has dropped. Again, managers and professionals have the highest levels of satisfaction, although managers are less happy with their long work hours. However, they appear prepared to trade-off longer hours for higher salaries, as managers have relatively high satisfaction levels concerning their pay.

Figure 8: Australian's satisfaction with work overall, 2001 and 2016



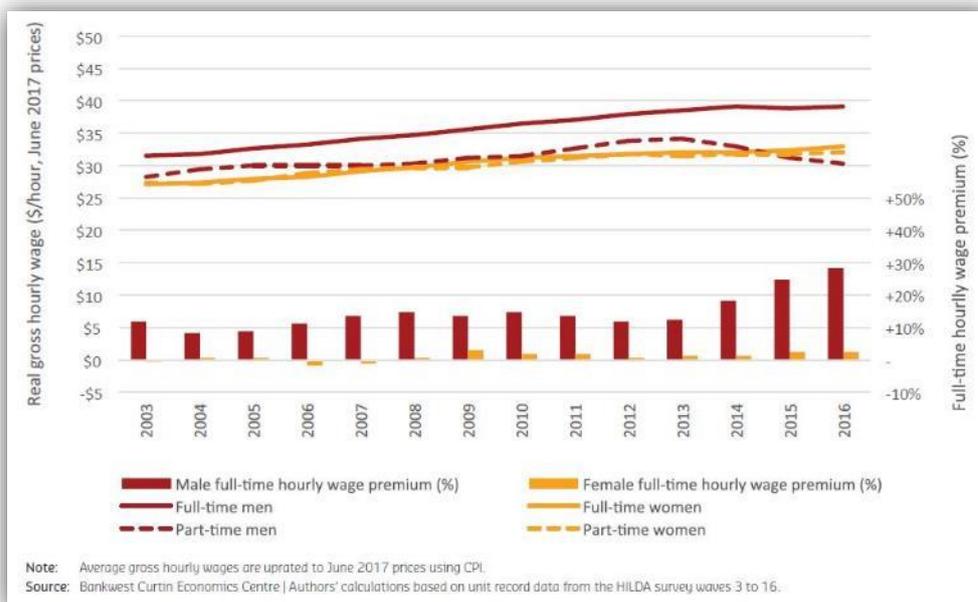
Interestingly, people who work for themselves are happier than employees or employers, probably indicating a greater degree of control over their working lives. Relatedly, working from home is also linked to greater satisfaction with work.

And if we want to be optimistic about our future job prospects, gaining employment in a high-skilled occupation such as professionals or managers will give us a more positive outlook than other workers. In general, satisfaction with our future job prospects has been decreasing since the global financial crisis, particularly for sales workers, and technician and trade workers. Low-skilled workers - labourers and machinery operators and drivers - remain the least satisfied about their future job prospects. Several factors may be contributing to this - including higher exposure these occupations have to automation.

3.3 What about wages?

While employment levels have remained high, real growth in wages has been relatively flat. Hourly rates of pay rates for full-time men have stalled since 2014, with average real gross wages for part-time men falling 11 per cent in three years. This is a concern not just for workers but also for governments who need income tax revenues and for businesses who need paying customers.

Figure 9: Real growth in gross hourly wage, by gender and employment status, 2003 to 2016



How do younger workers fare in terms of remuneration? There has been very little real growth in hourly pay over the last decade among the youngest cohorts of workers – an average real increase of around 0.8 per cent overall since 2010 among male workers aged 18 to 26, and a fall of 2.6 per cent in real terms among women aged 18 to 24. Indeed, the overall pay gap between the youngest cohort and older workers has widened by nearly a third since the start of the decade, which raises important questions around whether the anticipated rise in productivity in the future employment landscape will be matched by corresponding growth in real wages for younger workers.

Some industry sectors in finance, mining and resources, professional scientific and technical services, and IT and communications, look to offer significant opportunities for high wage growth. Yet other sectors have offered very little growth in pay, with average hourly wages retail and accommodation and food services sectors rising only 2.9 per cent and 1.9 per cent respectively since 2010, and with pay rates for agriculture workers falling in real terms since the start of the decade.

So too have we seen very little growth in pay rates since the start of the decade for a number of low-skilled occupations, especially among labourers, machinery operators and drivers, and for those on casual contracts. The issue of casualisation will become an issue in the future if workers are recruited on casual terms to positions that would previously have attracted a permanent or fixed-term contract.

Table 2: Real gross hourly wages by occupation and employment status, 2010 and 2016

| | Real gross hourly wage rates (uprated to June 2017 prices) | | | | | |
|---------------------------------|--|--------------|-------------|----------------|--------------|-------------|
| | Male workers | | | Female workers | | |
| | 2010 | 2016 | Pct diff | 2010 | 2016 | Pct diff |
| | \$/hour | \$/hour | % | \$/hour | \$/hour | % |
| Occupations | | | | | | |
| Managers | 45.42 | 48.21 | +6.1 | 36.79 | 39.98 | +8.7 |
| Professional | 44.72 | 47.49 | +6.2 | 38.52 | 40.90 | +6.2 |
| Technicians and trades | 32.70 | 35.19 | +7.6 | 27.55 | 25.48 | -7.5 |
| Community and personal | 31.40 | 31.82 | +1.3 | 25.82 | 26.59 | +3.0 |
| Clerical and administrative | 32.87 | 32.85 | -0.1 | 28.82 | 29.38 | +1.9 |
| Sales workers | 29.35 | 26.42 | -10.0 | 23.36 | 23.80 | +1.9 |
| Machinery operators and drivers | 30.36 | 32.54 | +7.2 | 24.57 | 25.47 | +3.6 |
| Labourers | 25.80 | 27.16 | +5.3 | 23.48 | 23.91 | +1.8 |
| Employment status | | | | | | |
| Permanent or ongoing contract | 36.59 | 39.09 | +6.8 | 31.52 | 33.39 | +5.9 |
| Fixed-term contract | 39.48 | 43.16 | +9.3 | 33.08 | 34.01 | +2.8 |
| Casual contract | 28.42 | 29.05 | +2.2 | 27.66 | 28.13 | +1.7 |
| All workers | 36.00 | 38.09 | +5.8 | 30.96 | 32.54 | +5.1 |

Note: Average gross hourly wages are uprated to June 2017 prices using CPI.
Source: Bankwest Curtin Economics Centre | Authors' calculations based on unit record data from the HILDA survey waves 10 and 16.

4. Technology and jobs

We've been here before. New technology has been impacting on people's jobs from at least the beginning of the industrial revolution over 200 years ago. The great majority of people used to work in agriculture - now less than 5 per cent do. Then manufacturing jobs proliferated as people moved to cities to work in factories. But those days are gone too, with only around 7 per cent of Australians working in manufacturing. Most people now work in service and knowledge-based occupations and industries.

But these massive changes have not led to mass unemployment or misery. In fact, over the long run, economies are now vastly more productive, society is much richer, jobs are safer, lives have extended and we have more leisure time. However, transitions can be difficult and in particular, those people losing their jobs to technological developments often suffer loss of income, status and wellbeing. They

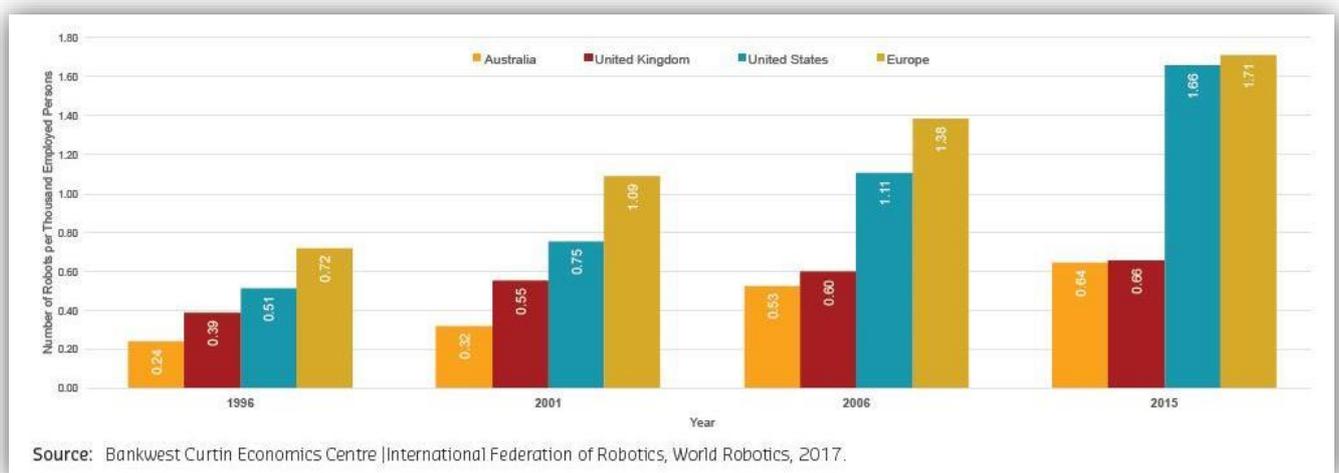
often do not easily find replacement jobs. Even those people in the new technology sectors may not see rising incomes for several years. But eventually, technology has created new and better jobs in sufficient numbers to raise almost everyone’s living standard. The long-term tendency has been for brains to replace brawn, with a consequent rise in education.

Now though, there is widespread concern that ‘this time may be different’. It is fairly easy in retrospect to see how manufacturing offered jobs to the excess agricultural workforce, and how the services sector absorbed workers released by the mechanisation of factories. But it is not so simple to see where the new jobs will come from in the face of digital disruption and artificial intelligence, which may put more skilled and knowledge-based workers out of a job.

New jobs are being created, but the likely balance between job creation and destruction - and what sort of jobs are going to be left – remains uncertain. Will these new or modified jobs require more or less skill, and will they pay better or worse? And if we don’t adopt new technology, will that just leave all of us even further behind?

Our analysis suggests that so far, at least, Australia is slightly behind comparable countries in terms of adopting ICT capital and robots. But we are catching up. And as a nation, we are among the most positive about the future in our belief that science and technology will create more opportunities for the next generation.

Figure 10: Number of robots per thousand employed persons, selected OECD countries



In 1996, there were only 0.24 robots per thousand employees in Australia. By 2015, the figure had increased nearly threefold to 0.64 per thousand workers. However, the level of ‘robotisation’ in Australia remains low in comparison with other OECD countries. The comparable rates for the number

of robots in the US and Europe were both over 1.6 per thousand workers. Nevertheless, this suggests that Australian businesses have the capacity for a significant expansion of automation to take on the tasks currently delivered by people.

Encouragingly, Australia is so far experiencing 'skill biased technological change' rather than 'job polarisation'. In other words, employment is shifting towards higher skill jobs, especially for women, rather than seeing a hollowed out middle flanked by an increase in high and low skill jobs.

That scenario would likely increase inequality - but so far we seem to be avoiding it. Similarly, routinisation within jobs is declining relative to the number of jobs requiring more complexity, although this is not universal across industries and occupations.

And what are the prospects for businesses and workers as the workplace becomes more automated? What impact will there be on the number of jobs, or the work that we do? Should we harbor any fears from the advent of automation or AI?

There has been some fear-mongering over the degree to which robots will replace people in the workplaces of the future – fears that have been fueled through a number of reports that predict more than 4 in 10 jobs could be eliminated in the future through automation.

Our view is that such claims are substantially exaggerated. More recent OECD studies have challenged the "40 per cent job loss" projections, and put the figure at around 9 per cent once we take account of the combination of tasks within a job that can be automated, rather than the job itself. Many occupations will transform and adapt to the introduction of automation, and increase in skill level, rather than disappear.

The central point here is that automation replaces tasks but not necessarily jobs, provided the workplace, and occupational roles, evolve appropriately. As robots or software systems take over the more functional, repetitive or mechanical tasks previously carried out by humans, this frees up more space for creative thinking, interpretation or strategic planning.

Nevertheless, we can't be complacent, for at least two reasons. First, there is a great need to support workers with lower skills and in vulnerable industries and occupations who are at greater risk of losing their jobs. Second, technology is not standing still, and the potential for even higher skill jobs and industries to be replaced is ever present.

We can, however, plan and prepare. One way is to become strong in leading edge industries and technologies - to be the disrupters, not just the disrupted. Another is to organise our workplaces so that robots, AI and digital technology complement and assist workers to do their jobs better, rather

than simply replacing them. A third is to invest in sectors that are less vulnerable to automation - personal services, health and caring professions, lifelong education, and creative industries. And a fourth is to ensure that we provide support for the most vulnerable - the young unskilled and people in industries and jobs in structural decline.

5. Preparing for the future

We have seen that the jobs that are increasing in number are generally those that require higher skills. Professionals now comprise the largest occupational grouping in Australia. At the same time, low skill occupations and industries are in decline, while jobs are tending to become more complex and less routine.

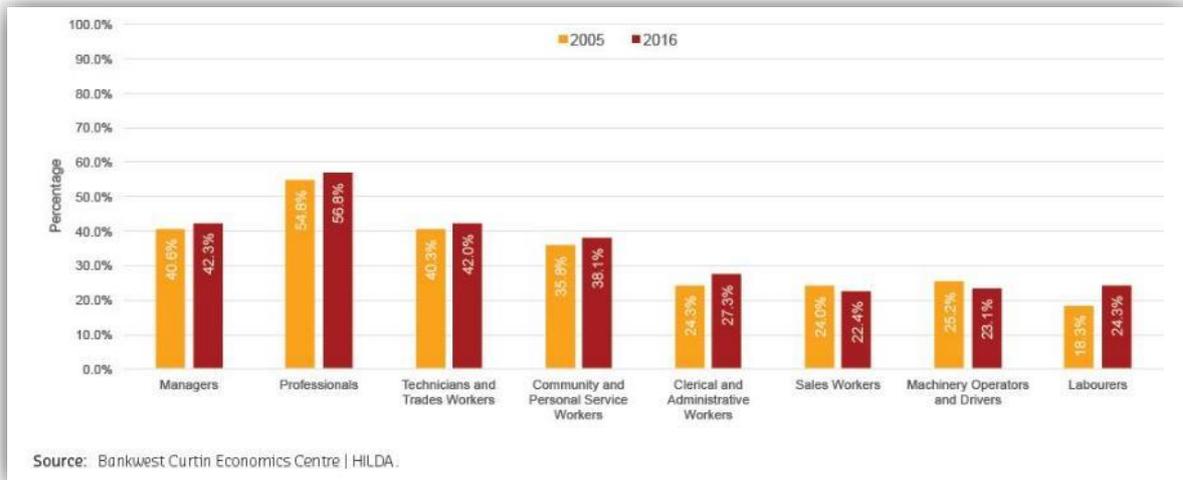
All these developments point to the need for more education and training, and this is true across the whole of people's working lives, not just at the start. Education may not quite be a silver bullet – but a lack of education and a failure by employers to train their workforce is surely not a sensible alternative. A good education is still the best insurance that individuals and society can have as they face the challenges of an uncertain labour market in the future.

Our analysis shows a mixed picture in terms of how well Australia is preparing for the future.

While higher education enrolments have been increasing, they remain highly gender segregated, with women dominating enrolments in health and education (around 75% of the total) while men continue to dominate engineering and IT enrolments (over 80%). Looking at enrolments as a whole, health enrolments are increasing rapidly reflecting the ongoing strong demand for graduates in this field. However, there has been a worrying fall in domestic student IT enrolments over the past 15 years, although this has begun to reverse to some extent since 2008. Given the likely significance of AI, IT and robotics to future industries and work, Australia should expect to have much larger numbers of graduates in IT.

The need for ongoing learning is evident, with almost all occupations seeing an increase in jobs that often require learning new skills. Unsurprisingly, the amount of training courses people are doing is also increasing, but this is only because women are doing more training – reflecting their concentration in jobs such as professionals, community and service workers. Men on the other hand are concentrated in occupations such as labourers, and technician and trade workers, where the amount of training declined over the past decade.

Figure 11: Jobs that often require learning new skills by occupation, Australia, 2001 to 2016



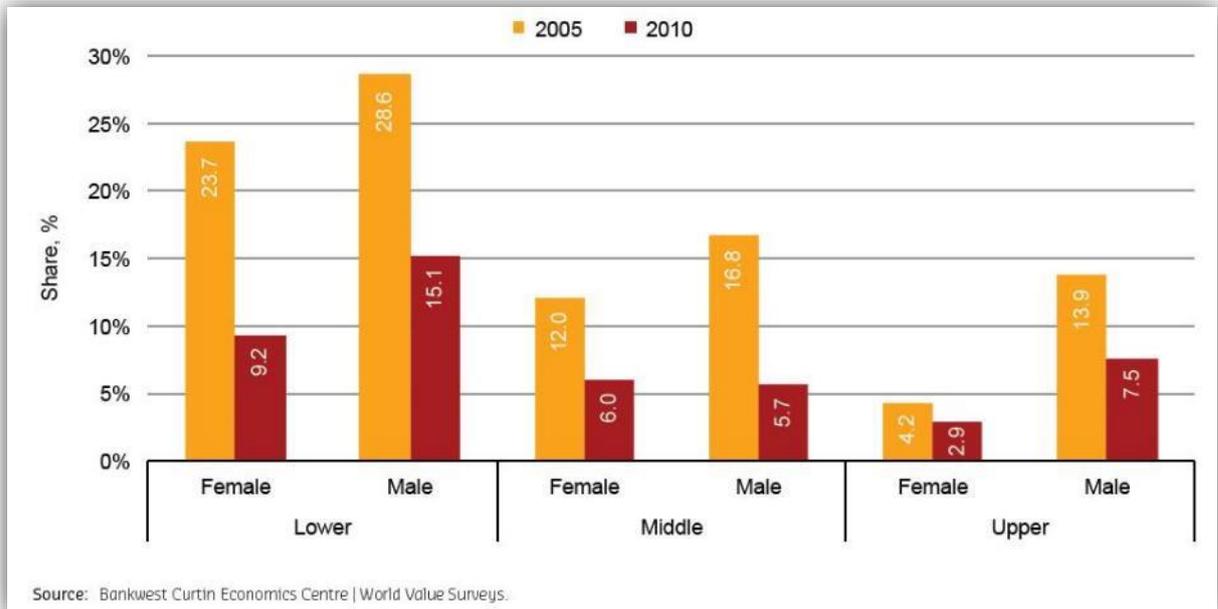
Surprisingly, managers reduced the number of training courses attended over the past ten years – this does not augur well for Australian industry. It needs to be reversed, if Australia is to remain competitive in an era of digital technology and globalisation.

As previously noted, Australia does not appear to be experiencing job polarisation (i.e. an increase in high and low skill jobs as middle skill jobs hollow out). Rather, there is a generally upward skill profile, as jobs in more highly skilled occupations and sectors increase and low skill work and sectors decline. On the one hand, this is a positive development as it implies higher wages and employment on average. But it does place low skilled workers in the firing line.

There are differences within the low skilled population. Men are at particular risk, as they tend to be in jobs more susceptible to technological displacement, such as machine operators and drivers, than low skilled women. The latter tend to be in jobs that may not be as vulnerable, as they require social and communication skills - sales workers, for example.

The social and cultural implications of these variable job prospects amongst the lower skilled also need to be taken into account. There remains a sizeable segment of society who believe men should receive preference for a job over women in situations where jobs are scarce. This belief is stronger amongst people with lower educational attainment who are themselves more likely to be in lower skilled jobs.

Figure 12: Share of individuals who agree that men should have more right to a job than women by educational attainment, Australia, 2005 and 2010



Yet as we have seen, displaced men may not have the necessary skills to take up new jobs, even in other low skill sectors and occupations, without retraining and more education. Their disappointment and resentment at their place in the labour market could be profound. Policy needs to target support to these low skilled men in order to assist their transition into other employment.

6. Conclusion

One way or another, work affects everyone. Understanding the evolution of work is critical to Australia's economic and social future.

Overall more of us are working, with a record 77 per cent of 15 to 64 year olds now in the labour force. The main reason for this is the massive rise in female labour participation, which has more than offset a decline in male participation. This has been accompanied by a doubling in the proportion of employees who work part-time compared to 40 years ago.

Work is becoming more 'feminised', as Australia shifts to a service economy. Sectors in which women dominate – such as Health Care, Social Assistance and Education – are growing fastest, while the situation for men is more mixed. The fall in Manufacturing is only just counter-balanced by the rise in Mining and Construction, and Mining is likely to be subject greater automation in future.

As a result of these industry changes, professionals are now the largest occupational grouping. But the fear of a hollowing out of medium-skilled workers is not necessarily justified - while trades and technicians have fallen back as a share of the workforce, other low-middle skill jobs such as in community and personal service workers are increasing in number.

The 'gig' or freelance economy has received a large amount of attention, but so far the evidence is not clear that it is increasing to the extent that many anticipate. Working from home and multiple job holdings have not risen substantially over the last decade, but this may well change in the future. We need more research to find out what is really happening.

The quality of jobs is as important an issue as the quantity. There are signs that precarious employment is increasing. The precariousness index introduced in BCEC's *Future of Work* report indicates that there has been some increase in precariousness, although the overall state of the economy (and of unemployment in particular) play a major role here.

What seems clear is that people are increasingly concerned for their job security, with more people worrying that their jobs are at risk. This is particularly the case for lower skill occupations. Some industries, such as Public Administration and Finance, still appear to offer better quality jobs in terms of security and benefits.

The fear of job loss is not translating over into job dissatisfaction. More workers are satisfied with their work than 15 years ago, while people who work for themselves or work at home are happier than employees or employers. Having control over your working hours and environment makes a positive

difference. So does having a high-skill job.

Worryingly, despite high employment levels, real wages growth has stalled for fulltime men, and fell for part-time men by 11 per cent in three years. Younger workers are losing out relatively speaking as well, with the pay gap between the youngest cohort and older workers widening by nearly a third since the start of the decade. All these trends point to difficulties for government tax revenues, for business growth, and for equity, as there appears to be a prospect of real wages not matching productivity over time.

The impact of technology on jobs has been a principal concern for analysts, policy makers and the community at large. While historically, manufacturing soaked up the loss of agricultural jobs, and services jobs replaced factory workers, where will the jobs come from if robots and AI can do the work currently being done by service and knowledge workers?

Our analysis suggests that we are not in a doomsday scenario when it comes to jobs and technology – or at least not yet. Much of the fear is based on an overly simplistic analysis of which occupations could be automated. However, societies have choices, about how they wish to organise work and how to use technology – in particular, whether it substitutes for human labour, or complements and supports it.

The good news so far is that the Australian labour market is generally moving its whole skill profile upwards towards a greater proportion of higher skill jobs, rather than hollowing out the middle. That should help to reduce inequality as long as those being displaced from lower skilled occupations and industries are given opportunities to enter new, higher skill fields.

Lower-skilled men are particularly vulnerable to the changing labour market landscape. The jobs they currently hold are more susceptible to technological displacement, and they may be less equipped with the necessary social and communication skills to take up the growing number of human services jobs that will be on offer.

We have seen that many of the trends relating to the future of work – such as the convergence of working patterns between men and women – are of long standing. Nothing is inevitable about how technology will impact on work. Societies, companies, governments, and individuals have choices about how and whether technology is introduced, how we engage with automation, and how we prepare ourselves for the future.

In fact, the future of work is already here.

And preparing for tomorrow's world of work needs to start today.

7. Policy recommendations

The empirical evidence raised in this submission indicates there is a strong case for government and industry to consider a range of policy measures and initiatives that affect the future of work, and the opportunities afforded to Australia's workforce.

Specific recommendations are as follows:

- a. Continued data capture is essential to ensure that changing labour market and working conditions are effectively assessed and monitored.
- b. We recommend in particular the reinstatement of the ABS Time Use Survey, with increased frequency of data collection, to improve our understanding of patterns of flexible work, multiple job holdings, and changes in the way that Australian workers use their time and engage with the share or 'gig' economy.
- c. It is imperative that all workers – especially those with lower skills – have access to retraining and education opportunities to smooth the transition to new, higher skilled jobs, or into other forms of employment. The introduction of transitional support programs for vulnerable workers and industries is a minimum requirement.
- d. There is a need for much greater investment in education and training across the whole of people's working lives, by government, individuals and industry.
- e. Attention needs also to be given to the challenge of shifting the growing gender segregation in certain industries such as higher education, engineering and IT.
- f. As part of this process, traditional attitudes to gendered work, and entrenched perceptions of what constitutes a 'male' and 'female' job, need to be shifted, and society needs to value more highly the status – and remuneration – of caring professions.
- g. Our lack of growth in domestic IT students is also a major concern, if we want to be at the forefront of the key industries of the future.
- h. There is a shared responsibility on governments, employers, and education and training organisations to ensure that no-one is left behind in the changing world of work.
- i. We need to work with technology to raise our productivity, eliminate the dangerous and routine tasks, and leave room to use our personal, creative and critical thinking skills.

8. References

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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 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 WA, and draws great strength and credibility from its partnership with Bankwest, Curtin University and the Western Australian government.

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