Casualisation of work and inequality in the Australian labour market

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Abstract

Australia has seen an increase in labour market inequality over recent decades. One driver for this is skill bias in the demand for labour. Another points to the casualisation of employment in Australia and to polarisation of job creation and earnings. To understand these, we conduct a simple analysis by applying data on occupational types, namely, full-time and part-time 'casual' and 'permanent' employment. The findings show polarisation in the labour market. This phenomenon occurs when the labour market experiences an increase in the share of high-paid jobs with decent working conditions, an increase in jobs with poor pay and working conditions, with an accompanying decrease in the share of jobs in the middle of the employment distribution. This outcome, we believe, is accentuated by a process of casualisation of employment. These processes may lead to a different dimension of inequality occurring in the Australian labour market, requiring new government policies to slow such trends.

JEL Codes: J01, J08
Keywords: labour market, casualisation, hours worked, inequality, earnings, polarisation

1. Introduction

The Australian labour market has experienced major transformations over the last four decades. Today the majority of employees work in different types of employment arrangements. These work engagements tend on the whole to comprise jobs that are full-time and part-time 'without leave entitlements' or casual, full-time or part-time 'with leave entitlements' or permanent, and others in conditions of self-employed employment. These new job types have in the long term impacted the wages outcomes of employees, resulting in increasing wage inequality (e.g., Mooi-Reci and Wooden 2017; Borland and Coelli 2016; Chetterjee *et al*. 2016; Preston and Yu 2013).

The reasons identified for the increase in inequality are varied. Some authors (e.g., Esposto 2005, 2011) show that the labour market has upskilled in Australia since 1971. A cause for this upskilling is skill bias in the demand for labour arising out of technological change or, as more formally named, the Skill-Bias Technical Changes (SBTC) hypostasis. In other words, companies prefer to employ more highly skilled employees in order to adapt to rapid technological change. Thus this bias in the demand for labour may create inequality in wages outcomes.

Others have argued that a process of labour market liberalisation has created a rift in terms of wages outcomes. For example, Preston and Yu (2015) show that part-time earners receive comparatively less than full-time earners: "In the case of permanent employees, we observed a part-time/full-time wage gap of around 11 per cent in the basic model falling to 4 per cent in the extended model with industry and occupation" (p. 42). Mooi-Reci and Wooden (2017) show that this can be due to differences between temporary and non-standard jobs: they find that "… casual employment has a much stronger negative association with the long-run earnings prospects of men than of women" (p. 1085).

Yet other research has shown that changes in the structure of the labour market have created a process of job polarisation in employment that may tend to increase earnings inequality (e.g., Healy *et al*. 2017; Coelli and Borland 2016). Polarisation in employment suggests that changes in the composition of employment are characterised by losses "… of middle skill jobs, predominantly in the areas of manufacturing production and clerical work, [that] may also have been intensified by the greater scope for offshoring of such tasks" (Coelli and Borland 2016, pp. 2-3).

This process, according to Coelli and Borland, is believed to generate an increase in the share of employment in high-skill jobs, a fall in the share in middle-skill jobs, and an increase in the share in low-skill jobs. This is also known as the disappearing middle or vanishing bottom hypothesis (Gregory 1996).

In light of these trends, the objective of this paper is to examine whether this process of skill change is generating polarisation in Australian jobs, and if so, to what extent. Furthermore, particular attention has arisen as a result of the casualisation of employment in Australia between 1989 and 2019. Our method is to conduct a simple analysis by applying more up-to-date data using the methodology originally applied by Wooden (2000), Cully (1999) and Esposto (2011). The paper is divided into five parts. The first, the introduction, is followed by a discussion of the literature. Section 3 explains our methodology and data utilised. The remaining two sections provide a discussion and conclusion.

2. Literature Review

The labour markets of many economies have experienced long-term fundamental changes, including in their institutions. In the Anglo-Saxon world, particularly in Australia, New Zealand and the UK, these were characterised by the decentralisation of collective bargaining structures that began in the early 1980s (Wooden and Sloan 1998). A common feature of these countries was that, in relative terms, they had reasonable levels of union participation in their workforce, and trade unions played an important role in negotiating wages outcomes for their members, as well as in national policy matters. The UK began the process of transforming industrial relations after the election of the Thatcher Conservative government in 1979. The government's strategy was to introduce a variety of laws that transformed the industrial landscape. The salient features of this process were the decentralisation of pay determination, the growth of plant and individual bargaining, and the decline in industrial action by unions and their membership (Wooden and Sloan 1998, p. 197).

Deregulation of the labour market in Australia began with the Hawke-Keating governments, which abolished the general right to strike and introduced the concept of "protected industrial action" (Quiggin 2018, p. 7). The most profound deregulation occurred under the Howard government's *Workplace Relations Act 1996*. Prior to these changes, the distinctive feature of the system was compulsory conciliation and arbitration, characterised by independent quasi-judicial industrial tribunals that had the power to stipulate legally binding awards that were required to be arbitrated or certified by these tribunals (Campbell and Brosnan 1999, p. 354). This situation changed considerably in that most of the bargaining prohibited closed shop agreements and extended the scope for non-union agreements. Clearly this was a result of Commonwealth government initiatives, both Labor and Liberal-National, with the introduction of the *Industrial Relations Reform Act 1993* and *Workplace Relations Act 1996,* which saw a push towards enterprise-bargaining structures, with the end result of ensuring that employers and employees negotiated workplace arrangements without intervention by unions or other third parties (Wooden 2001). The role of the Australian Industrial Relations Commission (AIRC) in the arbitration of disputes was reduced considerably. The reforms, no longer had the power to impose arbitrated awards, and was confined to disputes that related to matters of awards and where the operation of essential services was in jeopardy (Wooden 2001, p. 247).

Finally, the changing nature of industrial relations impacted significantly on union membership. Since 1992, the proportion of employees who are members of a trade union has fallen from 40 per cent to 19 per cent in 2016 (ABS 2017). In 2009, the Rudd-Gillard government introduced the *Fair Work Act*, altering some of the Howard Government *Work Choices* legislation. Since then not much has changed. Little legislation has been introduced by the Abbott-Turnbull-Morrison governments due to a hostile Senate (Quiggin 201, p. 8).

2.1 Does SBTC explain labour market inequality in Australia?

SBTC is defined as "a change in the production technology that favours skilled over unskilled labour by increasing its relative productivity and, hence, relative demand" (McAdam *et al*. 2018, p. 33). Therefore, because of technological change, new and

higher levels of skills are required to meet the demand for labour. Thus the wages of the more educated rise faster than those with fewer or lower skill levels, forcing those with relatively lower levels of education and skills to earn lower wages (Esposto 2011). Therefore one aspect of the study of upskilling is to observe which occupations have grown most in terms of the number of employees and hours worked and/or have received better earnings.

The reason for this upskilling is because companies prefer to hire employees with better skills and abilities so that they can be more competitive. These preferences for more skilled workers mean that those workers with lower skill levels found it harder to either find employment or to adapt to the companies' changes, demands and needs.

Barrett has reported that "… the change in the distribution has been associated with an increase in a wage premium paid" (2012, p. 1) to more skilled employees, attributing these changes to innovations in the technology and business distribution. He also found that employees who possessed a high level of cognitive skills had access to better opportunities and wages in the labour market.

Using data from the International Adult Literacy Survey (IALS), Chiswick, Lee and Miller found that "higher levels of education are associated with greater labour market success" (2003, p. 180) as measured by participation and unemployment rates. Similarly, higher levels of numeracy and literacy, excluding schooling or formal education, tend to be associated with higher labour market success. However, Chiswick *et al*. also reported that schooling had a positive relationship with numeracy and literacy and it had a positive impact on performance in the labour market. The findings shown by Chiswick *et al*. (2003) and Barrett (2012) are similar to those reported by Esposto (2011), Cully (1999) and Wooden (2000), despite the use of different methodologies and data.

2.2 Casualisation of the labour market

An important consideration is whether the process of liberalisation driven by casualisation has contributed to increasing labour market inequality. In general, the literature shows that there are adverse equity effects associated with casual, part-time and independent contract employees. These effects are in different spheres, such as earnings per hour (Borland and Coelli 2016; Mooi-Reci and Wooden 2017, Preston and Yu 2013), employment security (McGann 2012) and skill shortage and lack of training (Burgess, Campbell and May 2008). Although some academics highlight the economic benefits and advantages for companies in the existence of casual and non-standard employment, most research points to more negative effects on casual employees than on permanent ones (e.g., Mooi-Reci and Wooden 2017).

These flexible forms of employment may be useful in helping companies adjust to external shocks and deal with uncertainty in a rapidly changing labour market. The benefit from hiring an employee on a casual contract is that Australian law sees each contract as being unique in itself (Owens 2001, p. 120). An advantage is thus that these casual employment laws provide employers and employees with capacity for termination of the contract within a short period, whereas for permanent agreements these procedures tend to be more complex (Burgess and Campbell 1998). In addition, the law does not include the complexity that may exist in the labour market in terms of quality of work that differs between industries or award system structures (Esposto

2011, p. 204). Nevertheless, these types of jobs are also directly related to poor-quality working conditions, such as lower earnings and lesser access to 'decent work conditions' that are commonly associated with standard employment arrangements (Mooi-Reci and Wooden 2017, p. 1065).

In the case of Australia, these different modalities among temporary, non-standard and regular jobs are divided according to the number of hours worked per week. That is, full-time or part-time employment, or the payment of leave entitlements, which is the casual and permanent employment divide. All these forms create different conditions and inequalities, making it more difficult for researchers to analyse them. For this reason, most studies take earnings and income as the most appropriate methods for studying rising inequalities of outcomes in the labour market (Mooi-Reci and Wooden 2017; Borland and Coelli 2016; Chaterjee *et al*. 2016; Esposto 2011).

The most common way in the literature to study the different factors that impact on earnings in the labour market, is through the analysis of earnings per hour. This is arrived at by obtaining the average weekly earnings and dividing these by the number of hours worked. Some authors taking this analytical route recently include Chatterjee *et al*. (2016), Mooi-Reci and Wooden (2017), Esposto (2011), and Booth and Wood (2008). This method offers a powerful tool to make comparisons between the different earnings of employees. This methodology does have some limitations, such as earnings differences between full-time and part-time workers. However, it is seen as the most appropriate (e.g., Booth and Wooden 2008).

The labour market may have other adverse effects that exclude monetary returns. These include lags of employment opportunity, the possibility of obtaining a permanent full-time job, access to occupations with higher remuneration than in others, fewer benefits such as paid leave entitlements, and even more unpaid hours worked (Mooi-Reci and Wooden 2017), and other disadvantages such as lower work-life balance (Lass and Wooden 2019). These conclusions complement the different dimensions of inequality present in the Australian labour market that arise out of a process of casualisation. The literature, however, indicates a variety of opinions and findings with respect to the outcomes of different job types. Most authors agree, however, that those workers with permanent jobs receive higher wages and better employment arrangements than those employed on a casual or temporary basis (OECD 2015).

According to the Fair Work Commission (2018), casual employees are entitled to receive a 'casual loading', that is, a higher hourly pay rate than equivalent permanent employees. The reason for this premium rate is because they do not obtain the benefits such as paid leave when they are either sick or on holidays (Australian Council of Trade Unions 2017). However, a downside to this is that these premium rates are not applied in the Australian labour market evenly or fairly. For example, Borland and Coelli (2016) find that there is a penalty for casual and part-time jobs in receiving a lower hourly wage rate compared to that of permanent and full-time employees. There may also have been a technology effect, because the repetitive tasks performed by these employees may have been replaced by machinery.

The results from the Mooi-Reci and Wooden's (2017) study are similar to those discovered by Borland and Coelli (2016). Their research finds a penalty for casual

employment in the long-term wage. This penalty is more visible for men than for women, rising as high as 10 per cent. However, for most age groups of men, this wage penalty eventually declines, but by a small amount. In contrast, the effect for women is smaller: less than half the size of that for men, and is less robust. They also found that those who decided to wait to obtain a permanent job, in the long-term had a more significant higher hourly wage than those who chose to accept a casual position at the beginning of their careers.

McGann (2012, p. 79) found that the effect of casualisation and part-time work was strongly associated with independent contracting employees. Among the negative impact of these types of contracts were not working on a regular full-time basis, no benefits under paid leave entitlements, or protection against unexpected contract termination or even unfair dismissal. Preston and Yu (2013) arrived at similar conclusions. They reported that, on average full-time employees earned significantly more per hour than part-time workers. For example, they found, that after controlling for human capital characteristics (such as skill, education, occupation and others), the adjusted hourly earnings difference between the highest earnings (men employed full-time) and the lowest earnings (women hired part-time) is equal to 22.5 per cent (2013, p. 24).

Thus, in general, the literature shows, that there is not a premium rate for casual and part-time employees and, furthermore, they do not receive the same salary per hour as full-time permanent workers. Hence we can argue that the SBTC hypothesis and liberalisation argument can be unified through the following idea (Esposto 2005, p.93):

> …Australia may be experiencing a different scenario of the SBTC hypothesis. It is clear that if wages are inflexible downwards in the Australian labour market, but there exists a flexibility of job types (i.e. full-time and part-time permanent employment, and full-time and part-time casual employment, including fixed term employment), one way in which employers may reduce wage costs is by opting to employ workers on a part-time or casual basis.

This behaviour may, inadvertently cause or exacerbate increasing inequality of earnings.

2.3 Polarisation: A potential reason for rising earnings inequality

Job polarisation is a condition in which the labour market experiences an increase in the share of high-paid jobs with decent working conditions, an increase in jobs with poor pay and working conditions, and an accompanying decrease in the share of jobs in the middle of the employment distribution (Maxted 2016; Coelli and Borland 2016; Goos, Manning and Salomons 2014; Esposto 2011; Autor *et al*. 2006).

Analysis by Autor *et al*. (2006) found that the labour markets in the US have undergone substantial job polarisation, with employment 'polarising' into relatively high-skill, high-wage jobs and low-skill, low-wage jobs (p. 189). Goos *et al*. (2014) go further and document the pervasiveness in polarisation in 16 Western countries between 1993 and 2010. They document this polarisation with rising shares for high-paid professionals and managers as well as low-paid personal service workers, and

declines in shares of middle-income earners (p. 2524).

In trying to understand Australian labour market polarisation, Coelli and Borland (2016) investigated changes in the occupation structure of Australia for the 1966 to 2011 period. They analysed the effect of changes on earnings distribution. Their work found that the Australian labour market was experiencing employment polarisation: growth in high- and low-skill jobs and declines in middle-skilled employment distribution. A main finding was that job polarisation was a male phenomenon (p. 24).

Healy *et al*. (2017) examined different labour market scenarios and found that Australia might conceivably face future polarisation of the labour market, indicating that (p.5):

> Australia has not drifted far in this pessimistic direction, but there are signs of significant problems emerging, with persistent low wage growth, destruction of routine occupations, and extensive casualisation of the youth workforce.

3. Data and Methodology

Our primary aim is to identify whether the labour markets in Australia have undergone a process of job polarisation, with employment 'polarising' into relatively high-skill, high-wage jobs and low-skill, low-wage jobs, with reductions in the share of middle-skilled jobs.

In trying to understand the impact of labour market change on inequality our simple analysis uses the following data from the Australian Bureau of Statistics (ABS): (1) the Employee Earnings, Benefits and Trade Union Membership, Australia EEBTUM (ABS cat. no.6310.0); (2) Characteristics of Employment, Australia CEA (ABS cat. no. 6333.0); and (3) the Labour Force Survey, Australia, Detailed, Quarterly LFADQ (ABS cat. no. 6291.0.55.003).

From these data, it is possible to obtain information about the number of employees, weekly and hourly earnings, and hours worked. However, these data show one important limitation: there have been changes in the occupation classification over time, making it difficult to compare across different classifications. To solve this problem, we apply the partial match methodology of occupations suggested by the ABS to our data (2013, cat. no. 1220.0 ANZSCO, pp. 779-810).

The tables given by the ABS (2013, cat. no. 1220.0 ANZSCO, pp. 779-810) show the match or partial match between job title across the classifications: from ASCO 2 to ANZSCO and ASCO 1 to ASCO 2. Using these tables at the four-digit level, we were able to match the data from one classification to the other, choosing ANZSCO as the standardisation base.

The first partial match made was between ASCO 2nd Edition and ANZSCO using ABS cat. no. 1220.0 ANZSCO (pp. 779 to 810). In this catalogue, there are partial matches from ANZSCO to ASCO 2nd Edition, and vice versa, at the four digit level. This correspondence allowed for the partial matches to be made. Table 1 provides an example of the process conducted.

Table 1: Example of partial match between ASCO 2nd Edition and ANZSCO

ASCO 2nd Edition		*ANZSCO*		
Code	*Name of Occupation*	*Code*		*Name of Occupation*
2381	Dental Practitioners	2523		Dental Practitioners
2382	Pharmacists	2515		Pharmacists
2383	Occupational Therapists	2524		Occupational Therapists
2384	Optometrists	2514	p	Optometrists and Orthoptists
2385	Physiotherapists	2525		Physiotherapists
2386	Speech Pathologists	2527	p	Speech Professionals and Audiologists
2387	Chiropractors and Osteopaths	2521		Chiropractors and Osteopaths
2388	Podiatrists	2526		Podiatrists
238	Miscellaneous Health Professionals	252		Midwifery and Nursing Professionals

Notes: p = partial match
Source: Authors' assignment from ABS cat. no. 1220.0 ANZSCO.

The same process was made for ASCO 2 for the following years: 1997, 2001, 2003 and 2005. For years before 1996 the same method was used to match ASCO 1 to ASCO 2 occupations, and the final partial match was made with ANZSCO.

Measuring skill change and polarisation of the labour market in Australia
To measure skill change we utilise the Australian and New Zealand Standard Classification of Occupations (ANZSCO) (ABS, 2006, p. 21). Table 2 below shows the relationship between the groups and skill level. The first three tables (Major Groups, Major and Sub-Major Groups, and Major, Sub-Major and Minor Groups) show the predominant skill levels applying to each group.

Table 2: ANZSCO occupational and predominant skill level

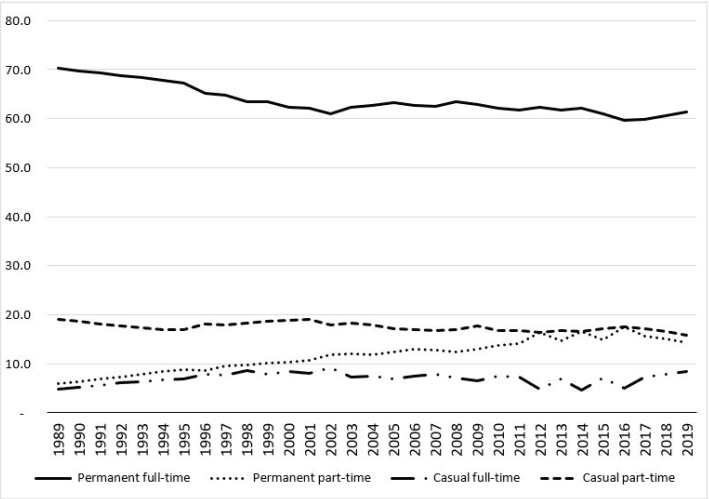
Major Group Code	*Major Groups*	*Skill level*
1	Managers	1,2
2	Professionals	1
3	Technicians and Trades Workers	2,3
4	Community and Personal Service Workers	2,3,4,5
5	Clerical and Administrative Workers	2,3,4,5
6	Sales Workers	2,3,4,5
7	Machinery Operators and Drivers	4
8	Labourers	4,5

Source: ABS cat. no. 1220.0 ANZSCO, p. 21.

4. Findings: Changes in the Occupational Composition of Employment

We begin our analysis by comparing changes to the share of job types between 1989 and 2019. These periods are sufficient to conduct a long-term analysis because it takes into account the period of casualisation that took place in Australia.

Figure 1. Change in the share of employment by job type, 1989-2019.



Source: Employee Earnings, Benefits and Trade Union Membership, Australia EEBTUM (ABS cat. no.6310.0) and Characteristics of Employment, Australia (ABS cat. no. 6333.0).

Figure 1 shows a steady decline in the share of permanent full-time employment from 70.2 to 61.3 per cent, in contrast to a gradual increase to 14.4 per cent in the share of permanent part-time work. The share of casual employment rose steadily in full-time employment from 4.8 per cent to 8.4 per cent. Part-time casual employment declined from around 19.0 per cent to 15.9 per cent.

Tables 3 and 4 provide a comparison of the growth in full-time and part-time permanent and casual work for men and women. Table 3 shows growth in full-time male and female employment. Total full-time employment grew by almost 2.2 million jobs between 1989 and 2019, or a total increase of 41.8 per cent. Of interest is the growth of higher-skilled work (occupations 1 and 2) for men, with corresponding declines in permanent work in less-skilled jobs at the bottom of the occupational distribution. Women experienced similar trends in these occupational categories.

Table 3: Growth in full-time employment, by occupation and type of contract casual or permanent, 1989-2019

Occupation	*Male full-time*			*Female full-time*		
	1989	*2019*	*Growth p.a. (%) 1989-2019*	*1989*	*2019*	*Growth p.a. (%) 1989-2019*
Permanent employees ('000s)						
1 Managers	310.5	524.6	2.3	77	368.9	12.6
2 Professionals	591	848.4	1.5	329.1	1,111.6	7.9
3 Technicians and Trades Workers	754.5	826.4	0.3	58.6	169.9	6.3
4 Community and Personal Service Workers	410.2	130.5	-2.3	126.4	330.3	5.4
5 Clerical and Administrative Workers	314.8	274.4	-0.4	736.1	715.9	-0.1
6 Sales Workers	110.9	130.6	0.6	158.1	213.4	1.2
7 Machinery Operators and Drivers	328.8	421.5	0.9	56.6	55.6	-0.1
8 Labourers	483.1	273.8	-1.4	116.1	149.0	0.9
Total	*3,303.8*	*3,430.2*	*0.1*	*1,658.0*	*3,114.6*	*2.9*
Casual employees ('000s)						
1 Managers	26.2	21.9	-0.5	5.7	15.4	5.7
2 Professionals	34.9	56.8	2.1	10.9	74.5	19.4
3 Technicians and Trades Workers	30.4	145.5	12.6	2.8	29.9	32.3
4 Community and Personal Service Workers	35.7	32.9	-0.3	8.4	83.2	29.7
5 Clerical and Administrative Workers	2.5	23.4	27.9	24.8	61.2	4.9
6 Sales Workers	6.2	23.7	9.4	11.6	38.6	7.8
7 Machinery Operators and Drivers	28.7	116.8	10.2	2.6	15.4	16.4
8 Labourers	44.1	104.5	4.6	12.5	56.9	11.8
Total	*208.7*	*525.6*	*5.1*	*79.3*	*375.1*	*12.4*

Sources: ABS1989-2019, cat. no. 6310.0 and ABS cat. no. 6333.0. Authors' calculations.

Growth in full-time casual work exhibited different trends to those seen in permanent employment arrangements, where the bulk of the growth for men and women was in the middle and lower end of the distribution (occupations 3 to 8).

In the case of part-time work (Table 4), permanent employment grew at a much faster rate than casual work, but the growth was more evenly spread. Of interest, are the occupations sales workers and machinery operators and drivers, where permanent part-time work for men increased considerably, while for women the growth was

concentrated in more skilled occupations (1, 2 and 3). Casual part-time workers exhibited the same trends.

Table 4. Growth in part-time employment, by occupation and type of contract casual or permanent, 1989-2019

Occupation	*Male part-time*			*Female part-time*		
	1989	*2019*	*Growth p.a. (%) 1989-2019*	*1989*	*2019*	*Growth p.a. (%) 1989-2019*
Permanent employees ('000s)						
1 Managers	1.4	39.2	89.9	5.7	27.5	12.8
2 Professionals	4.5	190.0	137.4	82.8	248.9	6.7
3 Technicians and Trades Workers	2.7	59.4	70.0	5.2	12.2	4.5
4 Community and Personal Service Workers	2.3	80.8	113.7	54.1	204.4	9.3
5 Clerical and Administrative Workers	3.2	78.6	78.5	75	204.9	5.8
6 Sales Workers	1.4	78.9	184.5	50.2	128.9	5.2
7 Machinery Operators and Drivers	0.5	27.2	177.8	4.5	3.6	-0.7
8 Labourers	9.6	98.4	30.8	44.5	53.6	0.7
Total	*25.6*	*652.3*	*81.6*	*322.0*	*884.0*	*5.8*
Casual employees ('000s)						
1 Managers	2.8	22.0	22.8	8.4	15.5	2.8
2 Professionals	13.3	80.6	16.9	60.9	105.7	2.4
3 Technicians and Trades Workers	13.7	82.3	16.7	16.3	16.9	0.1
4 Community and Personal Service Workers	43.5	119.5	5.8	124.8	302.5	4.7
5 Clerical and Administrative Workers	160.1	45.2	-2.4	95.6	117.9	0.8
6 Sales Workers	44.6	145.6	7.6	195.8	237.9	0.7
7 Machinery Operators and Drivers	9.1	78.7	25.5	8.5	10.4	0.7
8 Labourers	68.2	207.5	6.8	103.7	113.0	0.3
Total	*355.3*	*781.5*	*4.0*	*614.0*	*919.7*	*1.7*

Sources: ABS1989-2019, cat. no. 6310.0 and ABS cat. no. 6333.0. Authors' calculations.

Based on this simple data analysis, we can see a strong increase in part-time work for both men and women. Similarly, we can say that there is a process of casualisation in full-time work.

Table 5: Change in Share of employees by skill level, 1989-2019

Skill Level	*Employees ('000s)*			*Share (%)*		
	1989	*2019*	*Growth p.a. (%)*	*1989*	*2019*	*Changes*
I Managers/Professionals	1,498.5	3,414.1	4.3	22.8	32.0	9.1
II Associate Professionals	847.7	1,096.1	1.0	12.9	10.3	-2.6
III Skilled vocations	1,240.7	1,310.8	0.2	18.9	12.3	-6.6
IV Intermediate skills	1,550.6	3,008.2	3.1	23.6	28.2	4.5
V Elementary skills	1,428.8	1,853.8	1.0	21.8	17.4	-4.4
Total	*6,566.3*	*10,683.0*	*2.1*	*100.0*	*100.0*	

Sources: ABS1989-2019, cat. no. 6310.0 and ABS cat. no. 6333.0. Authors' calculations.

Table 5 compares the number of employees by skill level over the same 30 years. Although all skill levels experienced important growth in the number of persons employed, when shares are compared the only growth is seen at the highest skill occupational level, that is, *Managers and professionals* and in Skill level IV, *Intermediate skills*. The second level, *Associate professionals*, experienced a reduction in its share, while skills levels III and V experienced sharper reductions. These results imply a polarisation of the labour market, where high and low skilled occupations have declined in middle skills and elementary skills.

When we disaggregate skill levels in Table 6 between total permanent and casual work, we find that casual employment grew faster in all skills levels compared to permanent employment. The only exception is *Managers and professionals*. For permanent skills, the highest skill level had a higher increase than the other four categories, three of which experienced declines in their share. These changes in employment support the notion of polarisation of job creation. The picture is different for casual work, indicating that job growth in terms of shares favoured jobs requiring the two lowest skill levels. This indicates a strong trend of downskilling in casual full-time work.

Table 6: Change in share for male and female employees by skill level, 1989-2019

Skill Level	*Employees ('000s)*		*Employment*	
	1989	*2019*	*Growth p.a. (%)*	*Change in share (%)*
Full-time Permanent				
I Managers/Professionals	1,304.2	2,481.4	3.0	13.1
II Associate Professionals	731.0	770.6	0.2	-2.2
III Skilled vocations	1,136.2	828.1	-0.9	-9.0
IV Intermediate skills	1,176.6	1,710.7	1.5	3.7
V Elementary skills	903.4	757.4	-0.5	-5.6
Total	*5,251.4*	*6,548.2*	*0.8*	
Full-time Casual				
I Managers/Professionals	68.1	121.3	2.6	-8.2
II Associate Professionals	32.3	50.1	1.8	-4.7
III Skilled vocations	56.2	99.8	2.6	-6.8
IV Intermediate skills	76.1	310.2	10.3	10.3
V Elementary skills	82.0	318.0	9.6	9.3
Total	*314.6*	*899.3*	*6.2*	

Sources: ABS1989-2019, cat. no. 6310.0 and ABS cat. no. 6333.0. Authors' calculations.

4.1 The demand for Skills and Hours worked in Permanent and Casual Jobs

This section considers aggregate hours worked as a means of analysing the impact of the liberalisation of the labour market. While the number of employees responds to conditions of both demand and supply, hours worked is more related to demand conditions. According to Wooden (2000, p. 194), there are two reasons for this difference. Firstly, some demand may not be satisfied, because there may be not enough employees with the requisite skills and qualifications to do the job. Secondly, hours worked may vary depending on the job. For example, *Managers and Professionals* may do additional hours of unpaid work, while other occupations with fewer skill levels may work fewer hours.

We now proceed with an analysis of changes in the demand for labour by looking at changes in the number of hours worked in occupations and skills. Table 7 shows the growths of employment and growth in aggregate hours worked per week by occupation at the one-digit level between 1989 and 2019. In both years, *Professionals* contributed the most extensive participation of employment and aggregate hours. These workers also had a pronounced change in terms of total numbers and share (6.8 per cent share growth). *Managers* and *Technicians and Trade workers* also experienced

similar trends. The groups with lower skill level, such as *Labourers* and *Clerical and administrative* workers, had less growth, and for this reason, their participation appears rather moderate. These trends indicate polarisation in the Australian labour market. This is because the demand for hours worked is higher in occupations with higher-skill levels compared to those with lower-skill levels.

Table 7: Growth of employment and growth in aggregate hours worked per week by occupation, 1989 to 2019

ANZSCO major group	*Employment ('000s)*		*Aggregate hours (millions)*		*Net change p.a. (%)*		*Share change (%)*	
	1989	*2019*	*1989*	*2019*	*P*	*H*	*P*	*H*
1 Managers	437.6	1,035.0	16.5	37.7	4.6	4.3	3.0	2.1
2 Professionals	1,127.30	2,716.4	34.1	86.1	4.7	5.1	8.3	6.8
3 Technicians and Trades Workers	884.1	1,342.6	22.8	51.2	1.7	4.2	-0.9	2.7
4 Community and Personal Service Workers	805.4	1,284.0	23.5	33.4	2.0	1.4	-0.2	-2.9
5 Clerical and Administrative Workers	1,412.00	1,521.5	31.5	46.6	0.3	1.6	-7.3	-3.4
6 Sales Workers	578.9	997.6	16.5	26.0	2.4	1.9	0.5	-1.3
7 Machinery Operators and Drivers	439.3	729.1	15.1	27.8	2.2	2.8	0.1	0.0
8 Labourers	881.7	1,056.8	24.6	32.1	0.7	1.0	-3.5	-3.9
Total	*6,566.3*	*10,683.0*	*184.6*	*340.8*	*2.1*	*2.8*		

Notes: P = persons. *H* = hours.

Sources: ABS1989-2019, cat. no. 6310.0 and ABS cat. no. 6333.0. Authors' calculations.

Table 8 shows the growth in total hours worked for Australian workers by skill level for the 30 year period in question. The significance of this Table is the growth in the share change in aggregate hours for Skill I, indicating that the demand for labour favours higher rather than lower skills levels. These changes seem to indicate that the labour market is polarising in terms of skills, a finding already noted by Esposto (2011).

Table 8: Total Employment and Total Aggregate Hours per week Growth by Skill Level Category, 1989 to 2019

Skill category	*Employment growth (%)*	*Aggregate hours growth (%)*	*Change in employment share (%)*	*Share change in aggregate hours (%)*
I Managers/Professionals	127.8	152.1	9.1	8.9
II Associate Professionals	29.3	72.9	-2.6	-0.8
III Skilled vocations	5.6	52.4	-6.6	-3.0
IV Intermediate skills	94.0	90.5	4.5	0.9
V Elementary skills	29.7	26.8	-4.4	-6.1
Total	*62.7*	*84.4*		

Sources: ABS1989-2019, cat. no. 6310.0 and ABS cat. no. 6333.0. Authors' calculations.

Table 9 groups the growth in hours worked in terms of skilled job types: permanent, casual and full-time and part-time work. For permanent full-time work, the demand for labour shows clear signs of favouring occupations that possess higher-skill levels, namely, skill level I, where the share increased. However, the share declined in all other skill categories, indicating clear signs of upskilling in employment. Similar trends are seen in part-time permanent work, except that the share grew in the middle of the skill distribution. On the other hand, casual full-time employment shows opposite trends. For example, the growth in the demand for hours worked favours occupations with lower-skilled levels, where the share for the demand for labour grew principally in the two lowest-skilled categories. In terms of part-time casual work, the share in the demand for labour fell considerably in the lowest skilled occupation.

Table 9: Growth in Permanent and Casual Full-time and Part-time Employment and Aggregate Hours Worked per Week by Skill Level Category, 1989 to 2019

	Employment ('000s)		*Aggregate hours (millions)*		*Net change p.a. (%)*		*Share change (%)*	
	1989	*2019*	*1989*	*2019*	*P*	*H*	*P*	*H*
Full-time Permanent								
I Managers/Professionals	1,304	2,481.4	40.7	85.9	3.0	3.7	13.1	11.5
II Associate Professionals	731	770.6	19.8	28.1	0.2	1.4	-2.2	-0.3
III Skilled vocations	1,136	828.1	28.7	32.2	-0.9	0.4	-9.0	-4.1
IV Intermediate skills	1,177	1,710.7	43.0	60.7	1.5	1.4	3.7	-0.8
V Elementary skills	903	757.4	27.8	25.6	-0.5	-0.3	-5.6	-6.4
Total	*5,251*	*6,548.2*	*160.0*	*232.6*	*0.8*	*1.5*		
Full-time Casual								
I Managers/Professionals	68.1	121.3	2.5	2.6	2.6	0.1	-8.2	-9.9
II Associate Professionals	32.3	50.1	1.1	1.3	1.8	0.4	-4.7	-4.0
III Skilled vocations	56.2	99.8	1.9	2.8	2.6	1.6	-6.8	-2.7
IV Intermediate skills	76.1	310.2	2.5	7.0	10.3	5.9	10.3	13.7
V Elementary skills	82.0	318.0	2.5	4.9	9.6	3.2	9.3	2.8
Total	*314.6*	*899.3*	*10.6*	*18.5*	*6.2*	*2.5*		
Part-time Permanent								
I Managers/Professionals	53.3	582.5	1.0	20.2	33.1	65.6	25.2	23.2
II Associate Professionals	57.6	180.9	1.0	6.6	7.1	19.2	-1.9	-1.7
III Skilled vocations	11.5	194.4	0.2	7.6	52.8	100.0	9.9	10.4
IV Intermediate skills	126.7	401.6	2.1	14.2	7.2	19.1	-4.0	-3.8
V Elementary skills	171.9	177.8	2.8	6.0	0.1	3.9	-29.3	-28.1
Total	*421.1*	*1537.1*	*7.1*	*54.6*	*8.8*	*22.4*		
Part-time Casual								
I Managers/Professionals	72.9	229.0	0.9	4.9	7.1	14.9	0.9	1.3
II Associate Professionals	26.8	94.5	0.3	2.4	8.4	21.1	0.9	2.2
III Skilled vocations	36.8	188.5	0.6	5.3	13.7	27.4	4.7	7.0
IV Intermediate skills	171.2	585.8	2.2	13.1	8.1	16.6	4.9	6.5
V Elementary skills	271.5	600.6	3.1	9.3	4.0	6.7	-11.5	-17.0
Total	*579.2*	*1698.4*	*7.1*	*35.0*	*6.4*	*13.2*		

Notes: P = persons. *H* = hours.
Sources: ABS1989-2019, cat. no. 6310.0 and ABS cat. no. 6333.0. Authors' calculations.

These trends suggest that the labour market is polarising. The reason might be that employers are employing highly-skilled workers in permanent work, while in terms of casual employment, the demand for labour favours those occupations requiring lower-skill levels.

4.2 Increasing Inequality in Earnings by Skill level in Full-Time Jobs

We now turn to look at whether there is any evidence of inequality in full-time earnings. We analyse increasing inequality in full-time earnings in terms of skill levels at a highly aggregated level, using the respective ASCO 2nd edition and ANZSCO definitions of skill. Thus, we measure the earnings variability across skills between the periods of 1989-1995 (ASCO 1st edition), 1997-2005 (ASCO 2nd edition) and 2007-2019 (ANZSCO)[1]. There are two reasons for choosing these different periods for the analysis. Firstly, it is important to learn whether changes in earnings inequality in terms of skill levels have been consistent over the last 30 years. The second is to find out whether changes in skill inequality have been consistent across different skill distributions (i.e., ASCO 1st edition, ASCO 2nd edition and ANZSCO). To do this, we measure the level and change over these two periods in skill earnings inequality by using the respective skill definitions of each of the three distributions. Furthermore, real earnings are calculated by deflating nominal earnings by using the Consumer Price Index (CPI).

For all periods, the wages of casual workers were higher in permanent work compared to casual work. The only exception was Skill I in 2005. Between 1989 and 1995 the hourly rate of permanent employees grew at a greater level than for casual employees at all skill levels, with the exception of Skill II, which increased by over 25.3 per cent for casuals (first panel in Table 10). Earnings in Skill III for casual employment declined by 9.7 per cent. For the other two periods (second and third panels), we find that wages as arranged by skill level grew faster in casual work as opposed to permanent work. This was more pronounced in the 1997-2005 period compared to the 2007-2019 period, where all wages grew faster in casual work compared to permanent work. The only exceptions were Skill IV between 1997-2005 and Skill III between 2007-2019.

An interpretation of the results is that labour market reforms over recent decades have provided firms with more scope to reduce their use of permanent labour by creating more employment opportunities for casual workers, at lower wages. These types of recruitment decisions by employers has potential implications for exacerbating wages inequality in the Australian labour market, which continue to grow, particularly at a time when wages growth has been very low in the last few years.

1 In 2006, ASCO 2nd edition was replaced by ANZSCO; hence we do not use 2006 for the period of analysis. This is to avoid large fluctuations occurring from the changes in occupational and skill distributions arising from new measures and definitions of skill.

Table 10: Change in full-time permanent and casual hourly earnings, 1989-1995, 1997-2005 and 2007 and 2019

	1989		*1995*		*Change in earnings*	
	Permanent	*Casual*	*Permanent*	*Casual*	*Permanent %*	*Casual %*
ASCO I						
Skill I	31.9	24.8	33.7	25.8	5.6	4.1
Skill II	31.7	25.3	32.6	31.7	3.0	25.3
Skill III	24.0	25.5	24.1	23.0	0.7	-9.7
Skill IV	24.8	22.1	26.3	22.9	5.8	3.5
Skill V	22.5	20.0	23.5	20.8	4.3	4.4
	1997		*2005*		*Change in earnings*	
	Permanent	*Casual*	*Permanent*	*Casual*	*Permanent %*	*Casual %*
ASCO II						
Skill I	37.6	31.2	41.7	43.6	10.8	39.9
Skill II	31.5	21.5	34.0	26.9	7.8	25.0
Skill III	27.2	24.4	30.0	30.6	10.0	25.5
Skill IV	28.0	23.8	29.4	24.7	5.2	4.0
Skill V	24.5	20.4	25.5	23.3	4.3	14.6
	2007		*2019*		*Change in earnings*	
	Permanent	*Casual*	*Permanent*	*Casual*	*Permanent %*	*Casual %*
ANZSCO						
Skill I	43.8	39.1	47.9	42.9	9.4	9.7
Skill II	33.4	26.6	36.3	29.7	8.7	11.7
Skill III	29.4	26.1	31.4	27.4	6.8	5.0
Skill IV	28.3	24.1	30.3	26.8	7.1	11.2
Skill V	23.9	20.5	25.0	23.3	4.6	13.7

Sources: ABS1989-2018, cat. no. 6310.0 and ABS cat. no. 6333.0. Authors' calculations. Using Consumer Price Index, base 2019 = 100.

Table 11 provides a long term view of inequality in the longer term. When hourly earnings are examined, we can confirm that permanent jobs receive higher hourly wages than casual employees in 2019 as compared to 1989. According to the literature, casual employees earn less regardless of Australian law and Fair Commission determinations. Also, when growth is observed, only *Managers* had a higher increase in permanent jobs than in casual jobs. With this result, we can confirm the inequality that the Australian market has shown in recent decades.

Table 11: Hourly earnings for full-time Permanent and Casual employment from 1989 to 2019

	1989		*2019*		*Growth p.a.*	
	Permanent	*Casual*	*Permanent*	*Casual*	*Permanent*	*Casual*
1 Managers	28.4	23.5	48.0	30.6	2.3	1.0
2 Professionals	29.1	18.7	46.2	42.6	2.0	4.3
3 Technicians and trades workers	23.5	18.8	31.6	27.6	1.2	1.6
4 Community and personal service workers	24.0	20.2	29.7	26.0	0.8	1.0
5 Clerical and administrative workers	24.1	16.3	32.9	29.0	1.2	2.6
6 Sales workers	19.0	13.7	26.3	22.5	1.3	2.1
7 Machinery operators and drivers	22.6	19.0	30.8	27.5	1.2	1.5
8 Labourers	21.0	11.5	25.5	24.0	0.7	3.6

Sources: ABS1989-2019, cat. no. 6310.0 and ABS cat. no. 6333.0. Authors' calculations. Hourly earnings were standard with Customer Price Index ABS Cat 6401.0 -, Australia, Dec 2019. Using Consumer Price Index, base 2019 = 100.

5. Conclusion

In general, our data analysis shows that the labour market has experienced a process of polarisation consistent with that found overseas by Autor *et al*. (2006) and Goos and Salomon (2014), as well as Coelli and Borland (2016) for Australia.

Our findings indicate polarisation in Australia's labour market, that is, an increase in jobs with poor pay and working conditions, with an accompanying decrease in the share of jobs in the middle of the employment distribution. This is not too dissimilar to the disappearing middle or vanishing bottom hypothesis first highlighted by Gregory (1996). These findings pose strong challenges for policy makers in terms of the negative impacts that the casualisation of employment is causing in the Australian labour market. One such challenge is its negative impact on family income units. Further research work is required in this area, in order to generate government policies that will assist in alleviating the problem income inequality in households. Another important finding in this work is that disaggregating employment into job types, (full-time, part-time casual and permanent work for men and women), provides a broader understanding into the types of inequality that Australia is facing. Households whose members possess low skill levels and are dependent on part-time and casual work are likely to experience long-term increasing inequalities. To reverse these trends it may be required to generate a more equal distribution of labour skills. This could be done through the creation of more effective and targeted training and retraining education policy schemes and programmes.

While research that is more detailed is required in the area of skills inequality and job polarisation, particularly with the use of more disaggregated data, the findings show a very concerning long-term trend. Our analysis highlights two already existing themes. The first is that the Australian labour market has been unable to create long term full-time permanent jobs. The other, was captured by Borland, Gregory and Sheehan at the beginning of the century, when they identified that the Australian labour market had been unable to "… generate an adequate supply of jobs paying a living wage, and hence supporting full and independent involvement in the Australian community" (2001, pp. 19-20). Sadly, these trends appear to be increasing.

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