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The impact of the Global Financial Crisis on youth unemployment

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Abstract
Australia was one of the few OECD countries to emerge from the Global Financial Crisis (GFC) without facing a recession, usually defined as negative GDP growth for two consecutive quarters. However, the (overall) unemployment rate did increase following the GFC and has still not returned to pre–GFC levels. Unemployment rates for young people went up much more dramatically and remain high. This article investigates the impact of the GFC on youth unemployment and long-term unemployment. To anticipate our results, we find that the youth unemployment rates increased significantly owing to a fall in aggregate demand, although youth wages had been falling relative to adult wages. These findings do not support the commonly heard claim that youth wages are pricing young people out of the market.

JEL Codes: J64, J21

Keywords
Youth unemployment, Global Financial Crisis, minimum wages, replacement rates, youth labour markets

Introduction

Australia was one of the few Organisation for Economic Co-operation and Development (OECD) member countries to emerge from the Global Financial Crisis (GFC) without facing a recession, usually defined as negative growth in gross domestic product (GDP) for two consecutive quarters. However, the (overall) unemployment rate did increase following the 2008–2009 onset of the GFC and has still not returned to the pre-GFC levels.

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Youth unemployment rates went up much more dramatically than average rates across the workforce and remain high. Chris Kent, Assistant Governor of the Reserve Bank of Australia, stated to a House of Representatives Standing Committee on Economics that youth unemployment 'is certainly a significant concern' (Commonwealth of Australia, 2015: 15). This article investigates the impact of the GFC on youth unemployment and long-term unemployment. In particular, we study whether youth unemployment rates increased due to an increase in youth wages relative to adult wages. To anticipate our results, we find that the youth unemployment rates increased significantly although youth wages had been falling relative to adult wages. These findings do not support the commonly heard claim that youth wages are pricing young people out of the market.

Changes announced in the May 2014 Coalition Government Budget (but still not legislated by February 2015) meant that anyone below 30 years of age would not have access to unemployment benefits for 6 months and after that would be required to engage in compulsory work for the dole. The prospects facing a large and growing number of young people are therefore grim. Recent research (Clark et al., 2014; Mavromaras et al., 2013; Stewart, 2007) suggests a long-term scarring effect of taking on a job that is below the skill level of the person who does so: the probability of subsequently getting a good job (i.e. one that is appropriate for that person's skills and education levels) is decreased significantly. The Coalition Government in 2014 proposed that anyone under the age of 30 years must accept any job at all as a condition of receiving unemployment benefits.[1] This is a policy likely to cause serious problems for the young. The OECD (2013) in its Action Plan for Youth argues that 'Even if public resources are constrained, especially where fiscal consolidation is required, it is important to guarantee that youth, including those with little or no work experience, have access to unemployment and social assistance' (p. 7).

In the context of the Coalition Government's policy approach to young people's employment, this article examines the dimensions of the Australian youth labour market and changes to it in the wake of the GFC. The section 'Literature review' provides a literature review of the debate over the determinants of youth unemployment, including the relationship between minimum wages and unemployment levels. The section 'The Australian youth labour market' provides a statistical overview of the nature and dynamics of the youth labour market since 1997, including a regression analysis showing that unemployment trends in the adult labour market are amplified in the youth labour market, which is concentrated into narrow casualised segments, vulnerable to downturns. The section 'The youth labour market after the GFC' identifies the scarring effects on young people of post-GFC unemployment and its failure to return to pre-GFC levels. In a discussion of the causes of youth unemployment in the section 'What explains the rise in youth unemployment?' it is shown that claimed links to the levels of either youth wages or unemployment benefits are not supported by the evidence. The article concludes with some concrete proposals for reducing youth unemployment and by arguing the potentially very harmful effects of policy proposals announced in 2014.

Literature review

There is a large research literature on youth labour markets in the OECD in general, and there are a smaller number of papers about the Australian experience. Many of the

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European OECD countries have faced a massive increase in youth unemployment and long-term unemployment (Junankar, 2011). A common feature of this literature is the social impact of youth unemployment. When young people are unemployed, they may face various problems including heightened levels of social alienation and depression and an increase in the use of non-prescribed drugs, petty crime and suicide rates (Eurofound, 2014).

In the economics literature, there has been a continuing debate about the impact of minimum wages on (youth) unemployment, with the traditional view assuming competitive labour markets where it is argued that minimum wages lead to unemployment (Junankar, 1987). This view has been very popular with Conservative politicians and with the business sector. However, in recent years, a growing number of economists have argued that in imperfect markets, minimum wages do not lead to increased unemployment (Booth, 2014; Card and Krueger, 1995; Manning, 2003, 2010). They argue that the labour market is not perfectly competitive but that employers have market power in wage setting (monopsony). There is asymmetric information in the labour market, workers have heterogeneous preferences and so on, all of which make the labour market behave differently from a competitive market. Manning (2003, 2010) has shown that in such markets employment can increase with an increase in wage rates.

The controversy on the impact of minimum wages on unemployment was kindled by the work of Card and Krueger (1994, 1995) which was followed by several critiques by (among others) Neumark and Wascher (2007). The international evidence is mixed with recent studies by Dube et al. (2010) for the United States showing that there is no evidence for the 'disemployment' effects of minimum wages. Dube (2011) in a book review of Neumark and Wascher (2008) argues that the evidence provided for such effects is selective and that '[D]ynamic specifications show that the measured disemployment in the state panel models tend to occur before (and sometimes many years before) the minimum wage increases' (p. 763).

In 1999, Britain introduced a national minimum wage (NMW). The impact of this NMW has been studied by several economists. David Metcalf (2008), for example, shows that the NMW did increase wages, but there is no evidence to show that it led to a fall in employment. He argues that a minimum wage rise could increase labour supply and the increased wages (via efficiency wages) could increase productivity.

There is now much evidence that minimum wages do not lead to increased unemployment. In an open letter on 14 January 2014, 600 US Economists wrote to the US Congress:

> In recent years there have been important developments in the academic literature on the effect of increases in the minimum wage on employment, with the weight of evidence now showing that increases in the minimum wage have had little or no negative effect on the employment of minimum-wage workers, even during times of weakness in the labor market. Research suggests that a minimum-wage increase could have a small stimulative effect on the economy as low-wage workers spend their additional earnings, raising demand and job growth, and providing some help on the jobs front. (Economic Policy Institute, 2014)

Another branch of traditional economics argues that generous unemployment benefits lead to increased unemployment. The underlying economic theory is based on a model of unemployed workers searching for a job with imperfect information (Mortensen and

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Pissarides, 1999). The unemployed searching for employment receive various job offers, but depending on the wage offered they may accept or reject that offer. If they have substantial unemployment benefits, they have a higher 'reservation wage' and reject low wage offers, remaining unemployed. Nickell and Layard (1999) have argued that unemployment benefits are one of the reasons for high unemployment. They also argue that various labour market institutions like unions, centralised wage bargaining and so on also lead to higher unemployment. These results have been criticised by various people including Howell (2005, 2011), and Howell et al. (2007). Heckman (2007) also argues that the orthodox results are 'fragile' and unable to support the conclusions that labour market institutions are the main cause of high unemployment.

Curiously, there is very little recent literature on Australian youth labour markets. There were a few survey papers several years ago (Lewis and Mclean, 1998; Miller and Volker, 1987), a few papers using longitudinal data (Junankar and Wood, 1992; Marks et al., 2003), panel studies by Leigh (2003), Watson (2004) and some time-series estimates of employment (Daly et al.,1998; Junankar et al., 2000). In a paper using Australian time-series data, Junankar et al. (2000) estimated employment functions for youth in different industries using time-series data and found no evidence to support the view that minimum wages decrease employment rates. Leigh (2003), in a study using difference in difference methodology, compared one State (Western Australia) that had increased minimum wages with other States. He found a negative impact of minimum wages on employment. This article was heavily criticised by Watson (2004) and Junankar (2004). One important issue that is sometimes ignored in cross-sectional studies is that if minimum wages are increased, this leads to an increase in total incomes of that group; hence, there would be Keynesian aggregate demand effects that can help to increase employment overall.

Sewell (2013) carried out a time-series analysis (quarterly data from 1997 (Q1) to 2012 Q(1)) of the Australian youth labour market. He estimated a model using Ordinary Least Squares where the youth unemployment rate is a function of lagged changes in the growth rate of GDP (as a proxy for aggregate demand), lagged real minimum wage, a replacement rate (RR) and an indicator variable to allow for non-linearities in the impact of positive and negative changes in growth. He found that the impact of the real minimum wage was statistically insignificant for male youth but significant for females. The RR was statistically insignificant, but he noted that he used the adult wage rate (as he did not have data on youth wage rates), which means that we need to be wary in accepting these results. He also found that increases in aggregate demand lead to falls in the youth unemployment rate. An interesting finding was that when GDP growth is negative, it has a greater effect on youth unemployment than when it is positive.

There is some evidence for scarring (reduced long-term life chances) and occurrence dependence (an event of unemployment increases the probability of a repeat spell). A relatively recent paper by Doiron and Gorgens (2008) found evidence for state dependence, using the Household and Income Labour Dynamics (HILDA) longitudinal data. Another recent paper by Hérault et al. (2012) estimated a multinomial logit model for the youth labour market using cohort data from the Longitudinal Surveys of Australian Youth and Youth in Transition Surveys and found that growth and unemployment have different effects on different components of the youth labour market (analysed by

education, whether working part-time or full-time, and gender). An increase in the overall unemployment rate increases the risk of youth unemployment.

Overall, the various studies of the youth labour market suggest that there is considerable doubt about the impact of minimum wages on youth unemployment. However, most studies find that increases in aggregate demand lead to a fall in youth unemployment.

The Australian youth labour market[2]

The youth labour market in Australia is a complex market: young people have a choice of leaving school at age 16 or 17 (the compulsory schooling ages) or of continuing until age 18 (and completing Year 12). If they leave school early, they may look for work or a traineeship. If they continue until age 18, they may look for work or continue in tertiary education (either at a TAFE or at University). As the number of unskilled jobs seems to have been on a declining trend over the past few decades, most young people who leave school early find it difficult to get a job. As a result, they may decide to re-enter the education sector. If they continue into tertiary education, they may leave education at 20 (say with a TAFE qualification) or a university degree at 21 or 22. It is important to note that since government policies were introduced in July 2009, young people aged under 19 years have to be in full-time education (at least 25 hours a week); otherwise, they do not have access to the youth allowance (unemployment benefits), and hence are unlikely to respond to an Australian Bureau of Statistics (ABS) Survey as being unemployed. Even 20- to 24-year-olds without a Year 12 or equivalent would have access to subsidised education or training place. Again, this may affect this group from being listed as unemployed.[3]

Many young people who are studying at TAFE or University work part-time as well. There are even a significant number of young people who are full-time students and who work full-time! There are large flows between different states: from employment to unemployment or education, from unemployment to education or employment and from education to employment or unemployment.

Since there is a surge of young people entering the labour market at the end of a school year or university year, the sudden increase in supply means that it is difficult to find a job quickly and unemployment rises. If some young people are unable to find work for some time, they may move from unemployment to the education sector or to not-in-the-labour force (NILF) status, and the labour force participation rate and unemployment rate fall as a result. In a recession, as firms stop hiring, the young are hit as they are just entering the labour market. In addition, during a recession, firms tend to fire the young because they work on a last-in-first-out basis. As many young people may be in casual or short-term employment, during a recession their contracts are not renewed. Another important feature of the youth labour market is that young people are typically employed in cyclically sensitive areas like Manufacturing and Construction (for males) and Retail trade and Accommodation and food services (especially for females) (see Table 1). During the GFC, these industries were hit significantly and youth unemployment increased substantially.[4] A study by the OECD (2014) shows that

> in terms of employment changes by age the initial decline in the OECD employment rate (persons aged 15 and over) up to the end of 2009 was largely driven by job losses among

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> prime-age workers and youth, reflecting the relative dominance of prime-age workers in the population and the disproportionate impact of the crisis on jobs held by youth. (p. 26)

Furthermore, the OECD states, 'The worst off are youth and low skilled workers. Young and unskilled workers face the highest unemployment rates. Hence, they cumulate the poorest performance in terms of job quantity with the worst outcomes with respect to job quality' (p. 120).

As a result, young people are likely to face higher rates of unemployment compared to adults, as Figure 1 indicates. In particular, the 15- to 19-year-old group has much higher unemployment rates than the 20- to 24-year-old group, which in turn has higher rates than adults (25- to 64-year-olds). As young people see the labour market getting tighter, they may respond by delaying entering it and continuing their education (a phenomenon I call 'encouraged students'). Similarly, when people have been unemployed for a long period, they may give up searching for employment ('discouraged workers').

A simple ordinary least squares regression of the Australian youth unemployment rate (15–24 age group) on the adult unemployment rate (25–64 age group), using monthly seasonally adjusted data from November 1997 to November 2013, gives the following

$$\begin{aligned} \mathrm{YUR} &= 4.64 + 1.67\mathrm{UR} \\ &\quad (18.35)\,(28.61) \\ R^2 &= 0.81 \end{aligned} \tag{1}$$

In words, for every 1 percentage point increase in the adult unemployment rate, the youth unemployment rate increases by 1.67 percentage points.

There appears to have been a change in this relationship after the GFC (using a dummy variable equal to zero from November 1997 to December 2007, and one thereafter)[5]

$$\begin{aligned} \mathrm{YUR} &= 4.25 + 1.75\mathrm{UR} + 0.30\mathrm{GFC} \\ &\quad (14.87)\,(27.93)\quad (2.76) \\ R^2 &= 0.82 \end{aligned} \tag{2}$$

This suggests that for every 1 percentage point increase in the adult unemployment rate, the youth unemployment rate increased by 1.75 percentage points and after the GFC by 2.05 percentage points. In each case, the variables are statistically significant at the 1% level.[6]

A similar equation was estimated in terms of an annual change in unemployment rates (to remove any trend)

$$\begin{aligned} \Delta\mathrm{YUR} &= 0.04 + 1.89\Delta\mathrm{Adult\,UR} \\ &\quad (0.68)\quad (17.43) \\ R^2 &= 0.63 \end{aligned} \tag{3}$$

This result in turn suggests that an increase of 1 percentage point in the adult unemployment rate led to a 1.89 percentage point increase in the youth unemployment rate.

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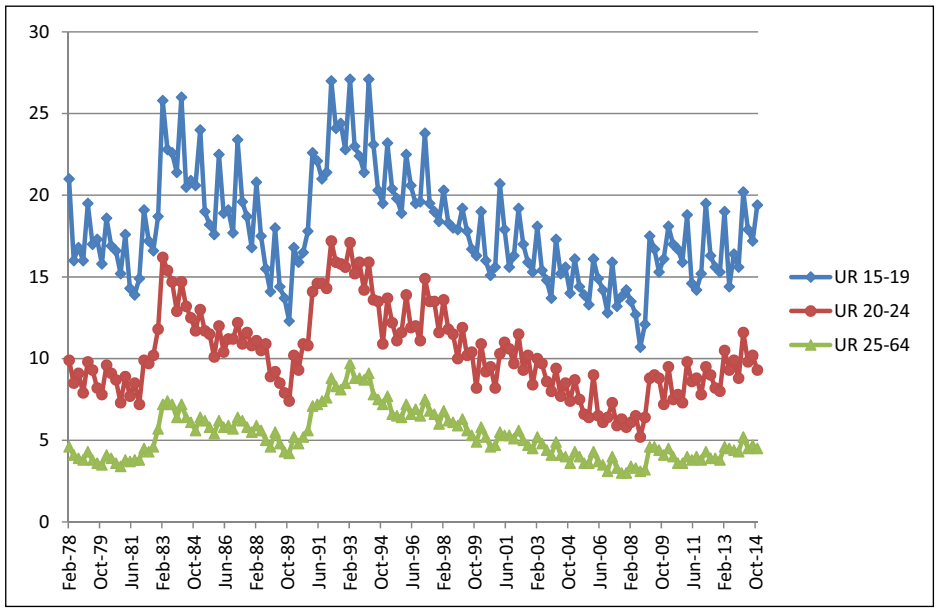

Figure 1. Unemployment rates, people aged 15–24, 20–24 and 25–64 years. Australia, 1978–2014.
UR 15–19: unemployment rate, 15- to 19-year-olds; UR 20–24: unemployment rate, 20- to 24-year-olds; UR 25–64: unemployment rate, 25- to 64-year-olds.
Source: ABS (2014e). GM1, Labour force status and gross changes (flows) by sex, state, age (LM8srd).

Note that changes in access to unemployment benefits, especially since July 2009, may have led to lower youth unemployment rates, *ceteris paribus*. No attempt has been made to test this relationship for structural stability.

As Tables 1 and 2 show, youth employment is concentrated in a few industries (shown in bold face type); 15- to 19-year-old males are mainly in full-time employment in the Construction, Manufacturing and Retail trade and in part-time employment in the Retail trade and Accommodation and food services. Full-time employment of 20- to 24-year-old males is concentrated in the Construction, Manufacturing and Retail trade, and 25- to 34-year-old males are mainly in full-time employment in Manufacturing while their part-time employment is concentrated in the Retail trade and Accommodation and food services. However, there is much greater concentration of males aged under 25 years in a few industries, compared with the older age group of 25- to 34-year-olds (a group that could be considered as substitutes for younger people);15- to 19-year-old females in full-time employment are concentrated in Health care and social assistance, the Retail trade and Accommodation and food services, while part-time female employment is heavily concentrated in Accommodation and food services and the Retail trade; 20- to 24-year-old females in full-time employment are concentrated in Health care and social assistance, the Retail trade, and Professional, scientific and technical services. Part-time employment for this age group is mainly in the Retail trade, Accommodation and food services, and Health care and social assistance.

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Table 1. Shares of employment by age and industry (%), males, Australia, May Quarter 2014.

Males – young and aged 25–34 years	MEFT, 15–19 (%)	MEPT, 15–19 (%)	MEFT, 20–24 (%)	MEPT, 20–24 (%)	MEFT, 25–34 (%)	MEPT. 25–34 (%)
Agriculture, forestry and fishing	4.59	2.08	3.27	0.42	2.34	3.13
Mining	0.63	0.15	4.57	0.26	4.57	0.00
Manufacturing	**11.43**	2.38	**10.29**	**4.08**	10.83	7.92
Electricity, gas, water and waste services	2.52	0.10	1.05	0.26	1.90	1.00
Construction	**34.29**	2.67	**25.52**	6.84	16.93	8.33
Wholesale trade	2.70	1.14	2.80	0.68	3.92	1.89
Retail trade	**12.06**	**35.89**	**10.29**	**26.28**	7.86	13.89
Accommodation and food services	5.76	**35.25**	6.69	**21.37**	4.50	12.59
Transport, postal and warehousing	4.41	1.98	5.24	5.49	6.02	6.21
Information media and communications	3.06	0.69	2.17	1.57	2.36	1.12
Financial and insurance services		0.20	1.52	0.89	4.17	0.71
Rental, hiring and real estate services	0.18	1.04	1.05	2.77	1.98	0.35
Professional, scientific and technical services	2.34	2.52	4.89	2.66	10.34	5.02
Administrative and support services	0.63	2.48	2.10	3.61	2.17	7.39
Public administration and safety	2.61		3.60	2.35	5.44	3.01
Education and training	0.72	1.83	1.12	5.12	3.64	7.27
Health care and social assistance	0.72	2.52	2.90	7.37	5.15	11.29
Arts and recreation services	1.17	5.69	2.05	5.49	1.30	3.37
Other services	**10.17**	1.39	8.89	2.51	4.58	5.50
Total (×1000)	111.1	202	400.5	191.4	1322.70	169.20

MEFT: share of males employed full-time in industry x; MEPT: share of males employed part-time in industry x.
Source: ABS (2014f). Employed persons (ST E12) by industry (Australian New Zealand Standard Industrial Classification (ANZSIC) division), sex, state and territory, age and actual hours worked, August 1991 onwards.

Thus, whereas 25- to 34-year-old males working full-time are concentrated in the Construction industry, those working part-time are concentrated in similar industries to females: Accommodation and food services and the Retail trade. However, it is clear that there are significant differences between the different age groups with a greater concentration in a fewer industries for the young.

Although youth are usually defined as young people between the ages of 15 and 24 years, the labour market for the 15–19 age group is very different from that of the 20–24 age group. Young people aged 15–24 years are more likely to be working part-time or in casual jobs. Note that casual employment is defined as workers without leave

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Table 2. Shares of employment by age and industry (%), females, Australia, May Quarter 2014.

Females – young and aged 25–34 years	FEFT, 15–19 (%)	FEPT, 15–19 (%)	FEFT, 20–24 (%)	FEPT, 20–24 (%)	FEFT, 25–34 (%)	FEPT, 25–34 (%)
Agriculture, forestry and fishing	0.71	0.52	1.08	0.25	0.41	0.85
Mining			0.97	0.11	1.49	0.18
Manufacturing	7.30	4.19	3.95	2.64	4.08	4.12
Electricity, gas, water and waste services	0.89		0.68	0.32	1.10	0.40
Construction	1.07	0.26	1.69	1.00	1.99	2.51
Wholesale trade	0.53	0.33	2.55	0.64	2.89	1.81
Retail trade	**17.26**	**36.00**	**12.03**	**30.31**	9.42	14.76
Accommodation and food services	**15.66**	**38.86**	8.04	**21.43**	5.71	11.07
Transport, postal and warehousing	3.20	0.96	3.59	1.57	2.10	1.41
Information media and communications	2.14	1.15	1.26	2.46	2.48	0.60
Financial and insurance services	3.74	0.30	5.10	1.07	7.07	2.99
Rental, hiring and real estate services	3.91	1.45	5.46	1.82	2.95	2.11
Professional, scientific and technical services	5.16	0.85	**10.99**	3.21	12.11	6.50
Administrative and support services	1.42	0.89	2.37	2.82	3.54	6.20
Public administration and safety	2.67	0.04	6.93	1.43	7.89	4.52
Education and training	3.02	3.23	5.82	8.06	10.77	11.02
Health care and social assistance	**17.44**	4.60	**19.46**	**12.70**	18.55	22.12
Arts and recreation services	0.89	3.34	1.22	3.74	1.55	2.11
Other services	**12.99**	3.04	6.82	4.42	3.92	4.72
Total (×1000)	56.2	269.7	278.5	280.4	810.90	398.30

FEFT: share of females employed full-time in industry x; FEPT: share of females employed part-time in industry x.
Source: ABS (2014f). Employed persons (ST E12) by industry (Australian New Zealand Standard Industrial Classification (ANZSIC) division), sex, state and territory, age and actual hours worked, August 1991 onwards.

entitlements.[7] As Figures 2 and 3 show, for young males and females (15–19), a large majority are part-time workers, but even for the 20–24 age group, a significant proportion are working in part-time jobs. In addition, there has been a significant increase in part-time working for young males as well as females over the past decades. As we can see from Figures 4 and 5, part-time workers are more likely to be casual workers and hence subject to a greater threat of losing their jobs. Even a large proportion of young full-time workers are in casual employment and would most likely be the first to lose their jobs in a recession.

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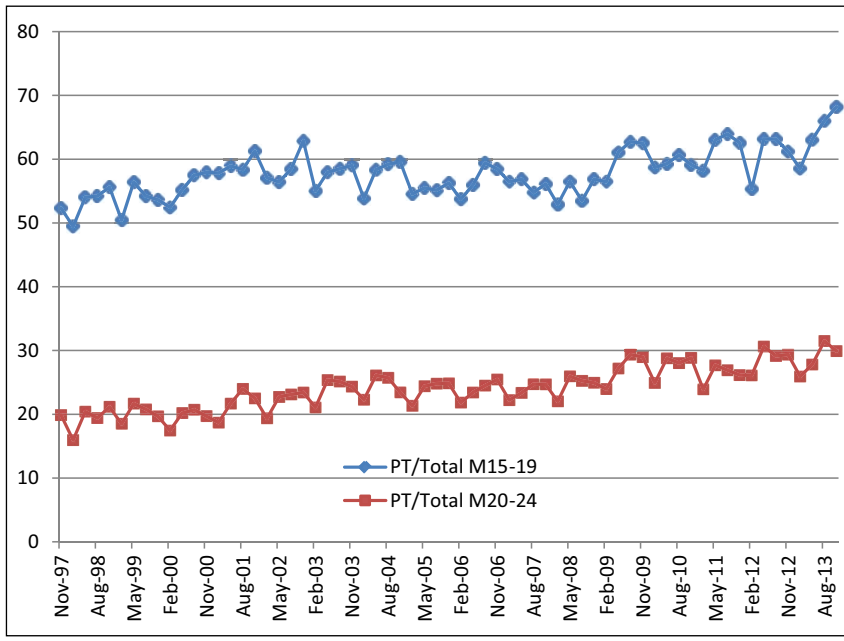

Figure 2. Part-time employment as a share of total employment (%), males aged 15–19 and 20–24 years, Australia 1997–2013.
Source: ABS (2014e).

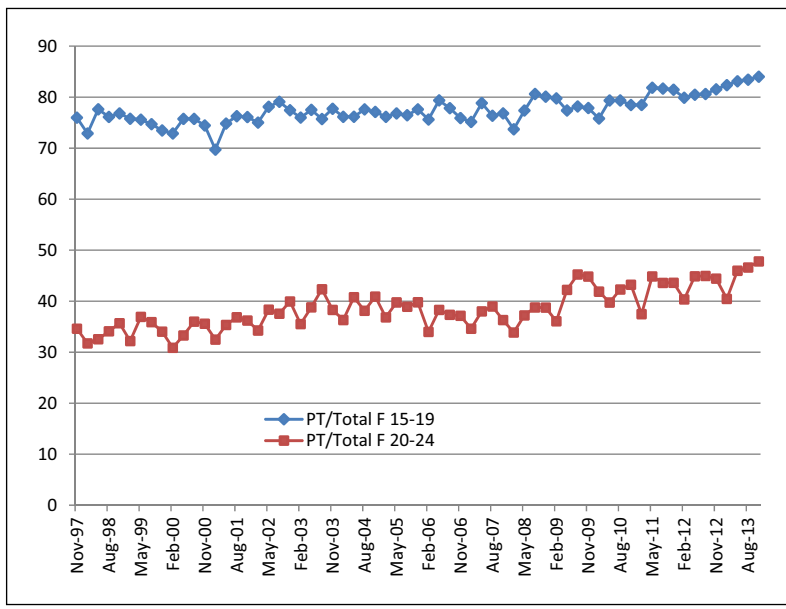

Figure 3. Part-time employment as a share of total employment (%), females aged 15–19 and 20–24 years, Australia, 1997–2013.
Source: ABS (2014e).

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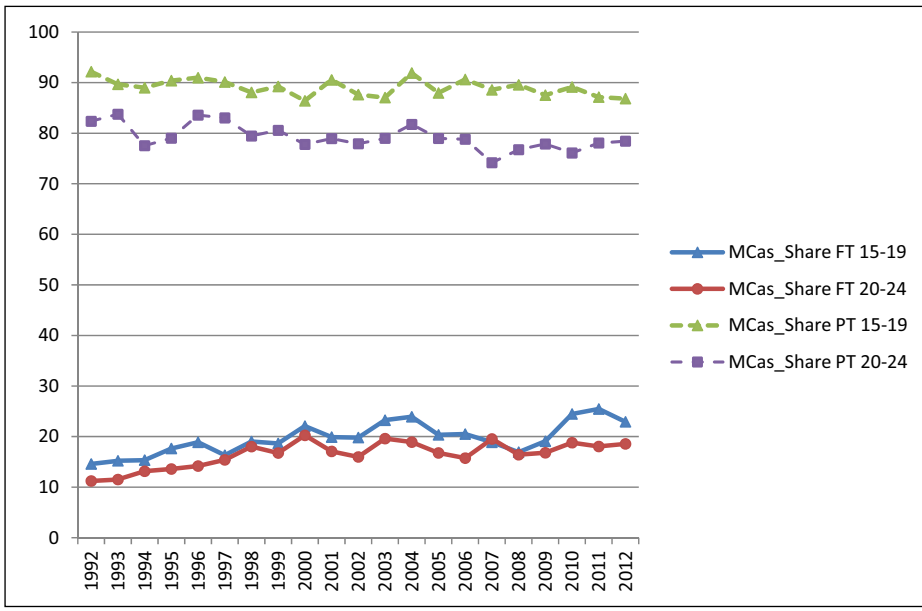

Figure 4. Casual employment as a share of full-time and part-time employment (%), males aged 15–19 and 20–24 years, Australia, 1992–2012.
Source: ABS (2014a).

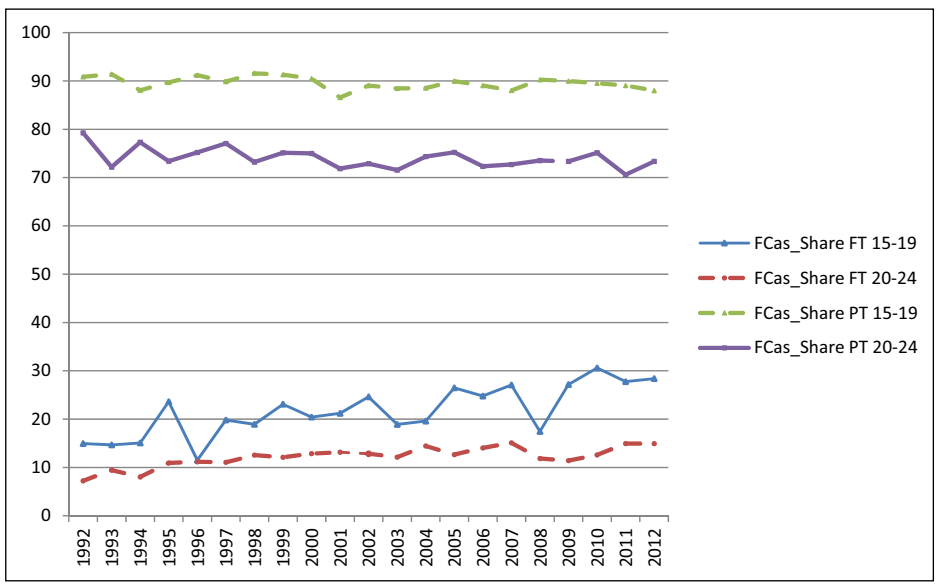

Figure 5. Casual employment as a share of full-time and part-time employment (%), females aged 15–19 and 20–24 years, Australia, 1992–2012.
Source: ABS (2014a).

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Table 3. Unemployment rates (%), young people aged 15–24 years, OECD.

	2008	2009	2010	2011	2012	2013	% Increase
Australia	8.8	11.5	11.6	11.4	11.7	12.2	38.5
Canada	11.6	15.2	14.8	14.2	14.3	13.7	18.0
France	18.6	23.2	22.9	22.1	23.9	23.9	28.7
Germany	10.4	11.0	9.7	8.5	8.1	7.9	–23.7
Greece	22.1	25.8	32.9	44.4	55.3	**58.3**	164.1
Ireland	12.4	25.5	28.3	29.9	33.0	29.6	137.9
Italy	21.3	25.4	27.9	29.1	35.3	40.0	88.2
Japan	7.2	9.1	9.2	8.0	7.9	**6.9**	–4.9
New Zealand	11.4	16.6	17.1	17.3	17.7	15.8	38.9
Spain	24.5	37.7	41.5	46.2	52.9	55.5	126.9
Sweden	20.2	24.9	24.8	22.8	23.7	23.6	16.8
United Kingdom	14.1	19.0	19.3	20.0	21.0	20.9	48.1
United States	12.8	17.6	18.4	17.3	16.2	15.5	21.0
OECD	12.7	16.7	16.7	16.2	16.3	16.2	27.0

Source: Organisation for Economic Co-operation and Development (OECD, 2015).

The youth labour market after the GFC

After the GFC (post 2008), Australia fared much better than most OECD countries, and its youth unemployment rates for 15- to 24-year-olds were almost the lowest, with only Japan and Germany having lower rates (Table 3; highest and lowest values shown in bold type). Even New Zealand, which is sometimes listed as a country that has done well since the GFC, had higher unemployment rates. Greece and Spain have had increasingly high youth unemployment rates, while Germany was one of the few countries where youth unemployment rates continued to fall over this period.

The GFC led to significant falls in GDP for most of the OECD countries, but Australia managed to grow throughout this period. Many economists (but not the National Bureau of Economic Research, New York) define a recession as a situation in which a country faces two consecutive quarters of negative GDP growth.[8] In terms of that definition, Australia avoided a recession. However, although Australian GDP fell only in one quarter during the GFC, unemployment rates (especially for youth) increased and had not returned to pre-GFC levels even by August 2013 (Table 4). A broader definition of a recession that includes employment/unemployment would consider that Australia suffered a recession in the aftermath of the GFC. The youth labour market was hit badly by the GFC, and unemployment and long-term unemployment increased substantially for both males and females. However, since Australian GDP did not fall substantially, unemployment rates did not reach the very high levels that Australian youth had faced during the previous recessions of the early 1980s and the early 1990s (Figure 6). Similarly, youth underemployment rates (the unemployed plus those young people who would like to work longer hours) and youth underutilisation rates (the unemployed, plus the underemployed, plus the marginally attached to the labour force) increased and reached very high levels (Figures 7 and 8).

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Table 4. Increases in youth unemployment in Australia, post-GFC (%).

	Unemployment rate (%)			
	Males aged 15–19 years	Males aged 20–24 years	Females aged 15–19 years	Females aged 20–24 years
August 2008	10.2	5.6	9.9	4.9
August 2013	16.4	9.8	13.6	8.6
% Increase since GFC (August 2008 to August 2013)	61.1	77.0	36.3	72.8

GFC: Global Financial Crisis.
Source: ABS (2014e).

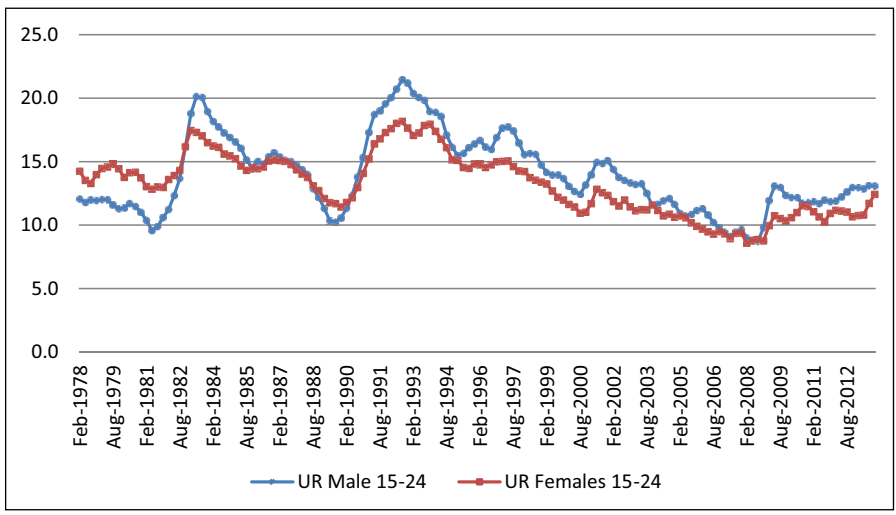

Figure 6. Unemployment rates (%), males and females aged 15–24 years, Australia, 1978–2012.
Source: ABS (2013b) – . Labour force status by sex – persons aged 15–24 years – trend, seasonally adjusted and original.

These figures suggest that the problem for young people is more serious than can be discerned simply looking at the unemployment rates. As a recession hits, the youth employment-to-population ratio falls (Figure 9). This occurs both because unemployment rises and because the labour force participation rate falls (Figure 10). Note that the female labour force participation rates had been growing consistently in previous decades and then fell, while the male labour force participation rates had been slowly falling and then fell sharply with the GFC. As a result of these changes in the participation rate, youth unemployment rate increases are underestimated.

As the GFC developed, although we did not have a technical recession, unemployment rates increased significantly for males, females and young people of both genders. For the reasons discussed earlier, young people face significant increases in unemployment in recessions.

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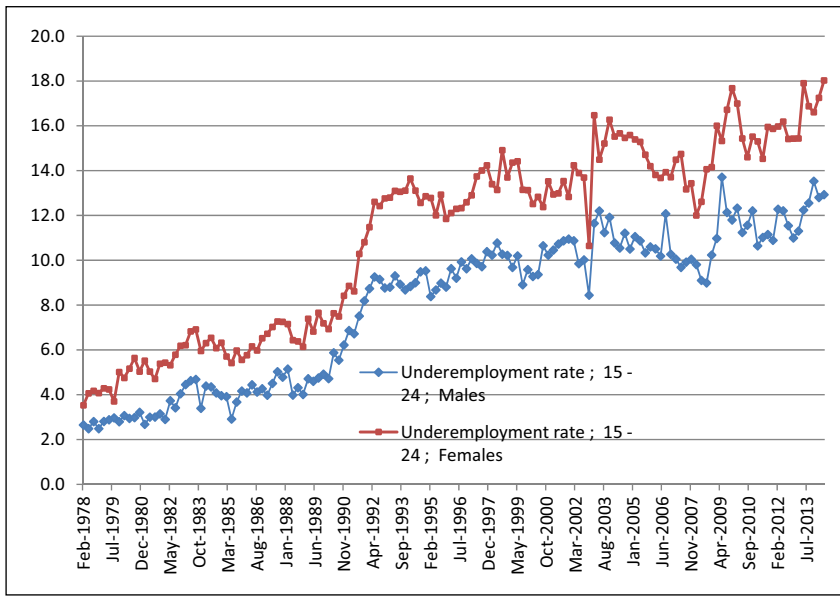

Figure 7. Underemployment rates (%), males and females aged 15–24 years, Australia, 1978–2013.
Source: ABS (2014d) – Table 22. Labour underutilisation by age and sex – trend, seasonally adjusted and original.

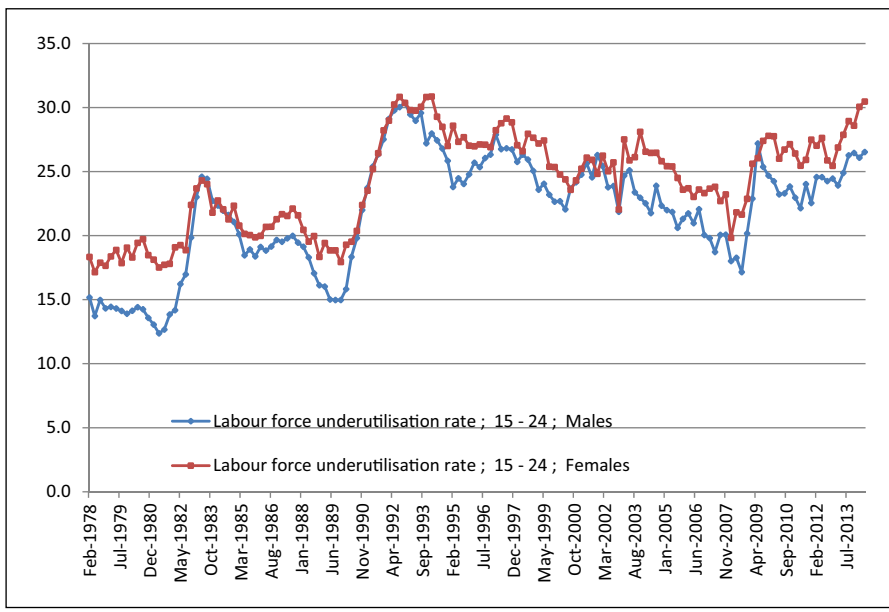

Figure 8. Labour underutilisation rates (%), males and females aged 15–24 years, Australia, 1978–2013.
Source: ABS (2014d) – Table 22. Labour underutilisation by age and sex – trend, seasonally adjusted and original.

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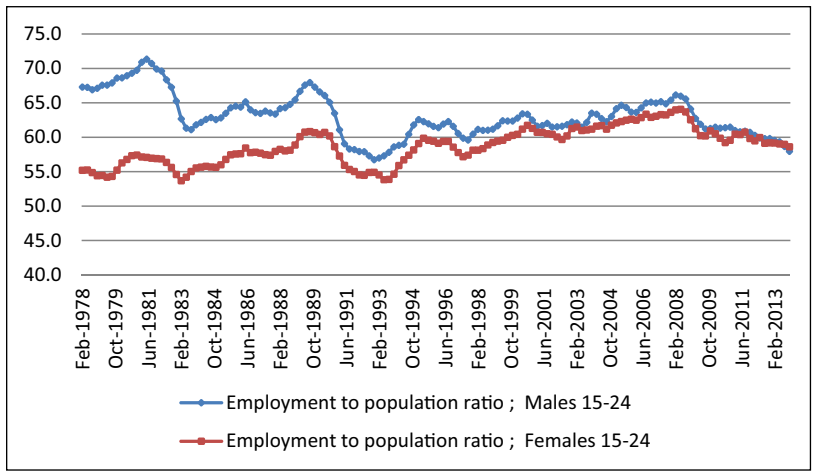

Figure 9. Youth employment-population ratios, Australia, 1978–2013.
Source: ABS (2013b) – Table 17. Labour force status by sex – persons aged 15–24 years – trend, seasonally adjusted and original.

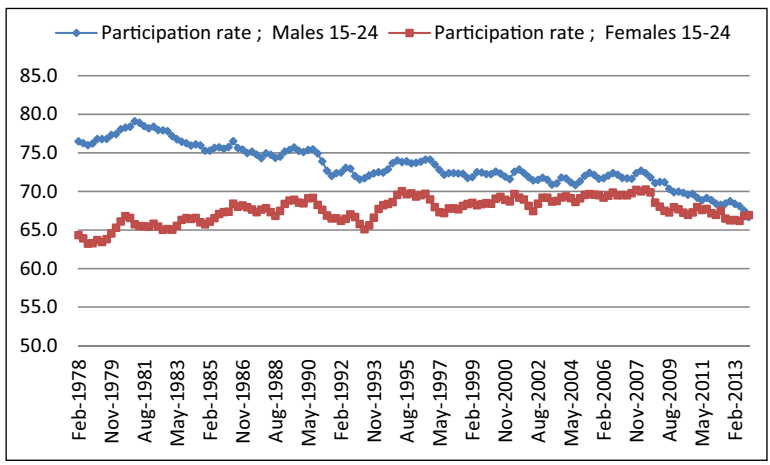

Figure 10. Labour force participation rates (%), males and females aged 15–24 years, Australia, 1978–2013.
Source: ABS (2013b) – Table 17. Labour force status by sex – persons aged 15–24 years – trend, seasonally adjusted and original.

When the GFC hit Australia, unemployment rates for adults and young people rose and so did the rates of long-term unemployment.[9] The percentage of the young unemployed who were unemployed for 12 months or more (i.e. the incidence of long-term unemployment) increased significantly (percentage of long-term unemployment (PLTU)). *Again, this long-term unemployment has not returned to pre-GFC days* (Figure 11). It is worth noting that since some of the unemployed may give up looking for work

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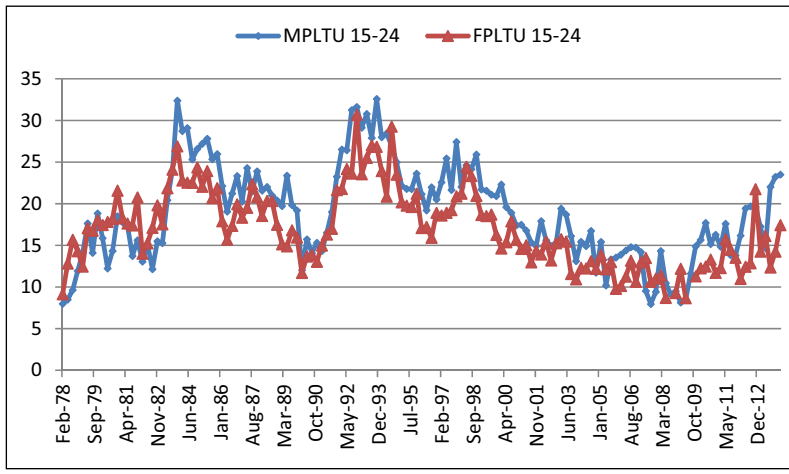

Figure 11. Incidence of male and female youth long-term unemployment (%), Australia, 1978–2012.
MPLTU 15–24: male percentage of long-term unemployment, 15- to 24-year-olds; FPLTU 15–24: female percentage of long-term unemployment, 15- to 24-year-olds.
Source: ABS (2014e). ST UMI unemployed persons by state and territory, age, sex and duration of unemployment since last full-time job, February 1978 onwards.

and move into the education sector, they are not recorded as long-term unemployed, which means that long-term unemployment rates are underestimated. Similarly, as young people age, they may move out of the age group (say 15–19) that is being considered (a person who is just 18 years old cannot be included in the measure of youth unemployed for more than a year). For a 20-year-old young person, to be unemployed for *1 year* is to have lost 5% of one's life to date in unemployment; to be unemployed for *2 years* is to have lost 10% of one's life in unemployment! Added to that is the problem of scarring: one spell of unemployment is likely to lead to repeat spells (Junankar and Wood, 1992) and to lower life-time earnings (Clark et al., 2014). Is it surprising that the long-term unemployed suffer from alienation, psychological problems and depression?

What explains the rise in youth unemployment?

What explains the rise in youth unemployment and long-term unemployment? Although Australian GDP growth during the GFC (2008–2010) was negative for only one quarter (but negative for two consecutive quarters in terms of the GDP index), the rate of growth of GDP slowed down after 2008 (Figure 12). Firms became cautious about hiring new workers, and since a large proportion of young people are first time entrants into the (full-time) labour market, they find it difficult to find work. Firms faced with a global crisis not only cut back on hiring new workers but also cut back on renewing contracts of casual and part-time workers, and these workers now joined the unemployment queue.

Most economists would agree that if the economy goes into a recession or if the growth rate of GDP slows down, this will lead to an increase in the overall unemployment rate. An Okun's Law relationship was estimated for Australia on quarterly data,

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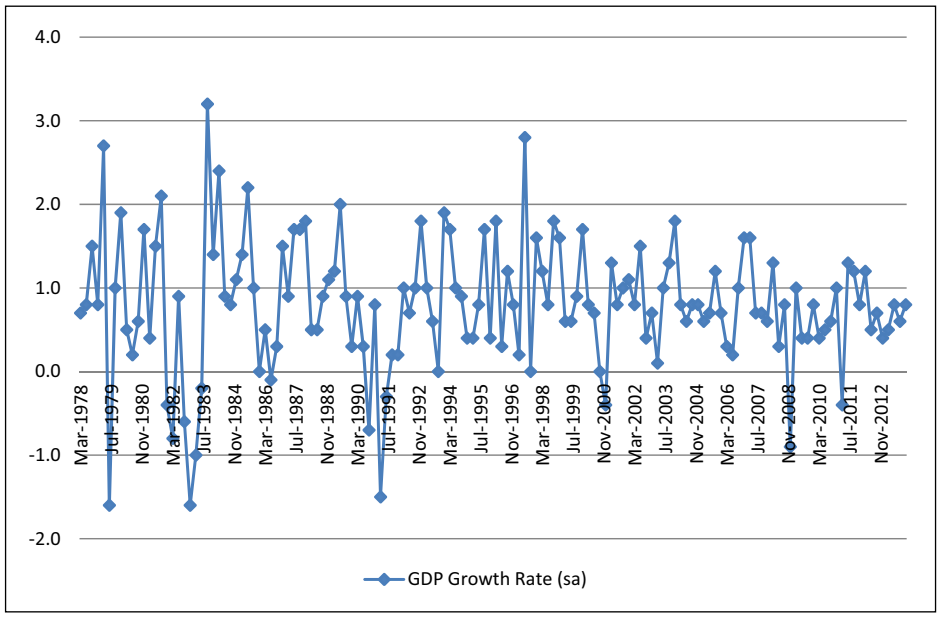

Figure 12. GDP growth rate (% seasonally adjusted) Australia, 1978–2012.
Source: ABS (2014b) – Table 1. Key National Accounts aggregates.

1978 Q1 to 2013 Q4 (four-quarter change in the unemployment rate regressed on the growth rate), and it was found that the Okun coefficient was −0.40, suggesting that a 1 percentage point fall in the growth rate led to a 0.40 percentage point increase in the unemployment rate. At the same time, youth unemployment rates tended to increase more than proportionately (by 1.67 percentage points, as estimated in Equation (1)). We can see that as Australian growth rates slowed down, youth unemployment rates went up significantly. According to our estimates, the annual growth rate would have to be at 3.1% to keep the overall unemployment rate constant

$$\begin{aligned} \Delta UR &= 1.29 - 0.40\,GrowthRate \\ &\quad (11.1) \quad (-12.9) \\ R^2 &= 0.5 \end{aligned} \tag{4}$$

Many economists and employers' organisations argue that the growth of youth unemployment is either due to the high rate of the minimum wage they have to pay or because the unemployment-benefit system is 'over-generous'. There are always strident calls from the employer organisations that Australian minimum wages are too high compared with those in our competitive countries.

To evaluate these claims, we will study, for Australia between 1990 and 2012, the movement of youth wages relative to those of adults. We will also examine the behaviour of the minimum wage relative to Average Weekly Earnings (AWE) and the movement of the RR (ratio of unemployment benefits to AWE) for the period 1998–2012.

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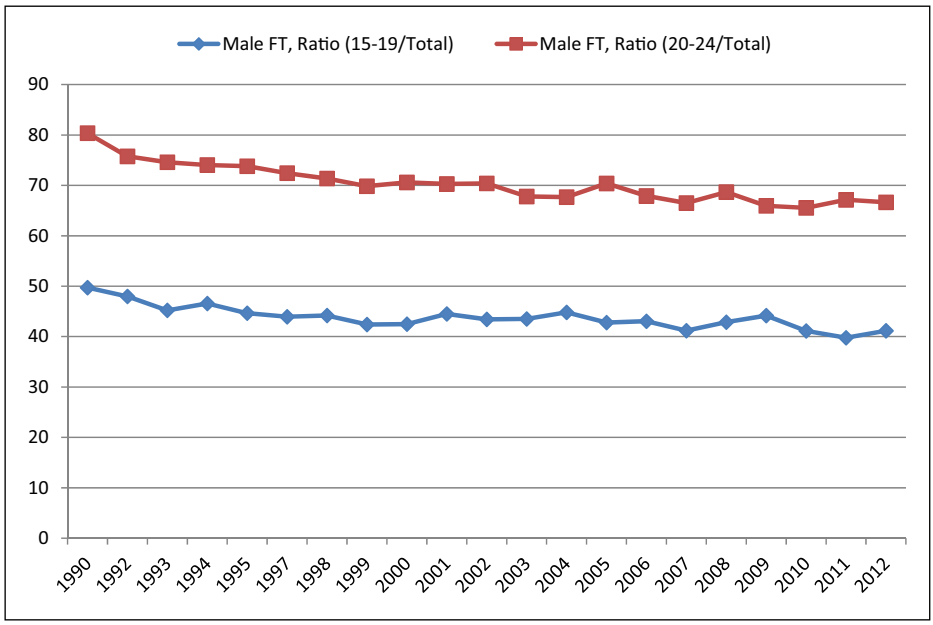

Figure 13. Full-time earnings ratios, males aged 15–19 and 20–24 years, Australia, 1990–2012.
Source: ABS (2013a) – Table 4. Employees in main job, mean weekly earnings in main job, by full-time or part-time status in main job, by age group (years), by sex, 1990–2012.

Figures 13 to 16 clearly show that youth wages relative to adult wages declined in 2008–2009 and had been on a declining trend since the 1990s. This is true for both males and females. This suggests that the increase in youth unemployment rates was not due to youth wages being 'too high', if we assume that youth labour productivity had not fallen relative to adult labour productivity. Such a decline is unlikely, given that the average educational levels of youth have been increasing over the past few decades with higher retention rates in high schools and increased participation in the higher education sector.

Another argument that is often raised is that the minimum wage overall is 'too high', and hence, employers are cutting back on employing young people. In Figures 17 and 18, we see that although the minimum wage was almost constant (increasing very slowly from 1998), unemployment rates for male and female youths had been falling continuously until the GFC. It is only after the GFC that unemployment rates increased while minimum wages increased slightly. This suggests that the view that youth unemployment rates increase with minimum wages is not supported by the data.

We then study the possibility that unemployment benefits were too high compared to AWE, reducing the incentive of young people to accept jobs.[10] In general, according to search theory, if the RR (the ratio of unemployment benefits to *expected* wage rates) increases, unemployed job searchers would become more 'choosy' and reject job offers; as a result, unemployment goes up when RR increases. Analogously, if the RR falls, unemployment will fall.[11] As Australia had been growing rapidly for several years

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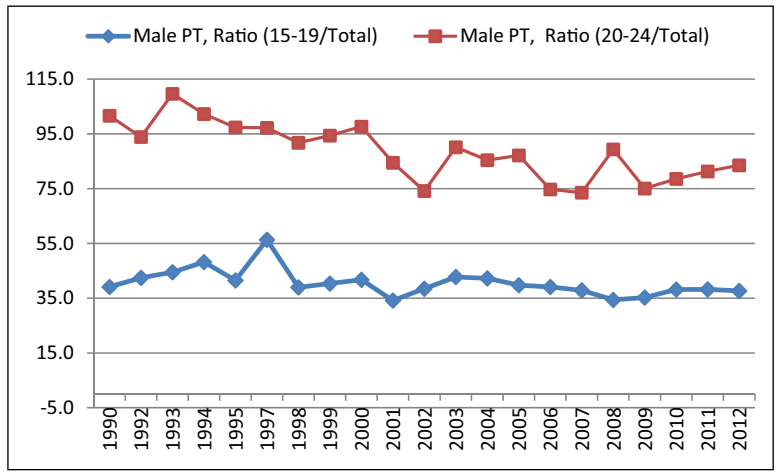

Figure 14. Part-time earnings ratios, males aged 15–19 and 20–24 years, Australia, 1990–2012.
Source: ABS (2013a) – Table 4. Employees in main job, mean weekly earnings in main job, by full-time or part-time status in main job, by age group (years), by sex, 1990–2012.

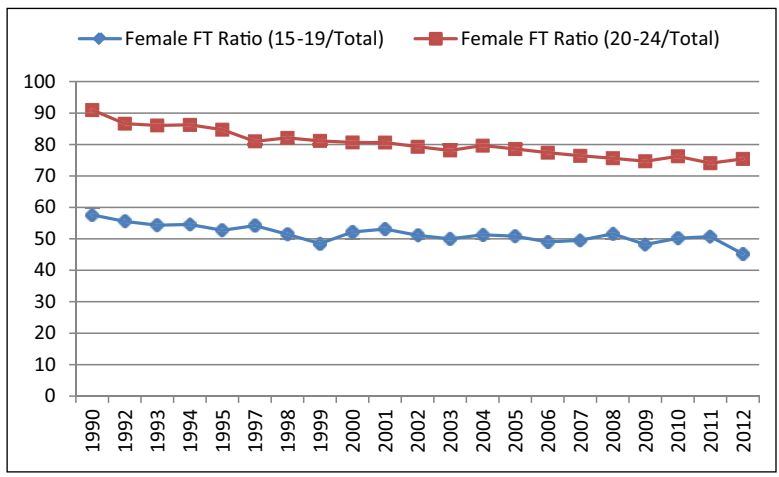

Figure 15. Full-time earnings ratios, females aged 15–19 and 20–24 years, Australia, 1990–2012.
Source: ABS (2013a) – Table 4. Employees in main job, mean weekly earnings in main job, by full-time or part-time status in main job, by age group (years), by sex, 1990–2012.

(without a serious recession), unemployment rates had been falling and real wages increasing. However, in a recession, we would find that the *expected* wage would fall, and if unemployment benefits are constant,[12] the RR would rise! *Note that the expected wage falls for two reasons*. First, wage rates are likely to fall in a recession. Second, the probability of gaining a job offer falls, hence the expected wage declines (taking the wage as the price of an employee). In other words, the RR is *endogenous*.[13]

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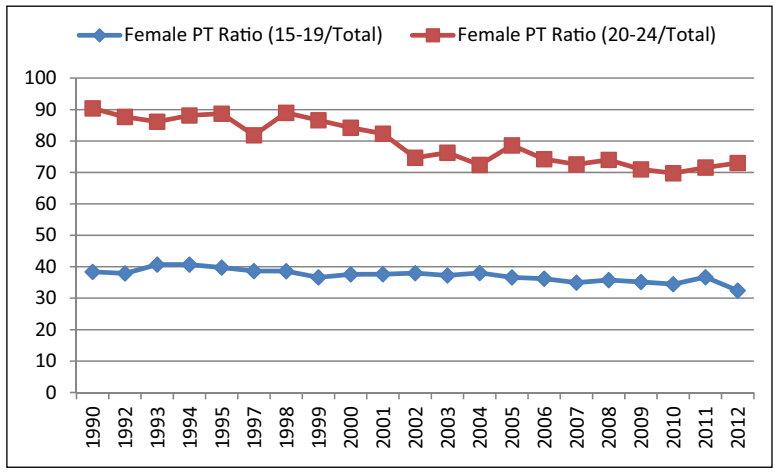

Figure 16. Part-time earnings ratios, females aged 15–19 and 20–24 years, Australia, 1990–2012.
Source: ABS (2013a) – Table 4. Employees in main job, mean weekly earnings in main job, by full-time or part-time status in main job, by age group (years), by sex, 1990–2012.

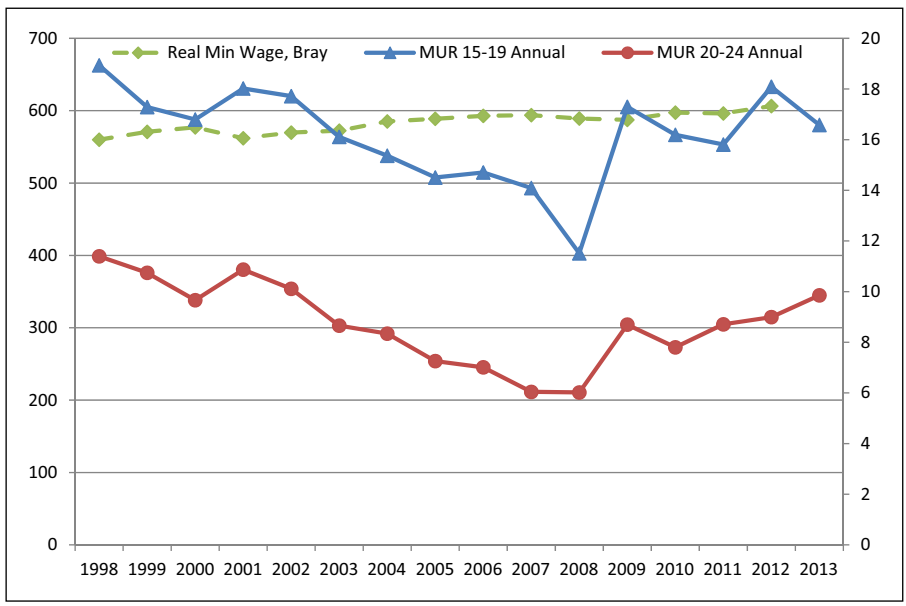

Figure 17. Male youth unemployment rates (%) and the real minimum wage (AUD), Australia, 1998–2013.
MUR: male unemployment rate.
The real minimum wage data (AUD) are from Bray (2013) and are on the left-hand scale, while unemployment rates (%) are represented on the right-hand scale.
Source: ABS (2014e). GM1 – Labour force status and gross changes (flows) by sex, state, age; and Bray (2013).

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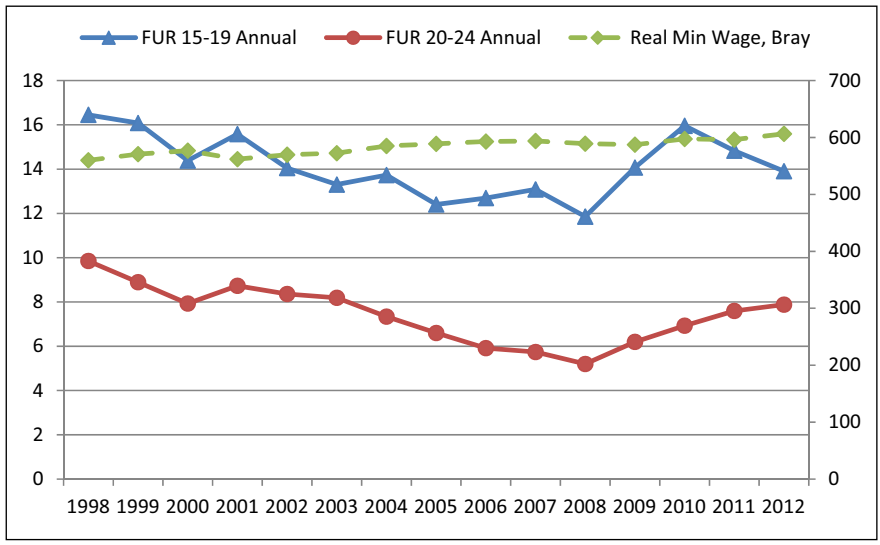

Figure 18. Female youth unemployment rates and the real minimum wage, Australia, 1998–2012.
FUR: female unemployment rate.
The real minimum wage data (AUD) are from Bray (2013) and are on the right-hand scale, while unemployment rates (%) are represented on the left-hand scale.
Source: ABS (2014e). GM1 – Labour force status and gross changes (flows) by sex, state, age; and Bray (2013).

The RR is defined as the real unemployment benefits as a proportion of the real minimum wage for our figures (diagrams), assuming that young people are mainly working at minimum wages and hence expect to receive minimum wages. We have not corrected for a fall in the probability of a wage offer. (A similar picture emerges if we define the RR to AWE of youths.) In Figure 19, we see that the RR fell and unemployment rates were falling with the growing economy. However, as discussed above, the causation is from unemployment to RRs, not the other way round. Since the GFC, the RR has continued to fall but unemployment rates have been rising. There is no obvious relationship.[14]

Conclusion

This article has studied the Australian youth labour market and its response to the Global Financial Crisis. It has established that the youth labour market is significantly different from the adult labour market. Youth unemployment rates increase more rapidly during a recession because many young people work in cyclically sensitive sectors and in part-time casual employment. As a result, when a recession hits, employers stop hiring new entrants (the young) and begin to fire young people who are in vulnerable employment. It was shown that high youth unemployment could not be explained by high youth wages, by the minimum wage or by so-called generous unemployment benefits.

To reduce youth unemployment rates, it is important to create increased growth, particularly in the industries that are the main employers of young people, namely,

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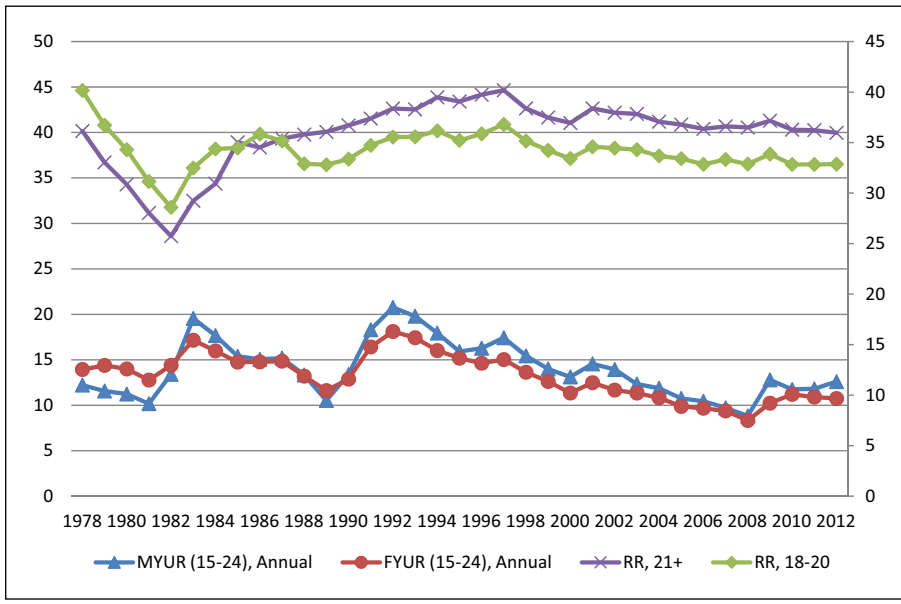

Figure 19. Youth unemployment rates and replacement rates, Australia 1978–2012.
MUR: male unemployment rate; FUR: female unemployment rate.
Left-hand side (LHS) axis: replacement rates; right-hand side (RHS) axis: unemployment rates.
Source: ABS (2013b) – Table 17. Labour force status by sex – persons aged 15–24 years – trend, seasonally adjusted and original; and Bray (2013).

Construction, Manufacturing, Retail trade, Accommodation and food services, and Health care and social assistance.[15] Since Manufacturing has been on a declining trend for decades, the main way to help young people would be a stimulus to (say) tourism that would help Retail trade and Accommodation and food services. In recent years, there has been an increase in temporary visas for migrants (e.g. backpackers and the so-called 457 visas) who compete with youth for jobs in restaurants, accommodation and so on. With an ageing population, there needs to be an increase in Health services, and this would increase the employment of young people as (say) nurses. For long-term unemployed youth, it would help to provide a job guarantee, where the work included training in useful skills and activities. To summarise, if the growth rate of the economy was stimulated, this would decrease youth unemployment rates. In the context of a growing economy, young people would need greater access to apprenticeships and to on-the-job training schemes.[16]

Policies announced in 2014 by the Abbott government precluding young people (now defined by this government as anyone aged 30 years or less) from receiving unemployment benefits for the first 6 months of unemployment and requiring work for the dole in the succeeding 6 months would, in effect, exclude the young from the welfare system. There is clear evidence that work for the dole does not help the unemployed to find jobs and more importantly that it has a negative effect on the participants in the scheme (Borland and Tseng, 2011). How young people are expected to survive without any

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social security benefits is left to one's imagination. If they do not come from families with sufficient resources (and/or they are living independently), they face homelessness and either dependence on charitable organisations or resort to petty crime. Is that the kind of society we would like to live in?

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Notes

1. Note that the Organisation for Economic Co-operation and Development (OECD, 2013) argues, 'Even if public resources are constrained, especially in countries where fiscal consolidation is required, it is important to guarantee that youth, including those with little or no work experience, have access to unemployment and social assistance systems' (p. 7).
2. See Sewell (2013) for an extended literature review and econometric analysis. O'Brien (2006) provides a study of the impact of Work Choices legislation on the youth labour market.
3. See Australian Government (n.d.) Fact Sheet, http://deta.qld.gov.au/resources/pdf/compact-fs-young.pdf and Cuervo et al. (2013).
4. Marcus and Gavrilovic (2010) provide evidence that youth 'occupy a marginalised position in the labour market … young people form the backbone of vulnerable industries such as manufacturing, construction and services' (p. 10). International Labour Organisation (ILO, 2010) states, 'Youth unemployment rates have proven more sensitive to economic shocks than adult rates' (p. 5).
5. In an earlier version of this paper I had used the overall unemployment rate from the Australian Bureau of Statistics (ABS), 2014c.
6. This is a purely descriptive statement, and not a causal statement. Note that since we are using monthly data (from Australian Bureau of Statistics (ABS, 2014e) ABS 6291.0.55.001 – Labour Force, Australia, Detailed – Electronic Delivery, GM1 – Labour Force Status and Gross Changes (flows) by Sex, State, Age), the series is very noisy.
7. Flatau et al. (2008) provide further details about young people aged 15–20 years for an earlier period.
8. The National Bureau of Economic Research's (NBER, n.d.) definition is as follows:

   The Committee does not have a fixed definition of economic activity. It examines and compares the behavior of various measures of broad activity: real GDP measured on the product and income sides, economy-wide employment, and real income. The Committee also may consider indicators that do not cover the entire economy, such as real sales and the Federal Reserve's index of industrial production (IP).

9. These data are for duration of unemployment since the last full-time job. Data for a shorter period are available for durations since the last job. There are similarities although duration since last full-time job is likely to be longer than since the last job.
10. In an interesting paper, Morris and Wilson (2014) show that young people have great difficulties in living when they receive unemployment benefits.
11. In a recent publication, the Federal Reserve Board (2014) comment that in a survey they recently conducted, 'Respondents identified personal networks as a primary source in their job search'. In other words, their search was not undirected and was influenced by wage offers.
12. In fact, real unemployment benefits had remained more or less constant for a decade or more.
13. What would Kahneman (2011) say about this so-called rational choice? Do young people really go through this 'system 2' thinking?
14. Ideally, we need to have a complete econometric model to test for this relationship, allowing for the endogeneity of the replacement rate (RR). However, the time-series data on the youth labour market are not sufficiently rich for a rigorous examination. There have been numerous changes made to the rates of benefits paid and more importantly to the conditions under which these benefits were accessible. In an Honours thesis, Sewell (2013) showed (with limited data) that there was no significant relationship between youth unemployment and the RR.
15. Note that OECD (2013) in its Action Plan to tackle the current youth unemployment crisis recommends that the first priority is to 'Tackle weak aggregate demand and boost job creation' (p. 3).
16. To discuss the policies to help lower unemployment rates would require another paper. See Appendix for the OECD Action Plan for Youth, June 2013. In the OECD and ILO (2014) paper on 'Promoting better labour market outcomes for youth', it argues that job training is important and that is unlikely to be provided in temporary jobs. Furthermore, 'many low-skilled youths get locked into such jobs or leave the labour market altogether' (p. 7).

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