AUSTRALIAN JOURNAL OF LABOUR ECONOMICS
Volume 18 • Number 3 • 2015 • pp 307 - 327

School-to-Work Transitions During Volatile Economic Times

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Abstract

School-to-work transitions are increasingly contingent upon having appropriate educational credentials therefore leaving school before completing secondary education may result in young people experiencing prolonged periods of precarious employment. Although the Australian economy weathered the recent Global Financial Crisis (GFC) better than many other advanced economies, in August 2009 the combined unemployment and underemployment rate for young people was double the rate for the working age population. During economic recessions, young people tend to delay entry into the labour market preferring remain in school until the economy rebounds and jobs are easier to secure. This paper presents the results of analyses of the Household Income and Labour Dynamics in Australia data tracking the fortunes of three cohorts of young Australians: those who completed school prior to the GFC; those who completed school during the GFC; and those who completed school after the GFC to examine the effect of the crisis on school-to-work transitions.

Keywords: Transitions, Global financial crisis, Unemployment

JEL classification: I24, I28, J01, J24

1. Introduction

Over the past four decades, the Australian economy restructured from a goods producing economy to a service economy as manufacturing moved offshore to nations with cheaper labour. As the Australian labour market restructured and jobs growth became concentrated in highly skilled occupations, Year 12 retention rates doubled and youth unemployment increased. Traditionally, the completion of the Year

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Acknowledgement: This paper uses unit record data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey. The HILDA Project was initiated and is funded by the Australian Government Department of Social Services (DSS) and is managed by the Melbourne Institute of Applied Economic and Social Research (MIAESR). The findings and views reported in this paper, however, are those of the authors and should not be attributed to either DSS or the MIAESR.

12 certificate was regarded as a pathway into further education, however, it is now regarded as the minimum requirement for entry level jobs. For young people seeking careers, further investment in human capital credentials is essential, fuelling growth in post-secondary education enrolments. During the Global Financial Crisis, the unemployment rate for young people was double the rate for the general population and has remained high ever since, creating uncertainty for young people wishing to transition directly into the labour market. In this paper, we examine transitions between school and employment and/or further study to assess the impact of the Global Financial Crisis on young Australians focussing on levels of engagement. Although the availability of full-time paid employment declines during periods of economic recession, young people may seek to overcome the disadvantages associated with transitioning from education to employment during economic downturns by undertaking post-school study and working part-time until the economy recovers and the labour market rebounds. The remainder of this paper is structured as follows: in section 2 we provide an overview of the economic context before, during and after the GFC; in section 3 we introduce the data and outline our analytical strategy; in section 4 we present the results; and in section 5 we provide a discussion of the findings before summing up the paper in section 6.

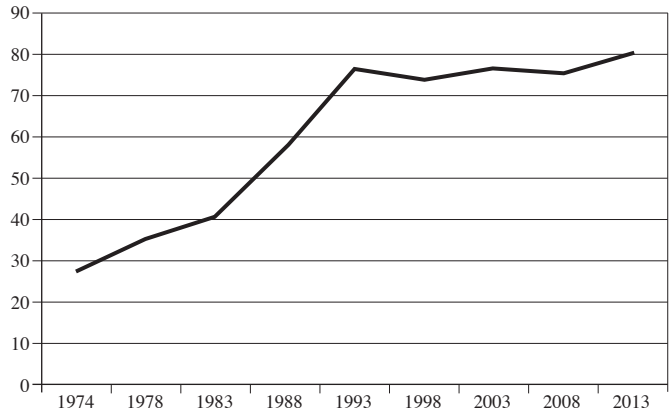
2. Context

Secondary Education in Australia

Since the 1970s, the Year 12 apparent retention rate increased from 27.5 to 81 per cent (ABS, 2013).The apparent retention rate doubled between 1983 and 1993 due to the collapse of the youth labour market in the wake of the economic recession of 1982-83 when apprenticeships declined by one-third (Teese and Polesel, 2003). The graph in figure 1 charts the trend over time in the Year 12 apparent retention rate. As senior school populations became increasingly diverse, schools introduced vocational education and training (VET) programs to accommodate the needs of non-academically inclined students (Anlezark *et al*., 2006). Students may complete VET Certificates I/II/III in conjunction with their Year 12 certificate. Over 40 per cent of senior secondary students participate in VET programs, however, the majority of participants do not complete a certificate level qualification (Karmel, 2012; Keating *et al*., 2013; Polesel, 2008) suggesting that students are not necessarily attempting to formalise this investment in their human capital.

Despite the overall increase in Year 12 rates, children growing up in economically disadvantaged neighbourhoods have higher non-completion rates than their more advantaged peers (Curtis *et al*., 2012; Johnston *et al*., 2014; Polesel, 2008). According to Curtis and McMillan (2008) key indicators of non-completion include: being male; being Indigenous; having low-educated parents; having parents employed in manual occupations; living in a regional/rural area; being a low achiever in Year 9; and attending a government school. The non-completion of Year 12 is associated with poor employment outcomes with one-quarter of early school leavers being unable to find any kind of paid employment in the first eight years after leaving school (Fitzpatrick *et al*., 2011). Consequently, 50 per cent of those who leave school before completing Year 12 undertake training in the VET sector (Curtis and McMillan, 2008).

Figure 1 - Year 10 to Year 12 Apparent Retention Rates 1974-2013



Source: Authors' calculations using figures published by the ABS (2000 and 2013).

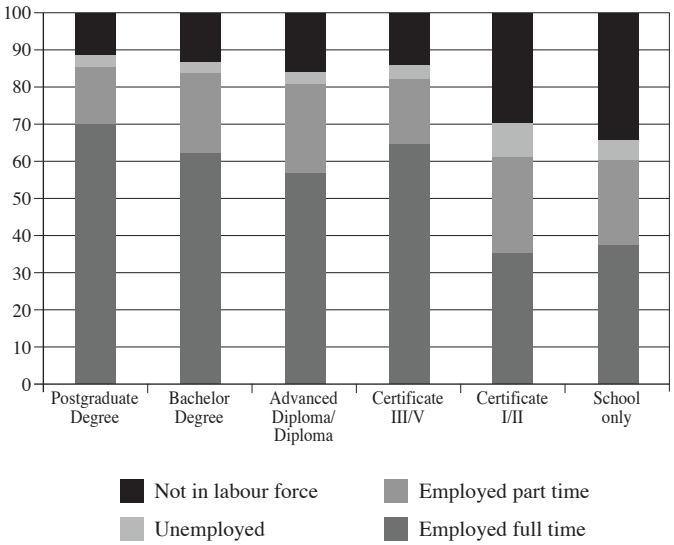
According to the Australian Bureau of Statistics (ABS, 2013), the percentage of young people aged 15 to 19 years engaged in formal study increased from 77 to 81 per cent between 2001 and 2012. The percentage of 20-24 year olds engaged in formal study increased from 34 to 41 per cent (ABS, 2013). Young people aged 15 years or older undertaking a course at an approved institution, such as a secondary school, a Vocational Education and Training (VET) institution, or a university may qualify for a means-tested welfare payment, Youth Allowance, provided by the Australian Government. In order to qualify for Youth Allowance, young people aged between 15 and 20 years who have not completed Year 12 or an equivalent educational qualification need to be engaged in study or training for at least 25 hours per week. These payments are designed to assist young people as they transition between education and employment by discouraging them from leaving school early and encouraging them to undertake further study if they cannot secure full-time employment.

Australian Labour Market

As the Australian economy restructured from a goods producing economy to a service economy, manufacturing sector jobs were replaced by jobs in the service sectors. Highly-skilled professionals now account for a much larger proportion of the workforce due to an increase in the number of occupations classified as 'professions' and an increase in the number of jobs available in each of the professions (van de Werfhorst, 2007). As jobs growth became increasingly concentrated in highly skilled occupations (Biddle, 2007; Curtis and McMillan, 2008; Keating *et al*., 2013) low-skilled workers became concentrated in sectors with high rates of part-time employment, namely retail and hospitality. Low-skilled jobs in the retail and hospitality sectors offer limited long-term employment opportunities as relatively low proportions of workers in these sectors, regardless of their age, are employed on a full-time basis. In 2012, just 41 per cent of workers employed in the accommodation and food services sector and 50 per cent of workers employed in the retail trade sector were employed on a full-time basis (DEEWR, 2013).

There is a strong correlation between educational attainment and employment status with university-educated persons being more likely to be labour force participants, more likely to be employed on a full-time basis and less likely to be unemployed than those with lower levels of education (ABS, 2014a). For example, 87 per cent of those with a Bachelor degree were participating in the labour force in 2013 compared to just 66 per cent of those without any post-school qualifications. Furthermore, 63 per cent of those with a Bachelor degree were employed on a full-time basis compared to just 38 per cent of those without post-school qualifications. Although those with lower level certificates were slightly more likely than those with no post-school qualification to be in the labour force, their unemployment rate was higher. The graph in figure 2 shows the relationship between level of education and employment status in 2013. Completing a post-school qualification at the level of a Certificate III or higher is associated with higher levels of employment, and full-time employment in particular, indicating that these extra investments in human capital provide financial benefits over the long term.

Figure 2 - Labour Force Status by Level of Education 2013



Source: Authors' calculations using published by the ABS (2014a).

Global Financial Crisis in Australia

The financial crisis of 2008-09, sometimes referred to as the Global Financial Crisis (GFC), was followed by a prolonged recession (the Great Recession) in many parts of the world, particularly in the US and Europe. It was preceded by an extended period of both stable growth and stable inflation (Hume and Sentence, 2009), during which nominal GDP increased dramatically in many countries including the US (120 per cent), the UK (150 per cent) and Australia (156 per cent) (Pomfret, 2009a: p. 26). Much

of this growth was the result of investment in property pushing prices up and creating asset bubbles in property markets. Central banks kept interest rates low to keep inflation under control, ignoring the role of interest rates as the price of capital, thus fuelling the asset bubble (Pomfret, 2009a). Low interest rates encouraged investors to seek high yield securities (Debelle, 2008) creating a market for the new investment products developed by investment banks.

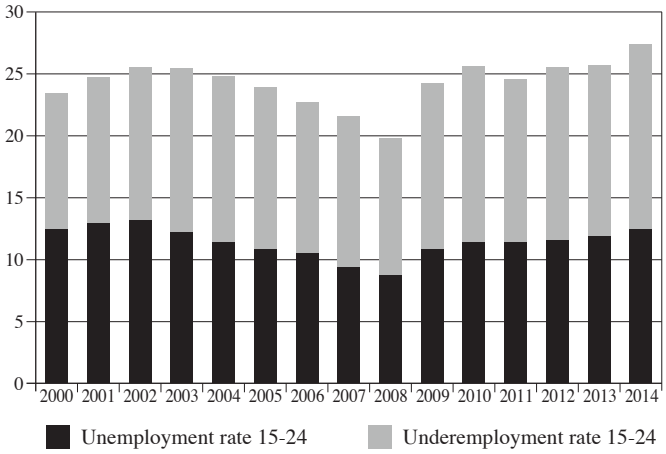
Prior to the GFC, Australia enjoyed 15 years of continuous economic growth between 1993 and 2008 during which average household wealth and average household indebtedness increased significantly. The onset of the GFC led to the collapse of the Australian dollar from $US0.98 to $US0.60 between July and October 2008 (Pomfret, 2009b: p. 256) and a 14 per cent decline in the aggregate value of household assets (Green *et al*., 2009; Wilkins and Wooden, 2009). Household consumption contracted and the household savings rate increased from 1.2 to 8.5 per cent between the March and December quarters of 2008 (Green *et al*., 2009: p. 344).

The overall unemployment rate increased from 4.1 per cent in February 2008 to 5.8 per cent in August 2009 (ABS, 2014b) and the underemployment rate (the proportion of the labour force employed part-time and seeking to work more hours) increased from 6 to 7.9 per cent during the same period. Consequently, the labour underutilisation rate, the combination of the unemployment and underemployment rates, increased from 10.2 per cent in February 2008 to 13.7 per cent in August 2009. The unemployment rate of those aged between 15 and 24 years increased from 8.8 per cent in February 2008 to 12 per cent in August 2009 and the underemployment rate increased from 11 to 15 per cent. These figures indicate that the GFC had a similar impact on the labour underutilisation rates of young people and of the labour force more generally.

Although the overall unemployment and underemployment rates quickly recovered, the rates for young people aged between 15 and 24 years continued to increase. In February 2014, the unemployment rate for young people was 13 per cent and the underemployment rate was 15 per cent indicating that 28 per cent of young people aged between 15 and 24 years were either seeking a job or were working part-time and wanted to work more hours. The graph in figure 3 charts trends over time in the underutilisation rate of young Australians.

As employment rates stagnated, an increasing proportion of young people delayed their transition into the labour market by completing secondary school and/or undertaking further study at post-school institutions. In this paper, we conduct analyses of longitudinal data collected by the Household Income and Labour Dynamics in Australia (HILDA) project to examine the effect of the GFC on the school-to-work transitions of three cohorts of young people. We seek to address two research questions: (1) Did the GFC encourage young people to complete Year 12; and (2) Did the GFC affect post-school outcomes?

Figure 3 - Underutilisation Rate for 15-24 Year Olds 2000-2014



Source: Authors' calculations using figures published by the ABS (2014b).

3. Method

Data

HILDA is a panel survey which collects data from the same respondents each year. For the first wave in 2001, a nationally representative sample of Australian households was selected and all members of the chosen households aged 15 years and older were invited to participate providing a total sample size of 13,969 (Summerfield *et al*., 2011). Each year, household members aged 15 years are added to the sample. We select three cohorts of respondents: those aged 16/17 years in 2004 (the Pre-GFC cohort); those aged 16/17 years in 2006 (the GFC cohort); and those aged 16/17 years in 2008 (the Post-GFC cohort). The pre-GFC cohort completed secondary school during the final stages of a long period of economic growth when youth unemployment rates were relatively low. The GFC cohort completed secondary school during the peak of the economic crisis when youth unemployment rates were historically high. The post-GFC cohort completed secondary school after the peak of the economic crisis had passed but when youth unemployment rates continued to increase. We track each cohort for five years until they are aged 20/21 years. Table A1 in the appendix lists the relevant waves of data for each of the three cohorts.

Variables

Our analyses include measures at five time points: T1; T2; T3; T4; and T5. The T1 variables provide our baseline data for comparison purposes and measure respondents' education, employment status, sex, family type, parents' education, parents' occupational prestige, residential location and socio-economic status. The respondent's level of education variable has three categories: still at school; early school leaver and completed Year 12. Completing Year 12 before age 18 years is

possible in some states of Australia. Sex is included as a dummy variable coded 1= female and 0= male. The respondent's employment status variable has three categories: not employed; employed part-time; and employed full-time. It is relatively common for secondary school students to be employed on a part-time/ casual basis (Anlezark and Lim, 2011; Biddle, 2007; Karmel, 2012). The family type variable is coded 1= living with both parents; 2= living with one parent; and 3= other. We do not distinguish between biological parents and step parents.

For parents' education we take the highest level of education of either parent. There are five categories: <Year 12; Year 12; VET; CAE/IT/University; don't know. In 1990, Colleges of Advanced Education (CAE) and Institutes of Technology (IT) were amalgamated and rebadged as universities so we include qualifications from these institutions with university-level qualifications. For parents' occupational prestige, we take the highest occupational status score of either parent. HILDA includes a variable which assigns a value to each occupation using the AUSIE06 index of occupational prestige which ranges from zero (low status) to 100 (high status). The scores assigned to individual occupations reflect the role of occupation in mediating the effects of educational attainment on earnings (McMillan *et al*., 2009). The distribution is divided into four groups: low (<30); mid (31-69); high (70+); not employed.

The residential location variable is coded: 0= living in capital city/ metropolitan area; and 1= living in regional/ rural area. The socioeconomic status variable is based on the SEIFA (Socio-Economic Index for Areas) Index of Relative Socio-economic Advantage/ Disadvantage value for the residential location at T1. SEIFA is compiled by the ABS using information such as income, occupation and levels of education as markers of relative advantage/disadvantage in a geographical area (ABS, 2006). Due to the size of the samples in each cohort, we recode the deciles into quintiles. The ABS unemployment rate variable is used as an indicator of variation in the unemployment rate between the areas in which the respondents live. It refers to the overall unemployment rate for each area, not specifically the unemployment rate for young people. Generally, unemployment is concentrated in particular suburbs in metropolitan areas and in particular regions outside of the capital cities in each state. We recode the unemployment rate variable into three categories: low = <four per cent; mid= 4.1 to five per cent; high = >five per cent. The descriptive statistics of the three cohorts at T1 are presented in table A2 in the appendix.

Using information at T5, when the respondents were aged 20/21 years, we identify respondents who left school before completing Year 12 and construct a dummy variable coded 1= early school leaver and 0 = school completer. The employment status at T5 variable has three categories: not employed; employed part-time; and employed full-time. The studying at T5 variable has three categories: not studying; studying part-time; and studying full-time. The level of engagement at T5 variable is derived from the employment and study status variables and has three categories: fully engaged (employed full-time with or without study; employed part-time and studying; studying full-time, with or without paid employment); partially engaged (part-time employment and no study or part-time study and no employment); and not engaged (no paid employment and no study). The not engaged group are generally referred to as NEETs (not in education, employment or training).

Analytical Strategy

Initially, we use data from T5, when the respondents were aged 20/21 years to identify the early school leavers and provide the descriptive statistics of early school leavers and school completers in each cohort. Secondly, we construct a series of models to predict the likelihood of being an early school leaver according to cohort, sex, family type, parents' education, parents' occupational prestige, location and SEIFA to answer the first research question, 'Did the GFC encourage young people to complete Year 12?'. We then we focus on post-school outcomes at T5, when the respondents were aged 20/21 years, to answer the second research question, 'Did the GFC affect post-school outcomes?'. We examine three outcomes: engagement in paid employment; engagement in post-school study; and overall engagement. For each outcome, we construct multinomial logistic regression models to examine levels of engagement at T5 according to level of engagement at T1, controlling for the effects of cohort, sex, family type at T1, location at T1, SEIFA at T1, ABS unemployment rate for location at T1 and parents' education. To check the reliability of our models, we carried out post-estimation tests in Stata to test the independence of irrelevant alternatives (IIA) assumption. A robust-based test of the Hausman test specification was used to test whether the inclusion or exclusion of response categories influenced (significantly) the relative risks associated with our outcome variable. The results indicated that there is not enough evidence to reject the null hypothesis of independence of alternatives.

4. Results

The Effect of the GFC on Year12 Completion

The descriptive statistics at T1 for early school leavers and school completers (identified at T5) in each cohort are presented in table A.3 in the appendix. We conducted t-tests to determine whether the differences between early school leavers and school completers in each cohort were statistically significant. Family type, parents' education, parents' occupational prestige and neighbourhood socio-economic status are associated with being an early school leaver in each cohort. Female students in the GFC and post-GFC cohorts were less likely than their male counterparts to be early school leavers.

To answer our first research question: 'Did the GFC encourage young people to complete Year 12?', we conducted a series of logistic regressions. The results are presented in table 1. In Model 1, we include cohort, sex, family type, location, SEIFA and ABS unemployment rate. In the second model we include parents' education and in the third model we include parents' occupational status. In each of the three models, when we hold all other variables in the model constant, cohort has no effect. Being female decreases the odds of leaving school before completing Year 12 in each of the models, net of the effects of the other factors. Not living with both parents increases the odds of leaving school early. Living in an area with a high rate of unemployment is associated with increased odds of being an early school leaver. This result is somewhat counterintuitive and suggests that the likelihood of being unemployed does not discourage young people from leaving school before completing Year 12. Teese and Polesel (2003) also found that leaving school before completing Year 12 was not associated with the availability of employment opportunities. These results are largely repeated when parents' education is included in Model 2. Furthermore, parents' education is negatively associated with being an early school leaver. Students

with university-educated parents were less than one-third as likely as those with low-educated parents to leave school before completing Year 12, net of the effects of the other factors. In the third model, we replace parents' education with parents' occupational status and find that, holding all other variables in the model constant, having a parent in a high status occupation decreases the odds of being an early school leaver.

Table 1 - Logistic Regression Models Estimating the Odds Ratios for Being an Early School Leaver

	Model 1		*Model 2*		*Model 3*	
	Odds ratio	*Std. err.*	*Odds ratio*	*Std. err.*	*Odds ratio*	*Std. err.*
***Cohort** (ref. Pre-GFC)*						
GFC	1.00	0.18	1.01	0.18	1.04	0.19
Post GFC	0.84	0.15	0.86	0.16	0.89	0.16
Sex (ref. male)						
Female	0.54 ***	0.08	0.52 ***	0.08	0.51 ***	0.07
Family @ T1 (ref. both parents)						
One parent	1.60 **	0.27	1.52 *	0.26	1.48 *	0.25
Other	4.66 ***	1.06	4.30 ***	1.00	3.79 ***	0.88
Location @ T1 (ref. regional)						
Metro	0.94	0.15	0.97	0.16	0.89	0.14
SEIFA @ T1 (ref. Q1)						
Quintile 2	0.57 **	0.11	0.63 *	0.13	0.70	0.15
Quintile 3	0.62 *	0.13	0.74	0.16	0.79	0.17
Quintile 4	0.44 ***	0.10	0.60 *	0.14	0.63	0.15
Quintile 5	0.23 ***	0.06	0.36 ***	0.10	0.39 ***	0.11
ABS unemployment rate @ T1 (ref. low)						
Mid	1.23	0.21	1.28	0.22	1.21	0.21
High	1.56 *	0.29	1.64 **	0.32	1.57 *	0.30
Parents' education (ref. <Year12)						
Year 12			0.48 *	0.14		
VET			0.62 *	0.12		
CAE/IT/Uni			0.28 ***	0.06		
Don't know			0.81	0.28		
Parents' occ. prestige (ref. low)						
Mid					0.78	0.17
High					0.32 ***	0.08
Not employed					2.10	0.85
Constant	0.65	0.15	1.03	0.27	0.86	0.23
n=	1202		1202		1202	
Pseudo R-squared	0.0933		0.1201		0.1238	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The Effect of the GFC on Post-school Outcomes

Before answering our second research question, we present the percentages of early school leavers and school completers in each of the three cohorts according to employment status, study status and level of engagement at T5. We conducted t-tests to determine whether the differences across the cohorts were statistically significant.

The descriptive statistics presented in table 2 indicate that the percentage of both early school leavers and school completers who were not employed when aged 20/21 years increased across the cohorts.

There were no differences across the cohorts in the percentages of early school leavers or school completers who were engaged in study. Overall, levels of full engagement declined with both early school leavers and school completers in the Post-GFC cohort being less likely than their counterparts in the pre-GFC and GFC cohorts to be fully engaged.

Table 2 - Levels of Engagement in Employment and Study for Each Cohort at T5

	Early School Leaver			*School Completer*		
	Pre-GFC n=101	*GFC n= 118*	*Post-GFC n=106*	*Pre-GFC n=251*	*GFC n=303*	*Post-GFC n=323*
	%	*%*	*%*	*%*	*%*	*%*
Employment status T5						
Not employed	26	33	44	11	21	24
Employed part-time	17	16	10	45	40	44
Employed full-time	57	51	45	44	39	32
p-value	0.071			0.001		
Current study T5						
Not studying	77	69	85	46	43	45
Part-time	15	18	9	15	16	15
Full-time	8	13	6	39	42	40
p-value	0.099			0.947		
Level of engagement T5						
Not engaged	24	24	39	2	7	8
Partially engaged	12	14	13	14	11	17
Fully engaged	64	63	48	85	83	74
p-value	0.072			0.001		

To take advantage of the longitudinal nature of these data we construct lagged variables for employment status, study status and level of engagement. Lagged variables allow us to control for the effects of having multiple observations for each respondent. In this case, the lag is the status at T5 compared to the status at T1. Table 3 presents the results of multinomial logistic regression models examining employment status at T5 according to cohort. Model 1 shows that holding employment status at T1, sex and family type constant, being in the GFC cohort or the Post-GFC cohort has a negative effect for both full-time and part-time employment.

Net of the effects of cohort, respondents employed on a part-time basis at T1 were, on average, 2.7 times more likely to be employed part-time relative to being not employed at T5. In other words, combining part-time employment with school at age 16/17 years protects against non-employment at age 20/21 years. Respondents employed on a part-time basis at T1 were, on average, 2.8 times more likely to be employed full-time relative to being not employed at T5. Respondents employed on a full-time basis at T1 were, on average, 4.5 times more likely to be employed full-

time relative to being not employed at T5. Being female has no independent effect on being employed on a part-time basis but has an independent negative effect on being employed on a full-time basis. Not living with both parents when aged 16/17 has an independent negative effect on both part-time and full-time employment.

These results are largely repeated when we add in location, SEIFA, ABS unemployment rate and parents' education into Model 2. Furthermore, when we hold all of the other variables in the model constant, SEIFA quintile for location of residence at age 16/17 has an independent positive effect for part-time employment but no effect for full-time employment. The ABS unemployment rate for location of residence has no independent effect for full-time or part-time employment. Having university-educated parents has an independent positive effect on part-time employment but no independent effect on full-time employment.

Table 3 - Multinomial Regression of the Relative Risk of being Part-time or Full-time Employed Relative to being not Employed at T5

	Model 1		*Model 2*	
	Part-time employed	*Full-time employed*	*Part-time employed*	*Full-time employed*
	RRR *Std. err*	*RRR* *Std. err*	*RRR* *Std. err*	*RRR* *Std. err*
Cohort (ref. Pre-GFC)				
GFC	0.61*	0.62*	0.60*	0.54**
	(0.13)	(0.13)	(0.14)	(0.12)
Post-GFC	0.55**	0.43***	0.56**	0.39***
	(0.12)	(0.09)	(0.12)	(0.09)
Employment status @T1 (ref. Not employed)				
Part-time employed	2.72***	2.85***	2.76***	2.80***
	(0.48)	(0.50)	(0.50)	(0.50)
Full-time employed	0.81	4.53***	0.91	4.45***
	(0.32)	(1.33)	(0.36)	(1.32)
Sex (ref. Male)				
Female	1.08	0.44***	1.13	0.44***
	(0.18)	(0.07)	(0.19)	(0.07)
Family (ref. Both parents)				
One parent	0.61**	0.67*	0.64*	0.69
	(0.12)	(0.13)	(0.13)	(0.13)
Other	0.21***	0.40***	0.26***	0.41***
	(0.06)	(0.10)	(0.08)	(0.11)
Location (ref. Regional)				
Metro			1.41	1.35
			(0.27)	(0.25)
SEIFA (ref. Q1)				
Quintile 2			1.54	1.29
			(0.41)	(0.31)
Quintile 3			1.73*	1.32
			(0.49)	(0.35)
Quintile 4			1.94*	1.20
			(0.55)	(0.32)
Quintile 5			2.07*	0.97
			(0.62)	(0.28)

Table 3 - Multinomial Regression of the Relative Risk of being Part-time or Full-time Employed Relative to being not Employed at T5 (continued)

	Model 1		*Model 2*	
	Part-time employed	*Full-time employed*	*Part-time employed*	*Full-time employed*
	RRR *Std. err*	*RRR* *Std. err*	*RRR* *Std. err*	*RRR* *Std. err*
ABS unemployment rate (ref. low)				
Mid			0.92	0.70
			(0.18)	(0.14)
High			1.15	0.82
			(0.28)	(0.19)
Parents' education <yr12 (ref.)				
Year 12			1.57	1.35
			(0.56)	(0.45)
VET			1.58	1.47
			(0.42)	(0.36)
CAE/IT/Uni			1.97*	1.19
			(0.54)	(0.31)
Don't know			0.89	1.00
			(0.42)	(0.41)
Constant	1.96***	3.12***	0.58	2.34***
	(0.41)	(0.62)	(0.21)	(0.77)
Observations	1202		1202	
Pseudo R-squared	0.0841		0.1062	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

During this transition period, young people may be engaged in post-school study rather than paid employment, therefore, we next examine levels of engagement with post-school study at T5 according to cohort, controlling for sex, family type, location, SEIFA, ABS unemployment rate and parents' education. The results presented in table 4 for Model 1 indicate that holding all other variables in the model constant, cohort had no effect on the likelihood of studying part-time or full-time relative to not studying. Net of the effects of cohort, those in full-time study at T1 were more likely to be studying at T5. Being female has an independent positive effect on studying full-time relative to not studying whereas not living with both parents has an independent negative effect on studying part-time or full-time relative to not studying. These results are largely repeated in Model 2 except that being in the GFC cohort is associated with an increased likelihood of studying full-time relative to not studying. Furthermore, SEIFA quintile and parents' education have independent positive effects and living in a regional or rural area has an independent negative effect on full-time study.

Table 4 - Multinomial Regression of the Relative Risk of Being Engaged in either Part-time or Full-time Study Relative to being not Engaged in Study at T5

	Model 1		*Model 2*	
	Part-time study	*Full-time study*	*Part-time study*	*Full-time study*
	RRR *Std. err*	*RRR* *Std. err*	*RRR* *Std. err*	*RRR* *Std. err*
Cohort (ref. Pre-GFC)				
GFC	1.18	1.25	1.28	1.47*
	(0.25)	(0.21)	(0.29)	(0.28)
Post-GFC	0.89	1.06	0.95	1.15
	(0.19)	(0.18)	(0.21)	(0.21)
Study status @T1 (ref. Not studying)				
Part-time study	0.99	1.15	0.87	0.92
	(0.43)	(0.46)	(0.39)	(0.38)
Full-time study	2.28***	4.25***	2.04**	3.13***
	(0.55)	(0.95)	(0.50)	(0.73)
Sex (ref. Male)				
Female	0.92	1.36*	0.94	1.40*
	(0.16)	(0.19)	(0.16)	(0.20)
Family (ref. Both parents)				
One parent	1.01	0.63**	1.04	0.67*
	(0.21)	(0.11)	(0.22)	(0.12)
Other	1.17	0.18***	1.24	0.22***
	(0.34)	(0.07)	(0.36)	(0.09)
Location (ref. Regional)				
Metro			0.70	0.63**
			(0.14)	(0.11)
SEIFA (ref. Q1)				
Quintile 2			1.15	2.02**
			(0.31)	(0.51)
Quintile 3			1.09	2.16**
			(0.31)	(0.56)
Quintile 4			1.46	2.31**
			(0.43)	(0.61)
Quintile 5			1.80	3.56***
			(0.56)	(0.97)
ABS unemployment rate (ref. low)				
Mid			1.23	1.44*
			(0.26)	(0.24)
High			1.26	1.27
			(0.31)	(0.26)
Parents' education (ref. <yr12)				
Year 12			1.18	2.63**
			(0.44)	(0.87)
VET			1.14	1.82*
			(0.31)	(0.49)
CAE/IT/Uni			1.40	3.75***
			(0.40)	(1.01)
Don't know			1.00	1.26
			(0.46)	(0.58)
Constant	0.15***	0.18***	0.11***	0.04***
	(0.04)	(0.04)	(0.04)	(0.02)
Observations	1202		1202	
Pseudo R-squared	0.0545		0.0927	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Finally, we examine levels of engagement in both paid employment and study. Table 5 presents the results of multinomial logistic regression models examining level of engagement at T5. Model 1 shows that holding level of engagement at T1, sex and family type constant, being in the Post-GFC cohort is negatively associated with being fully engaged relative to being not engaged at T5.

Net of the effects of cohort, respondents who were partially engaged at T1 were, on average, 3.6 times more likely to be partially engaged relative to being not engaged at T5. Respondents who were fully engaged at T1 were, on average, 5.3 times more likely to be partially engaged relative to being not engaged at T5. Respondents who were partially engaged at T1 were, on average, 2.7 times more likely to be fully engaged relative to being not engaged at T5. Respondents who were fully engaged at T1 were, on average, 7.6 times more likely to be fully engaged relative to being not engaged at T5. Being female has no independent effect on level of engagement. Not living with both parents when aged 16/17 has an independent negative effect on level of engagement.

These results are largely repeated when we add in location, SEIFA, ABS unemployment rate and parents' education into Model 2. Furthermore, SEIFA quintile for location of residence at age 16/17 has an independent positive effect on full engagement. The ABS unemployment rate for location of residence has an independent negative effect on being fully engaged. Parents' education has an independent positive effect on being fully engaged at T5.

Table 5 - Multinomial Regression of the Relative Risk of being Partially Engaged or Fully Engaged Relative to being not Engaged at T5

	Model 1		*Model 2*	
	Partially engaged	*Fully engaged*	*Partially engaged*	*Fully engaged*
	RRR *Std. err*	*RRR* *Std. err*	*RRR* *Std. err*	*RRR* *Std. err*
Cohort (ref. Pre-GFC)				
GFC	0.58	0.67	0.62	0.67
	(0.19)	(0.18)	(0.21)	(0.19)
Post-GFC	0.59	0.43***	0.65	0.42***
	(0.18)	(0.11)	(0.21)	(0.11)
Level of engagement @T1 (ref. not engaged)				
Partially engaged	3.59*	2.75**	3.36*	2.87**
	(1.84)	(1.07)	(1.76)	(1.17)
Fully engaged	5.34***	7.55***	4.43***	5.92***
	(2.16)	(2.15)	(1.83)	(1.77)
Sex (ref. male)				
Female	1.47	0.76	1.49	0.75
	(0.36)	(0.15)	(0.37)	(0.15)
Family (ref. both parents)				
One parent	0.60	0.39**	0.62	0.43***
	(0.17)	(0.09)	(0.18)	(0.10)
Other	0.31***	0.15**	0.35**	0.18***
	(0.11)	(0.04)	(0.12)	(0.05)

Table 5 - Multinomial Regression of the Relative Risk of being Partially Engaged or Fully Engaged Relative to being not Engaged at T5 (continued)

	Model 1		*Model 2*	
	Partially engaged	*Fully engaged*	*Partially engaged*	*Fully engaged*
	RRR *Std. err*	*RRR* *Std. err*	*RRR* *Std. err*	*RRR* *Std. err*
Location (ref. regional)				
Metro			1.18	0.80
			(0.32)	(0.18)
SEIFA (ref. Q1)				
Quintile 2			1.56	2.05*
			(0.54)	(0.57)
Quintile 3			1.38	1.79
			(0.52)	(0.54)
Quintile 4			2.09	2.45**
			(0.85)	(0.83)
Quintile 5			2.99*	3.60***
			(1.40)	(1.45)
ABS unemployment rate (ref. Low)				
Mid			1.02	0.92
			(0.29)	(0.22)
High			1.38	0.88
			(0.47)	(0.26)
Parents' education (ref. <yr12)				
Year 12			0.98	2.49*
			(0.52)	(1.02)
VET			1.50	2.19**
			(0.49)	(0.59)
CAE/IT/Uni			1.55	3.30***
			(0.58)	(1.04)
Don't know			0.83	1.49
			(0.50)	(0.68)
Constant	0.56	3.49***	0.21**	1.23
	(0.22)	(1.20)	(0.12)	(0.57)
Observations	1202		1202	
Pseudo R-squared	0.0953		0.1251	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

5. Discussion

Although, for the most part, the effects of the GFC were relatively short-lived in Australia, the unemployment and underemployment rates for those aged between 15 and 24 years have yet to recover. Coupled with the transition into a post-industrial economy, these high rates suggest that young people are finding it increasingly difficult to transition from full-time study at school into full-time paid employment. In this paper, we examined the effect of the GFC on levels of engagement in paid employment and/or study to answer two research questions.

In answer to our first research question: Did the GFC encourage young people to complete Year12?, we found that after controlling for sex, family type, parents'

education, parents' occupation, location, SEIFA and ABS unemployment rate, being a member of the GFC or Post-GFC cohort did not affect the likelihood of completing Year 12. Living in an area with a high rate of unemployment was associated with increased odds of leaving school before completing Year 12 suggesting that the decision to leave school early is taken independently of economic conditions. Teese and Polesel (2003) also found that young people located in areas with high rates of unemployment were not deterred from leaving school before completing Year 12 concluding that students do not invest time and effort in their studies unless they believe that they will succeed at school. According to Fitzpatrick and others (2011), the lack of human capital, as certified by the Year 12 certificate, damages the employment prospects of early school leavers. Their study found that around one-quarter had not engaged in any type of paid work during the first eight years after leaving school. This economic precariousness is difficult to overcome in the longer term (Teese and Polesel, 2003).

Turning to our second research question: 'Did the GFC affect post-school outcomes?', the results presented here show that the GFC had a negative effect on both part-time and full-time employment. After controlling for employment status at age 16/17 years, respondents in the GFC and Post-GFC cohorts were less likely to be employed rather than not employed at age 20/21 years. This result is not unexpected given that the youth unemployment rate has yet to recover from the GFC. In February 2014, 28 per cent of labour force participants aged 15 to 24 years were either unemployed or part-time employed and seeking to work more hours. With such a large proportion of young people unable to secure full-time employment, the future employment prospects of this generation may also be affected. As Blossfeld (1990) notes access to apprenticeships is dependent upon the prevailing economic conditions, therefore, a lack of opportunities during the transition years has lifelong economic consequences.

One consequence of this higher rate of unemployment was an increase in the likelihood of undertaking further study. Respondents in the GFC cohort were more likely to be engaged in full-time study at age 20/21 years than those in the Pre-GFC cohort. On the other hand, being a member of the Post-GFC cohort was not associated with a greater likelihood of being engaged in further study. Curtis and McMillan (2008) examined the post-school outcomes of early school leavers finding that around half of those who left school before completing Year 12 returned to education, typically studying low level VET certificates. This may be partly due to the requirement for young people receiving welfare payments to be engaged in study. It may also be a consequence of young people realising that without further investment in their human capital, they have little chance of gaining employment in a highly competitive labour market that is generating highly-skilled rather than low-skilled jobs.

Our examination of levels of overall engagement showed that being in the Post-GFC cohort had a negative effect on being fully engaged at age 20/21 years, net of the effects of level of engagement at age 16/17 years, sex, family type, location, SEIFA, ABS unemployment rate and parents' education. These results suggests that engaging in paid employment during senior secondary years provides some protection from unemployment at age 20/21 therefore students not intending to pursue post-secondary education may benefit from participation in paid employment whilst at

school. As other researchers have noted (Anlezark and Lim, 2011; Stern and Briggs, 2001), undertaking long hours of employment whilst at secondary school is associated with an increased likelihood of becoming an early school leaver, therefore, students need to carefully balance their school and paid work commitments. Students at risk of being not engaged in either education or employment may benefit from programs that provide actual workplace experience in the fields that interest them. Young people who do not engage in part-time work whilst at school may not see retail or hospitality jobs as having any connection with their post-school plans and may be unsuccessful in their applications for part-time work in their chosen field. The current requirements for school-based apprenticeships may be acting as a deterrent for employers and potential apprentices, therefore, a review of this program is timely given the high rates of both youth unemployment and skilled migration.

6. Conclusion

Summing up, the results presented here show that transitions between full-time school and full-time employment were affected by, and continue to be affected by, the GFC. The restructuring of the labour market restricted the availability of low-skilled full-time jobs and the GFC exacerbated this trend. Young people in the Post-GFC cohort, those who finished school after 2009, were less likely than their counterparts in the Pre-GFC cohort to be fully engaged at age 20/21 years, however, the ongoing high rates of unemployment and underemployment do not appear to deter young people from leaving school without a clear plan for the next stage of their life course.

Appendix

Table A1 - Relevant waves of data for each of the three cohorts: Pre-GFC; GFC; Post-GFC

Cohort	*T1 [16/17yrs]*	*T2 [17/18yrs]*	*T3 [18/19yrs]*	*T4 [19/20yrs]*	*T5 [20/21yrs]*
Pre GFC	2004	2005	2006	2007	2008
GFC	2006	2007	2008	2009	2010
Post GFC	2008	2009	2010	2011	2012

Table A2 - Characteristics of the three cohorts at T1 (respondents aged 16/17 years)

Characteristic	*Pre GFC n=352*	*GFC n= 421*	*Post GFC n= 429*
	%	%	%
Still at school	72	75	74
Early school leaver	19	16	19
Completed Year 12	9	8	8
Sex			
Male	54	51	46
Female	46	49	54
Employment status @ T1			
Not employed	45	52	48
Employed part-time	45	40	42
Employed full-time	11	9	10
Family type @T1			
Both parents	74	69	68
One parent	18	23	22
Other	8	8	10
Parents' education			
<Year12	14	15	12
Year12	7	8	11
VET	33	35	36
Tertiary (CAE/IT/Uni.)	41	39	36
Don't know	6	3	4
Parent occupational prestige			
Low	14	13	7
Mid	46	46	53
High	36	39	37
Not employed	3	3	4
Region @ T1			
Metro	59	57	56
Regional	41	43	44
SEIFA at T1			
Quintile 1	19	19	20
Quintile 2	22	22	20
Quintile 3	20	17	20
Quintile 4	15	23	20
Quintile 5	24	19	20
ABS unemployment rate			
Low (<4%)	22	58	51
Mid (4.1-5%)	49	19	40
High (>5%)	28	23	9

Table A3 - Descriptive Statistics at T1 of Early School Leavers and School Completers (measured at T5)

	Pre GFC		*GFC*		*Post GFC*	
Characteristic @ T1	*Early school leaver n=101*	*School completer n=251*	*Early school leaver n=118*	*School completer n=303*	*Early school leaver n=106*	*School completer n=323*
	%	*%*	*%*	*%*	*%*	*%*
Male	59	52	62	46	56	42
Female	41	48	38	54	44	58
p-value	0.219		0.004		0.018	
Employment status						
Not employed	37	48	44	55	51	47
Employed p/t	38	48	33	42	20	50
Employed f/t	26	4	23	3	29	3
p-value	<0.0001		<0.0001		<0.0001	
Family type						
Both parents	63	79	59	73	51	73
One parent	20	17	26	22	26	20
Other	17	4	14	5	23	6
p-value	<0.0001		0.001		<0.0001	
Parents' education						
<Year12	22	10	19	13	27	7
Year 12	6	7	8	8	10	11
VET	42	29	45	31	37	36
CAE/IT/Uni.	21	49	23	45	18	42
Don't know	10	4	4	3	8	3
p-value	<0.0001		0.001		<0.0001	
Occupational prestige- Parent						
Low	24	11	19	10	12	5
Mid	47	46	55	43	65	49
High	22	42	21	46	13	45
Not employed	8	1	5	2	9	2
p-value	<0.0001		<0.0001		<0.0001	
Region						
Metro	50	63	50	60	48	59
Regional/Remote	50	37	50	40	52	41
p-value	0.024		0.070		0.047	
SEIFA						
Quintile 1	33	13	28	16	30	16
Quintile 2	23	22	25	21	24	19
Quintile 3	23	19	21	15	18	21
Quintile 4	8	18	18	25	21	20
Quintile 5	14	29	8	22	8	24
p-value	<0.0001		0.001		0.001	
ABS rate of unemployment						
Low	28	20	50	61	43	54
Mid	38	54	17	19	44	39
High	35	26	33	19	12	7
p-value	0.019		0.012		0.114	

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