International Journal of Research in Humanities and Social Studies
Volume 8, Issue 10, 2021, PP 35-46
ISSN 2694-6296
DOI: https://doi.org/10.22259/2694-6296.0810003

Labor Underutilization in the Years Following the GFC: an Australian Example

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ABSTRACT

This paper presents analysis the main factors associated with labor underutilization in Australia during the period following the Global Financial Crisis (GFC). It does so by using a panel data set consisting of survey data taken from the Household, Income and Labour Dynamics Australia (HILDA) and Small Area Labour Markets data, published by the Department of Employment. The results illustrate the broad nature of factors influencing an individual's risk of being underutilized including the changing nature of macro-economic processes during the post-GFC period.

Keywords: *Unemployment, Labor market disadvantage, Australia*

INTRODUCTION

In the immediate aftermath of the Global Financial Crisis (GFC) there was much discussion surrounding the relative resilience of the Australian economy to the shocks that impacted on other advanced economies around the world. This economic resilience was heralded by the national government and international organizations such as the IMF. As one media outlet portrayed it'[l]uckily in Australia we avoided a long-term unemployment problem—in part due to China, but also because of the massive stimulus program put through by the Rudd Government'[1]. While it is certainly true that the Australian economy was not impacted in the immediate GFC period, it is equally the case that in the years following the immediate global slowdown, changes in the performance and management of the macro-economy have resulted in declining or at best stagnant labor market fortunes for particular individuals [2, 3].

Considering the most basic measure of labor market performance—unemployment rates (figure 1)—although Australia, the United States and the United Kingdom all began the pre-GFC period with very similar rates of unemployment, both the US and UK labor markets were much more immediately impacted than was Australia. Unemployment in the United States climbed to close to 10 per cent in 2010 while in the United Kingdom the peak came one year later (8.1 per cent in 2011). The Australian labor market in contrast recorded much more modest increases in unemployment, peaking at 5.6 per cent in 2009. In the post 2011 period, when other economy's labor markets were witnessing falls in unemployment, the Australian labor market began to witness modest increases in unemployment, with rates eventually moving above both the United States and United Kingdom during 2014-15.

Beyond the headline rates of unemployment, issues around labor underutilization are seen to dominate academic discussion. A broader term of labor underutilization includes those who are unemployed in the narrow sense, but also includes those who are underemployed by hours (involuntary part-time workers or working hours tension [4]) and those who have left the official labor market but would take a job if one was available (hidden unemployed). Once these two categories of underutilization are added to the unemployment figures, the long run post-GFC labor market situation becomes more tenuous. In the United States, for example,[5][5] point out that the true level of underutilization is largely underestimated by the official unemployment rate. Taking the wider U6 measure and adding those who were employed part-time for economic reasons, plus those in the labor force who want a job now, minus those who are not available to work now (ill, disabled, or in school), provides an estimate of 20 million potential workers who are at least partially idled [5].

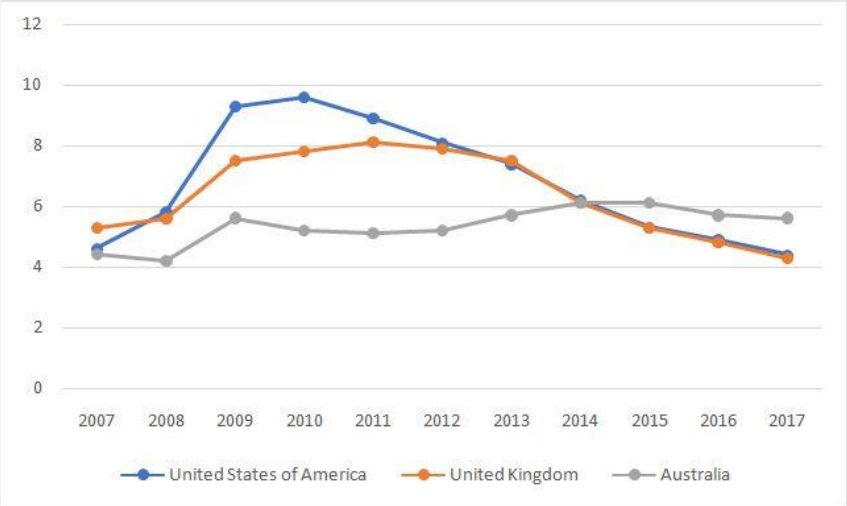

Figure1. *Unemployment rate, 2007 to 2017, Australia, United States of America and United Kingdom*

In the Australian context, the Australian Bureau of Statistics notes that while the unemployment rate has fallen over recent periods, the rate of under-employment by hours has shown an upward trend, sitting at around 8 per cent, since the onset of the GFC [6]. Moreover, as Borland [2] and others have rightly pointed out, once the rate of under-employment by hours and the rate of hidden unemployed are added to the unemployment rate the actual rate of underutilization is likely to be close to 20 per cent.

While figures such as these are important and illustrate the magnitude of the problem, an understanding of labor underutilization moves beyond a discussion of basic statistics. It necessarily involves a consideration of the broad societal impacts of labor wastage together with an unpacking of the patterns and drivers of underutilization.

The economic and social impacts of labor underutilization are closely aligned with the broader literature around the impacts of unemployment itself and concerns around links between joblessness and broader issues of social disadvantage, social exclusion and social problems. Using a disease analogy, Tcherneva [7] states 'Unemployment is chronic, volatile, and pernicious. It also inflicts unbearable costs on individuals, their families, communities, and the economy' (p. 9). Although only referring to unemployment Tcherneva's statement holds equally true to broader measures of underemployment.

The economic costs of labor underutilization are evident in the loss of productivity and output, both as a direct result of labor wastage, but also via multiplier effects associated with reduced consumption, reduced human and physical capital stock as a result of atrophy of skills and the lower investment in physical capital stock [2, 8, 9]. The magnitude of such costs differ, but during the period of the GFC, it is estimated that the United States economy lost $10 billion of output daily as a result of higher levels of unemployment [10], while for Australia Borland [2] suggests that

> if just one-half of the current unemployed in Australia shifted into jobs where they added the same amount to the gross domestic product (GDP) as the average productivity per worker in December 2014, it would add 3.1 per cent to our total GDP.

Increasing levels of labor underutilization also contribute to increases in the level of inequality and poverty at a societal level [9, 11-13] resulting in increased social exclusion which in turn is associated with increased societal tensions and social problems such as anti-social and criminal behavior [5].

Beyond the broader economy and society, are a raft of negative individual impacts. A number of researchers have pointed to the negative health impacts associated with poor labor market outcomes. Paul and Moser [14], using a meta-analysis of over 300 studies finds that being unemployed doubles the risk of clinical mental health problems. Similarly, in a German study Zuelke, Luck [15] identify that the loss of material and social resources (social interactions) as a result of being unemployed negatively impacts on the severity of depressive disorders.

An individual's social networks and social capital are also seen to suffer from periods of underutilization. Pohlan [16] using a linked German dataset discusses the association between the reduction in financial resources and the psychosocial malaise accompanying joblessness and the loss of social integration, and participation which leads to reduced social networks and social capital. This reduction in important social ties can impact on the ability of an unemployed individual to regain entry into paid employment, and in areas of concentrated unemployment can result in flow-on effects to other potential job seekers [17]. Related to this is the impact that underutilization can have on families and households. Gradín, Cantó [18] note that the exclusion of a household member from meaningful secure employment not only affects the individual but also the other members of the family. See also [9][19].

These long-run patterns and concerns around labor underutilization and labor wastage provide the context and stimulus for this paper. The main purpose of the paper is to investigate underutilization in the Australian labor market in the years following the global financial crisis and in particular consider the factors associated with underutilization including the characteristics of at-risk individuals and the characteristics of the local labor markets that individuals operate in. The paper does so by utilizing panel data regarding individual labor market outcomes covering the years 2008 to 2015 from the Household, Income and Labour Dynamics Australia (HILDA) survey and regional labor market statistics from the Australian Bureau of Statistics. This dataset allows the following research questions to be addressed:

1) What was the impact of supply side characteristics on the risk of an individual's labor being underutilized?
2) What was the impact of aggregate/ spatial demand side characteristics on the risk of an individual's labor being underutilized? and
3) What was the impact of macro-economic forces in the post-GFC period on an individual's labor being underutilized?

The Context of Labor Underutilization

Within this paper the context for understanding labor underutilization is set out recognising the significance of factors accounting for both labor supply and labor demand [20]. Conceptually, the approach is set within a broad holistic definition of 'employability' [21] which accounts for the full range of factors impacting on labor market outcomes and considers an individual's employability as dependent on the knowledge, skills and attitudes they possess, the way they use those assets and present them to employers and the context (e.g. personal circumstances and labor market environment) within which they seek work [22].

From within this framework, labor underutilization is seen as a function of the *characteristics of individuals* –skills and attributes such as basic education, transferable skills, demographic characteristics, health and well-being, job-seeking behaviour and employment history— *social and family context or background*—family employment history and social networks— and the characteristics of *external factors*-labor market strength and performance and the condition of the broader macro-economy [22]. The first two factors relate to individual and personal circumstances or 'employability components' [23] and are thought of as factors influencing labor supply. The final set of factors are considered mainly exogenous to the individual and embody an extensive variety of background factors representative of labor demand [21].

There is a significant body of evidence illustrating the importance of the first of these factors—individual characteristics— to understanding labor underutilization [3, 20, 24, 25]. The recent Australian study by Kler, Potia [3] used a narrow involuntarily part-time or 'working hours tension' measure of underutilization, and identified the significance of factors including age, gender, and language ability or ethnicity on the probability that individuals would be classified as working part-time involuntarily. In particular being male, younger and having immigrated to Australia all increased the likelihood of underutilization. The much earlier Australian work by Baum, Bill [20] found similar results with a more inclusive measure of underutilization. Measuring underutilization as those who were involuntarily working part-time, those who were unemployed and those classified as

hidden-unemployed, Baum, Bill [20] find that having a post-school qualification such as a university degree reduces the chances that an individual will be classified as underutilized, while having a disability, poor English skills or being female was associated with an increased risk of being underutilized. Outside of Australia, Doran and Fingleton [24] looking at European micro-level data and considering both labor supply and labor demand, report that being in a younger cohort, having higher education levels, and male all increased the probability of being employed rather than underutilized. In a study directly looking at the period of the GFC [25] find that for a Spanish sample, factors including the age of the respondent, not having a university degree and an individual's living arrangements (living with elderly parents) increases the risk of labor underutilization.

While not denying the significance of individual employability endowments in understanding labor underutilization, broader social and family contextual factors are also important. An individual's broader family and social circumstances can act to mediate individual outcomes and potential. Family or household composition may impact on choices and constraints faced in the labor market. Additionally, family background can impact on an individual's employment opportunities via intergenerational effects [26], but also through the impact of social networks and social capital of parents [27]. Morales [27] using a sample of Spanish families finds that parental unemployment has an impact on future labor market engagement of children, suggesting the presence of significant intergenerational processes in future employment outcomes. Similar findings are also reported [28] in a study of youth unemployment in European countries illustrating the presence of a generational legacy. In the early Australian work by [20] having parents outside of paid employment during childhood significantly increased the likelihood that an individual would be disadvantaged in the labor market. This effect was significant even after controlling for individual factors such as education level, age and gender and local labor market effects.

While intergenerational processes may be important drivers, wider social networks are also important in explaining labor market outcomes. Social networks (who you know) have been increasingly important in explaining the job search activities of individuals and hence increasingly important in explaining eventual employment prospects [29-33]. As an example of the links between social networks and employment outcomes, Sousounis and Lanot [30] find that the employment outcomes of individual respondents in a sample of the British Household Survey were significantly impacted by their level of social networks.

Apart from individual factors and social and family contexts, external factors representing labor demand and the macro-economic environment may also influence an individual's labor market outcomes [21]. In understanding labor underutilization, the spatial organization of metropolitan employment opportunities in terms of the number, quality and distribution of jobs is important. Though researchers including [34] question whether local labor demand can be thought of as a local or regional factor, others such as Sunley, Martin [35] point to the importance of its inclusion in an analysis of labor market outcomes at the individual level. Significantly 'there is no such thing as a national labor market, but rather a complex geographical mosaic of overlapping local and sub-national labor markets' [35] which will have differential effects on individuals' opportunity structures and hence on employment outcomes. The nature of segmented local labor market regions mean that demand is expected to be considerably different between geographically distinct labor market regions. Interacting with these spatially separated local labor markets is the influence of macro-economic elements such as the stability of the broader macro economy, the level of business confidence and the level of labor demand in the national economy [21]. Negative shocks to the macro-economy, such as that witnessed during and immediately after the Global financial Crisis will work in concert with other factors external to the individual to influence individual labor market outcomes.

Research accounting for the impact of these external factors on labor market outcomes provides support for the inclusion. Doran and Fingleton [24] find in their European study that the regional economy had a separate impact on individual's labor market outcomes,

net of other factors, while Rodríguez Hernández [25] identify similar patterns in their study of Spanish labor market outcomes. The early work by Baum, Bill [20] illustrated the importance of including a measure of local labor market performance in the Australian context, an outcome reinforced by the later work of Haynes, Higginson [36].

MATERIALS AND METHODS

The data is sourced from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, managed by the Melbourne Institute of Applied Economic and Social Research; as well as the Small Area Labour Markets Australia, published by the Department of Employment.

The HILDA Survey follows a large cohort of Australians across consecutive years, gathering responses on a variety of economic, social and labor questions. The HILDA Survey began in 2000-01 (Wave 1) and has since produced 15 consecutive waves of output, with a high rate of participant retention. This paper uses data from Waves 8 to 15 (2008-2015). Among the variables accessed through the HILDA data are a person's labor force status, their age, gender, health status, language command, education level, family status, their parents' employment as well as their social capital. Importantly, the data is accessed from the unconfidentialised release, which allows an individual to be followed through the various waves, and also reveals a spatial identifier for each individual, which allows placement into an appropriate labor market.

While the retention rate of respondents throughout the life of the survey has been high, some have dropped out along the way, others have missed a year or more along the way, while some do not fully answer all questions in the survey each year. To address this loss of respondents, the Melbourne Institute included a top-up sample in 2012, which increased the number of respondents from then on. However, over the eight years from 2008 to 2015, just over 3,000 respondents answered all questions in every year. Further, this cohort was found to be a biased cohort, with a much higher proportion fully employed and higher education levels than across all respondents over the life of the survey. Hence, we feel there is value in using an unbalanced dataset, where respondents need only to have completed all questions for a single year to remain in the dataset. This does require two consecutive years engagement with the survey at any stage as the social capital variable is sourced from questions from the previous year (see Table 1).

The Small Area Labour Markets Australia publication produces unemployment and labor force estimates at a small area level, specifically Statistical Areas Level 2 (SA2s) (ABS, 2010). These estimates are based on ABS Labour Force Survey data, which are published at the SA4 level, and then apportioned to SA2s across each SA4 depending on the distribution of Newstart and Youth Allowance recipients in those smaller regions.

Labor Market Regions

The modelling that follows is aimed at evaluating the impact of a person's individual characteristics as well as the characteristics of the labor market they are a part of. We define an individual's labor market as the functional region they live in as per the CofFEE Functional Economic Regions (CFERs) (Stimson *et al*., 2015). These regions, which cover the whole of Australia, are specifically designed as labor markets, informed by the commuting patterns of workers throughout the country. The regions are unencumbered by administrative or political requirements and have been shown to produce better measures of labor market statistics. This is important as we use the unemployment rate of the region an individual is a resident in as the measure of a region's influence on an individual's labor force status. The CFERs are comprised of SA2s, so a region's unemployment rate is determined by the unemployment and labor force numbers of its constituent SA2s, as provided in the Small Area Labor Markets publication.

Modelling

The model is set up so as to determine the influence a range of explanatory variables have on the response variable, employment status. Employment status is measured across one of four categories:

- Fully employed (FE) – employed full-time, or employed part-time without wanting more work;
- Underemployed (UDE) – employed part-time and wanting more work;

- Unemployed (UNE) – those who are not employed and actively looking for work; and
- Marginally attached to the labor force (MALF) – those who are not employed and not actively looking for work, but would work if a job became available.

With a categorical dependent variable, the appropriate model to use is a multinomial logit model. The explanatory variables are listed in table 1 below. Most of the explanatory variables are categorical variables where, like the response variable, a baseline reference category is chosen to which all the other categories are compared.

Table1. *Explanatory variables used in analysis*

Variable	Description	Reference Variable
Age1524	1 if person *i* is aged between 15-24 years at time *t*; 0 otherwise	Person aged between 25-54 years at time *t*
Age5564	1 if person *i* is aged between 55-64 years at time *t*; 0 otherwise	Person aged between 25-54 years at time *t*
Age65	1 if person *i* is aged 65 years or greater at time *t*; 0 otherwise	Person aged between 25-54 years at time *t*
Sex	1 if person *i* is female at time *t*; 0 otherwise	Person is male at time *t*
Health	1 if person *i* reports a long-term health condition at time *t*; 0 otherwise	No long-term health condition reported at time *t*
Eng	1 if person *i* was born in a non-English speaking country; 0 otherwise	Person born in English speaking country
EducPS	1 if person *i*'s highest level of education at time *t* is post-secondary (inc certificate and diploma); 0 otherwise	Person has no post-school qualification at time *t*
EducTer	1 if person *i* has completed tertiary level education at time *t* (bachelor degree and above); 0 otherwise	Person has no post-school qualification at time *t*
FamCK	1 if person *i* is part of a couple relationship with dependent children at time *t*; 0 otherwise	Person is single at time *t*
FamSP	1 if person *i* is a single parent at time *t*; 0 otherwise	Person is single at time *t*
FamCO	1 if person *i* is part of a couple with no dependent children at time *t*; 0 otherwise	Person is single at time *t*
ParEmp	1 if both parents of person *i* were not in paid employment when person *i* was 14; 0 otherwise	At least one of person's parents were in paid employment when 14
PrevEmp	1 if person *i* did not have a job anytime in the previous 12 months at time *t*; 0 otherwise	Person had a job some time in last 12 months
SocCap	Social capital/networks value for person *i* at time *t-1*. This was calculated through a Principal Components Analysis of responses to 9 questions from HILDA survey	N/A
RegUR	Log of the unemployment rate of the region (CFER) person *i* is resident in at time *t*	N/A
Year2	1 if period is time 2 (2009), 0 otherwise	Year 1 (2008)
Year3	1 if period is time 3 (2010), 0 otherwise	Year 1 (2008)
Year4	1 if period is time 4 (2011), 0 otherwise	Year 1 (2008)
Year5	1 if period is time 5 (2012), 0 otherwise	Year 1 (2008)
Year6	1 if period is time 6 (2013), 0 otherwise	Year 1 (2008)
Year7	1 if period is time 7 (2014), 0 otherwise	Year 1 (2008)
Year8	1 if period is time 8 (2015), 0 otherwise	Year 1 (2008)

Source: *Authors' own data code book*

RESULTS

This section presents the findings from the analysis of labor force status of individuals across Australia. Table 2 presents the number and proportion of respondents that remain in the dataset for each wave across the 8 years. The increase in 2012 is due to the top-up sample implemented in Wave 12.

Table2. *Dataset labor force status statistics*

Year		Fully employed	Under-employed	Unemployed	Marginally Attached LF	Total
2008	Number	6,050	569	253	439	7,311
	Proportion	82.8%	7.8%	3.5%	6.0%	100%
2009	Number	5,894	635	277	496	7,302
	Proportion	80.7%	8.7%	3.8%	6.9%	100%
2010	Number	6,113	635	321	550	7,619
	Proportion	80.2%	8.3%	4.2%	7.2%	100%
2011	Number	6,305	750	306	555	7,916
	Proportion	79.6%	9.5%	3.9%	7.0%	100%
2012	Number	7,978	849	443	798	10,068
	Proportion	79.2%	8.4%	4.4%	7.9%	100%
2013	Number	7,909	929	462	838	10,138
	Proportion	78.0%	9.2%	4.6%	8.3%	100%
2014	Number	7,773	1,031	482	849	10,135
	Proportion	76.7%	10.2%	4.8%	8.4%	100%
2015	Number	7,952	991	534	788	10,265
	Proportion	77.5%	9.7%	5.2%	7.7%	100%
All years	Number	55,974	6,389	3,078	5,313	70,754
	Proportion	79.1%	9.0%	4.4%	7.5%	100%

Source: *HILDA Survey, authors' calculations*

Table 3 shows the unemployment and underemployment rates of the dataset respondents and compares them to the rates across Australia at the time[1]. In the HILDA dataset, unemployed persons are under-represented compared to the whole of Australia, while underemployed persons are over-represented. However, the movements in the rates between the two cohorts generally align.

Table3. *Underutilization rates Dataset and Australia*

Year	Unemployment Rate		Underemployment Rate	
	Dataset	Australia	Dataset	Australia
2008	3.7%	4.5%	9.4%	6.8%
2009	4.1%	5.6%	10.8%	8.3%
2010	4.5%	5.1%	10.4%	7.5%
2011	4.2%	5.3%	11.9%	7.7%
2012	4.8%	5.3%	10.6%	7.7%
2013	5.0%	5.8%	11.7%	8.1%
2014	5.2%	6.3%	13.3%	9.1%
2015	5.6%	5.9%	12.5%	9.0%

Source: *HILDA Survey, authors' calculations, ABS Labour Force Survey*

Note: *Underemployment rate is underemployed persons as a proportion of all employed persons*

Table 4 presents the results of the maximum simulation likelihood of the mixed logit models. The models were run using the gmnl package in R. Given the large dataset and the complexity of the simulation, the computation was quite intensive and each took many days to complete. Prior to running the mixed logit models, the dataset was pooled and a multinomial logit model was run, with the results (not reproduced here) being largely similar to the mixed logit results below.

[1]Labour Force Survey data taken from November of the corresponding years

The model is run so that in turn each of the response variable states is set as the baseline reference state and are compared to each of the other states. Given our four response variable alternatives, six permutations are required so that each state is compared to every other state. Column 1 in table 4 therefore presents the parameter estimates for the outcome of fully employed relative to underemployed.

Unsurprisingly, age has quite a significant impact on a person's labor force status. Young persons aged 15 to 24 are more likely to not be fully employed than any other state compared to persons aged 25 to 54 (the reference age group). The chance of young people being underemployed rather than unemployed or marginally attached is not significant. However, young people are more likely to be unemployed rather than marginally attached to the labor force than people in the reference age group. The difference between being fully employed and underemployed is not significant for people aged 55 to 64 or those over 65 compared to those in the reference age group, however, there is a significant influence for all other response variable state pairs. These older people are more likely to be fully employed than unemployed, but more likely to be marginally attached to the labor force than fully employed compared to the reference cohort. This latter result reflects the possible situations for people at this stage of life. Once they drop out of employment, they are not likely to look for work, either because they are comfortable to enter retirement or feel their prospects for getting further work are small, given their age, skill level and/or the changing nature of workplaces. Yet, they would generally take a job if one were available.

Gender has a significant effect on labor force status for most pair of response states. Interestingly, females are more likely than men to be underemployed than every other labor force state. Further, women are more likely to be marginally attached to the labor force than either fully employed or unemployed. As with older people, this would reflect either their position in life, where either they are comfortable enough not working, or view their prospects of getting work as poor, but would take a job if it were available.

Persons with a long-term health condition are more likely to be in a more precarious labor force state than those without a condition. The only exception to this being no significant difference between being underemployed or unemployed. Being born in a country where English is not the official language has a significant impact on a person struggling to be fully employed. Such a person is more likely to be underemployed, unemployed or marginally attached to the labor force than fully employed compared to persons born in English speaking countries, but does not have an impact on outcomes between these three labor force states.

Any form of post-school qualification has a positive significant impact on a person’s labor force state. Such a person is more likely to be fully employed than each other state and less likely to be marginally attached to the labor force than underemployed or unemployed.

A person’s family situation is somewhat influential to a person’s labor force status. A single parent is more likely to be in a more precarious labor force state than a single person, with the exception that they are more likely to be underemployed than unemployed and with no significant difference between being underemployed and marginally attached to the labor force. A person having a partner and children has a positive impact on them being in employment. While they are more likely to be underemployed than fully employed compared to a single person, they are more likely to be fully employed or underemployed than unemployed. They are also more likely to be searching for work if out of a job than be marginally attached to the labor force. Persons in couple relationships without children are more likely to be fully employed than each other labor force state compared to a single person, with the other pairs of relationships being insignificant.

The employment history of a person's parents has a significant negative impact on their ability to be being fully employed. If both parents of a person were out of work when they were a teenager, they themselves are more likely to be underemployed, unemployed or marginally attached to the labor force, compared to a person who had at least one parent in employment at the same time of life. This has no impact, though, on which of the labor underutilization states (underemployed, unemployed or marginally attached) they are in.

The strength of a person's social capital and networks generally have a positive impact on their labor force status. A person with stronger social capital is more likely to be fully employed than each other labor force state and more likely to be underemployed than

unemployed. However, such a person is more likely to not actively search for work if they are out of a job, but be willing to take one should one be available. This latter result may be a consequence of a person with strong social capital being financially and emotionally supported if they are not in employment and/or having other interests they can pursue given the time away from work.

The unemployment rate of a person's local labor market has, in general, an impact on an individual's labor force status. A higher unemployment rate in a person's labor market means they are more likely to be underemployed or unemployed than fully employed. Further, the requirement of people not in work to be actively looking for work to be included in official unemployment statistics means that a higher regional unemployment rate actually means a person is more likely to be underemployed or unemployed than in this cohort.

The impact of the macroeconomic situation on individuals' ability to secure enough employment for themselves is strong, but weak when comparing the different states of labor underutilization to each other. The global situation began deteriorating in late 2007 but did not reach Australia until late 2008. Continuing on the growth period of the early part of the millennium, official national unemployment kept falling until August 2008 when it reached its nadir at 4.0 per cent. It was about this time the eighth wave of HILDA surveys were being conducted, our reference year (Year 1) in the regression analysis. After rising to almost 6 per cent in 2009, the national unemployment rate reduced again before rising in 2011 where it stayed above 6 per cent for most of 2014 and 2015.

These movements in the national unemployment rate are reflected through the course of the survey on the impact the ensuing years had on the people's labor force statuses. While there was no significant impact between the different types of labor underutilization, there was a significant impact on people's ability to be fully employed as the effects of the GFC became entrenched. No significant effect was measured in 2009 (Year2), while in 2010 people were more likely to be unemployed and marginally attached than fully employed compared to 2008. In 2011 people were more likely to be underemployed and marginally attached to the labor force than fully employed, compared to 2008, and these patterns continued and intensified from 2011 on, with only unemployment in 2011 and underemployment in 2012 relative to full employment not being significantly more likely for persons compared to the reference year.

Table4. *Regression analysis results*

	FE:UDE (1)	FE:UNE (2)	FE:MALF (3)	UDE:UNE (4)	UDE:MALF (5)	UNE:MALF (6)
Intercept	-4.442 ***	-4.764 ***	-4.789 ***	-1.123 ***	-1.108 ***	-0.492 **
Age1524	1.480 ***	1.416 ***	1.158 ***	0.133	-0.103	-0.240 ***
Age5564	-0.030	-0.336 ***	0.575 ***	-0.297 **	0.563 ***	0.822 ***
Age65+	-0.232	-1.575 ***	1.498 ***	-1.436 ***	1.547 ***	2.866 ***
Sex	0.999 ***	-0.052	0.462 **	-0.815 ***	-0.306 ***	0.457 ***
Health	0.451 ***	0.454 ***	0.839 ***	-0.067	0.326 ***	0.404 ***
Eng	0.517 ***	0.257 **	0.239 **	-0.117	-0.145	-0.002
EducPS	-0.288 ***	-0.214 **	-0.478 ***	0.037	-0.267 ***	-0.330 ***
EducTer	-0.648 ***	-0.532 ***	-0.684 ***	-0.028	-0.196 *	-0.223 **
FamCK	0.158 **	-0.449 ***	0.119	-0.512 ***	0.021	0.538 ***
FamSP	0.655 ***	0.550 ***	0.549 ***	-0.370 ***	-0.019	0.377 ***
FamCO	-0.314 ***	-0.374 ***	-0.345 ***	-0.103	-0.105	0.003
ParEmp	0.498 ***	0.765 ***	0.521 ***	0.268	0.072	-0.187
PrevEmp	1.865	20.168	21.286	18.398	19.327	1.185 ***
SocCap	-0.062 ***	-0.086 ***	-0.068 ***	-0.024 **	-0.009	0.017 *
RegUR	6.614 ***	7.384 ***	-0.070	0.649	-6.506 **	-5.870 **
Year2	0.141	0.097	0.143	-0.001	0.045	0.025
Year3	0.086	0.235 *	0.261 *	0.157	0.191	0.006
Year4	0.264 ***	0.170	0.303 **	-0.058	0.060	0.082
Year5	0.126	0.303 **	0.345 ***	0.163	0.206	0.027
Year6	0.215 **	0.286 **	0.420 ***	0.076	0.200	0.086
Year7	0.378 ***	0.214 *	0.246 *	-0.122	-0.072	0.003
Year8	0.255 ***	0.297 **	0.077	0.040	-0.150	-0.217

Source: *HILDA Survey, DoE Small Area Labour Markets, authors' calculations*

CONCLUSION

This paper sets out an analysis of labor underutilization in Australia in the years following the beginning of the Global financial Crisis. The context for the paper lies in the realization that while the Australian economy was resilient in the early phases of the GFC, deterioration in the macro-economy in later years has resulted in declining labor market performance, even as other economies were showing improvement. Considering labor underutilization as a function of individual employability characteristics, including social and family contexts, the strength of the local labor market region and the performance of the macro-economy the analysis presented here considers three separate questions:

1) What was the impact of supply side characteristics on the risk of an individual's labor being underutilized?

2) What was the impact of aggregate/ spatial demand side characteristics on the risk of an individual's labor being underutilized? and

3) What was the impact of macro-economic forces in the post-GFC period on an individual's labor being underutilized?

It is not surprising, given the established literature dealing with labor underutilization, to find that individual characteristics such as formal education, gender, age, language proficiency and health status are implicated in the likelihood of labor underutilization. Capabilities, measured by formal education, physical capacity and language capacity, all impact on the likelihood of an individual being underutilized with hypothesized low capabilities being associated with increased disadvantage. Over and above the impacts of individual capabilities, there is a clear employment life-cycle effect [37] with younger individuals being more likely to be caught in all forms of underemployment and older individuals being more likely to be among the marginally attached. For the younger individuals, labor market inexperience and choices around work and education are important, while for older individuals choices around exiting the formal labor force may come to the fore [38]. Lastly, there is a significant gendered difference in the likelihood of underutilization, with females more lily to be underemployed by hours or marginally attached, a finding that reflects both choices around workforce participation and family and also about gendered constraints in labor markets ([39, 40].

Over and above these individual employability characteristics, social and family context variables were also important. Reflecting the impacts of life cycle choices and constraints [41, 42] individuals who were members of a couple only households were less likely to be underutilized across all outcomes, while those in couple households with children present had a higher likelihood of being underemployed. Family relationships with work are also important. Individuals who grew up in job-poor families were more likely to be underutilized across all measures reflecting the potential impacts of intergenerational transfers of disadvantage. Beyond the family, broader social networks are also associated with labor underutilization with those with low measures of social capital being more likely to be in one of the underutilization categories.

The second question addressed in this paper related to the role that spatial demand-side characteristics have on the likelihood that an individual would be classified as being underutilized. There is clear evidence presented here that regardless of other factors, individual's labor market outcomes are influenced by the level of local labor demand. In areas with job deficiencies the risk of being underemployed or unemployed was significantly higher.

The final question addressed in this paper related to the impact of the macro-economy on labor underutilization outcomes, and in particular the impact of the deteriorating post-GFC economy. If we take 2010 as the beginning of the broader international recovery it is clear that macro-economic deterioration continued in the Australian economy resulting in worsening labor market outcomes. Interestingly, this deterioration in the Australian macro-economy coincided with the end of the Federal Government's fiscal assistance programs and the beginning of austerity politics.

It is this final issue that is of most interest in this paper. If one of the reasons for analyzing the drivers of individual labor underutilization is to contribute to policy debates, the findings of this paper provide a useful addition to the labor market evidence base. The impact of

individual level characteristics on labor underutilization may be seen as evidence of the need to improve an individual's employment capacity through place neutral policies such as skills training schemes. This has certainly been a focus of a significant amount of Australia labor market policy in the past. However, as has been pointed out elsewhere [20] a focus on these people based or place neutral polices can only be seen as a necessary but not sufficient condition towards improving labor market outcomes. A focus on the strength and performance of local labor markets through place-based policies will provide demand side approaches that complement polices targeting things like skills improvement. The final take-home message from this paper relates to the Government's responsibility to act as an enabler for inclusion of individuals into all aspects of society including the paid labor market. The findings here suggested that the Federal Government's fiscal intervention during the early stages of the Global Financial Crisis helped to create the macro-economic conditions favorable to a resilient labor market. The subsequent retreat from these policies in part resulted in a deterioration of the macro-economy and a negative impact on individual's labor market outcomes, net of other factors. While there is significant discussion in policy circles about individuals taking more responsibility for their own outcomes, as has been shown here and elsewhere [20] the government must actively pursue polices to ensure that broad macro-economic contexts are favorable towards positive labor market outcomes for all.

REFERENCES

[1] Pickering C. Lessons for Australia from the GFC. The Australian. 2014 11 June.

[2] Borland J. The Australian Labour Market: The More Things Change…. Australian Economic Review. 2015;48(3):225-42.

[3] Kler P, Potia AH, Shankar S. Underemployment in Australia: a panel investigation. Applied Economics Letters. 2018;25(1):24-8

[4] Merz J, Lang R. Preferred vs. Actual Working Hours-A Ten Years Paneleconometric Analysis for Professions, Entrepreneurs and Employees in Germany. 1997.

[5] Dantas F, Wray LR. Full employment: are we there yet? : Public Policy Brief; 2017. Report No.: 1936192543.

[6] ABS. Underemployment in Australia. In: ABS, editor. Canberra: Australian Bureau of Statistics; 2018.

[7] Tcherneva PR. Unemployment: The silent epidemic. 2017.

[8] Watts MJ, Mitchell WF. The Costs of Unemployment in Australia. The Economic and Labour Relations Review. 2000;11(2):180-97.

[9] Sinfield A. Unemployment and Its Wider Impact. The Oxford Handbook of Job Loss and Job Search. 2018:99.

[10] Mitchell W. Billy Blog [Internet]2012. Available from: http://bilbo.economicoutlook.net/blog/?p=17740.

[11] Sen A. Inequality, unemployment and contemporary Europe. Int'l Lab Rev. 1997;136:155.

[12] Tcherneva PR. Reorienting fiscal policy: A bottom-up approach. Journal of Post Keynesian Economics. 2014;37(1):43-66.

[13] Saunders P. The direct and indirect effects of unemployment on poverty and inequality. Australian Journal of Labour Economics. 2002;5(4):507.

[14] Paul KI, Moser K. Unemployment impairs mental health: Meta-analyses. Journal of Vocational behavior. 2009;74(3):264-82.

[15] Zuelke AE, Luck T, Schroeter ML, Witte AV, Hinz A, Engel C, et al. The association between unemployment and depression–Results from the population-based LIFE-adult-study. Journal of affective disorders. 2018;235:399-406.

[16] Pohlan L. Unemployment and social exclusion. ZEW Discussion Papers; 2018.

[17] Jahn EJ, Neugart M. Do neighbors help finding a job? Social networks and labor market outcomes after plant closures. 2017.

[18] Gradín C, Cantó O, Del Río C. Measuring employment deprivation in the EU using a household-level index. Review of Economics of the Household. 2017;15(2):639-67.

[19] McKee-Ryan FM, Maitoza R. Job Loss, unemployment, and families. The Oxford Handbook of Job Loss and Job Search. 2018:87.

[20] Baum S, Bill A, Mitchell W. Labour underutilisation in metropolitan labour markets in Australia: individual characteristics, personal circumstances and local labour markets. Urban Studies. 2008;45(5-6):1193-216.

[21] McQuaid RW, Lindsay C. The concept of employability. Urban studies. 2005;42(2):197-219.

[22] Hillage J, Pollard E. Employability: developing a framework for policy analysis: DfEE London; 1998.

[23] Evans C, Simmonds D, Nathan M. Employability through work: Centre for Local Economic Strategies Manchester M4 5DL; 1999.

[24] Doran J, Fingleton B. Employment resilience in Europe and the 2008 economic crisis: Insights from micro-level data. Regional Studies. 2016;50(4):644-56.

[25] Rodríguez Hernández JE. Factors determining labor underutilization in Spain by gender before and after the economic crisis. Economic and Industrial Democracy. 2018:0143831X17752266.

[26] Berloffa G, Filandri MA, Matteazzi E, Nazio T, Negri N, O'Reilly J, et al. Work-poor and work-rich families: Influence on youth labour market outcomes. Universita Degli Studi Di Torino; 2016.

[27] Morales M. Can the labor status of parents and the composition of the family influence the future labor situation of children? Evidence for Spain. 2018.

[28] O'Reilly J, Eichhorst W, Gábos A, Hadjivassiliou K, Lain D, Leschke J, et al. Five characteristics of youth unemployment in Europe: Flexibility, education, migration, family legacies, and EU policy. Sage Open. 2015;5(1):2158244015574962.

[29] Oesch D, von Ow A. Social Networks and Job Access for the Unemployed: Work Ties for the Upper-Middle Class, Communal Ties for the Working Class. European Sociological Review. 2017;33(2):275-91.

[30] Sousounis P, Lanot G. Social networks and unemployment exit in Great Britain. International Journal of Social Economics. 2018;45(8):1205-26

[31] Kalfa E, Piracha M. Social networks and the labour market mismatch. Journal of Population Economics. 2018;31(3):877-914.

[32] Cingano F, Rosolia A. People I know: job search and social networks. Journal of Labor Economics. 2012;30(2):291-332.

[33] Granovetter M. The impact of social structure on economic outcomes. Journal of economic perspectives. 2005;19(1):33-50.

[34] Buck N. Identifying neighbourhood effects on social exclusion. Urban studies. 2001;38(12):2251-75.

[35] Sunley P, Martin R, Nativel C. Putting workfare in place: Local labour markets and the new deal: John Wiley & Sons; 2011.

[36] Haynes M, Higginson A, Probert WJ, Boreham P. Social determinants and regional disparity of unemployment duration in Australia: a multilevel approach. 2011

[37] Choi S, Janiak A, Villena-Roldán B. Unemployment, Participation and Worker Flows Over the Life-Cycle. The Economic Journal. 2014;125(589):1705-33.

[38] Chéron A, Hairault J-O, Langot F. Life-cycle equilibrium unemployment. Journal of Labor Economics. 2013;31(4):843-82.

[39] Christensen K. He-cession? She-cession? The gendered impact of the great recession in the United States. Review of Radical Political Economics. 2015;47(3):368-88.

[40] Périvier H. Recession, austerity and gender: A comparison of eight European labour markets. International Labour Review. 2018;157(1):1-37.

[41] Crompton R, Harris F. Explaining women's employment patterns:'orientations to work'revisited. British journal of Sociology. 1998:118-36.

[42] Steiber N, Haas B. Advances in explaining women's employment patterns. Socio-Economic Review. 2012;10(2):343-67.

Citation: *Scott Baum & William Mitchell "Labor Underutilization in the Years Following the GFC: an Australian Example", International Journal of Research in Humanities and Social Studies. 2022; 8(10): 35-46. DOI: DOI: https://doi.org/10.22259/2694-6296.0810003*