Adequate Employment, Underutilisation and Unemployment: an Analysis of Labour Force Outcomes for Australian Youth

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Abstract

This paper considers youth labour market disadvantage and presents an analysis which juxtaposes the role of individual supply characteristics with labour demand characteristics to advance an understanding of youth labour market outcomes. The paper takes the concept of employability and using data from the Household Income and Labour Dynamics Australia (HILDA) survey and the Australian Bureau of Statistics Household and Population Census develops probit regressions of separate labour force states against individual supply-side and regional level demand characteristics. The results illustrate the importance of considering both supply side and demand side characteristics when considering labour market outcomes and developing potential policy interventions.

1. Introduction

The current global economic slowdown has once again ignited debate regarding the serious issue of unemployment and labour underutilisation. While labour market disadvantage in general is associated with a broad range of negative social and economic costs, being unemployed or underemployed (not having enough hours of work) is significant, especially for the young. There is no shortage of research which illustrates that the early experiences of those entering or seeking to enter the labour market significantly influence their future social, economic and behavioural fortunes (Gray, 2000; Knights, Harris and Loundes, 2000; Chapman and Gray, 2002; Green *et al.* 2005). The likely costs of negative labour market experiences for young workers or job seekers

include the probability of further labour market disadvantage later in life, social exclusion and poverty, ill-health and emotional distress, the undermining of human relationships and family life and the loss of social values and responsibility (Mitchell and Muysken, 2008). Add to these the costs of different forms of unemployment and joblessness to the wider society and economy and the importance of understanding the processes and drivers of early labour market disadvantage becomes apparent.

This paper takes this concern regarding youth labour market disadvantage and presents an analysis which juxtaposes the role of individual supply characteristics with labour demand characteristics to advance an understanding of youth labour market outcomes. While the focus on the supply characteristics is conventional, there is less emphasis typically given to the demand factors, particularly in the regional context. We consider this additional emphasis in the paper to be a worthwhile innovation.

We place our concern for labour market disadvantage within the context of labour underutilisation, recognising that broader concepts of social exclusion have been developed in the extant literature and that access to sufficient work is a crucial starting point in enjoying wider aspects of social participation. Underutilisation moves beyond the narrow notion of unemployment to include other types of inadequate employment or other forms of dislocation from the labour market. It includes individuals who want to work but are excluded from official unemployment statistics because they are not actively seeking employment (discouraged workers), and it also includes individuals who are not working full time but would like to work more hours. Within broader definitions it also may include individuals who are working full-time or part-time voluntarily but who receive very low wages (working poor) and those who are employed in jobs that are classified as low skilled relative to the individual's qualifications.

The extent of underutilisation varies according to which definition is used. Data from the Australian Bureau of Statistics for 2001 suggests that while the unemployment rate stood at 6.8 per cent, the rate of underutilisation was almost double this at 12.5 per cent. For young people the figures are more disturbing. For the age group 15 to 19, while the unemployment rate was 17.5 per cent the underutilisation rate was 31.0 per cent. For the older age group (20-24) the corresponding figures were 10.1 per cent and 18.0 per cent. What is important to note with regards to these figures is that while the actual level of unemployment has been declining across all groups there has been a corresponding increase in the other forms of labour underutilisation (Mitchell and Muysken, 2008).

In the discussion and analysis that follows we confine ourselves to those who have already made the decision to participate in the labour force and thus exclude the hidden unemployed from our analysis. We also focus only on time-related underemployment and exclude considerations of the extent and causes of underemployment arising from underuse of available skills. Moreover, once an individual has chosen to participate in the labour force, we seek to determine the factors that influence whether a 15-24 year old enjoys adequate employment or is constrained by being unable to gain sufficient work. To understand these outcomes we first present a broader contextual discussion before discussing the data and methodological issues that confront a study of youth labour force outcomes. Following this we then present the findings of our analysis before presenting some concluding comments.

2. The Context for Understanding Labour Force Outcomes

As a genre of broader labour market research, the study of labour force disadvantage expressed as labour underutilisation can be understood from a range of conceptual approaches developed across a several social science disciplines including economics, sociology and geography. Often these approaches are piecemeal, focusing on narrowly defined drivers and processes. However, there has been an increasing movement towards utilising a broader framework focusing on aspects of employability. While various definitions have been applied, including those narrowly focused on simple supply side characteristics only, a more holistic definition of employability would include

> the capability to move into and within labour markets and to realise potential through sustainable and accessible employment. For the individual, employability depends on: the knowledge and skills they possess, and their attitudes; the way personal attributes are presented in the labour market; the environmental and social context within which work is sought; and the economic context within which work is sought. (Department of Higher and Further Education, Training and Employment (DHFETE), 2002, 7)

Heuristically a broad employability approach to understanding labour market outcomes is illustrated in figure 1. In this context employability can be usefully divided into the assets ascribed to the individual - skills and attributes such as basic education, transferable skills, demographic characteristics, health and well-being, job seeking skills and an individual's level of adaptability and mobility - and those ascribed to the broader, often aggregate, employment environment - strength of the local labour market, hiring policies of employers and the local infrastructure such as public transport accessibility. In other words, a correctly calibrated study of employability includes a focus on systemic (regional and macroeconomic) factors which are by any measure beyond the discretion of the individual.

In understanding the potential drivers of labour market outcomes for youth, a range of studies focused either on unemployment or underutilisation more generally provide guidance and context. Clearly certain individuals or groups are at higher risk of underutilisation or negative labour market outcomes than others. The early Australian work by Harris (1996) and MacClelland *et al*. (1998), together with the more recent work by Chapman and Gray (2002), Green *et al*. (2000) all point to the impact of factors such as educational attainment, gender, marital status, indigenous and ethnic background on labour force outcomes for youth. Of these characteristics usually ascribed to supply-side approaches to understanding labour market outcomes, the impact of educational level was critical across all studies, with a strong association between positive labour market outcomes and educational attainment. This work is supported by the wider literature (see, for example, Wooden, 1993; Wilkins, 2004 and Flynn, 2003). Early work by Wooden (1993) identified that apart from a distinct age dimension, the underutilised were more likely to be female, unmarried and to be from a non-English speaking background (NESB). The likelihood of being underutilised

Figure 1 - Heuristic Model of Individual Underutilisation Risk
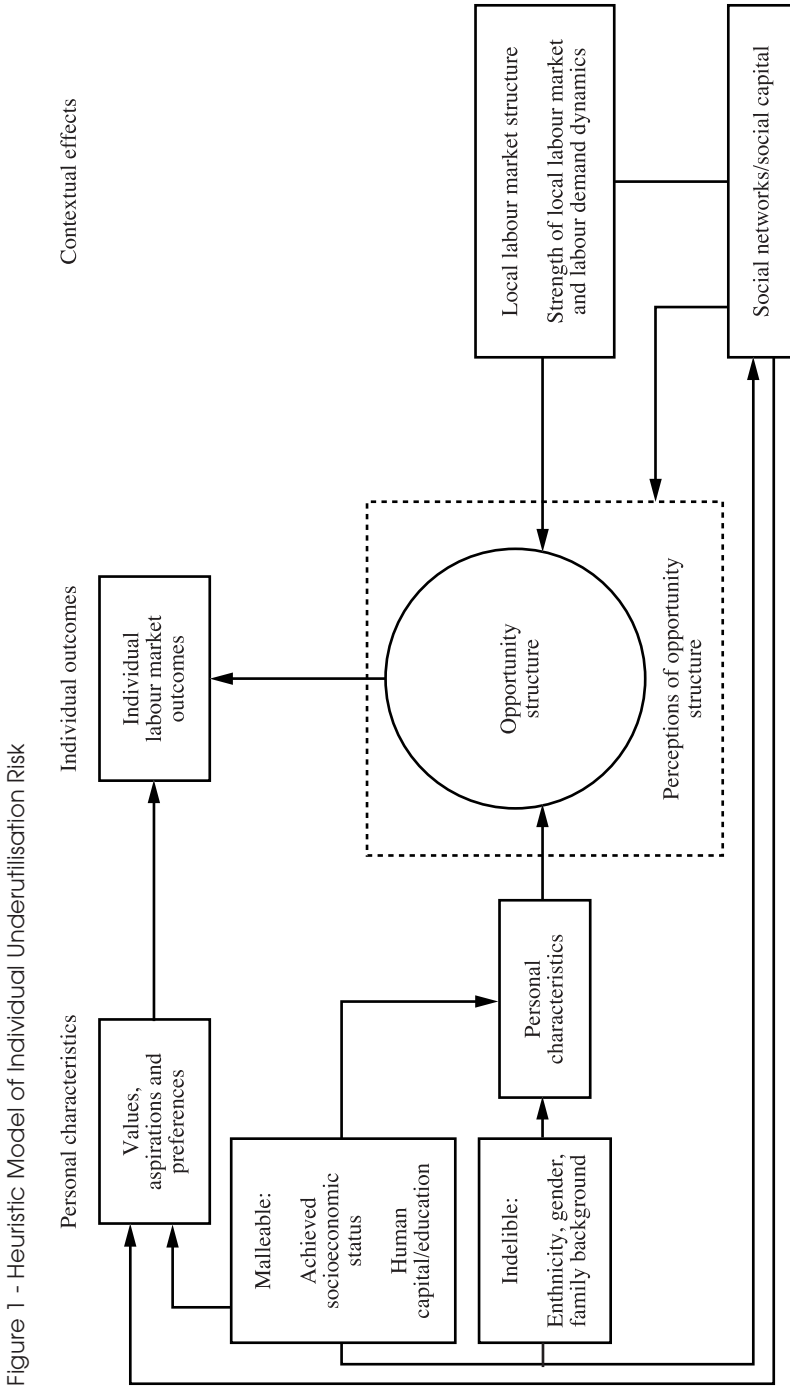
Note: Adapted from Galster and Killen (1995).

was also higher for those working in less skilled occupations and for those working in the recreation and personal services and construction industries. The more recent work by Wilkins (2004) expands these findings illustrating that for males and females part-time underemployment (involuntary part-time work) is higher among younger than older respondents, respondents who are single and who have low levels of human capital, although for females part-time underemployment is also high for those aged 35 to 44 years and for respondents in couple families with dependent children.

Critically, these individual supply-side factors are often taken to be the main drivers of labour underutilisation and are taken as the evidence base for policy development. However, equally important are the range of other contextual factors, including aggregate labour demand characteristics, which impact of labour market outcomes. The work of Andrews *et al*. (2003) identified the importance of a range of aggregate level neighbourhood variables in understanding youth labour markets in Australia, while the overseas work by O'Regan and Quigley (1998) illustrate the impact of residential location and its association with job access in influencing employment prospects. Although not focused specifically on youth outcomes the recent work by Baum *et al*. (2008) in Australia and Flynn (2003) in the US illustrate the importance of including aggregate spatial or regional level labour demand variables. Baum *et al*. (2008) use several aggregate labour demand variables to illustrate the impact of labour demand on labour market outcomes while Flynn (2003) use aggregate employment in services and manufacturing as demand proxies and found that net of the range of individual level factors the aggregate labour demand characteristics were important in explaining the risk of employment outcomes. Using regional proxies for labour market demand differences Jensen *et al.* (1999) found that differences in regional outcomes, suggestive of differences in regional labour market performance, were significantly related to transitions into and out of underemployment, net of individual level characteristics.

3. Data Description and Sources

In order to consider the main questions set out in this paper we employ two main data sources: (a) the Household Income and Labour Dynamics Australia (HILDA) survey; and (b) the Australian Bureau of Statistics Household and Population Census 2001. The HILDA survey is a broad social and economic survey conducted annually which contains information on employment, individual socio-economic characteristics and household/family characteristics. This current paper considers the first wave of the HILDA survey (2001) with subsequent papers considering longitudinal outcomes. The 2001 choice aligns with the 2001 Census. The wave one respondent persons file contains a total of 13,969 respondents. A reduced data set is used in this paper which includes persons aged between 15 and 24 years old who fit our labour force status characteristics and who are living in the major state metropolitan regions. This reduced data set includes 813 individuals.

Combining HILDA and Census Data
An important step in developing the data set used in this paper is the matching of the individual responses in the HILDA survey with the aggregate data from the Australian

Bureau of Statistics. As the goal of the analysis is to understand how individual and personal characteristics and broader labour market factors impact on individual underutilisation it was necessary to match individuals to the local labour market in which they were living. Within Australia there are 67 ABS labour market regions which within the Australian Standard Geographical Classification (ASGC) are made up of aggregations of Statistical Local Areas (SLAs). As the unconfidentialised HILDA data contain SLA codes for each respondent, matching was done by producing a new dummy variable (labour market region) where we matched an individual's SLA of residence to the corresponding labour market region. Each respondent was then assigned information relating to their local labour market based on the labour market region variable. This created a working data set whereby each individual had a set of individual and personal characteristics and a set of labour market characteristics based on the labour market region in which they lived. We therefore had a dataset where groups of individuals who had separate personal characteristics were nested in a higher level labour market.

Variable Selection

The main aim of this paper is to understand the broad supply-side and demand-side factors that determine the likelihood that a person (aged between 15 and 24 years) who has chosen to participate in the labour force, will be: (a) adequately employed; (b) involuntarily part-time employed; or (c) unemployed. While we recognise that the factors that distribute individuals between full-time and part-time employment may be significantly different, in this paper we are focusing on whether an individual's desires are met by the available labour market opportunities. In that context, we dichotomise employment into adequate and inadequate (involuntary part-time, unemployed) categories.

In the context of our research questions we need to account for a range of individual factors such as gender, educational attainment and family context as well as demand-side factors that are measured at a regional or spatial level. Importantly, we also recognise that the labour force outcomes for youth may be conditioned by the decision process relating to education choice, and in particular the decision to study or not. As we explain below this means conducting analysis of the study decision together with analysis of labour force outcomes.

We estimate three separate probit models for individuals aged 15 to 24 years in terms of their labour force status reflected in the HILDA survey. The categorical dependent variables (which assume that the labour force participation decision has already been made) in each case are:
- Adequately employed: takes the value of 1 if the person indicates they are employed and do not desire additional hours of work and zero otherwise;
- Involuntarily part-time: takes the value of 1 if the person is working part time, but would like to work more hours (that is, they are under-employed) and zero otherwise; and
- Unemployed: takes the value of 1 if the person is not working but actively looking for work and zero otherwise.

In the final analysis presented we focus on the following explanatory variables which were those most indicated in the literature to be of relevance (see, for example, Harris, 1996; MacClelland *et al*. 1998; Chapman and Gray, 2002; Green *et al*. 2000; Wooden, 1993; Wilkins, 2004; Flynn, 2003 and Baum *et al*. 2008). We examined other possible influences but found no statistical support for them. In some of the following cases, no statistical support was also found but the variables are reported because they are typically given prominence in the literature. The explanatory variables are divided into individual/demographic (supply) influences and regional/ macroeconomic (demand) influences.

Individual/demographic variables

1. Educational attainment- The impact of higher educational attainment is widely considered in studies of labour force outcomes. We account for educational attainment using two variables, **Degree** (1 if respondent has a university degree or higher, 0 otherwise); **Post secondary** (1 if respondent has postsecondary school education but not a university degree, 0 otherwise). We also include a control variable accounting for those respondents who are currently studying (**study**) It is hypothesised that higher education will be positively associated with being adequately employed and act to reduce the likelihood of being in one of the underutilisation categories.

2. The inclusion of gender in an unemployment model while considered important, often results in varying outcomes depending on the level of analysis considered and the sample used. We use a variable **female** (1 if respondent is female, 0 otherwise) to model the gender dimension. The hypothesised outcomes for this variable are difficult to state a-priori, however, we might expect that being female will increase the likelihood of working part-time involuntarily.

3. The under-representation of individuals from a non-English speaking background or those with an indigenous background in employment is an important social and economic issue and has been commented on elsewhere. We account for indigenous background with the variable **ATSI** (1 if indigenous background, 0 otherwise) and hypothesise that a negative relationship with adequate employment and a positive relationship with unemployment. The impact on involuntary part-time is uncertain.

4. We model the important impact of ethnic background by including a variable accounting for language skills - **ESL** (1 if English is the second language; 0 otherwise). We would expect this to have a positive association with underutilisation and a negative association with adequate employment.

5. Having a disability is also likely to be associated with increased risk of underutilisation. Here we use **Disability** (1 if the respondent has a disability, 0 otherwise) to model potential outcomes.

6. Household and family characteristics have been shown to have an influence on labour market outcomes with high unemployment being associated with individuals who are married or have family responsibilities. We account for marital status with reference to the variable **Married** (1 if married, 0 otherwise). We expect those who are married to have a higher likelihood of being adequately employed.

7. Our other family characteristic variable relates to the presence of children. The exact outcomes on this variable are difficult to hypothesise but a-priori we might expect it to increase the potential for involuntary part-time employment and reduce the potential for unemployment. We account for the presence of children with the variable **resident children** (1 if the respondent has children living with them, 0 otherwise);

8. While the analysis presented in this paper relates to those aged between 15 and 24, we include a variable to account for variations within this age band. Younger workers are considered to be searching for labour market information and take time to settle into a career path. **Age** (a continuous variable accounting for the impact of age) is thus expected to have a positive association with adequate employment and a negative association with the dependent variables accounting for states of underutilisation.

9. Workplace experience has been shown to be important in understanding labour force outcomes. We include a variable **years in paid employment** (a continuous variable) to proxy experience. Experience is expected to have a positive impact on the likelihood of adequate employment and reduce the likelihood of underutilisation.

10. The potential impact of social networks or contacts has been an important facet of studies into labour market outcomes. Here we use an index accounting for an individual's social networks (**Network**) to account for these potential impacts which was developed using responses to questions relating to the extent to which individuals had contact with friends and colleagues.[1] We would expect that respondents with stronger networks (higher scores) will record better employment outcomes.

Regional/Macroeconomic variables

We model demand side indicators using both available data from the HILDA survey and ABS census data. The availability of local jobs, per cent of low income jobs and the local unemployment rate are all measured at the aggregate local labour market level as described above.

1. The extent to which local workers can access local jobs will be important to understudying labour market outcomes. The **availability of local jobs** is measured by the rate of self-containment within the local labour market. The self containment rate measures the percentage of jobs in the local labour market which are taken by workers living in that region. Lower levels of self containment may indicate that local workers are being bumped down the vacancy ladder, either taking lower quality jobs, being unemployed or marginally attached to the labour market.

2. As a measure of the extent to which there are entry level jobs available in the local labour market we include the **percent of low paid jobs**. We assume that these types of jobs are more likely to be the local jobs taken up by those aged less than 24 years.

3. Finally, we include the **local unemployment rate** as an indicator of the strength of the local labour market. We assume that individuals in labour markets with higher unemployment rates will have more disadvantaged labour force outcomes.

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[1] The social network index was constructed by considering the main components from a PCA of questions coded on a five point likert scale. The questions included in the index are: People don't come to visit me as often as I would like; I often need help from other people but can't get it; I don't have anyone I can confide in; I have no one to lean on in times of trouble; I often feel very lonely.

Sample

Table 1 breaks the 813 observations in the sample into the labour force categories described above. The underutilised row is the sum of those involuntarily working part-time and those that are officially unemployed. Our category 'adequately employed' accounts for 67 per cent of the sample, while the underutilisation categories (involuntary part-time and unemployment) account for the remaining 33 per cent. Comparing this to the ABS Labour Force statistics especially the Underemployment Survey suggests that the sample is an adequate representation.

Table 1 - Labour Force Category Breakdown in HILDA Sample, 2001

Variable	Number	Percentage of Sample
Adequately employed	544	67.0
Involuntary part-time	158	19.4
Unemployed	111	13.6
Underutilised	269	33.0

Source: HILDA Unconfidentialised data, Wave 1, 2001.

4. Labour Market Outcomes and Schooling – the Problem of Selectivity Bias

In considering the impact of schooling and higher education we recognise that our models may encounter the so-called selection bias problem. Selection bias occurs when individuals are not randomly selected into groups, and unobservable characteristics determine the selection. In theory, there may be two separate relationships of relevance. First, the individual's choice of how much education to undertake (S_i) which is presumably a function of a range of demographic and economic factors, such that

$$S_i = \gamma' \mathbf{z}_i + v_i \tag{1}$$

where z is a vector of the factors which motivate the decision. Second, once the person has chosen the amount of desired education, the resulting labour market outcome is determined by

$$\gamma_i = \beta' \mathbf{x}_i + \delta' S_i + \varepsilon_i \tag{2}$$

where y_i is the labour market outcome for the ith person in the sample; $\mathbf{x}$ is a vector of the factors which influence this outcome independent of the schooling impact. In both equations, v_i and ε_i are normally distributed random error components. We could measure S in years or as discrete levels of education (secondary, post-secondary, and higher etc) depending on the availability of the data.

Estimating Equation (2) directly without considering Equation (1) is unlikely to be a valid modelling strategy. There is every reason to suspect that the motivations (and characteristics) that have driven the education decision are also likely to be correlated with those observed and unobserved attributes that predispose a person to successfully gain employment or improve their labour market outcomes (especially in

a rationed labour market). This means that S may be correlated to ε_I in Equation (2) which would violate the standard assumptions underpinning probit estimation and generate biased and inconsistent estimates of the education coefficient(s).

If endogeneity is found, then several techniques are available to correct the selection bias and thus generate unbiased and consistent estimates of the system of Equations (1) and (2) (for example, instrumental variables (IV); a "treatment-effects" maximum likelihood model; or a bivariate probit approach) (see, for example, Maddala, 1983; Pekkala and Tervo, 2002; Wooldridge, 2002; and Greene, 2003).

To resolve this issue empirically, we used the probexog procedure available in STATA (which computes the Smith-Blundell test statistic) to determine whether the variables – Degree and Post-secondary – are likely to be endogenous in Equation (2). If we reject the null of exogeneity then we would be required to employ one of the alternative techniques in place of the standard probit approach. This amounts to an instrumental variables estimation strategy with a χ^2 test statistic being generated. We used father's main occupation (Garen, 1984; and Wooldridge, 2002); whether the parent was born overseas; and whether the person was brought up in a single-parent household (Blackburn and Neumark, 1995; and Lam and Schoeni, 1993) as plausible instruments in the test equation to proxy the unobserved heterogeneity component.

We ran three separate probexog regressions - one for each of the labour force categories - Adequately employed ($\chi^2 = 0.68$, p-value 0.713); involuntarily part-time employed ($\chi^2 = 4.44$, p-value 0.109); and unemployed ($\chi^2 = 3.71$, p-value 0.157) - and in each case the null of exogeneity could not be rejected (the test statistics are shown in parenthesis). To check on the validity of the instruments we ran full IV probit regressions using the same specifications and tested for exogeneity and instrument validity using relevant Wald tests (available in the STATA ivprobit and overid routines). In each case, the null hypotheses of exogeneity and instrument validity were unable to be rejected. We conclude that it is reasonable, notwithstanding the theoretical issues surrounding self-selection, to employ a standard probit analysis.

5. Results

Table 2 shows the results of separate probit regressions for each of the labour force categories of interest: adequately employed; involuntarily part-time employed and unemployed.[2] To abstract from the labour force participation decision, the data set thus includes only those who have already made the decision to participate. The regressions thus depict the demographic and regional characteristics that work together to allocate the participating workers across the three categories. For each model we use a common specification rather than a separate specification for each. After determining a well specified model for adequately employed, we then imposed this specification on the other labour force outcomes. This allows for easier comparison across the types of labour force outcomes. Experimentation showed that this imposition does not significantly alter the final outcomes reported. We also control for those who are currently studying (the study variable).

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[2] We recognise that running the probit models without accounting for the clustering of individual observations within spatially defined labour markets is likely to result in biased estimates. To overcome this we perform the probit analysis in STATA using the clustering sub-command. This produces robust standard errors.

Table 2 - Probit Regression Results, 15-24 Year Olds by Labour Force Category, 2001

Explanatory variables	Dependent Variable: Adequately employed	Dependent Variable: Involuntary part-time	Dependent Variable: Unemployed
	Coefficient	Coefficient	Coefficient
Female	0.017	0.094	-0.290 *
Age (years)	0.039	0.005	-0.002
Post secondary	0.253 **	-0.174	-0.320 ***
Degree	0.696 *	-0.204	-0.560 **
Married	0.340 ***	-0.624	-0.175
Resident children	-0.929 *	-0.868 **	0.157
Disability	-0.203	-0.203	0.003
ATSI	-0.479 ***	0.062	1.005 *
Network	0.076 ***	-0.051	-0.134 **
ESL	-0.504 *	-0.325 **	0.182
Availability of local employment	0.008 **	-0.014 *	0.004
% low income jobs in LMR	-0.042	0.101 *	-0.011
Years in paid employment	0.136 *	-0.032	-0.101 *
Local unemployment rate	-0.040 **	0.015	0.026
Currently studying	0.089	-0.080	-0.396 *
Constant	-0.872 ***	-1.290 **	-1.052 ***

* denotes 1 per cent level of significance, ** denotes 5 per cent level of significance and *** denotes 10 per cent level of significance.

The typical supply-side influences (those associated with the individual characteristics of the respondent) are considered first. As expected the educational attainment variables were significantly improved an individual's likelihood of being adequately employed and reduced the unemployment risk. Interestingly, we found that post Year 12 educational attainment did not influence the likelihood of being underemployed.

Being **female** is associated with a reduced likelihood of being unemployed but had no impact on the employment categories.

As expected, **married** persons were more likely to be adequately employed. However, no statistically significant impacts could be detected for the other labour force outcomes.

The **presence of children** reduces the likelihood that the respondent will be adequately employed. The presence of children also decreases the likelihood that the respondent will be involuntarily working part-time. This may reflect the fact that carers have less choice in the hours they can work and therefore may have to accept constrained employment situations in order to effectively manage dual roles. It should be noted that around 97 per cent of the sample were unmarried and around 30 per cent were caring for children.

Indigenous background (**ATSI**) significantly increases the likelihood that the respondent will be unemployed, while commensurately reducing the likelihood that the respondent will be adequately employed. This is in line with other studies. Having **English as a second language** reduces the likelihood or both being employed

adequately and of being employed part-time and wanting more hours (involuntary part-time). This reflects that fact that in a rationed labour market various screens are used by employers to shuffle the excess labour supply queue. Language capacity is often found to be one of those screening tools.

Network measures the extent that respondents have close contact with friends as a potential measure of the impact of social networks on labour force status. Although we recognise the inherent problems associated with this indicator – for example, we do not know if social contacts are an outcome or cause of a particular labour force status – we find that the strength of social contacts increases the likelihood of adequate employment and reduces the unemployment risk.

Years in paid employment illustrates the impact that experience may have on labour force outcomes. As years of experience increase the likelihood that the respondent is adequately employed increases, while the likelihood that a respondent will be unemployed increases with shorter working experience.

The variable **availability of local employment** reflects the argument that in a spatially bounded and rationed labour market, in-commuters may act to bump down resident labour market participants either into inferior jobs or into joblessness. The stronger is local demand – that is, the more local jobs that are available - the less likely employers will screen on individual characteristics – and the more likely a person will find adequate employment. As the level of self-containment increases so does the likelihood the respondent will be adequately employed. While there is no significant association between unemployment and self-containment, there is a negative association between involuntary part-time employment suggesting that in local labour markets with lower levels of self-containment the likelihood of being involuntarily part-time will increase because competition from neighbouring workers increases.

The **percent of low income jobs** in a local labour market is used to indicate the quality of jobs available. It significantly impacts on the involuntary part-time outcome and the positive coefficient indicates that the higher the proportion of low paid jobs in a local labour market the higher the risk that an individual in that labour market will be underemployed.

The final demand side variable related to the **unemployment rate** in the local labour market. As a measure of the general strength of the local labour market the significant negative coefficient in the adequately employed model suggests that as the local unemployment rate increases the likelihood that the respondent will be adequately employed decreases.

6. Conclusion

This paper sets out an analysis of youth labour market outcomes in Australian metropolitan labour markets using a combination of data from the first wave of the Household, Income and Labour Dynamics in Australia (HILDA) survey and aggregate employment data from the 2001 Australian Census of Population and Housing.

Acknowledging that there exists a range of frameworks within which to place issues surrounding underutilisation, we cast the research conducted in this paper in terms of a model that considers underutilisation as a function of broader issues associated with underutilisation.

The employability framework used in this paper is based on the conjecture

that the typical supply-side framework employed to examine labour market risk is too narrow and ignores crucial demand side influences – not the least being the quantity and quality of work available in local labour markets. The importance of the demand variables in the models estimated provides support for our conjecture.

We have found that the different labour force outcomes examined - adequate employment, involuntary part-time work and unemployment - are a function of a range of individual level characteristics which are normally detected in the extant literature. The analysis illustrated that the individual level supply-side factors often associated with labour market outcomes were largely important in the models presented here. Formal education levels had the expected impact as did associations between gender, indigenous status, family status and ethnicity (English as a second language).

As interesting finding in the paper has to do with the strengths of social contacts or social networks. Our model suggests that individuals who have narrower social networks have a higher risk of some forms of underutilisation than those with wider social networks. There has been significant work on the impact that social networks have on employment outcomes and our findings support the suggestion that 'social isolation impedes individual success in the labour market because it denies residents informal job contacts that are critical not only for finding jobs but good jobs that promote prolonged labour force attachment' (Elliott 1999, 200).

However, significantly, our empirical work confirms the importance of labour market demand factors which are typically ignored in such studies. The final level at which our framework acts on individual labour market outcomes is through the impact of local labour market processes. Although much existing research tends to ignore the impact of these demand side factors, focusing only on the narrower supply side influences, we have illustrated the important impact that aggregate demand variables may have. It is clear that those local labour markets which have deficiencies in adequate quality jobs result in an increase in the risk of negative labour market outcomes at the individual level net of other characteristics. This is a similar message to that presented by researchers including Green and Owen (1998); Turok and Edge (1999); Turok and Webster (1998); and Sunley *et al*. (2006). Deficiencies in jobs may be measured in a number of ways and the variables included in this paper suggested that while the general strength of the local labour market is important, it is also important to consider the types of jobs available and the impact that the gross supply of labour (both local residents and in-commuters) has on labour market outcomes in any one given labour market.

Returning to consider the broad employability framework set out in the beginning of this paper, it would appear, given the available data and the sample we have utilised, that a broad understanding of labour market outcomes which takes into account both individual level, supply-side factors and more aggregate contextual factors is indeed a useful approach. Importantly the approach provides a framework for considering policy, especially as it relates to attempts to improve employment outcomes across groups in society and across spatially distinct communities. In several industrialised countries the emphasis of government policy to combating disadvantage stemming from negative labour market outcomes is to improve individual's personal employment prospects by introducing schemes that are increasingly neo-liberal in their approach. These policies take a narrow employability focus by simply focusing

on the employment assets of the individual job seeker. However, improving the employability of individuals is, in itself insufficient and to a large extent simply reshuffles the existing queue for the available jobs. We considered here how in-commuters might 'bump down' lower skilled workers either into taking more undesirable jobs or into unemployment. Simply focusing on improving the employability of individuals has a similar impact. A more sustainable and successful approach is likely to include also improving the available job opportunities and considering other contextual effects. This is clearly what the broader employability framework aims to achieve. Within Australia and elsewhere labour market policies which ignore the need for this broader approach remain a significant impediment to ensuring that available workers are employed in the most efficient manner. Until these deficiencies are properly addressed the wasted human resources that are reflected in joblessness and broader labour market disadvantage will remain a significant social problem.

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