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# LABOUR ECONOMICS

A JOURNAL OF LABOUR ECONOMICS AND LABOUR RELATIONS

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From the Managing Director

*Phil Lewis*

Wage Subsidy Programs: A Primer

*Jeff Borland*

Far Removed: An Insight into the Labour Markets of Remote  
Communities in Central Australia

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*Tim Hazledine*



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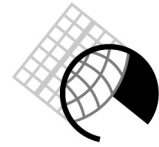
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### Contact details:

Telephone 61 8 9266 1744

Email [ajle@curtin.edu.au](mailto:ajle@curtin.edu.au)

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## From the Managing Editor

Welcome to the last edition of AJLE for 2016. Some significant changes are occurring at the Journal in 2017, including a new Editorial Board and innovations which will improve the impact of AJLE, the Australian Labour Market Research Workshop and the Australian Society of Labour Economics. We will keep you posted!

This issue of AJLE includes the first of what will, hopefully, be a regular series of articles by experts in the field covering topics of interest to labour economists, students and practitioners. Jeff Borland has done us the honour of beginning the series with an excellent overview of wage subsidies. If readers have ideas for topics they think would be of general interest please let me know.

This issue of the journal also contains articles on a variety of topics including retirement decisions of women, remote area labour markets and executive pay in New Zealand.

Finally, the journal relies heavily on the excellent work done by our referees. I would like to thank the following for their support in 2016.

Dr Joan Rodgers  
Dr Jinjing Li  
Prof Anne Daly  
A/Prof Mike Dockery  
Dr Yohannes Kinfu  
Dr Huong Dinh  
Dr Boyd Hunter  
Dr Diana Warren  
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Prof John Shields  
Dr Helen Roberts  
Dr Martin O'Brian  
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Dr Richard Seymour

Best Wishes

*Phil Lewis*  
**Managing Editor**

# Wage Subsidy Programs: A Primer<sup>1</sup>

*Jeff Borland*, Department of Economics, University of Melbourne

## Abstract

*This article provides an introduction to wage subsidy programs for jobseekers facing barriers to employment. First, the features of a wage subsidy program are described, and a brief history of this type of program in Australia is presented. Second, Australian and international evidence on the impact of wage subsidy programs is reviewed. Third, the main aspects of the design of wage subsidy programs are considered.*

JEL classification: J68; J23

Keywords: wage subsidy; unemployment; labour market program

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<sup>1</sup> This paper is an extended version of a talk given at the ‘Wage Subsidy Symposium’ organised by the Commonwealth Department of Employment in August 2016. I am grateful to Peter Davidson for discussions and for suggesting several extra references, and for valuable comments and feedback by participants at the Symposium. I have also benefitted from comments by the Editor and two referees.

## What is a wage subsidy program?

A wage subsidy program involves an employer who has hired a new worker receiving a monetary transfer (or set of transfers over time) from the government. The objective of the transfer is to reduce the cost to the employer of having the new worker as an employee. The monetary transfer might be a direct monetary payment to the employer, or could take other forms such as a tax rebate. I will focus on programs where eligibility to receive the transfer is conditional on the employer hiring a new worker who has some disadvantage as a jobseeker (such as being unemployed), and the transfer is for a limited duration. Often the transfer will only be made in circumstances where an employer can demonstrate that the new worker is being hired to an additional job that has been created.

In the literature there are a variety of definitions of a wage subsidy program, and another type of program, a hiring subsidy, is sometimes referred to. One common approach is to define a wage subsidy program as involving direct monetary payments to employers, and a hiring subsidy as encompassing both wage subsidy programs and programs with other types of transfers such as reduced tax payments (European Commission, 2014). An alternative approach defines a wage subsidy as a payment made to maintain existing jobs and a hiring subsidy as a limited duration payment paid to an employer to hire a jobseeker (Brown and Koettl, 2015). In this article the term wage subsidy program is used to refer to a program where the monetary transfer to an employer is linked to the hiring of a new worker, and the monetary transfer could take a variety of forms (although the discussion will usually have in mind direct monetary payments). I restrict attention to payments made to employers for hiring new employees, and do not consider programs that provide a subsidy for self-employment.

## A brief history of wage subsidy programs in Australia

Substantial spending on active labour market programs in Australia commenced with the onset of high unemployment in the early 1970s. Between 1972 and 1975, under the Commonwealth Labor government, most emphasis was placed on training programs and direct job creation. With the advent of the Liberal government in 1975, the orientation of policy shifted to creating private sector employment opportunities. The Special Youth Employment and Training Program (SYETP), introduced in 1976, paid a fixed wage subsidy for four months to an employer who provided a job to a youth who had been unemployed for at least four of the last eight months. In 1985 that program was superseded by the JOBSTART program, which provided a similar type of wage subsidy to long-term unemployed in all age groups. JOBSTART, with various modifications, remained as an available program for unemployed jobseekers through to the mid-1990s. At that time an expanded version of the program, with an increased subsidy rate and extended duration to 39 weeks, became part of the Working Nation Job Compact guarantee, whereby all unemployment payment recipients with spell durations longer than 18 months were guaranteed a work experience opportunity.

A major change in the provision of active labour market programs occurred in the late 1990s with the introduction of the Job Network, a ‘managed’ market for private sector provision of government-funded services to the unemployed (Davidson and Whiteford, 2012, pp.54-66). Under Job Network (now *jobactive*) eligible unemployment payment recipients are assessed by Centrelink, and may then be referred to service providers. These providers supply services – potentially including wage subsidy programs - to unemployed job-seekers according to their assessed needs as determined by their Job Seeker Classification Index (JSCI) score. Currently there are four main types of Commonwealth government wage subsidy programs available to be used with jobseekers: Restart; Youth Wage; Parents Wage; and LTU and Indigenous Wage. Each of these programs is targeted at a specific group of jobseekers. For example, the Restart program is available to jobseekers aged 50 years or older who have been unemployed for six months or longer. The maximum Restart payment amount is \$10,000 which can be paid to an employer on a flexible basis (negotiated with the service provider) over 12 months, and payments are pro-rata depending on weekly hours of work in the job.

### **How are wage subsidy programs supposed to work?**

A wage subsidy program has the objective to motivate an employer to hire an unemployed jobseeker by lowering the cost of employing that jobseeker. For example, a profit-maximising employer operating in competitive product and labour markets will hire all workers whose value added to revenue is greater than or equal to their cost (wages and non-wage costs). In this case a wage subsidy, by lowering the cost of employing a worker, should make employers willing to hire extra workers – specifically, workers whose value added to revenue is lower than they would be willing to hire in the absence of the subsidy.

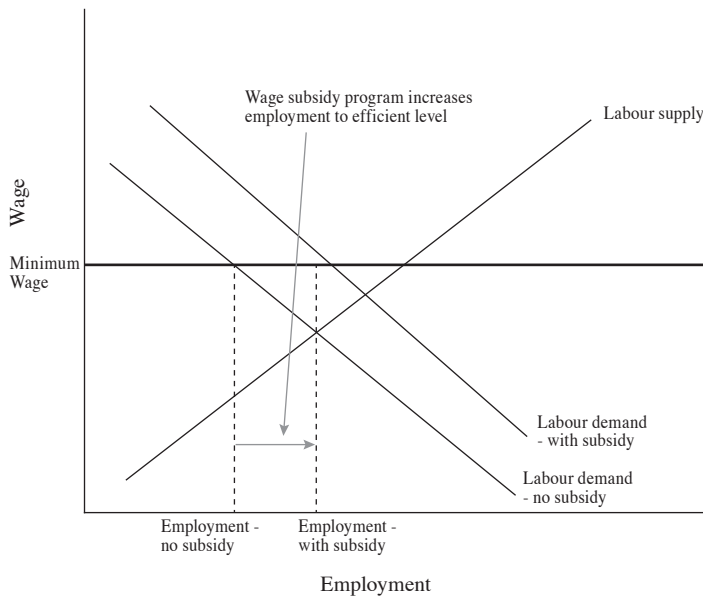
A ‘macro’ effect of wage subsidy programs can therefore be to increase aggregate employment. In a static partial equilibrium framework the effect of a wage subsidy is to increase the demand for labour, so that the impact on total employment will be positive and depend on: (i) The size of the subsidy; and (ii) The relative wage elasticities of labour demand and labour supply. [Formally,  $d\ln N/ds = \theta\varepsilon/(\theta+\varepsilon)$ , where  $N$  = total employment,  $s$  = subsidy,  $\theta$  = labour demand elasticity, and  $\varepsilon$  = labour supply elasticity; see Bell et al., 1999, pp.16-17.]

The work opportunity provided through a wage subsidy program can also bring ‘micro’ benefits. First, participants may be assisted to retain or to increase their job readiness and skill development. Second, the work experience may allow participants to demonstrate their skills and job readiness to an employer. This can improve the subsequent work prospects of jobseekers where employers had previously under-estimated their ability, or been deterred from hiring them due to uncertainty about their ability.

What will be the welfare consequences of a wage subsidy program? This will depend on whether there is a market failure problem that is addressed by the program. For example, in a perfectly competitive labour market the effect of a wage subsidy program would be to increase employment above the optimal level, hence lowering

social welfare. However, if there are limits on adjustment in a labour market, caused for example by wage rigidity, that constrain employment to be less than the optimal level, then a wage subsidy may improve social welfare by increasing employment toward the optimal level. The effect of the wage subsidy will be to reorder the unemployment queue in favour of those jobseekers who attract the subsidy. Such a situation is illustrated in Figure 1 for the case of a labour market where a minimum wage is a binding constraint on downward wage adjustment.

Figure 1 - The effect of a wage subsidy program with a minimum wage



There may also be other sources of market failure that make a wage subsidy program welfare-enhancing. One possibility is that market imperfections have prevented jobseekers from obtaining an appropriate level of training and job skills – and the work experience provided by a wage subsidy program can remedy that problem. Another possibility is that imperfect information about the skills of a group of jobseekers has harmed their likelihood of being hired (for example, via statistical discrimination) – in which case the wage subsidy program, by increasing information about their skills, undoes this source of market failure.

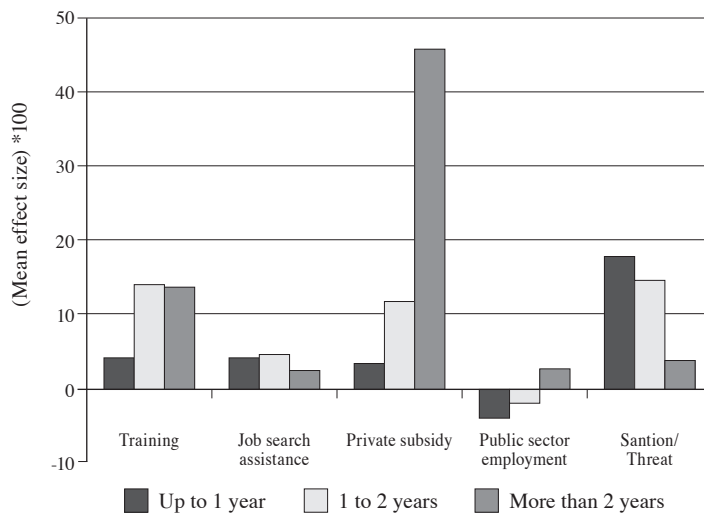
## Evidence on the aggregate effect of wage subsidy programs

### **Lesson 1: The consensus from Australian and international evaluations is that wage subsidy programs increase the employment rate of participants.**

Evidence on the impact of wage subsidy programs in Australia is confined to analyses of the SYTEP and JOBSTART programs from the 1980s and 1990s. Webster (1998, p.196) summarises this evidence as showing that ‘...wage subsidy schemes

do raise the employability of participants.’ (For some extra details of these studies, see the Appendix.) A more extensive set of international evidence on wage subsidy programs is consistent with the findings from Australia. Kluge’s (2010, p.904) review of European labour market programs, for example, concludes that ‘wage subsidies... can be effective in increasing participants’ employment probability’; and a more recent report on US programs by Dutta-Gupta et al. (2016, p.ix) finds that ‘...a number of experimentally-evaluated subsidized employment programs have successfully raised earnings and employment, with some programs providing lasting labour market impacts’ (see also OECD, 2005: and European Commission, 2014). The most thorough review of the effect of wage subsidy programs is by Card et al. (2015) who undertake a meta-analysis of 207 studies of active labour market programs. They conclude that ‘...private sector employment programs tend to have small effects in the short run, coupled with more positive impacts in the medium and longer runs’. Figure 2 reproduces summary information from Card et al. on the average impact sizes of wage subsidy and other types of labour market programs derived from the program evaluations included in their study.

Figure 2 - Average effect of program on the probability of employment for a program participant, By duration after program commencement



Source: Card et al. (2015, Table 3a).

## But there are some problems with this evidence

**Lesson 2: Existing studies of the impact of wage subsidy programs are likely to over-state the net effect of those programs on job creation. First, these studies often fail to take account of general equilibrium effects. Second, estimates of the impact of wage subsidy programs may partly reflect selection effects.**

It is well-known that net job creation due to a wage subsidy program is less than the estimated impact on employment outcomes for participants compared to non-participants. Several main factors account for this difference:

- Substitution effect: Workers hired through the wage subsidy program may crowd-out unsubsidised jobseekers who would otherwise have been hired;
- Deadweight loss: The wage subsidy pays for a job that would have been created anyway; and
- Displacement effect: Employers who do not hire workers using the wage subsidy may lose business to those who do use the subsidy, and hence employment shifts from employers who do not use the subsidy to those who do.

It is also likely that any positive effect on net job creation due to a wage subsidy scheme will disappear once the program ceases.

While the size of deadweight loss, substitution and displacement effects will depend on the specific details of a wage subsidy scheme, even in well-designed programs these effects are likely to be substantial. Martin and Grubb (2001) review evaluations for the OECD and conclude that the effects undo 40 to 90 per cent of the impact of wage subsidy programs; and a review for the US by Neumark (2013) finds that deadweight loss is 67 to 96 per cent of the program impact. Most recently, Brown and Koettl (2015, p.12) also suggest substantial effects: ‘...Swedish studies find sizeable displacement effects for Swedish hiring subsidies of around 65-70%, and studies for Ireland and the UK 20%, for Belgium 36% and for the Netherlands 50%’.

That a wage subsidy program might fail to create extra employment may not be a concern to policy-makers to the extent that the main objective is to make job ready the largest pool of jobseekers or to redistribute access to employment amongst jobseekers. However, considering the effect of deadweight loss and substitution and displacement effects does make the point that the best way for a government to create extra sustainable jobs is by doing all it can do to promote labour demand via economic growth.

A further issue with interpreting estimates of the impact of wage subsidy programs is the potential role of selection effects. It has been argued that existing studies, which generally estimate the impact of a wage subsidy program by comparing jobseekers from an eligible population who receive and don’t receive a wage subsidy, are likely to be biased (OECD, 2015, p.139). Getting a subsidy is conditional on obtaining a job, and jobseekers who can get jobs may not be identical to jobseekers who cannot get jobs. Where jobseekers who receive and don’t receive subsidy payments differ, it follows that comparisons of outcomes between them will confound effects of differences in characteristics with the impact of the subsidy.

Schunemann et al (2011) seek to overcome this potential selection effect by comparing a sample of unemployed jobseekers in Germany who are eligible to receive a wage subsidy with a matched sample who are not eligible. This study finds a zero effect of receiving a wage subsidy on employment outcomes. However, a critique by Wolff and Stephan (2013) argues that the control group in the study may have been receiving an alternative type of subsidy payment; and they conclude from a review of

other German wage subsidy programs that (p.20) ‘...even conditioning on employment, hiring subsidies on average positively influence tenure and cumulated earnings of initially subsidized persons’.

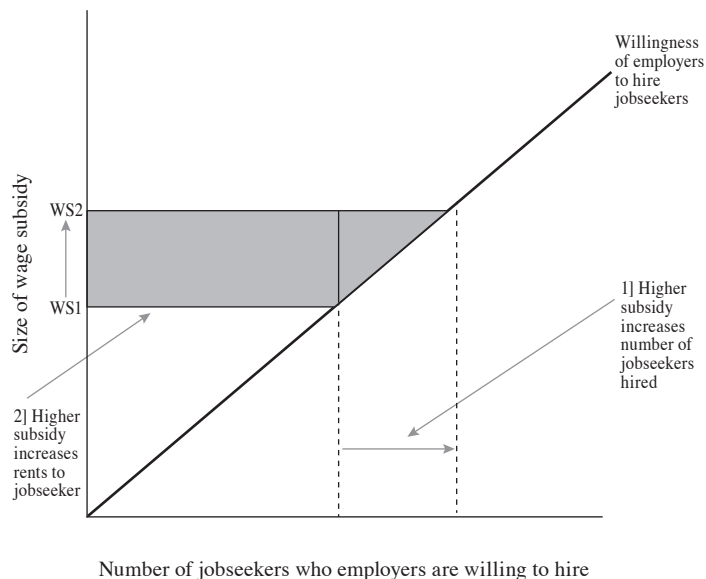
Finally, in considering the effect of a wage subsidy program on society’s well-being it is important to take into account that there will be a deadweight loss associated with raising the tax needed to finance the program (for a discussion of the size of this deadweight loss, see Dobes et al., 2016, Appendix 7).

## Design matters 1

### Lesson 3: The level and structure of the wage subsidy transfer will affect its impact and the cost to government.

The size of monetary transfer to the employer is associated with a trade-off. When the size of payment is increased then an employer will be willing to hire from a larger pool of jobseekers. But the higher payment means the employer is receiving a payment for the more job ready in the pool of jobseekers that is higher than necessary to induce them to employ those jobseekers. This trade-off associated with increasing the size of monetary transfer is illustrated in Figure 3.

Figure 3 - A trade-off in choosing the size of wage subsidy

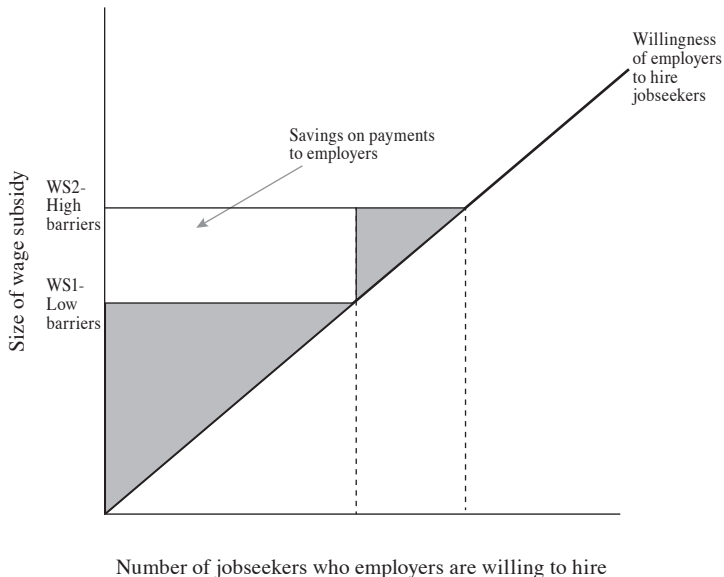


The existence of a trade-off depends on an assumption that employers need a higher level of payment to induce them to hire jobseekers with lower levels of job readiness. This assumption is supported by a range of evidence. A case in point was the Job Compact in the 1990s. It was intended that the major method for fulfilling the job guarantee made to jobseekers with unemployment spells longer than 18 months would be the JobStart wage subsidy program. However, compared to the

objective of 70 per cent of jobs coming from wage subsidies, such placements only accounted for 34 per cent of jobs created for the long-term unemployed in the initial phase of the Job Compact. The explanation provided by an official study was that ‘...employers perceive that the long-term unemployed have a range of problems that can make them unsuitable employees’ (Commonwealth Department of Employment, Education, Training and Youth Affairs, 1996, pp.46-47). International evidence also indicates strongly that increasing the size of monetary transfer to employers will increase the take-up of wage subsidy programs (see European Commission, 2014, pp.39-40).

One way for the government to seek to overcome the trade-off is through price discrimination. An example is shown in Figure 4.

Figure 4 - The scope for price discrimination in setting the wage subsidy



Suppose the government is able to distinguish between job seekers with low and high barriers to employment. It could then offer a lower level of payment that would be sufficient to induce employers to hire jobseekers with low barriers to employment, and a higher payment for hiring jobseekers with higher barriers to employment. This method of price discrimination can achieve the same total amount of hiring of jobseekers, but at lower cost to the government, since the level of the monetary transfer is being targeted at the amount necessary to induce an employer to hire each jobseeker. The main issue for the government in order to be able to implement this method of price discrimination is, of course, having sufficient information about employers’ willingness to hire to allow targeted wage subsidy payments. One obvious possibility is to vary the size of transfer according to a jobseeker’s duration of unemployment (Brown and Koettl, 2015, p.14). A more

sophisticated option would be to vary the size of transfer according to an index based on a set of jobseekers' characteristics that are related to their barriers to finding a job, such as the JSCI in Australia.

There are a variety of other important dimensions of the structure of the monetary transfer to the employer that need to be considered:

- *How to vary the monetary transfer over the duration of program?:*

There are many different ways in which the timing of wage subsidy payments can be organised. One way is to make a lump-sum payment at the start or end of the program. Another way is to spread payments throughout the program (such as on a per week basis); and those payments could be equal across time or either front-loaded or back-loaded. Where some of the subsidy payment is made up-front it is possible to require employers to repay part of the payment if a new worker is not retained for a threshold length of time – an example is the hiring credits provided by US states in the aftermath of the Great Recession (Neumark and Grijalva, 2013). A trade-off is likely to arise in choosing the timing of payment – Increasing the up-front component of the subsidy payment is generally thought to increase the take-up by employers, but it may also decrease the willingness of employers to retain the new workers or adversely affect the quality of work experience provided.

- *Fitting the monetary transfer to different types of jobs:*

Different employers are likely to want to create different types of new jobs – for example, part time or full time jobs. Hence, it is important for a wage subsidy program to increase the incentive for creating all those types of jobs. One way to address differences in hours of work between jobs would be to relate the total subsidy payment to hours worked. Making the payment on a per hour worked basis would mean that there was an equal percentage decrease in the cost of hiring a worker, regardless of hours worked. However, this may not completely deal with differences in the cost of hiring workers into jobs with different weekly hours of work. For example, employers may have the same fixed cost of hiring and training a part-time or full-time worker. Paying the same subsidy per hour worked for part-time and full-time jobs would then imply a lower extra incentive for hiring part-time than full-time workers. So in order to equalise the incentive effect on employers wanting to offer part-time and full-time jobs, it might be necessary to make some extra fixed payment to employers offering part-time jobs. (This discussion assumes that a government would want the wage subsidy scheme to provide incentives for employers to create extra jobs of different types. However, even where the government has an alternative objective, for example, a stronger preference for creating full-time than part-time jobs, this does not change the point being made here - that attention needs to be given to fitting the structure of the payment to the types of jobs that are intended to be created. Brown and Koettl (2015, p.13) do argue that the amount of employment provided by a subsidised job should be sufficient to develop habits of regular employment.)

- *How to make the monetary transfer:*

Possible options, for example, might be a direct monetary payment or a reduction in tax payments. Most programs have involved a direct monetary payment; and there is some evidence that employers prefer to get the ‘money in their pocket’ at the time they hire the new worker (European Commission, 2014, p.39). It has also been suggested, however, that making the transfer via a tax reduction may be administratively simpler for employers.

- *Whether to vary the monetary transfer over business cycle?:*

The optimal subsidy payment might vary over the business cycle for several reasons. First, the extent of incentive provided for hiring extra workers by a wage subsidy program will depend on the size of the decrease in the costs of employing workers relative to their productivity. If productivity varies pro-cyclically, then in order for a wage subsidy scheme to provide the same extra incentive for hiring across the business cycle, it would be necessary to vary the size of monetary transfer counter-cyclically. Second, the scarring effects of unemployment during economic downturns may mean that the government is more concerned to redistribute employment opportunities during a downturn than in other periods. For a wage subsidy program to contribute to that objective, it would be necessary to increase the size of monetary transfer during a downturn.

## Design matters 2

### **Lesson 4: Wage subsidy programs need to be targeted at jobseekers who can benefit (most).**

The potential impact of a wage subsidy program is likely to vary between jobseekers according to the extent of their barriers to employment. Access to a wage subsidy program may not be necessary (or is a more extensive intervention than warranted) for jobseekers with low barriers to obtaining employment. And jobseekers with high barriers to employment require more substantial assistance than a wage subsidy program. For example, Card *et al.* (2015, p.21) conclude that: ‘...long-term unemployed participants benefit relatively more from ‘human capital’ programs (training and private sector employment) and relatively less from ‘work first programs’ (job search and threat/sanction programs)’. Therefore, a wage subsidy program might be an element of the appropriate policy for jobseekers with high barriers, but other interventions such as training to increase their skills and job readiness will also be necessary. For this group of jobseekers work experience obtained through a wage subsidy program would also need to be accompanied by monitoring and support in the job placement (Borland *et al.*, 2016).

Wage subsidy programs therefore are most likely to be valuable for jobseekers who need the opportunity to demonstrate their job readiness to employers. A possible portfolio approach to matching appropriate type of labour market program to the needs of jobseekers, and how wage subsidy programs fit into the portfolio, is shown in Figure 5.



the created job; and the type of work and amount of training that is provided during the work experience (European Commission, 2014, p.41; Dutta Gupta et al., 2016; Neumark and Grijalva, 2013);

- *How to monitor?:*

Monitoring of some aspects of the implementation of wage subsidy programs is necessary to ensure integrity. For example, where a wage subsidy is paid to an employer only for extra jobs that it creates, it is necessary to ensure that employers are not transferring existing employees to take up wage subsidy payments; and where the size of payment varies with hours of work it is necessary to monitor actual hours worked by participants in a wage subsidy program. At the same time, extra monitoring and administrative complexity increases the costs to an employer of providing a job through the wage subsidy program, and hence reduce employer take-up.

## **The overall institutional environment matters too**

### **Lesson 6: Labour market regulations, other labour market programs and the unemployment benefits system can affect the impact of a wage subsidy program.**

Interaction with other labour market institutions will influence the outcomes from a wage subsidy program. One example is the effect of minimum wages. Where a minimum wage (or some other barrier to downward wage adjustment) is constraining employment, a wage subsidy program will increase employment by the full amount of the increase in labour demand from the wage subsidy. By contrast, where a minimum wage does not exist, for the same wage subsidy program with the same increase in labour demand, there will be a smaller increase in employment because there is also an increase in wages that occurs as part of the equilibrium adjustment. Hence, the impact of a wage subsidy program on aggregate employment will be larger in a labour market where there is a binding minimum wage.

## **Appendix:**

### ***Australian studies of wage subsidy programs***

Richardson (1998) uses an IV approach to examine the impact of the SYTEP wage subsidy program for youth between 1984 and 1987. His study finds that the program had a large positive effect on employment outcomes – for example, having participated in SYTEP increased the probability of having a job 8 to 13 months after subsidy expiry by about 25 per cent. Most of this effect was due to subsidised workers retaining the same job after the subsidy expiry; but the program also had a positive effect on later employment for those who lost their subsidised job.

Johnston (2007) uses a quasi-experimental matching method to examine the effect of the Working Nation interventions between 1994 and 1997, and concludes that at 24 months after program commencement ‘...wage subsidy programs have a large positive impact on job seekers’ labour market outcomes: wage subsidy participants were 21 percentage points more likely to be employed and 10 percentage points less likely to be unemployed than non-participants’. Outcomes for participants in wage

subsidy programs were significantly better than for participants in training or public sector job creation programs. Stromback and Dockery (2000) also examine the Working Nation wage subsidy scheme and find even larger effects – for example, a positive effect on the proportion employed of 44.3 percentage points for participants by two to three years after commencement in the program. These results, however, are certain to over-estimate the true effect of the program. It is known that during Working Nation employers were only willing to take workers under the wage subsidy scheme if they had higher levels of skills (Commonwealth Department of Employment, Education, Training and Youth Affairs, 1996, p.42).

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# Far Removed: An Insight into the Labour Markets of Remote Communities in Central Australia

*Michael Dockery*, Curtin Business School

*Judith Lovell*, Charles Darwin University

## Abstract

*There are ongoing debates about the livelihoods of Aboriginal and Torres Strait Islander Australians living in remote communities, and the role for policy in addressing socio-economic equity and the economic viability of those communities. The characteristics and dynamics of remote labour markets are important parameters in many of these debates. However, remote economic development discourses are often conducted with limited access to empirical evidence of the actual functioning of labour markets in remote communities – evidence that is likely to have important implications for the efficacy of policy alternatives. Unique survey data collected from Aboriginal and Torres Strait Islanders living in 21 remote communities in central Australia for the Cooperative Research Centre for Remote Economic Participation's Population Mobility and Labour Markets project are used to examine these labour markets, with a focus on the role of education and training. Examining access to education, employment opportunity and other structural factors, it is clear that the reality of economic engagement in these communities is far removed from the functioning of mainstream labour markets. The assumptions about, or lack of distinction between remote and urban locations, have contributed to misunderstanding of the assets and capabilities remote communities have, and aspire to develop. Evidence from the survey data on a number of fronts is interpreted to suggest policies to promote employment opportunity within communities offer greater potential for improving the livelihoods of remote community residents than policies reliant on the assumption that residents will move elsewhere for work.*

ECONLIT classifications: R1. General Regional Economics; R2. Household analysis; R4. Transport economics

Keywords: Location economics, regional and remote, Australia

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Michael Dockery, Principal Research Leader | Population Mobility and Labour Markets, CRC for Remote Economic Participation. Principal Research Fellow | Bankwest Curtin Economics Centre. Curtin Business School. Corresponding author: [mike.dockery@cbs.curtin.edu.au](mailto:mike.dockery@cbs.curtin.edu.au)  
Judith Lovell, Principal Research Leader | Synthesis and Integration, CRC for Remote Economic Participation. Senior research Fellow, Northern Institute, Charles Darwin University: [judith.lovell@cdu.edu.au](mailto:judith.lovell@cdu.edu.au)

## 1. Introduction

Remote communities have been under the spotlight for many years because of a perceived lack of economic opportunity, their demands on the public purse, and comparatively poor outcomes on a range of health and wellbeing measures (Australian Government, 2016; Productivity Commission, 2015). The objective of the Population Mobility and Labour Markets project (2010-2017) is to improve understanding of temporary mobility of people living in remote and very remote Aboriginal and Torres Strait Islander communities, and to provide evidence of labour force characteristics that can contribute to planning and decision-making by communities themselves, service providers, policymakers and employers. The functioning of labour markets and associated opportunities for employment has an important bearing on key debates surrounding the future of discrete Indigenous communities and the appropriate role for public policy in enhancing the livelihoods of their remote residents.

Recent debates on the future of discrete Indigenous communities include Noel Pearson's arguments on the detrimental effects of welfare dependency (see, for example, Pearson 2000, 2011, and 2014); the coexistence of and interaction between activities in the market, state and customary sectors (Altman 2010, Wolf 1993); and the trade-offs between relocating to access employment opportunities in the mainstream labour market with loss of access to traditional lands, and the potential implications for cultural survival (Curchin 2015, p. 422-23). Intermingled within these debates are issues surrounding the role of the now defunct Community Development Employment Projects Scheme (CDEP) which, having elements of both a community development program and labour market program (Hunter and Gray 2013), was variously seen as a means to reduce welfare dependency and as a mechanism for normalising it (Dockery & Milsom 2007, Hunter 2009).

These discourses oscillate between normative and ideological rationale reflecting different positions on a 'preferred' future for Aboriginal and Torres Strait Islanders and what constitutes a morally just process to get there. This paper does not attempt to resolve these policy debates, but to contribute to the less ambitious but necessary step of improving understanding of the realities of labour markets and any associated role that education and training pathways might contribute to labour markets in peripheral community contexts. This is important because the formulation of good policy requires policy-makers who know how individuals are likely to respond to the incentives created by the policy parameters put in place. For example, discrete Indigenous communities in Australia are subject to high government regulation through active welfare policies, public housing administration, land tenure, property rights and delivery of essential public services. However, relatively little is

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known about the nature of remote labour markets and the interactivity of them with opportunities in education and training.

Data on labour market functioning is as sparse as the country, and what data are available are influenced to an unknown degree by the effects of the CDEP, and ensuing active welfare policy programs (Fowkes & Sanders, 2015). This paper is based on unique data from survey work being undertaken as part of the Population Mobility and Labour Markets project (2010-2017) and concepts of remote economic participation developed through the Synthesis and Integration project (2015-2017) under the Cooperative Research Centre for Remote Economic Participation (CRC-REP). It builds on a previous working paper (Dockery and Hampton, 2015), which was based on an earlier set of survey responses, and by focusing on data items relating to education and training not previously analysed in detail.

The following section clarifies what is meant by discreet Indigenous communities in the geographic and demographic sense. Section 3 provides some background to government policy debates on the future of remote communities and the need for a greater understanding of the reality of remote labour markets. Section 4 presents the mobility survey data and analysis, with implications discussed in the final section.

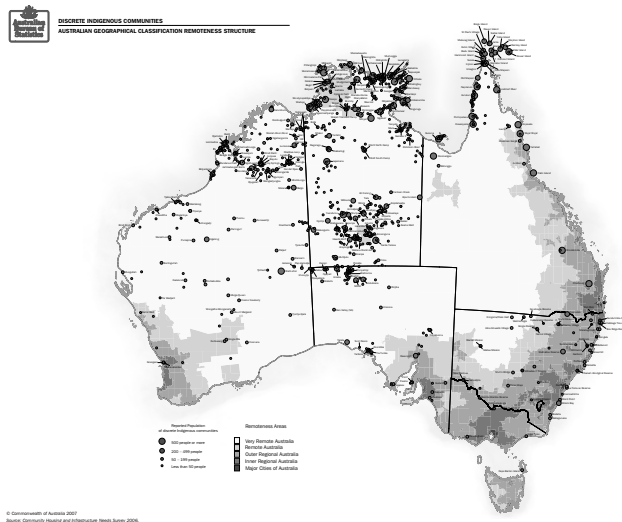
## **2. Remoteness, Population and Employment**

While geographical regions classified as 'remote' and 'very remote' represent around 80 per cent of the Australian land mass, those regions are home to less than 3 per cent of the Australian population. Relative to their share in the overall population, a high proportion of Aboriginal and Torres Strait Islanders reside in the more remote areas of Australia. Based on 2011 Census data, people who identified as Aboriginal and Torres Strait Islander made up 2.55 per cent of the Australian population. However, they represented 13 per cent of the population in remote Australia and 41 per cent of persons living in very remote Australia. While around 70 per cent of the Australian population live in the major cities, only one-third of Aboriginal and Torres Strait Islanders do.

There are well documented problems of underrepresentation of remote Aboriginal and Torres Strait Islander populations in national data collections (Taylor 2014). As best can be surmised from 2011 Australian Bureau of Statistics (ABS) Census data, there were an estimated 117,200 Aboriginal and Torres Strait Islanders living in remote and very remote Australia and 490,400 non-Indigenous Australians, such that Aboriginal and Torres Strait Islanders constituted just under one-quarter of the remote and very remote population. Many of those Indigenous people live in 'discrete Indigenous communities' defined according to the Community Housing and Infrastructure Needs Survey (CHINS) (ABS, 2006 reissue) as: 'A geographic location, bounded by physical or cadastral (legal) boundaries, and inhabited or intended to be inhabited predominantly (i.e. greater than 50 per cent of usual residents) by Aboriginal or Torres Strait Islander peoples, with housing or infrastructure that is managed on a community basis' (ABS 2007, p. 109).

Noting that there was some element of subjectivity in deciding whether a location met the criteria, a total of 1,112 communities were identified in remote and very remote areas, of which 90 per cent (1,008) were very remote. Three-quarters of those had an estimated population of less than 50 persons. Some of these are likely to be satellite settlements commonly known as outstations or homelands (ABS 2006), and may be inhabited on a seasonal basis. They may not have been included in the CHINS (2006) survey, and may be underrepresented in Census collections. As reported by ABS Census (2006, 2011), the proportion of usual residents who identify as Aboriginal or Torres Strait Islander is typically over 80 per cent of the population in these communities. A significant proportion of the non-Aboriginal population living in very remote Australia also work in non-market service delivery, or in governance roles related to administration and legislation effecting those communities and organisations.

Figure 1 - Australian Bureau of Statistics, Map of discrete Indigenous communities, 2007



### **Employment estimates**

Estimates of employment in remote communities are beset with a number of additional issues overlaying the problems of initial enumeration of the population. Chief among these is the effect of changes to the way active welfare participants are counted in the labour force (as employed or as unemployed), and the significant reduction in CDEP activity between the 2006 and 2011 census points. There has been much debate on whether active welfare participation should be classed as employment or welfare (see Gray, Howlett and Hunter 2014, p. 498). A comparison of Indigenous and non-Indigenous employment and unemployment rates based on 2006 and 2011 Census data is provided in Table 1. The definition of employment used in these figures includes CDEP participants, whose number was significantly reduced in line with the Northern Territory Emergency Response policy reforms from 2007. Complete disbandment of CDEP in

2009 changed the employment status of many remote residents, and is estimated to have led to a percentage point increase in estimates of Aboriginal and Torres Strait Islander unemployment in remote and very remote areas in 2011 (ABS 2014).

The key messages from Table 1 are (a) employment opportunity is markedly lower, with commensurately higher unemployment rates, for Indigenous Australians relative to non-Indigenous Australians; (b) in remote Australia employment rates are yet lower for Indigenous Australians and the Indigenous/non-Indigenous divide accentuated; (c) there is minimal, if any, evidence of improvement in employment for remote Indigenous residents between 2006 and 2011. These key features of remote labour markets are corroborated by figures that adjust census data to derive non-CDEP employment estimates (see Gray, Howlett & Hunter 2013).

Table 1 - Indigenous and non-Indigenous Australians' labour force status, 2006 & 2011 Census, remote and non-remote Australia

	<i>Indigenous</i>		<i>Non-Indigenous</i>		<i>Indigenous to non-Indigenous ratio</i>	
	<i>2006</i>	<i>2011</i>	<i>2006</i>	<i>2011</i>	<i>2006</i>	<i>2011</i>
<b>Remote Australia</b>						
Emp to population ratio	44.7	38.9	72.5	73.2	0.62	0.53
Unemployment rate (per cent)	11.8	17.8	2.9	2.7	4.08	6.61
Participation rate (per cent)	50.7	47.3	74.6	75.2	0.68	0.63
<b>Non-remote Australia</b>						
Emp to population ratio	46.2	45.3	61.7	61.9	0.75	0.73
Unemployment rate (per cent)	16.4	16.9	5.1	5.4	3.24	3.13
Participation rate (per cent)	55.3	54.6	65.0	65.4	0.85	0.83

*Notes:* Labour force figures relate to persons aged 15 years and over. The definition of employment includes CDEP participation.

### 3. Land, People and Polity

Over thousands of years climatic events, access to resources and tribal incursions influenced the dispersal of peoples across the continent (Smith & Jackson, 2006). In more recent times the numerous and ongoing demands of European colonisation resulted in the forced settlement of custodians onto some of the most marginal and remote regions of the Australian landmass (Woinsarski, Traill, & Booth, 2014). Meanwhile significant change has impacted on traditional practices, reducing strategies for resilience, survival and habitation including mobility, and access to resources and trade that were previously available (Wallace & Lovell, 2009). Remote communities, and the living conditions within them should be understood in such light, rather than just as manifestations of Aboriginal or Torres Strait Islander culture or lifestyle choices. That withstanding, their perceived incompatibility with mainstream goals for economic development has meant that remote communities have been a hotbed for policy debates relating to Indigenous affairs in Australia.

A key dimension of Aboriginal economic development in the decades since the 1967 referendum first recognised Aboriginal and Torres Strait Islanders as citizens (Altman, Biddle, & Hunter, 2005) has been the struggle between opposing politics of self-determination and assimilation (Dockery 2010). Proponents of self-determination would argue that the choice to remain on country is a legitimate choice that Aboriginal and Torres Strait Islander people have the right to exercise, irrespective of the implications this may have for mainstream socio-economic outcomes (Central Land Council, 2015). The assimilationist view would privilege the imperative to improve outcomes over such choices through 'living as members of a single Australian community...' (Commonwealth of Australia, 1961, p. 1051). The logic of assimilation suggests that to achieve socio-economic parity with other Australians, Aboriginal and Torres Strait Islanders would need access to the same systems of education, health and other services, and to labour market opportunities that are not generally available in remote communities (Australian Government, 2015, Commonwealth of Australia, 1961).

Following the 1967 referendum, political pressure mounted for Indigenous Australians to be granted land rights and greater involvement in decision-making and management of their own affairs. Land rights were first introduced in Australia in the Northern Territory with the passing of the *Aboriginal Land Rights (Northern Territory) Act 1976* through the Commonwealth Parliament. They were vastly expanded by the High Court's 1992 Mabo judgement that ruled Aboriginal groups who could show a continuous connection to their lands since 1788 held native title rights over those lands, provided title had not subsequently been extinguished through another Act of Parliament. As this represented a major shake-up of land administration in Australia and created a great deal of uncertainty, legislative measures were subsequently introduced to create a native title regime that sought to balance interests of traditional owners with those of national economic development, most significantly the *Native Title Act of 1993* and the *Native Title Amendment Bill of 1997* (Kildea 1998, COAG 2015).

Land claims initiated since land rights and native title legislations have led to around 40 per cent of Australia's land mass formally recognised as being owned by traditional owners (COAG 2015, p. 21) with substantial areas of land also subject to ongoing claims. The *Aboriginal Land Rights Act (NT)* predates the Native Title acts, and preserves Aboriginal sovereignty over approximately 80 per cent of the Northern Territory (Northern Territory Government, 2015). The potential for native title to provide an economic base in remote Australia has been particularly recognised with regard to the extractives industry, given the magnitude of the recent resources boom and that much mining activity occurs in remote areas and on Indigenous owned land (Langton & Longbottom 2012; O'Faircheallaigh 2010, 2013). While the native title regime is still evolving, there are grounds to believe there are limited employment or other benefits flowing to Indigenous peoples in remote Australia (see, for example, Bauman, Strelein and Weir 2013; Dockery 2014; O'Faircheallaigh 2015).

In 1972 the then prime minister, Whitlam opened government administration of Indigenous affairs to include Aboriginal and Torres Strait Islanders, on the principle that they should be involved in the decision-making and management of their own affairs (Rowse, 2002). Between 1972 and 1990 there was at least one national, elected Aboriginal and Torres Strait Islander representative body, with a role in advising

government. In 1989 the Hawke-Keating government established the Aboriginal and Torres Strait Islander Commission (ATSIC), a representative and coordinated framework through which local delegates from regions across Australia informed government policy, implementation and priorities for Aboriginal Affairs (Pratt & Bennett, 2004, p. 4). ATSIC was disbanded by the Howard government in 2005 and, for the first time since 1972, Aboriginal and Torres Strait Islanders were without nationally elected representation to government.

To replace the 'experiments in Aboriginal administration' 'mainstreaming' of service delivery was implemented (Pratt & Bennett, 2004, p.14), which included the transfer of Indigenous programs into existing national departments, with the Office of Indigenous Policy Coordination (OIPC) established to oversee the restaffing of ATSIC regional offices and coordinate their engagement with mainstream departments (2005-2013). The Council of Australian Governments (COAG) was also established post-ATSIC to improve the coordination and delivery of Indigenous services across government tiers (Pratt & Bennett, 2004, p.12). Continuing throughout these recent attempts to realign remote Aboriginal and Torres Strait Islanders to mainstream norms has been the policy-led intervention in an 18 billion dollar Australian Government Indigenous Affairs coordinated effort to 'close the gap'; initiated in 2007 and ongoing (Productivity Commission, 2015).

OIPC was itself disbanded under the Abbott government, who then oversaw a transition of the so-called 'Stronger Futures' policy with over 100 programs, into the current 'Indigenous Advancement Strategy' (IAS). Most Indigenous programs and services were moved once again; this time from mainstream departments into the Department of Prime Minister and Cabinet (2014). All programs were then sent to tender in a process which saw less than 50 per cent of service provision flow to Indigenous organisations (Australian Government, 2014). This hit the mechanisms in remote and very remote Australia particularly hard, with less choice of service provider and therefore less opportunity for self-management and administration. The IAS has retained a focus on remote economic development, employment and training and continues to monitor these using as its main evaluative process 'Closing the Gap' targets (Productivity Commission, 2015; Steering Committee for the Review of Government Service Provision, 2014).

This constant reshuffling of program funding and responsibilities is important for residents of remote communities where a lack of infrastructure and access to services, such as health, education and social services, has been highlighted as a causal factor in inferior socio-economic outcomes. Housing, in particular, has been identified as an area where needs of the community go unmet (Department of Finance and Deregulation 2009). The cost of providing infrastructure and services in remote communities at the level of access and quality needed to bridge this gap in outcomes lies at the heart of arguments that communities are 'unviable' or 'unsustainable'. The Productivity Commission estimates that in 2012-13, government services expenditure per person was \$43,449 for Aboriginal and Torres Strait Islanders, compared to \$20,900 for other Australians, with the greater intensity of use of services accounting for 68.5 per cent of that difference and the greater cost of providing services to Aboriginal and

Torres Strait Islander Australians (including due to location) accounting for 31.5 per cent of the difference (SCRGSP 2014, p. 1). In late 2014 the Western Australian government foreshadowed the withdrawal of services from a number of the smaller and more remote communities in WA, with media reports suggesting as many as 150 communities may be affected, due partly to the extent of cross-subsidisation of those communities in the face of the withdrawal of Commonwealth funding (WA Today 2014a, 2014b).

Against these arguments there is an extensive literature pointing to problems in remote communities being as much a failure of government as a failure of those communities, and that issues surrounding the cost and accessibility of services could be addressed by more flexible, coordinated and appropriate delivery of services (Fisher 2011; Walker, Porter and Marsh 2012). Altman (2010, p. 266) argues that the debate over smaller versus large communities is, in some respects, a false one given the social interconnection and mobility between them – they are not separate, sedentary populations.

There is also evidence that connection to culture and country provided by remote communities has a positive effect on health, wellbeing and some economic indicators (Campbell et al. 2011; Dockery 2010, 2012). Evidence makes it clear that Aboriginal and Torres Strait Islanders who move to major population centres suffer from a range of other issues that negatively impact on their wellbeing, including from discrimination (Dockery 2012) and psychological stresses of attempting to live between two cultures (Ranzijns, McConnochie and Nolan 2010). As suggested by Table 1, Census data indicate that labour market outcomes for Aboriginal and Torres Strait Islander Australians are not a great deal better for those living in non-remote Australia. Based on analysis of data from the 2001 and 2006 ABS Census, Biddle (2009, 2010) cautions policy makers that Aboriginal and Torres Strait Islanders who moved from remote areas to non-remote areas in the inter-censal period appeared to fare no better in the labour market than those who remained in remote areas. Combined with other potential negative externalities in destination areas, such as housing and social cohesion (Biddle 2009, p. 29), it is not clear that measures to encourage out-migration from remote communities and rationalisation of the number and scale of remote communities would offer either the financial saving or the improvement in outcomes implied by simplistic comparisons between remote and non-remote communities.

The pragmatics of assimilation are reinforced in the current National Indigenous Reform Agenda, the centrepiece of which are ‘Closing the Gap’ targets to reduce statistical inequality between Indigenous and non-Indigenous Australians along a range of socio-economic indicators. The ‘Closing the Gap’ framework includes only passing acknowledgement of the structural inequalities inherent in the interface between policy and custom in remote locations. ‘Closing the Gap’ and ensuing frameworks have remained silent about the relationship between culture, capability and the future aspirations of Aboriginal and Torres Strait Islanders in remote Australia, assessing instead failure or success in achieving parity in health, wealth, and education between remote and urban, Indigenous and non-Indigenous Australians. The framework is devoid of the cultural mapping necessary to the preservation of Indigenous Knowledge and customary activity essential to the rights of Aboriginal

and Torres Strait Islander sovereignty, and the collectivised structures of property ownership. Yet these are determinants of capability and the capacity to aspire reflected in literature as essential to empowerment (Appadurai, 2013; Tremblay, 2010).

The one area in which there does seem to be a convergence is the importance of accessible and appropriate education as a means to improving outcomes for Aboriginal and Torres Strait Islanders. Hughes (2007) and WA premier Barnett emphasised the lack of access to education in remote communities as limiting economic opportunity. Pearson (2011) identifies education as a central tenet of empowered communities and the Wunan Foundation (2015) designs optional empowerment pathways upon access to local educational foundations that establish the capacity for older children to access mainstream education at any level. The National Indigenous Reform Agenda similarly states:

Human capital development through education is key to future opportunity. Responsive schooling requires attention to infrastructure, workforce (including teacher and school leader supply and quality), curriculum, student literacy and numeracy achievement and opportunities for parental engagement and school/community partnerships. Transition pathways into schooling and into work, post school education and training are also important. (Council of Australian Government 2012, p. 6)

Views differ, of course, on the extent to which enhanced education should be achieved by improved delivery of education services to remote communities as opposed to people leaving remote communities to access services available elsewhere. The goals of local schools would also differ accordingly with emphasis on mainstream benchmarks enabling transition into institutions elsewhere, or more emphasis on links between education and training for increased local capability, with pathways to new and existing local enterprise and community development outcomes.

For the foreseeable future, remote communities will continue to be at the centre of these policy debates. This paper does not seek to address these larger issues, rather we note that in order for policy-makers to appreciate which policy alternatives will and won't be effective, it is important to understand how labour markets in remote communities operate. The functioning of remote labour markets is critical to the capacity of Aboriginal and Torres Strait Islanders to leverage benefits from native title; for how services can be delivered effectively and with what degree of local autonomy; for the design of remote education systems and employment programs to address welfare dependency. Equally, people's preferences between market and cultural activities will shape how labour markets operate. In light of limited existing evidence, as highlighted above, the following section draws on data from the Mobility Survey to provide primary, empirical evidence on the reality of labour markets in remote Aboriginal communities.

#### **4. The CRC-REP Mobility Survey**

Surveying of Aboriginal people living in remote communities for the CRC-REP's Mobility project commenced in May of 2014. The methodology developed includes an initial survey collecting baseline data and then a series of follow-up surveys conducted

with those same individuals collecting detailed information on recent trips. The survey has been progressively rolled out across communities, with a target of four follow up surveys to be completed by each respondent at roughly three month intervals to capture seasonal variation in mobility.

A two-stage sampling frame was designed consisting of a sample of 25 remote Aboriginal communities around Alice Springs, and within those communities a sample of individuals. The scope for the sample of communities was any remote Aboriginal community in which people would potentially access Alice Springs as a regional service centre; however, residents of some of the communities may also travel to other regional centres, such as Tennant Creek or Katherine. The sample was targeted to give reasonable representation of communities by size (population) and proximity to Alice Springs and of the language groups around Alice Springs. This was to include a handful of communities in the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands to the south of Alice Springs and across the border in South Australia. However, approval to work in those communities could not be secured in time to include these communities in the project.

In-scope individuals within the communities included all people aged 15 and over who were happy to participate. The target samples were stratified by age and gender based on Census population data for each community. The target sampling-to-population ratio declines with the population of the community, with the overall ratio designed to produce a sample of 1,500 respondents to the initial questionnaire and with the hope of 750 people responding to all five surveys after allowing for attrition.

The initial questionnaire and a template for the follow-up questionnaires were developed following focus groups conducted in two remote communities (Ntaria and Ltyentye Apurte) and with policymakers, service providers and other community representatives and stakeholders. The questionnaires were composed using the iSurvey software to be administered using iPads. These were tested and revised by trained Aboriginal Community Researchers (ACRs) employed by Ninti One's Business Development Unit. The ACRs can usually conduct surveys in the language the respondent prefers, which is essential given the surveys were undertaken amongst speakers of 6 primary Aboriginal language groups, but with 12 language groups represented in total. The first of the follow-up surveys was further refined following a review of the experiences with the initial questionnaire instrument and further testing by ACRs. This process helped to identify key questions and develop the questionnaire constructs and flow, and also led to the omission of questions that were considered culturally inappropriate.

While the sample design served as a guide, the reality of working in remote communities is that samples will always be 'convenience' samples to some extent. Soliciting information of acceptable quality requires researchers to work in communities where they are known, and therefore have a warm start, and hence the selection of communities was biased towards those with which the ACRs had established working relationships. Undoubtedly this similarly applies to the selection of individuals within the communities on the basis of familiarity with the ACRs although the research teams strive to convene as a group who, between them, can access the broadest cross-section of participants in each community.

The analysis presented in this paper is based on responses to the baseline survey collected up to mid-November, 2015. With the field work being unable to commence in the communities in the APY lands, this is likely to be the final sample for the study. Hereafter referred to as the 'Mobility Data', this dataset consists of responses from 1,075 people from 21 communities who at least partially responded. It should be noted that the full process of checking, validating and cleaning the data has yet to be completed. The results reported here are based on unweighted survey data, as population weights for individuals have yet to be computed and incorporated into the datasets. However, the sampling targets stratified within communities by age and gender based on 2011 Census data were relatively closely followed by the ACRs.

## 5. Data Analysis

The limitations of existing data collections to accurately capture the dynamic realities of demography and of labour market and economic engagement of Aboriginal and Torres Strait Islanders living in remote Australia have been widely documented, particularly with respect to the Census (see, for example, Taylor 2006; and Zoellner and Lovell, forthcoming). Though not without its own limitations, the Mobility Data provides a unique opportunity to enhance our understanding of such remote labour markets. The classifications of labour force status are similar in concept to those used in the official ABS Labour Force Survey, but not technically comparable as the same set of questions were not used as in the labour force survey. People were asked whether they were currently working for wages. If they responded yes, they were further classified as working full-time (35 hours or more) or part-time (less than 35 hours) on the basis of a follow-up question on how many hours worked in a week. People who were not working for wages but indicated they had been looking for work are classified as unemployed, and those neither working for wages nor looking for work as not participating in the labour force. It is noted that there may be some conflation between reported 'working for wages' and what might be considered as income support attached to program participation. At the time of the survey the previous CDEP programs were being replaced by the Remote Jobs and Communities Program which also provided for payments to individuals for participation in community development activities.

### ***5.1 Education, training and labour market outcomes in remote Aboriginal communities***

Early assessment of the Mobility Data painted a picture of a population characterised by low levels of formal educational attainment, low rates of employment, high welfare dependency and residents who travel vast distances to access services (Dockery & Hampton 2015, p. 13). Table 2 shows the labour force status for the surveyed population by age.

The labour force participation rate of 63.8 per cent for people in these remote communities is in fact much higher than the 47.3 per cent observed for Aboriginal and Torres Strait Islanders in remote Australia in the 2011 Census. This is likely to largely reflect that the additional criterion for being unemployed of having actively looked for work in the past four weeks was not imposed in the mobility survey as it is in the census. Consistent with this the unemployment rate of 30 per cent is also well in excess of the

17.8 per cent figure recorded in the Census, but the employment to population ratio quite comparable (33.8 per cent in our sample, 38.9 per cent for Aboriginal and Torres Strait Islanders living in remote areas in 2011). Another important contextual difference is that the communities in the Mobility sample are predominately 'very remote', with just 2 of the communities classified as remote rather than very remote. The approximated unemployment rate is markedly higher for younger residents of the communities.

Table 2 - Labour force status by age, Mobility survey

	<i>15-24 years (per cent)</i>	<i>24-39 years (per cent)</i>	<i>40-54 years (per cent)</i>	<i>Total (per cent)</i>
Labour force state:				
Employed full-time	8.4	12.9	17.0	12.0
Employed part-time	13.7	29.7	24.2	21.8
Unemployed	49.3	34.0	20.0	30.0
Not in the labour force	28.6	23.4	38.9	36.2
Total	100.0	100.0	100.0	100.0
Ratios: Unemployment rate	69.1	44.3	32.7	47.0
Emp. to population. ratio	22.0	42.6	41.1	33.8
Participation rate	71.4	76.6	61.1	63.8
Observations	227	427	265	1071

Table 2. shows that more than half of the respondents were not in paid employment. Among these, the most commonly reported activities were home duties (87 per cent of females and 73 per cent of males), cultural activities (31 per cent and 34 per cent, respectively) and looking for work (9 per cent of females and 18 per cent of males). It is difficult to find statistics from other sources against which to compare this sample, but perhaps the most similar are data from the ABS 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS), for which estimates are available for persons living in remote and very remote Australia. These data similarly report 49.8 per cent of the population aged 15 and over to be in employment, and a labour force participation rate of 58.5 per cent (ABS 2009).

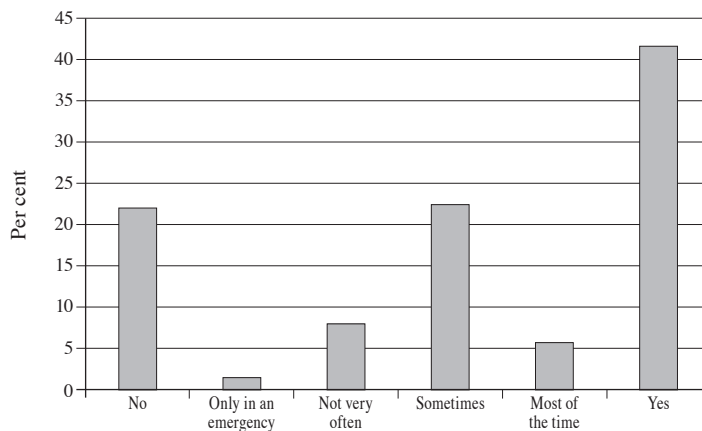
Due to cultural differences in family structures and obligations, the survey avoided using constructs based on biological children and 'dependent children' that are used in mainstream surveys. Rather people were asked whether there were children they looked after and living in the same house. This was the case for 80 per cent of female respondents and 75 per cent of males. Employment rates are surprisingly similar for females conditional upon child raising duties, while for men those living with children they looked after were markedly more likely to be in employment (41 per cent) compared to those without children they looked after (29 per cent).<sup>1</sup>

<sup>1</sup> The difference in the mean of the employment dummy for men with and without child raising responsibilities is significant at the 5 per cent level by the standard t-test.

For those who were not working but reported they wanted to work, the Mobility Survey asked what was stopping them. The most common reason indicated was that there were no jobs available, accounting for around one in four of responses to this question, and a further 5 per cent indicating inadequate or mismatched skills. Very close behind the lack of available jobs was caring responsibilities, primarily with relation to children. Poor health accounted for 20 per cent of responses, with a further 7 per cent suggesting other personal barriers to working.

Very few people indicated that a lack of transport for getting to work was a barrier. This is surprising given that analysis of an earlier subset of the same data revealed that a significant proportion of respondents did not hold a driver's licence and/or had limited access to a vehicle, and this was correlated with markedly lower propensity to be in employment (Dockery & Hampton 2105). Frequencies from the current sample show that only 40 per cent held a current driver's licence. As shown in Figure 1, less than half of the sample reported that they could access a vehicle when they need to or could do so most of the time. Over half indicated restricted access, with almost one-third selecting the options of 'not very often', 'only in an emergency' or simply 'no'.

Figure 2 - Can you always get access to a vehicle if you need one?



## 5.2 Educational attainment and engagement

Table 3 shows the highest level of education reported by the respondents. It can be seen that around a quarter of people surveyed either never went to school or attended only primary school. The modal level of attainment is just Year 9 high school, and very few people hold post-school qualifications at only 3 per cent. Note, however, that 'certificates' have not been included in this reckoning of the highest level of education attained, as it is unclear what their equivalent level of attainment is. Certificates potentially encompass a broad range of activities, from a few hours attendance at a workshop to a vocational education and training (VET) qualification. The survey asked people to indicate whether they held a range of qualifications, of which certificate was one option. As the final column of Table 3 indicates, 38 per cent of

respondents indicated having completed a certificate, and a substantial proportion did so irrespective of their other level of educational attainment. The proportion ranges from a low of 19 per cent for those who did not go to high school to a high of 71 per cent for those who also held a trade qualification.

Table 3 - Education attainment and proportion holding a certificate, Mobility Survey

<i>Highest level attained</i>	<i>Number of Persons</i>	<i>per cent</i>	<i>Proportion with a Certificate</i>
Primary only/never went to school	252	23.5	19.0
High school to Year 9 or less	292	27.2	33.6
High school to Year 10	247	23.0	44.1
High school to Year 11	153	14.3	57.5
High school to Year 12	90	8.4	47.8
Diploma or trade qualification	31	2.9	71.0
University degree or higher	8	0.7	50.0
Total	1073	100.0	38.4

Table 3. Notes: 2 observations had missing values.

In addition to past educational attainment, people were asked about any current study or training they were undertaking. Just under 20 per cent, or roughly 200 individuals, indicated that they were, a figure that is perhaps surprisingly high.<sup>2</sup> However, this was closely related to employment status, with around one-third of those employed currently undertaking study or training compared to just 9 per cent of those not working for wages. Accordingly, workplace training was the predominant form of training provided, nominated by 60 per cent of those currently in study or training. However, 15 per cent of those currently undertaking a course also reported studying through a university.<sup>3</sup> Most reported doing their study or training part-time (60 per cent).

In terms of the mode of study 53 per cent reported attending either weekly classes or in blocks, while 31 per cent reported studying by remote/distance education or on-line courses. Just half of those currently undertaking training or study indicated that they had to travel away from their community to do so. This was quite consistent across the different modes of study, including for on-line courses and by distance or remote education. It seems the digital age has not obviated the need to travel to access education and training, but it may have reduced the amount of travel students and trainees need to do. The most common forms of transport for attending education and training were by work vehicle, private car, and bus.

<sup>2</sup> The figure for Aboriginal and Torres Strait islander people living in remote and very remote Australia from the 2008 NATSIS was 12.5% (ABS 2009).

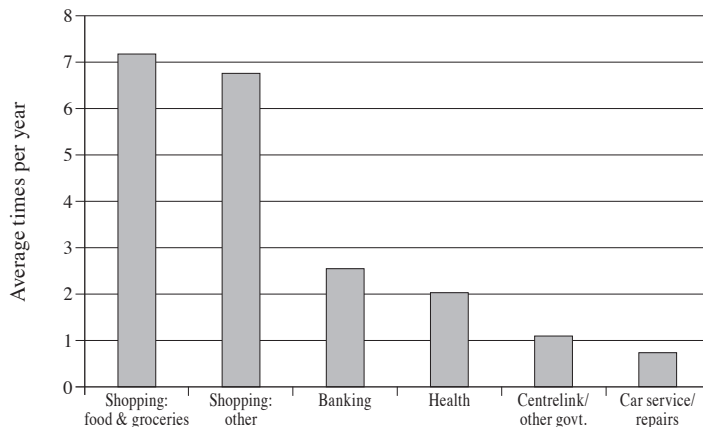
<sup>3</sup> Included in the 15% figure are those who selected the option of 'University or other higher degree training organisation' and those who selected 'Other' and then indicated Charles Darwin University or Bachelor Institute in the free text field.

### 5.3 Accessing services

One of the main objectives of the Mobility Survey is to provide information on how the need to access services and different service delivery models shape the mobility patterns of Aboriginal and Torres Strait Islander peoples living in remote Australia. In the initial survey people were asked about a range of specific services, whether they needed to travel away from the community to access these and, if so, how often and where they went. This included travelling away from the community for education and training courses. As determined by the sampling frame, the most common place people went to access services was Alice Springs. Figure 3 shows the estimated frequency with which people reported travelling away from the community to access those services asked about. Education and training did not feature highly as a reason for travel. While around 1 in five reported sometimes leaving the community for education and training, the vast bulk of these indicated they did so at most once per year. Less than 2 per cent of people reported leaving the community for education or training as regularly as monthly.

By comparison, around 80 per cent of people reported leaving the community to shop for food and groceries, with one in four reporting that they did so at least monthly (see Figure 3). From the data it is possible to estimate that people leave the community to access services around once every 2 to 3 weeks, and the average distance travelled for those who do is approximately 840 kilometres per month. Hence the population in these remote communities do leave the communities relatively frequently and travel long distances. By and large, however, they do not do so for the purposes of accessing education and training providers.

Figure 3 - Leaving the community to access services: Main services by frequency of trips



### 5.4 Returns to education and training

This section looks at indicators of the gains to individuals from education and training, commencing with a multivariate model of employment outcomes. As noted, employment status has been defined on the basis of whether a respondent indicated that they were working for wages.

### ***5.4.1 Employment outcomes: multivariate analysis***

Table 4 presents the results of multivariate logit models of the probability of the respondent being employed. These are reported in the form of odds ratios, which show the estimated effect of a variable on the probability of being in employment (working for wages) relative to its default or omitted category. An odds ratio of 1 indicates no difference between two categories, while an odds ratio above (below) one indicates the percentage increase (decrease) in the likelihood of employment. The odds ratio of 1.33 for males, for example, indicates that males are estimated to be 33 per cent more likely (that is  $1.33 - 1.00 = +0.33$ ) than a female to be in employment. The odds ratio of 0.45 on being aged 15–24 years in the model for all persons indicates that those young people are 55 per cent less likely ( $0.45 - 1.00 = -0.55$ ) to be employed than a person aged 25–44 years (the default category). For continuous variables – number of adults living in the household and log of the distance to Alice Springs – the estimated effect is the change in the likelihood of being employed for each 1 unit increase in that variable. In interpreting the results, the caveats noted above regarding potential conflation between employment and program participation equally apply.

The results suggest that employment probability peaks between the ages of 25 years and 44 years for women, and 45 to 54 for men. The odds of being in employment for people residing in these communities drops sharply beyond the age of 55. Married women are estimated to be around 25 per cent less likely to be employed than unmarried women, but this effect fails to attain significance at the 10 per cent level ( $p=0.15$ ). There are opposing effects of living with children in your care by gender, though neither estimate is statistically significant. The coefficient for men suggests that having care of children is associated with around a 50 per cent higher chance of being in employment, but we cannot confidently reject the possibility that the true effect is zero ( $p=0.14$ ).

In their earlier analysis, Dockery and Hampton noted that the number of adults living in the household was associated with a decline in employment propensity. They suggest this may be due to the effect of crowding, insecure tenure, or of disincentives to earn income created by ‘humberging’ within the household (2015, p. 12-13). Alternatively it may reflect omitted variable bias in which crowding is negatively related to the level of infrastructure in the community. Separate estimation by gender now shows that the effect applies only for women. For each additional adult resident, the probability that a co-resident woman is employed is estimated to fall by 14 per cent. This would suggest that the effect is more likely to be related to social or household dynamics, such as the within-household division of labour between paid and unpaid work, rather than community effects.

Before turning to the results for variables capturing educational attainment, note that a variable indicating whether the individual holds a certificate has been defined independently of the other variables capturing the highest level of qualification. This follows from the observation above that having completed a certificate was relatively commonplace irrespective of other qualifications held. Generally, there is rather weak evidence that educational attainment is associated with a higher probability of being employed. Note that estimates relating to post-school qualifications are very imprecise in a statistical sense because very few people in the sample hold such qualifications.

Relative to those who completed Year 12, women who reported either never having gone to school or only having attended primary school are substantially less likely to be employed, and women holding a trade certificate or diploma more likely to be employed – the estimated effect is large but only weakly significant. For men, however, there are no statistically significant estimates. In the model estimated for all persons, only the estimate for having not progressed past primary school is significant.

Table 4 - Odds ratios from logistic regression of the probability of being employed, by gender

<i>Variable</i>	<i>Females</i>	<i>Males</i>	<i>Persons</i>
Male	n.a.	n.a.	1.33 *
Age: 15–24 years	0.37 ***	0.54 *	0.45 ***
25–44 years	—	—	—
45–54 years	0.82	1.40	1.06
55–64 years	0.36 **	0.35 **	0.35 ***
65 and over	0.13 *	0.26 **	0.23 ***
Married/partnered	0.74	1.01	0.87
Looks after kids	0.81	1.58	1.13
Number of additional adults living in households	0.86 ***	0.96	0.91 ***
Highest education level:	0.30 ***	0.89	0.51 **
Never went/primary school			
Some high school, but not Yr 12	0.72	1.82	1.06
Finished Year 12	—	—	—
Trade qualification or diploma	8.80 *	1.27	1.56
University degree or higher	0.70	n.a.b	3.37
Has a certificate	3.06 ***	1.97 ***	2.51 ***
Has a current licence	3.14 ***	3.20 ***	3.17 ***
Community variables:	1.62 *	1.43	1.50 *
Serviced by bus			
Log distance to Alice Springs	0.62 ***	0.70 *	0.65 ***
Observations	651	398	1049
Likelihood ratio	205.2 ***	87.3 ***	268.8 ***

*Notes:* a. Number of adults in addition to self and partner, where applicable. b. estimate infeasible due to small sample and lack of within-category variation in employment status \*\*\*, \*\* and \* denote that the estimated coefficient is significant at the 1 per cent, 5 per cent and 10 per cent levels, respectively.

These estimates are in stark contrast to those relating to the holding of a certificate. These show that, in these remote communities, people who hold a certificate are two and a half times – 250 per cent - more likely to be working for wages than those who do not hold a certificate! In turn, these results are in stark contrast to those normally observed in studies for mainstream labour markets, in which certificates tend to be associated with minimal improvement in labour market outcomes. It is

important to be cautious as to what can be read into these estimates. Most obviously, there is a high chance of reverse causation (or endogeneity), whereby people have gained certificates as a consequence of being in a job, such as through working in a Ranger program. However, this still requires that people would have had to hold on to those jobs, or tend to rapidly regain jobs, for the coincidence of certificate holding and employment to be observed in the cross-sectional data. Exactly why certificates should be associated with vastly improved labour market outcomes in remote communities when (a) certificates do not have this positive effect in mainstream labour markets and (b) there seems limited return to more recognised forms of educational attainment, is certainly a question warranting further analyses.

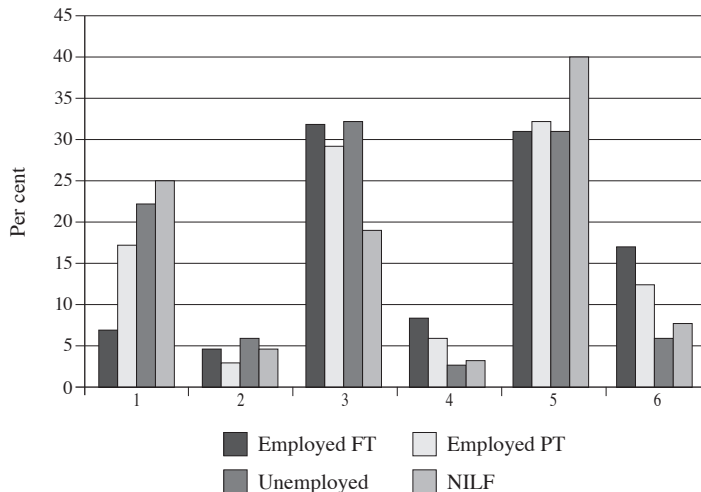
The positive effect of having a drivers' licence can also be seen in the multivariate results. The literal interpretation is that a person with a drivers' licence is more than three times more likely to be working than someone without a licence. This variable has been used in preference to the vehicle access variable due to potential endogeneity between employment and access to a vehicle, such as a work or community vehicle. However, including the 1 to 6 scale depicted in Figure 1 in the logistic regression model instead of the drivers' licence dummy also returns a large and significant result in the expected direction. Vehicle access becomes insignificant if both variables are included jointly.

A number of community level variables were tested in the model. As can be seen, living in a community with a bus service is associated with higher employment propensities, while employment propensity drops off with the distance of the community from Alice Springs. Seventeen of the 21 communities were serviced by a bus. For all but two of these the bus service to and from the community operates on only one or two days per week.

#### ***5.4.2 Financial prosperity or 'money situation'***

It was not considered feasible or appropriate to collect data on actual wages earned. However, a question was included that attempted to measure individuals' financial prosperity. Specifically, people were asked to select which answer from a set of given options best described their money situation. The options given were: 'I run out of money before payday', 'I sometimes have to borrow or bookdown', 'I keep just enough money to get us through to the next pay', 'most weeks there is money left over, which I spend', 'I save up sometimes' and 'I always save'. These options, as developed in consultation with ACRs and remote community residents, were intended to represent a progressive, ordered scale from least financially well-off through to most financially comfortable. Figure 4 shows the distribution of this variable by labour force status. At the two extremes of the scale, there is a clear relationship of greater prosperity, or less financial stress, for those in employment and in full-time employment in particular. The relationship is less clear for the intermediate assessment of one's financial situation.

Figure 4 - Money situation by labour force status (1=least financially well off, 6=most well off)



*Notes:* 1 = 'I often run out of money before payday'; 2 = 'I sometimes have to borrow or book down'; 3 = 'I keep just enough money to get us through to the next pay'; 4 = 'Most weeks there is money left over, which I spend'; 5 = 'I save up sometimes'; 6 = 'I always save'.

To assess factors that shape financial wellbeing further multivariate models were estimated using dependent variables based on individuals' reported financial situation. In the first model we simply create a dummy indicator of financial stress that is assigned a value of 1 if the individual reported running out of money or sometimes having to borrow or bookdown, and 0 otherwise. The model of financial stress is again estimated as a logit model. Second the 6-pt scale was converted to a 3-point scale with 1 corresponding to running out of money or having to book down; 2 corresponding to having just enough money or having a bit left over which is spent; and 3 corresponding to saving up sometimes or always. The model using this variable was estimated as an ordered probit model. The variables relating to holding a licence and vehicle access were dropped due to potential endogeneity, and in any case testing revealed neither was significant.

The results are reported in Table 5. For both financial stress and financial situation, the models are initially estimated without including a variable for employment status (models 5.1 and 5.3, respectively). This reduced-form specification is adopted to test the pay-off from education in terms of its impact on financial circumstances. A dummy variable indicating whether or not the individual is employed is then added to test whether any such effects are mediated through the impact of educational attainment on employment status (models 5.2 and 5.4).

For the logit model, the odds ratios relate to the probability of being in financial stress, so a figure greater than one suggests an undesirable outcome. The coefficients for the ordered probit model relate to the effect of the variable on the probability that

the individual will report a more financially comfortable position, and hence a positive coefficient represents a desirable effect.

Looking at models 5.1 to 5.4, there are few significant results. Males are much more likely to report running out of money and less likely to report that they can save any money. However, reported financial situation seems insensitive to age, marital status, having care of children or the number of adults living in the household. Self-assessed financial wellbeing appears to drop off with remoteness, as proxied by distance from Alice Springs. Of most relevance here, there appears no relationship between educational attainment and people's assessment of their financial situation. The exceptions are again with respect to holding a certificate, which seems to reduce the likelihood of running out of money or having to borrow (significant at the 10 per cent level), and a higher incidence of financial stress for those who never went to high school. Holding a certificate is also associated with a more positive rating of one's financial situation (model 5.3), but the estimated effect is small and insignificant.

When employment status is included as a regressor, the results show a large beneficial and highly significant effect of being in employment on financial wellbeing. The estimated odds ratio (model 5.2) implies being in employment is associated with a 44 per cent drop in the likelihood of reporting financial stress. The inclusion of this variable has a modest impact on the estimated effects for educational attainment, consistent with some of the effect of educational attainment on prosperity acting through the propensity to be in employment. This holds also for the effect of holding a certificate, consistent with the positive association observed between holding a certificate and the probability of being in employment.

To illustrate the contrast between these results, which are based on a sample of individuals from very remote communities, and those pertaining to mainstream labour markets the final set of models (5.5 and 5.6) replicate as closely as possible the ordered probit models for financial prosperity using data from Wave 14 of the Household, Income and Labour Dynamics in Australia survey (HILDA). HILDA is household panel survey designed to be nationally representative of private dwellings in Australia, with a number exceptions. Those exceptions include 'people living in remote and sparsely populated areas' (Summerfield et al. 2015, p. 132; Zoellner & Lovell, in press; see also <http://www.melbourneinstitute.com/hilda/> for details on the HILDA survey). The sample for estimation here is further restricted to include only people who are not of Aboriginal or Torres Strait Islander descent. The much larger sample means that many more of the estimated coefficients attain statistical significance. Interviews to collect the Wave 14 data were mostly conducted in 2014, the same year data collection for the Mobility Project commenced.

Table 5 - Multivariate models of individuals' reported financial situation

	Financial stress (Odds ratios - Mobility Data)		Financial situation (probit model - Mobility Data)		Financial situation (probit model - HILDA data)	
	Model 5.1	Model 5.2	Model 5.3	Model 5.4	Model 5.5	Model 5.6
Male	1.77 ***	1.83 ***	-0.37 ***	-0.38 ***	0.02	0.00
<b>Age:</b>						
15-24 years	0.78	0.71 *	0.13	0.18 *	0.39 ***	0.42 ***
25-44 years	—	—	—	—	—	—
45-54 years	1.09	1.09	-0.06	-0.06	0.02	0.01
55-64 years	1.16	1.06	-0.15	-0.11	0.11 ***	0.16 ***
65 and over	1.00	0.92	-0.15	-0.11	0.28 ***	0.47 ***
Married/partnered	0.94	0.94	-0.08	-0.08	0.32 ***	0.29 ***
Looks after kids	0.78	0.79	0.07	0.06	-0.23 ***	-0.21 ***
Number of additional adults living in households	1.04	1.03	0.01	0.02	0.06 ***	0.06 ***
Employed		0.56 ***		0.24 ***		0.29 ***
<b>Highest education level:</b>						
Never went/primary school	1.71 *	1.61	-0.15	-0.12	-0.27 **	-0.22 *
Some high school, but not Yr 12	1.42	1.44	-0.19	-0.19	-0.27 ***	-0.23 ***
Finished Year 12	—	—	—	—	—	—
Trade qualification or diploma	0.82	0.88	-0.13	-0.16	-0.15 ***	-0.15 ***
University degree or higher	0.56	0.71	0.72	0.66	0.39 ***	0.37 ***
Has a certificate	0.75 *	0.84	0.07	0.02	-0.10 ***	-0.11 ***
<b>Community variables:</b>						
Serviced by bus	1.08	1.12	0.00	-0.01		
Log distance to Alice Springs	1.29 **	1.25 *	-0.11 **	-0.10 *		
Intercept			0.71 *	0.53	-1.24 ***	-1.46 ***
Intercept2			0.85 ***	0.86 ***	1.53 ***	1.54 ***
Observations	1055	1055	1055	1055	11745	11745
Likelihood Ratio	41.1 ***	52.0 ***				
Log Likelihood			-1107.7	-1103.4	-11347.4	-11288.3

As with the ordered probit models for financial situation using the Mobility Data (models 5.3 and 5.4), the dependent variable in the models using the HILDA data takes on values from 1 to 3. These are based on HILDA's question on self-assessed prosperity, with 1 corresponding to 'very poor', 'poor' or 'just getting along', 2 corresponding to the modal response of 'reasonably comfortable', and 3 corresponding to 'very comfortable' or 'prosperous'. It is possible to derive all other variables used in the models on a roughly comparable basis with the exception of the variables relating to distance from Alice Springs and having a bus service (which in any case are not relevant to the HILDA sample). The results for 'mainstream' Australia show stronger demographic influences on self-assessed financial wellbeing, with assessed prosperity significantly lower in the prime working years of 25-44, higher for persons who are married, higher for each additional adult in the house, and lower for those with dependent children. None of these associations are apparent within the Mobility sample. Possibly this reflects a greater degree of sharing of resources and reciprocity along kinship and cultural lines within Aboriginal and Torres Strait Islander society in remote Australia, such that one's sense of financial wellbeing is less affected by stage of the life cycle or demographic circumstances.

It is difficult to compare the relationships between educational attainment and financial circumstances. Broadly, in both the remote and mainstream contexts the sign and magnitude of the coefficients indicate higher educational attainment is associated with a more comfortable financial position, but as noted these coefficients are mostly insignificant for the Mobility sample. In both contexts there is a large and positive association between being in employment and one's self-assessed financial situation. Where the results differ is with respect to holding a certificate. For the HILDA sample holding a certificate has been defined as ever having completed a post-school qualification at the Certificate level 5 or 6 based on the Australian Standard Classification of Education (see ABS 2001), with the exception of a Certificate level 514 (which includes trade certificates and therefore included among the 'Trade qualification or diploma' category). In the HILDA sample, 38 per cent reported holding such a certificate, which turns out to be precisely the same figure as for the Mobility sample. However, the contexts are very different since those in the wider HILDA sample have far higher levels of post-school educational attainment overall. For the HILDA sample 28 per cent had a university level qualification and 23 per cent a trade or diploma; compared to just 0.7 per cent and 2.9 per cent, respectively for the Mobility sample (see Table 3), making the certificate virtually the only non-school qualification held among people in the remote communities.

In mainstream labour markets, however, holding a certificate is associated with lower assessed financial wellbeing (highly significant), and this is not mediated by the inclusion of employment status to any substantive degree.

## 6. Discussion

In the context of ongoing debate on economic opportunity, demands on the public purse, and comparatively poor outcomes on a range of health and wellbeing measures this paper attempts to shed light on some of the characteristics of labour markets in

discreet Indigenous communities. Education and training is often flagged as a solution to addressing disadvantage and creating equality in opportunity. In some cases education and training may provide access to mainstream labour markets, which will assist those who want to transition out of remote communities; a favoured impact for those who ultimately see the demise of such remote communities as the solution to addressing Indigenous socio-economic disadvantage.

Overall the Mobility Survey results show a population with a low level of employment and educational attainment. The main problem perceived for employment is simply the lack of available jobs within these communities. However, other barriers to employment are widespread, including many people taking on caring and cultural roles and widespread health and other personal work limitations. For example, analyses of the Mobility data suggests that, while not self-reported as a barrier to work, the lack of a drivers' licence is associated with a marked reduction in the probability of being in employment.

These more detailed community level data also provide a more nuanced insight into Biddle's (2009, 2010) observations based on aggregate census data that employment outcomes generally did not improve for those who migrate from remote communities. Given the levels of skill attained compared to that expected in many 'mainstream' jobs, and the likelihood of endemic health issues, and language barriers it is very doubtful that remote residents would be more likely to participate or, if so, to be competitive in the labour markets of larger communities, regional towns or major cities. Kinship is a significant source of social capital of remote residents, and once relocated they would face additional issues relating to maintaining (or missing out on) kinship ties, discrimination, access to services, and the stress of cultural adjustment. It is doubtful the communities and families they would be leaving or the receiving communities would benefit from such movement.

There are also reasons to be guarded about the potential of education as the panacea it is often touted to be. There is little evidence that remote residents are willing to go out of their way to access education and training opportunities and the uptake of on-line modes of study also appears limited; albeit possibly due to limited telecommunications infrastructure. Workplace training is the main form of human capital accumulation, and in some instances this couples with the governance of local organisations and assets. Moreover, this form of human capital accumulation towards triple bottom line outcomes (social, cultural and financial) seems justified as the available evidence points to very limited benefits from the sort of educational qualifications that are valued in the mainstream labour market, either in terms of employment propensity or financial wellbeing. Add to this the mystery of the strong association between employment outcomes and the completion of certificates in the remote communities sample, when such certificates hold little value elsewhere. It seems the returns to different types of education and training vary substantially in the remote and mainstream contexts.

A possible explanation for these variations is that in the relatively 'dense' mainstream labour market, educational attainment plays a substantial signalling role in matching individuals to jobs, with attainment taken as a proxy for individual attributes (or capability). The holding of a certificate will not signal positive attributes given the

proportion of those who complete Year 12 and hold higher post-school qualifications in mainstream Australia. The extent of such competition and matching will be very limited in remote Aboriginal communities. Certificates are often gained outside of formal 'off-the-job' tuition, instead providing very practical skills through on-the-job application and experience. Rather than act as a signal of individual capability, the effect of a certificate is more likely to relate to a direct productivity enhancing effect of job-related training the individual has received. That such modes of training offer higher returns in remote communities echoes findings from the CRC-REP's Remote Education Systems project that engaging Indigenous children in education in remote communities requires schooling and curriculum to be directly relevant to their needs.

On the positive side, there seems much that potentially can be done to promote employment outcomes within remote communities. There are many people in these communities willing and wanting to work. Evidence continues to accumulate that barriers to mobility are a significant constraint to employment. This is most obvious in the large gap in employment outcomes for those with and without a driver's licence, but can also be seen in differences by level of vehicle access and conditional upon public transport services – in this case whether or not the community is serviced by the Bush Bus. It is well known many Aboriginal and Torres Strait Islander people lose their licences for relatively trivial offences, notably non-payment of fines. Investments in vehicles, improved licensing systems, public transport and road infrastructure may well offer high returns. A substantial majority do not have sealed road access (Smoker 2011), and Spandonide (2015) estimates that 15 per cent more people commute for work from communities where there are sealed roads. Only three of the 21 communities in the Mobility sample can be reached by sealed road. As we have seen, intensive education is not necessarily required to leverage such employment outcomes, only relevant on-the-job training at the certificate level.

Previous research has noted the resilience of Aboriginal and Torres Strait Islander peoples against past attempts to shape their mobility and geography (Memmott, Long & Thompson 2006, Morphy 2010). This further suggests that returns to measures to promote employment within communities may be much higher than attempting to lure or push residents out of remote communities. Policy-makers must be cognisant of the things that Aboriginal and Torres Strait Islander people value if they are to understand their mobility and formulate effective labour market policy (Dockery 2016). For good reasons, people are not going to respond in the way policy makers may anticipate from perceptions and models based on mainstream labour markets (Lovell, Guenther, & Zoellner, 2015).

While the Mobility survey does address some of the shortcomings of existing data collections it is of course subject to its own limitations. Because of survey fatigue and an inherent lack of trust in the motives behind research, or of the likelihood of it bringing any benefits to the participants, it was considered important to keep the Mobility Survey as short as possible, and not to collect data that may be sensitive or not directly related to the key research questions. It was also important to pay due respect to views expressed during community consultations in the process of framing the questionnaires. Some important limitations include the lack of information on household relationships between participants or on other members of the participants' households

(such as their employment status). This precluded including household level data in the modelling (other than the number of people living in the household) or to control for selection effects. Questions on substance abuse and incarceration of participants or their relatives were not included as these are considered personal, and not tangibly related to mobility, and there was no supportive argument as to how the mobility research would contribute to positive change regarding those factors. The issue of 'survey fatigue' was raised in locations in which longitudinal studies on early years education and on health are underway, some of which did discuss substance abuse and incarceration within household level data. Residents expressed some frustration that the same questions were being asked of them by different researchers, without any evidence of change as a result of participation. In that light, substance abuse and incarceration were placed outside the scope of what the mobility project collected. It is acknowledged that omitted factors also have substantial impacts on the lives of many Aboriginal and Torres Strait Islander people living in remote Australia and it should not be assumed that they are without weight in any ensuing synthesis of findings. However, the benefits of participatory research design with remote residents have contributed to a unique data set, which, like all research designs, includes anticipated shortcomings.

## 7. Summary and conclusion

Around one in five of all Aboriginal and Torres Strait Islanders live in remote and very remote Australia, many within distinct remote Aboriginal communities. The appropriateness of policies designed to address issues surrounding socio-economic outcomes for those residents and the economic sustainability of those communities thus has important implications for a substantial proportion of Indigenous Australians and for attempts to bridge inequality. The nature of remote labour markets has a bearing on a number of debates around these issues, including tensions between employment and other support programs and welfare dependency, leveraging benefits from native title, the design of models of service delivery and access, and options of promoting economic development within communities as opposed to promoting pathways to outside opportunities. Limits to existing information on basic aggregates, let alone the dynamics of those remote labour markets, increases the likelihood of inappropriate policy responses being applied to remote communities.

The analysis of data from 21, mostly very remote, communities in Central Australia provides important initial insights into the functioning of such labour markets. In addition to the well-known low rates of employment, salient features include low levels of education with relatively muted returns in terms of employment opportunity or financial prosperity associated with higher educational attainment, and lack of access to a vehicle or transport constituting a significant barrier to employment. Many people, however, do hold a certificate qualification and, in contrast to mainstream labour markets, this is strongly associated with better employment outcomes. Thus there appears to be a higher relative benefit to direct job-related training when compared to general education in these labour markets; and such context-specific human capital may not translate well to employment opportunities outside of the communities. Housing factors also appear to shape female employment outcomes.

There is a need for more information on how cultural connections and aspirations shape these peculiarities and other characteristics of remote labour markets if policy responses are to be appropriate and effective, for the assumptions underlying policy settings in mainstream labour markets are far removed from the barriers, processes and incentives that operate in remote communities.

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# Contractual Arrangements and the Retirement Intentions of Women in Australia

*Philip Taylor*, Federation University Australia

*Catherine Earl*, Federation University Australia

*Christopher McLoughlin*, Federation University Australia

## Abstract

*Older women represent an increasing proportion of Australia's paid labour force. Lacking is an understanding of how the nature of the contractual arrangement between worker and employer is associated with women's retirement intentions. Utilising data from a national survey of older women and employment, regression analysis is reported that tests the association between contractual arrangements and other meso level factors on the number of years until respondents' intended retirement. Taking a range of factors into account, it is found that those in casual employment anticipate retiring later than those with other employment arrangements. It is argued that, firstly, there is definitional ambiguity about flexible working that renders present calls for its promotion for older workers potentially problematical; secondly, policy continues to focus on an androcentric norm which presents risks for women in negotiating retirement; and, thirdly, a pro-work agenda for older people needs to have job quality as a core value.*

EconLit Subject Descriptors: J14, J18, J26, J28

Keywords: Older Workers, Old Age Policy, Retirement Age, Retirement Decision, Retirement Policy, Job Satisfaction

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Philip Taylor, Federation Business School, Federation University Australia, PO Box 3191 Gippsland Mail Centre Vic 3841, Australia, philip.taylor@federation.edu.au

Catherine Earl, Federation Business School, Federation University Australia, PO Box 3191 Gippsland Mail Centre Vic 3841, Australia, catherine.earl@federation.edu.au

Christopher McLoughlin, Federation Business School, Federation University Australia, PO Box 3191 Gippsland Mail Centre Vic 3841, Australia, christopher.mcloughlin@federation.edu.au

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## 1. Introduction

As the Australian population ages there is increasing public policy interest in delaying the final age of withdrawal from the labour market in order to offset projected increases in social welfare costs and to counter possible labour shortfalls due to retirement (Department of Treasury 2002, 2010, 2015; Productivity Commission 2013). As a critical mass of workers approach retirement age, it becomes increasingly important to understand the factors affecting choices concerning continued working, the reduction of working hours or retirement (Humpel, *et al.* 2009). After decades of promoting the practice of early retirement, industrialised nations face population ageing, current global economic uncertainty, dire warnings about social welfare system sustainability, and declining labour supply. As a consequence, influential international bodies, such as the OECD (2006), have called for greater efforts from industrialised nations to prolong working lives.

Calls to prolong working lives have rarely addressed explicitly older women's employment and their expectations about retirement have been neglected (Johnson and Price-Bonham 1980; Richardson 1999). According to Warren (2015) most of the literature about transitions to retirement has focused on men's retirement behaviour, reflecting both a lack of data about women's retirement decisions, and the traditional view of retirement as being more of a concern for men than for women. Responding to this gap in knowledge is important because in Australia older women represent an increasing proportion of the paid labour force, with 52 per cent of women in 2016 having exited the labour market by age 55 (ABS 2016b), compared to 74 per cent of women in 1997 (ABS 1998). Also, as Blekesaune and Solem (2005) point out, the main reasons for exiting the workforce vary with gender. In Australia a third of men (37 per cent) but only a fifth of women (19 per cent) retire because they reach retirement age; sickness, illness or disability is the reason for 19 per cent of men and 14 per cent of women to retire; and being retrenched, dismissed or having no available work compels nine per cent of men and five per cent of women to retire (ABS 2016b).

Much recent research internationally has focused on understanding the timing of retirement (Fisher, Chaffee and Sonnega 2016), with evidence that in relation to other factors, retirement preferences represent an isolated influence on retirement patterns (Örestig, Strandh and Stattin 2013). Moen, *et al.* (2016) argue that while much of the literature is concerned with retirement planning, it is concerned with macro level factors (such as economic conditions and public policy) or individual micro level factors (such as savings, income and health), and somewhat overlooked are the 'nuances of mesolevel factors related to work environments and workplace policies' (p. 322). This study, as with Moen and colleague's (2016), is concerned with the intersection of macro level forces with micro level individual decisions that occurs at the level of the workplace (the meso level). Notably for this study, research has found that work factors play a greater role in the timing of women's retirement timing than they do for that of men (De Preter, *et al.* 2013).

Work-related meso level factors that have been found to influence retirement intentions in Australia for all/any workers (not older women workers specifically) include availability of flexible working arrangements, opportunities for personal

development at work, and more effective management and supervision processes (Keogh and Roan 2016; Shacklock and Brunetto 2011; Shacklock, Brunetto and Nelson 2009). What appears to have been overlooked in recent retirement research, including in Australia, is the relationship between the nature of the employment contract and retirement intentions. Thus, Borland (2005) has defined the transition to retirement as a 'phase where an individual shifts from one relatively permanent or regular pattern of labour market activity to another pattern' (p. 3), and describes a taxonomy of retirement that, while referring to the possibility of this phase including casual employment, seemingly overlooks the possibility that any shift may not be from regular employment. This is important given, as evidenced by Watson (2013), that with increasing age come poorer outcomes in terms of job permanency, with those in casual employment likely to remain so or to enter joblessness and that while 'continuing attachment to employment is a major asset [...] by their very nature, casual jobs constantly undermine this attachment' (p. 14). According to Watson, particularly for women re-entering the labour market after child rearing, their employment prospects are likely to come via casual employment with no progression to permanency, a reservoir of such jobs being part of the employment strategies of many firms. While referring to such work as a potential bridge, Watson is considering the contention that it may lead to permanency of employment, but elsewhere the concept of bridge employment has been deployed in considering how to ease the transition to retirement. Such employment, it is argued, may take a variety of forms, including casual work, job sharing, salaried jobs, permanent or temporary jobs and self-employment (Alcover, *et al.* 2014; Mariappanadar 2013). Alcover and colleagues (2014) state that the use of bridge employment between the end of career employment or full-time employment 'has generated important benefits for both individuals and organizations, including improvements in the quality of psychosocial life and life satisfaction in the period before and after retirement' (p. 10). As with Borland the kinds of transitions they describe appear to preclude those that occur for people not in 'career' or full-time roles. In their view contingent forms of employment represent a stage to be passed through on the way to full retirement. Thus, workers in contingent employment generally are overlooked by proponents of bridge employment.

The notion that casual work might necessarily act as a stepping stone to a successful retirement is contestable, with lowered social status, insecurity and limitations in terms of managing health, psychological wellbeing and social relations observed among such workers (McGann, Moss and White 2012), with this presumably having the potential for deleterious consequences for the transition to life after work. As noted by Wall and Aboim (2016), having been in precarious work is likely to mean an individual experiences a precarious retirement.

The purpose of this paper is to explore the relationship between type of employment contract and the retirement intentions of women as it appears this relationship is largely not well understood. In the following sections the changing nature of retirement and its relationship to labour market fragmentation is discussed. This is followed by a description of the study's methodology before results are set out.

## 2. Transformations of work and retirement

The end of careers in industrialised societies is undergoing a dramatic change (Marshall, Clarke and Ballantyne 2001), with traditional abrupt transitions to retirement being replaced by more flexible processes (Contini and Leombruni 2006; Curl and Hokenstad 2006; Guillemard 2013). As retirement paths are significantly affected by their demographic, social and economic contexts, the traditional shift from full-time work to full-time retirement that was experienced with an androcentric 'breadwinner' career model has become largely redundant (Curl and Hokenstad 2006; Kojola and Moen 2016). Many commentators now argue that the retirement processes experienced by the majority of older workers are more flexible and blurred e.g., involving 'bridge employment' (Alcover, *et al.* 2014) or 'blended work' (Dropkin, *et al.* 2016). This illustrates an interaction between the macro and micro levels that plays out through organisations and workplaces i.e., the meso level.

Yet employees in the public sector and large private sector organisations are more likely to continue to engage with an abrupt exit from employment e.g., in Australia 85 per cent of person years lost to early retirement occurs in nine white collar occupations including managers and teachers (Jackson and Walter 2010). For others, especially those in small and medium sized organisations, 'end-of-career is marked by irregular patterns of labour market activity that has serious negative impacts on their current earnings and pensions' (Contini and Leombruni 2006, p. 360). Important interactions between work, age and gender have been identified for older women's employment in Australia (e.g. Earl and Taylor 2015; Warner-Smith, Everingham and Ford 2006; Warner-Smith, Powers and Hampson 2008; Warren 2006), but as yet there is limited evidence concerning older women's labour market trajectories and experiences and how these may influence later life transitions and roles more generally (Loretto and Vickerstaff 2015).

In recent years the public discourse has changed to promote a message that later retirement is preferable and it is within this changed context that decisions and pathways to retirement are now occurring. The prolongation of paid working lives has particularly important consequences for women, notably in terms of their ability to balance paid work with other roles. However, while there have been notable exceptions in the Australian context (Earl, *et al.* 2015; Warner-Smith, *et al.* 2008), the broad research literature to date has focused primarily on the later life labour market experiences of men. As noted by Russell (2007, p. 100) the 'problem of old age' has historically been applied primarily to men because it was involved with stopping work and losing identity, whereas women were expected to continue in the domestic role.

However, potentially significant economic benefits for Australia from increasing female labour force participation rates, particularly in full-time work, have been identified (Access Economics 2006; Department of Treasury 2015). Even with Australia's unique 'superannuation guarantee' comprising mandatory employer contributions to privatised retirement savings programs that were introduced in 1992 (Martin and Xiang 2015), there are doubts about its potential to provide sufficient and sustainable retirement incomes for women. Working may supplement women's superannuation funds which are generally much smaller than those held by men (Warner-Smith, *et al.* 2008). Arguably retirement incomes have become 'a product of

the past' that are determined in part by the extent of prior labour force participation and these are negatively affected not only by periods of unemployment or non-activity but also by flexible and precarious work that especially characterises women's employment pathways (OECD 2015, p. 74). Women's patterns of work and care contribute to their lower retirement incomes which are increasingly becoming inadequate and resulting in them living in poverty (Altman 2015; Hodgson and Marriott 2013; Jefferson 2005, 2009; Olsberg 2005; Warren 2006; WGEA 2015).

As with other developed nations (Vargas, *et al.* 2013), Australia has implemented a raft of measures aimed at achieving the objective of prolonging working lives, both on the supply and demand side (Taylor and Earl 2016). In terms of the former the age at which the Age Pension can be accessed by women was initially in 1993 increased from age 60 to age 65 and which caused a substantial program substitution with increased enrolment in the Disability Support Pension (Atalay and Barrett 2015). More recently, age pension eligibility for all has been pushed out to 67 and, although there were further efforts to increase the qualifying age to 70 (Department of Treasury 2014), it has recently been recommended that these be abandoned (Senate Economics References Committee 2016). Other specific government policies have reduced assistance provided to women e.g., ceasing new grants of the Class B Widows' pension (for widows without children aged over 50) in 1997. Further measures have been aimed at making working longer a more attractive option for older people and facilitating a gradual withdrawal from the labour market e.g., through the Transition to Retirement Scheme (Australian Taxation Office 2015).

While there is increasing policy interest in promoting older people's labour force participation, research and policy concerning the ageing workforce have arguably proceeded based on a male centric, full-time model of the labour market, with insufficient attention paid to the dynamics of older women's relationships with paid work. As noted by Campbell and Brosnan (2005 p. 34) 'full-time permanent employment was the axis along which standard rights and benefits were defined.' But this has been eroded by the twin pressures of new demands from the workforce and neoliberal approaches to workforce regulation (Campbell, Whitehouse and Baxter 2009). Moreover, the labour market at older ages is comprising increasing numbers of women. Participation rates for older women in Australia have grown rapidly. As can be seen in Table 1, which presents labour force participation rates for men and women aged 55-64 in Australia and other selected OECD countries, there has been a marked increase in older women's participation over the last three decades. In Australia by 2014 the rate of participation among older men (72 per cent) had finally exceeded rates last observed in 1980 (69 per cent). By contrast, participation rates among Australian older women have increased markedly - almost trebling over the same period - from approximately 20 per cent in 1980 to 56 per cent by 2014. Table 1 highlights this is a trend that is also observable in other industrialised nations. This occurs not only due to longer life expectancy but also financial necessity. Participation rates among people aged over 65 are projected to increase strongly also, in part due to increase in the age of eligibility for pension entitlements (Department of Treasury 2015, p. ix). For women aged over 65, participation rates are also increasing, from 2.8 per cent in February 1978 to 8.6 per cent in September 2016 (Australian Bureau of Statistics 2016a).

Table 1 - Labour Force Participation Rates Over Time Among Men and Women Aged 55-64 in Selected OECD Countries and Overall OECD Rates

Year		1980	1985	1990	1995	2000	2005	2010	2014
Country	Sex								
Australia	Men	69.0	61.4	62.8	61.4	60.9	66.2	71.2	72.2
	Women	21.8	20.2	24.8	28.5	35.3	44.4	54.1	56.2
Canada	Men	74.5	68.8	64.0	58.3	60.7	66.7	68.0	69.7
	Women	32.6	33.4	34.9	36.2	41.4	49.4	56.5	59.2
France	Men	..	44.3	39.3	36.1	35.5	43.8	45.3	53.1
	Women	..	27.7	26.9	27.1	28.2	37.7	40.0	48.6
Germany	Men	67.3	57.9	55.9	53.9	52.4	61.3	70.7	75.5
	Women	28.9	22.7	24.7	31.1	33.5	43.2	54.5	62.9
Italy	Men	39.6	54.8	53.0	46.5	42.7	44.3	49.5	60.2
	Women	11.0	15.1	15.5	14.1	16.1	21.5	26.9	38.3
Japan	Men	85.4	83.0	83.3	84.8	84.1	83.1	83.9	84.8
	Women	45.3	45.3	47.2	48.5	49.7	50.8	53.9	57.5
South Korea	Men	80.0	77.3	77.2	79.6	71.3	74.5	77.7	82.0
	Women	46.2	47.3	49.6	50.4	48.8	46.5	48.1	53.0
Netherlands	Men	63.2	47.0	45.7	42.3	50.9	58.8	67.6	75.5
	Women	14.4	12.3	16.7	18.6	25.9	34.8	44.9	54.3
New Zealand	Men	..	..	56.6	65.0	71.9	79.5	82.7	83.6
	Women	..	..	30.6	39.0	47.8	62.4	69.2	74.2
Norway	Men	79.5	79.9	72.8	72.3	74.4	74.6	73.5	77.0
	Women	49.8	53.2	53.9	57.4	61.6	62.9	65.6	69.2
Poland	Men	..	..	..	45.5	40.4	43.4	48.9	57.2
	Women	..	..	..	27.6	23.7	23.5	25.9	35.2
Spain	Men	75.9	67.4	62.5	55.4	60.5	62.9	63.7	64.3
	Women	21.1	19.9	19.4	19.8	22.6	29.9	38.4	46.9
Sweden	Men	78.8	76.0	75.5	70.9	72.6	76.4	79.4	81.7
	Women	55.4	60.0	65.8	63.9	65.9	69.2	70.4	75.2
United Kingdom	Men	..	69.0	68.1	62.5	63.2	67.8	69.3	70.9
	Women	..	35.0	38.7	40.8	42.5	48.9	50.6	56.4
United States	Men	72.1	67.9	67.8	66.0	67.3	69.3	70.0	69.9
	Women	41.3	42.0	45.2	49.2	51.9	57.0	60.2	58.8
OECD countries	Men	73.0	65.9	64.8	62.3	62.5	65.6	67.6	70.0
	Women	36.8	33.8	35.6	36.0	38.3	43.5	47.9	51.5

Source: OECD Statistics

Furthermore, the terms of women's workforce engagement, goals, patterns and paths differ from those of men due in part to family and caring responsibilities (Earl, *et al.* 2015). Career gaps taken by women for raising children and caring for elderly relatives contribute to lowering their retirement incomes to varying degrees across OECD countries. Shorter, fragmented and precarious contributions made earlier in working life can have a profound long term effect. Women's shorter effective

working lives are compounded by a gender pay gap that also varies across countries but results in lower incomes for working women that contribute to lower retirement incomes also (OECD 2015). In Australia with its unique superannuation system (and also in the Netherlands, USA, Mexico and New Zealand), women's lower retirement incomes are further affected by a lack of publicly funded pension credits that are provided in other OECD countries for childcaring and unemployment (e.g. France, Italy, Sweden) (OECD 2015, pp. 87-88). These issues present challenges to employers and public policy makers in Australia, indicating that there is a need to consider issues of later life employment from the perspective of women.

### 3. Fragmentation of work and retirement

It was once accepted that stage of age was key in determining work status and workforce engagement. Guillemard (2013, p. 64) notes that 'a finding of the sociology of the life-course is that the institutionalisation of welfare systems has been a powerful factor that formatted the life-course into three periods by using age as a chronological marker for setting the thresholds for passing from one age of life to the next'. However, Guillemard describes the standardised biographical pattern of education, work and leisure that once organised the life course in industrialised society as changing and that flexible working, flexible life courses and, as a result, new and uncertain biographical pathways, are multiplying. One potential, practical consequence of this increasing fragmentation is increasing uncertainty concerning the nature and timing of the retirement event, with implications for individuals, their employers and for the formulation of public policy concerning work and retirement.

While not conceptualised in terms of fragmentation, in policy debates in Australia and elsewhere much attention has been paid to meso level factors, particularly the role new forms of contractual arrangements might play in promoting older workers' employment and delaying the age of their final labour market withdrawal. For instance, the Advisory Panel on the Economic Potential of Senior Australians (2011) suggested that employees aged 55 and over be given the right to request flexible work arrangements from their employers, including measures such as part-time work; casual work; working for blocks of time, taking leave and returning to work in order to accommodate seasonal work or travel; scaling-down and working fewer hours to allow more time for recreation. It must be noted here that flexible working arrangements are generally available to permanent and contracted employees via negotiation with their employers. Flexible working arrangements, thus, are reflective of employment status and differ from temporary or casual employment which is not negotiated and not flexible.

There has been much commentary concerning the potential role played by flexible approaches to retirement in the form of 'bridge employment' or 'gradual retirement' as facilitators of an easier transition from work to non-work at the end of a career (Alcover, *et al.* 2014; Reday-Mulvey 2005). Advocates have stressed the potential benefits that flow to workers, employers and governments in terms of avoiding the personal 'cliff-edge' of retirement, the retention of useful human capital,

and reduced social welfare payments and continued tax receipts. However, while individual benefits of a phased or gradual withdrawal have been assumed, Australian research has found that for many outcomes there was no difference between those retiring gradually and abruptly, although the latter were more likely to rate their health as having deteriorated and more likely to report better adjustment to retirement (de Vaus, *et al.* 2007). Notably, having choice or control over the manner and timing of one's retirement emerged as a more important influence on retirement wellbeing than whether the transition from working was gradual or abrupt. While giving employees more control over when, where and how much they work affects retirement expectations (Cahill, James and Pitt-Catsoupes 2015; Moen, *et al.* 2016), phased or gradual models of retirement appear to presume that an individual is able to negotiate the manner and timing of their retirement, which is unlikely to be the case for many workers, particularly casual employees (Taylor, *et al.* 2016).

While the benefits of flexible working in late career are much vaunted the nature of such arrangements would seem to be critical. In this regard, at the same time as there has been increasing interest in issues associated with the ageing of the workforce, the phenomenon of labour flexibilisation - in the forms of the loss of jobs for life and the increasing precarity of work - has also been garnering much attention among researchers and commentators (Cappelli 1999; Standing 2011). In 2013 approximately a quarter (23.9 per cent) of the Australian workforce was considered to be in 'casual employment'. More women (26.7 per cent) than men (21.2 per cent) were in casual jobs in Australia in 2013, although there has been a disproportionate increase in male casual employment since the 1990s (Kryger 2015). The omnibus term casual is understood in Australia as including many different employment arrangements that in common are directly linked to an absence of employment rights and conditions, such as the entitlement to paid annual leave or sick leave (Burgess, Campbell and May 2008).

There is considerable variation by age in terms of the incidence of casual employment in Australia. According to the most recently published Australian Bureau of Statistics figures (ABS 2014), the proportion of persons employed in casual employment has increased steadily for younger workers, increased slowly for male workers aged 30 and over, and decreased slowly for women aged 30 and over. Women under the age of 30 have continued to be the highest proportion of casually employed workers since the early 1990s, increasing from 32 per cent in 1992 to 41 per cent in 2013. Men in this age group have also experienced a similar trend in the proportion of casual employment, increasing from 21 per cent to 34 per cent over the same timeframe. The proportion of casually employed men aged 30 to 49 and those aged 50 and over has also increased but much more slowly over this period, increasing from six per cent to 11 per cent and seven per cent to 11 per cent respectively. The proportion of employed women in these two broad age groups with casual employment arrangements has decreased, falling from 23 per cent to 17 per cent for those aged 30 to 49 and from 20 per cent to 17 per cent for those aged 50 and over. Significant differences have been found between women across contingent employment statuses, so dealing with all non-full-time workers as though they are a homogenous group is problematic (Hall and Harley 2000).

Casual employment is not without criticism e.g., Campbell (2010, p. 215) describes it 'as a particularly degraded form of temporary employment'. Given the significant level of casual employment observed in Australia and elsewhere, there has been surprisingly little attention paid to its relationships with labour force participation at older ages and retirement behaviour. Analysis over ten waves of the Household, Income and Labour Dynamics in Australia (HILDA) panel study demonstrates that there is a relationship between casualisation and job dissatisfaction, with the most educated women in casual employment - including staff in schools and universities - being the least satisfied (Buddelmeyer, McVicar and Wooden 2015, p. 271). Unlike younger women, job satisfaction of older women increases the most when they are working in a feminised occupation, such as teaching, that offers them a desirable type of work, hours of work and flexible working arrangements (Dockery and Buchler 2015, pp. 19-20). Interestingly, this recent interpretation of findings from the HILDA panel survey reiterates earlier interpretations of findings from the 1995 Australian Workplace Industrial Relations Survey (see Hall, Harley and Whitehouse 1998).

Australian research suggests job satisfaction plays an important role in determining retirement intentions (Choi and Yu 2016; Clark, Mavromaras and Wei 2014), but this relationship has not been examined in terms of women's retirement intentions within different types of employment arrangement. While as noted earlier, casual work is often described as being of poor quality, it may be argued that job satisfaction may mediate the relationship between employment status and retirement intentions, satisfied workers regardless of employment type being less likely to report the intention to retire sooner. On the other hand, by contrast with permanent full-time or part-time work, participation in casual forms of employment might also be argued to restrict choices over the nature and timing of labour market withdrawal, whatever the level of job satisfaction. This article considers these issues, drawing on survey data collected as part of a study that investigated older women's employment and retirement transitions.

#### **4. Methodology**

Data were collected from among women members of two Australian superannuation funds via an online survey of 1,189 older women members of ESSSuper, a superannuation fund serving emergency services and public sector employees in Victoria and a postal survey of 1,287 older women members of UniSuper, a superannuation fund serving people working in Australia's higher education and research sector. Data collection took place in 2013 and 2014. Those surveyed were aged between 50 and 70 and potential respondents were randomly sampled by the superannuation funds from their membership lists. The respondents, thus, could be employed or non-employed. The overall response rate was 21 per cent.

Regarding the nature of employment arrangements the survey collected information about whether working respondents were employed full-time in a permanent role, employed part-time in a permanent role, were in a casual role or were in a fixed-term role. In order to test the effect of job satisfaction on the association between employment arrangements and retirement intentions it was necessary to

control for a range of variables that, based on a review of the literature, might also be expected to influence participants' retirement intentions. These variables included: health status; household income; occupation; age; perceptions of discrimination; and partner's employment status.

Health status was measured by asking 'In general, how would you say your health is?' measured using a five-point Likert type response scale ranging from 'poor' to 'excellent'. Household income was measured with participants endorsing an income level within \$10,000 increments, but a simplified categorisation was used in the analysis, using \$50,000 increments up to 'over \$150,000' to facilitate simpler interpretations and because it was assumed that only large differences in household incomes would make meaningful differences to respondents' retirement intentions. Occupation was measured using the ABS (2009) ANZSCO classification, but due to small numbers of participants in the majority of these occupational classifications, a recategorised version delineating 'managers', 'professionals', 'administrative and clerical workers' and then all 'other' occupations was used. Age groups, in this case, five-year increments between 50 and 70, were used to control for the likelihood of shorter times until intended retirement for older participants. Given a likely association between partner's retirement status and women's retirement intentions, it was also necessary to control for partner's employment status that were categorised, again in a simplified form, as either 'inactive', 'full-time permanent', 'self-employed' or 'other'. Six indicators of job satisfaction drawn from the HILDA panel study were used (see Wooden and Watson 2007). Responses to these items, originally using a five-point response scale from 'not at all' to 'a very large extent', were reclassified by grouping the two highest satisfaction response options together. This was contrasted with the grouping of the three lower satisfaction response options. The rationale for this categorisation was that only high levels of job satisfaction were expected to influence retirement intentions.

Finally, the importance of four work related factors for retirement intentions were included to control for individual variations in experiences in the workplace and perceptions of financial preparedness for retirement. Respondents were asked how important the experience of gender, age or disability discrimination and financial security were or would be for their decision to retire. Using these control variables, four linear regression analyses were undertaken to assess the differing effects of job satisfaction on retirement intentions for respondents in the four employment status groups. Retirement intentions were measured in terms of an item that asked respondents when they intended to retire from the paid workforce. Respondents were provided with the following options: Less than 1 year; In 1 to 2 years; In 2 to 3 years, In 3 to 4 years; In 4 to 5 years; In 5 to 6 years; In 6 to 10 years; and In 10 years or more. This dependent variable was treated as a continuous measure, effectively ignoring the wider time frames captured by the last two response options. Although this is problematic and meaningful proportions of respondents endorsed these two response options (18.1 per cent and 17.7 per cent respectively), including these two response options was considered preferable to excluding them from analysis despite the consequences for interpretability.

## 5. Results

### *Respondent characteristics*

The mean age of respondents was 58.6 and they were relatively normally distributed within the age range. Over 80 per cent were born in Australia and 1.7 per cent were of Australian Aboriginal or Torres Strait Islander descent. In terms of highest qualification completed, 67 per cent had a bachelor or postgraduate degree, 14 per cent had a certificate or diploma, and 12 per cent had completed high school. Regarding occupational group (ABS 2009), eight per cent were managers, 37 per cent professionals, 14 per cent were in clerical and administrative roles, and six per cent other categories. Sixty two per cent of respondents were married or partnered, 15 per cent were separated or divorced, 11 per cent were never married, and four per cent were widowed. The average age of partners was 60. In terms of partner's employment status, 17 per cent were inactive, 24 per cent in permanent positions, seven per cent in casual or fixed-term positions, 10 per cent were self-employed, and three per cent other. The average household income was \$130,000-140,000.

Regarding the employment status of the women defined as employed in the sample (n=1596), three-fifths (60.4 per cent) were classified as in full-time permanent employment, with a fifth (21.7 per cent) classified as in part-time permanent employment. Less than a tenth were classified as being in casual employment (7.4 per cent) and just over a tenth working on a fixed-term contract (10.5 per cent). This finding indicates that, compared with the national picture, these women were markedly less likely to classify themselves as being in casual employment.

### *Linear regression analyses*

The results of the linear regression analyses used to test the association between job satisfaction and the number of years until respondents intended to retire for each employment status group are reported in Table 2. Altogether, after cases with missing values were excluded, 1043 remained in the analysis, with 645 being classified as full time permanent, 192 part time permanent, 97 casual and 109 fixed term.

Job satisfaction was initially tested as a mediator of the effect of employment status on time until intended retirement. This analysis revealed that while job satisfaction measures were associated with time until intended retirement they did not influence the association between employment status and time until intended retirement. As such, simplified regression models are presented with measures of job satisfaction included in a single-step regression model.

Table 2 - Unstandardised Beta Coefficients for Two Regression Analyses  
Testing the Mediation Effect of Job Satisfaction on Employment Status for  
Predicting Time Until Retirement

		<i>Full-time permanent</i>	<i>Part-time permanent</i>	<i>Casual</i>	<i>Fixed-term</i>
<i>(Constant)</i>		4.304 ***	5.47 ***	5.628 **	3.948 *
Health status		-0.004	0.066	-.523	0.163
Household annual income	Under \$50,000	-0.022	-1.495*	1.905	0.976
	\$50,000 to \$100,000	0.284	-.624	1.159	0.378
	\$100,000 to \$150,000	0.063	-.217	-1.605	0.884
Occupation	Manager	0.054	1.270*	1.447	0.248
	Clerical and administrative	0.336	.369	-.489	-0.018
	Other	0.923 *	1.915 ***	-1.549	-.047
Age group	55 to 59	-1.347 ***	-1.323 ***	-1.970 *	-1.119 *
	60 to 64	-2.545 ***	-2.862 ***	-3.944 ***	-2.858 ***
	65 to 69	-3.216 ***	-2.474 ***	-4.632 ***	-4.32 ***
Partner employment status	Full-time permanent	0.281	-.283	.666	-0.092
	Other	0.18	.008	1.217	0.9
	Self employed	0.2	-.129	3.234 *	-0.159
Factors important to retirement decision	Financial security	0.994 *	.497	1.380	0.928
	Age discrimination	0.312	-.364	1.897	-0.092
	Sex discrimination	0.011	.315	-.724	0.714
	Disability discrimination	0.593 *	1.395 **	.687	0.675
Job satisfaction	Total pay	0.276	-.204	1.033	0.248
	Job security	-0.729 **	-1.286 **	-.202	0.034
	The work itself	0.159	.418	-1.421	-1.975 **
	The hours you work	0.276	-.443	.036	-0.262
	Flexibility to balance commitments	0.503 *	.204	.688	-0.222
	Overall satisfaction	0.373	.394	.511	2.209 **
r-squared		30%	39%	50%	40%

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

Given the use of a range of categorical independent variables, the constant value represents the years until intended retirement for the relevant reference categories being respondents in a professional occupation, aged 50 to 54, with a household income in excess of \$150,000 whose partner was not in paid employment.

Comparisons are therefore drawn between these relatively high status women with secure financial positions. The regression models explained 30 per cent to 50 per cent of variation in years until intended retirement. Standard error values for the

significant independent variables were relatively low suggesting adequate predictive accuracy, as presented in Table 3 (included as an appendix). However in the case of the casual employment group standard error values were somewhat higher, likely due to a smaller sample size.

Job satisfaction demonstrated a relationship with retirement intentions that varied by type of employment arrangement. Respondents' intended time until retirement was predicted to change if they were more satisfied with different aspects of their job for each employment arrangement group except casuals. The absence of associations between facets of job satisfaction in retirement intentions of those respondents in casual employment perhaps indicates an overriding import of financial imperatives for older women engaged in this employment arrangement. The role these women appear to play in improving financial security alongside a self-employed partner may provide indicative evidence supporting this assertion. The largest predicted increase in time until expected retirement (3.2 years) was observed for women in casual employment arrangements whose partner was self-employed. Given that women in casual employment had the longest baseline intended time until retirement at 5.6 years (compared with four years for those with fixed-term contracts, for instance) it is suggested that for many of these women planning to work indefinitely or as long as they are able is their best option to avoid financial hardship in retirement.

Respondents with full-time permanent employment arrangements who were more satisfied with the flexibility of their work to meet work/life balance needs intended to retire later. In contrast, higher levels of satisfaction with their job security predicted a shorter time until intended retirement. Taking these findings together, it appears logical that older women employed in full-time permanent positions would perceive such flexibility as conducive to retiring later. Perhaps the absence of the threat of separation from employment without the recompense offered to those in permanent employment arrangements explains the counter-intuitive relationship between satisfaction with job security and the intention to retire sooner. The unexpected association between high satisfaction with job security and the intention to retire sooner was also found among older women employed in permanent part-time positions, further supporting the notion that such job security may only be appreciated when one does not have it.

Older women employed with fixed-term arrangements had an ambiguous combination of associations between measures of job satisfaction and time until intended retirement. While higher levels of satisfaction with the work itself predicted a shorter time until intended retirement, those with higher overall job satisfaction intended to retire later. Both associations indicated a change of approximately two years in time until intended retirement. Given that none of the other measures of job satisfaction were associated with retirement intentions this combination of results may suggest that there is another aspect of job satisfaction, in this case captured by the 'overall satisfaction' measure, that is particularly relevant to those employed in fixed-term arrangements. Nevertheless it is unclear why higher satisfaction with the work itself would be associated with the intention to retire sooner.

The importance of financial security and perceived workplace discrimination for respondents' decision to retire was also associated with intended time until retirement

for those in permanent employment arrangements. Not surprisingly, respondents who indicated financial security was important for their decision to retire were predicted to retire later. Notably, this association was only evident for those in permanent full-time positions, perhaps indicating a greater degree of choice and control over retirement decisions for these older women. Respondents who indicated disability discrimination would be important for their decision to retire were, perhaps counter-intuitively, predicted to retire later. A plausible interpretation of this association, evident for the permanent part-time and permanent full-time employment arrangement groups, is that while workplace discrimination would be important for their decision to retire, they are not necessarily subject to it but would be disinclined to continue employment if facing such treatment. So this finding is potentially reflecting the opposite experience where these older women enjoy favourable treatment by their employer and colleagues thereby encouraging the prolongation of their working life.

The associations between the majority of control variables and intended time until retirement were generally as would be expected. Older age groups intended to retire sooner. Permanent part-time managers intended to retire earlier than the reference category occupation group (professionals), perhaps suggesting those in such part-time positions were in the process of transitioning to retirement. In contrast, the lowest income group in permanent part-time employment arrangements intended to retire later, interpreted as indicating this group's need to secure greater financial resources before retirement.

## **6. Limitations of the study**

Before offering some concluding comments it is important to draw attention to potentially critical methodological limitations. A potential lack of sample representativeness makes it impossible to draw conclusions regarding the wider applicability of the findings. While a significant proportion of those surveyed identified as being in casual employment the proportion was low compared with the national picture, suggesting that these women may have been atypical of women in casual employment more generally. This, together with the sectoral specificity of the sample, means that care is required in interpreting the findings.

Also, we acknowledge the possibility of dual causality in the regression model assessing the association between the control variables and the intended time to retirement on the one hand and job satisfaction on the other i.e., higher income may be expected to co-vary with employment in higher status occupation and both may increase job satisfaction and extend the expected time until retirement. However, higher income may also facilitate the accumulation of greater retirement assets and thereby reduce the time until retirement. To assess the potential problem associated with these control variables, reduced form models with only the job satisfaction measures were computed and these produced qualitatively similar results to those reported in this article.

## 7. Conclusions

The findings of this study are noteworthy in terms of sounding a cautionary note regarding the management of older women's careers. They are indicative of the likelihood of later retirement for women in casual roles, with implications for their life planning and income security. This is suggestive of the need for care in promoting labour market flexibility from the perspective of developing public policy towards older workers and that an androcentric policy model of labour force engagement at older ages presents risks for older women attempting to negotiate their exit from the labour force. More generally, this finding indicates that for such women the present public policy objective of longer working lives is being realised. We cannot be certain that for many of the women surveyed casual employment might not have been a lifestyle choice and thus cannot draw firm conclusions regarding whether their working longer was anticipated and perhaps even welcomed. However, we suspect that for some the desire to retire may have been overridden by economic necessity. Drawing on the bridge metaphor, in terms of their transitions to retirement this may be a long and precarious structure.

The findings of the study concerning the role of job satisfaction also highlight the apparent importance of the quality of the employment arrangement, for longer working lives. Put simply, it appears that a greater focus on job quality is likely to result in better outcomes in terms of older workers' ongoing participation in the labour force. The apparent significance of job quality also indicates that a simple measure of employment participation as an indicator of the success of pro-work policies addressing issues of older people's employment, as has been adopted, for instance, in Australia and the European Union member states (Department of Treasury 2010; European Commission 2010) is inadequate from the perspective of ensuring that 'successful' ageing is achieved. Rather these findings indicate that efforts to promote job quality should be considered a core value of the pro-work agenda if the intention is to recognise the importance of older workers' wellbeing alongside that of ensuring business has an adequate supply of labour going forward or that the social welfare burden is minimised as the population ages.

From the specific perspective of older women's employment this study points to the need for policy and research agendas that recognise the gendered nature of the labour market and that age and gender also intersect with a range of other factors. In this regard basing public policy on such a vague concept as 'older workers' is a reductionist approach that overlooks critical labour market dynamics. A consequence may be that women's employment and retirement prospects are undermined at a time when maintaining their relationship with the labour market is considered crucial to national productivity and growth.

**A1**

Table 3 - Standard Error Values for Two Regression Analyses Testing the Mediation Effect of Job Satisfaction on Employment Status for Predicting Time Until Retirement

		<i>Full-time permanent</i>	<i>Part-time permanent</i>	<i>Casual</i>	<i>Fixed-term</i>
<i>(Constant)</i>		0.591	0.979	1.884	1.56
Health status		0.086	0.151	.356	0.2
Household annual income	Under \$50,000	0.55	.574	1.234	0.814
	\$50,000 to \$100,000	0.236	.425	1.044	0.702
	\$100,000 to \$150,000	0.213	.368	1.304	0.535
Occupation	Manager	0.231	.596	1.808	0.641
	Clerical and administrative	0.221	.371	.879	0.619
	Other	0.367	.515	.960	0.705
Age group	55 to 59	0.195	.358	.897	0.541
	60 to 64	0.226	.380	.940	0.533
	65 to 69	0.388	.644	1.112	0.869
Partner employment status	Full-time permanent	0.217	.396	1.183	0.574
	Other	0.29	.447	1.034	0.665
	Self employed	0.294	.560	1.204	0.673
Factors important to retirement decision	Financial security	0.407	.669	1.082	0.881
	Age discrimination	0.257	.498	1.153	0.608
	Sex discrimination	0.298	.534	1.419	0.714
	Disability discrimination	0.267	.453	1.216	0.627
Job satisfaction	Total pay	0.189	.318	.669	0.47
	Job security	0.216	.389	.696	0.455
	The work itself	0.225	.394	1.050	0.732
	The hours you work	0.197	.391	.742	0.499
	Flexibility to balance commitments	0.199	.400	.939	0.482
	Overall satisfaction	0.233	.456	.794	0.686

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# Tip of the Iceberg? Organisational Foundations of Top Pay in New Zealand Listed Companies, 1995-2014

*Tim Hazledine*, University of Auckland Business School

## Abstract

*A unique database on numbers and pay of all employees earning more than \$150,000/year in all New Zealand listed companies between 1995 and 2014 reveals substantial increases in the pay of the CEO and in the size of the hierarchy of managers reporting to the CEO. None of the growth in Top Pay can be accounted for by growth in the size of these companies. Factors that do explain cross sectional variation in CEO pay are identified.*

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## 1. Introduction

The lives of the men and women who run our largest organisations, the Chief Executive Officers, or CEOs, are both public and mysterious. We know who they are, even though few observers could name their immediate subordinates, the chief financial officer (CFO) or chief operating officer (COO), etc. In the case of publicly listed and state owned companies, we also know how much CEOs are paid, and are periodically reminded how large is their remuneration, and how much it has gone up, as it always seems to do, compared with ordinary wage and salary earners.<sup>1</sup>

What is still mysterious, however, is *why* CEOs are paid what they are; why pay differs so much across firms and countries, and why, in particular, top pay across the board has, for example, almost doubled in New Zealand over the past two decades. To put it bluntly: are CEOs worth what they get paid? And, if the answer to that is yes, then were they being exploited when paid so much less twenty years ago? If the answer to that is no, then what dimensions of the difficulty of the job or the value of the output has increased so as to justify the higher pay?

This paper analyses the determinants of CEO pay in the publicly listed company sector of New Zealand. It makes two contributions: (1) expanding the fairly sparse empirical literature modelling cross sectional databases on CEO pay to another country (most studies are of the United States), and (b) making use of unique data on the numbers and remuneration of all employees earning more than \$150,000/year.

The second contribution is made possible by the 1993 revision of the NZ *Companies Act*, which now requires all substantially locally owned firms listed on the NZ stock exchange to include in their Annual Reports information on the numbers of all employees with (total) remuneration packages worth more than \$100,000/year, and these in \$10K bands all the way up to the CEO. These data, which began to appear in Annual Reports from 1995, enable us to infer the size and shape of the managerial hierarchy within each firm, the bureaucratic pyramid on which the CEO sits at the peak. They can be added to more conventionally available information on other dimensions of firms' structure and performance: sales, number of employees, profitability, to give new insights into what CEOs are paid to do, and what might justify, or, at least, explain why their pay has tended to increase over time.

In the NZ listed companies sector, in 2014, the average CEO received total compensation of \$840,000, a figure which has increased since 1995 by 85 per cent, in constant \$NZ2014, even corrected for size of company. Over the same period, real hourly wage and salary earnings in NZ have increased by just 20.4 per cent.<sup>2</sup> The ratio of CEO pay to that of the average shop-floor worker is now, on average, around 12.<sup>3</sup>

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1 See 'Rich Rewards: Top CEO earnings have risen much faster than workers' wages' by Hamish Fletcher, *The New Zealand Herald*, May 13, 2016.

2 Estimates supplied by Council of Trade Unions economist Bill Rosenberg, using Statistics NZ data

3 This ratio is a lot smaller than the figures often cited for CEO/shop-floor pay ratios in US companies. However, the latter ratios are calculated just for the largest US companies, such as the Fortune 500.

The “explosion” (as some have termed it) in top pay has been documented across the English-speaking corporate world, and indeed the process probably got underway well before 1995. In NZ, for example, the income share of the top one per cent of taxpayers near-doubled in the 1985-95 period (from around five to around nine per cent), but has not increased a lot since that time.<sup>4</sup>

So: how has this happened, and is it a problem, either for the firms themselves (ie a governance or capital market problem) and/or for the economy and nation at large (through effects on the overall income distribution and economic prosperity)?

The pay and performance of CEOs, and sometimes of their most senior executives, has received considerable attention in the economics and finance literatures, from basically two analytical perspectives: changes in what could be termed ‘horizontal’ bargaining power of CEOs (especially English-speaking CEOs) with the onset of globalisation and the advent of the practice of benchmarking, what is also called the “rent extraction model” (Bebchuk and Fried, 2004; Laschever, 2013), and changes in the “upward-vertical” relationship between CEOs and their Board, reflected in the structuring of remuneration packages, in particular with respect to performance incentives and their impact on company profitability in the short- and long-term. A powerful recent synthesising survey of the theoretical literature is Edmans and Gabaix (2016), which focuses on assignment models to explain the link between firm size and CEO pay, and incentive mechanisms to elicit more or more appropriate “effort” from chief executives. Smeets and Warzinski (2000), who were not referenced by Edmans and Gabaix, provide explanations for the bureaucratic hierarchical form typical of large private and public sector, and list some underlying theoretical models: information processing model, supervision model, knowledge-based model, and well as incentive and assignment models.

Empirical studies are relatively sparse, being largely limited to case studies using confidential data for unnamed companies.<sup>5</sup> Edmans and Gabaix do survey this literature, and conclude that:

‘[A]ssigning causality is very difficult, as there are very few instruments for CEO incentives. Even the very basic question of whether CEO incentives positively affect firm value has not yet been satisfactorily [empirically] answered.’ (2016, p1273)

Edmans and Gabaix also note that longitudinal studies following individual CEOs from firm to firm find substantial unexplained managerial fixed effects in both pay and incentives, for which multiple possible explanations might be offered: ‘talent, ability to extract rent, preferences, or other characteristics’ (2016, p1275).

The present short paper will not resolve these empirical questions, and in a sense will add to them. With our data on the full tranche of managerial employees, we will be able to explore another possibility: what if CEO pay actually hasn’t risen at all (or not much), in the following sense. If there has been a trend to larger managerial bureaucracies (for a given revenue size of firm), then this could naturally be reflected in increases in the pay of the person at the peak of the pyramid.

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4 Max Rashbrooke, “Inequality in New Zealand, Chapter 2 in Rashbrooke (2013), p26.

5 Ortin-Angel (2002). An impressive study which does use a database on 300 large U.S. firms is Rajan and Wulf (2006).

The database used to explore the determinants of CEO pay in NZ is built from information in the earliest (most often 1997) and recent (2014) Annual Reports in which the managerial pay information is provided. Section 2 describes the data and its sources. Section 3 presents descriptive statistics and reports some simple trend regressions of the variables. Section 4 reports our econometric modelling of CEO pay. Section 5 concludes.

## 2. Data and Sources

Most data were sourced from listed company Annual Report Financial Statements, downloaded from the New Zealand stock exchange (NZX) database (companyresearch.nzx.com) available from the University of Auckland Library database website. For each company, the most recent (usually FY 2014) year's data were gathered, along with corresponding data from the earliest year in which the company was (a) listed, and (b) reported top pay salaries, the earliest of these being 1995, and the most common, as noted above, 1997.

The NZX is a long established institution, dating from the gold rush of the 1870s, but it has always struggled to achieve scale. Whereas the Australian stock exchange (ASX) has around 2,400 listings, the companies on the NZX can always be comfortably listed on one tabloid-sized newspaper page. Although our database is complete; including all companies listed over the 1995-2014 period, excepting only shell companies and "penny stocks", plus the big Australian banks and other foreign-owned corporates which are not required to report the salary data we need, it has only 262 rows of data, of which 228 are pairs of earliest/latest observations on 114 companies, when these observations were at least three years apart. The other 34 rows are for listed companies appearing only once, because the company either delisted soon after 1995 (eg Feltex), or listed for the first time very recently (Airworks), such that no more than three consecutive years of Reports are available (of which we usually choose the latest).

Data on total revenue ('turnover' or 'receipts from customers') and for total variable costs ('payments to suppliers and employees') are generally easy to locate, although, to a naïve economist there seems to be a surprising variety of accounting/auditing conventions, and there are often decisions to be made about what is or should be included.<sup>6</sup>

In nearly all instances, the most recent Annual Report broke down variable costs into wages & salaries, and materials and service supplies, though not usually in the early year. Employee numbers are almost never reported in the Financial Statements, but in just under 118 instances were gleaned from the texts of the Report (or, occasionally, from company websites or news stories). For two thirds of the companies employment data was available for at least one year, including all but six of the 114 companies for which we measure financial and other data over two end years. Gaps in wage & salary and employment numbers data were filled in assuming constancy over time of the share of wages in total costs, and/or constancy across firms in the same industry.

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<sup>6</sup> For example, for companies not in the business of lending money (ie not in the Finance sector), I excluded from total revenue any small incoming interest payments as being likely incidental to the company's main market activity.

Profitability, measured in principle by ‘EBIT’ (earnings before interest and tax), is of course available from Financial Statements, but not always reliably so, in the sense of following a standard definition. Figures on book value of assets often appear (to an economist) implausible. As a result rate of return calculated as the ratio of EBIT to Assets does not seem reliable enough to be used as a continuous variable, and will be expressed as a series of dummy variables (i.e., RORHIGH, RORMED, RORLOW and RORNEGATIVE, which are equal to one if the EBIT/Assets ratio is greater than 15 per cent; between 15 per cent and 8 per cent; greater than zero but less than 8 per cent, and less than zero, respectively). We also will include another dummy variable, FIRE, set equal to one if the firm’s main line of business is in the Finance, Insurance or Property (real estate) sector.<sup>7</sup>

Information in the texts of Annual Reports, along with, in some cases, data on the names and remuneration of the company’s board members (who are not included in this study unless they are executive directors) is adequate to reassure us that, in almost every case, the person receiving the salary listed as the highest salary in the Table included in the Annual Report under the Companies Act (1993). Occasionally, it is clear that the highest pay was received by a departing CEO, including a severance package, such have generally been included in the database, which will be a source of “noise” in the econometric analysis.

Note that these data are required by law to include: salary, bonuses, company pension and health insurance contributions, and any fringe benefits, such as a company car. They do not include stock or option awards, which Boyle and Roberts (2013) report are infrequent and minor in New Zealand. Because the database is essentially cross sectional rather than year-on-year, we have no use for data on changes in share prices or other stock market information, as used in the difference-of-differences analysis of Boyle and Roberts<sup>8</sup>.

All those earning more than the equivalent of \$150,000 in 2014 dollars are here designated to be “managers”, even though there will inevitably be some non-managerial professionals amongst them.<sup>9</sup> <sup>10</sup> We can’t do anything about this, except in the undoubted extreme case of Air New Zealand and its highly paid pilots. I have used website information on the numbers of pilots employed by Air New Zealand to estimate top pay numbers excluding aircrew.

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7 Mean values for the four EBIT dummies are 0.25, 0.31, 0.25, 0.19, respectively. The FIRE dummy has a mean value of 0.054, meaning that just over five per cent of companies in the database are in this sector.

8 These authors use the NZ pay data over the 1997-2005 period to investigate, in particular, whether the presence or not of the CEO on the company’s Board compensation committee is linked to changes in CEO compensation, and find, interestingly, a significant *negative* correlation.

9 An income of \$150K in 2014 would put the recipient at about the 98<sup>th</sup> percentile of the overall income distribution, in New Zealand. Although many self-employed professionals, and those in partnerships, earn well over \$150K, it is probably reasonable to assume that such people in large private sector bureaucracies will generally be required to take on substantive management duties.

10 Why cut off at \$150K when the data go down to \$100K? This is because \$100K in 1996 is worth \$150K in 2014, the CPI increased by 50 per cent over that period.

### 3. What the data look like

Table 1 gives us an overview of the NZ listed company sector, with summary statistics for the 262 observations of data from all the observed years; all monetary values being converted into \$NZ2014. The highest paid CEO (at Spark, part of the former Telecom) received a remuneration package in 2014 worth \$3.8 million. The lowest paid, at the start-up Windflow Technology in 2005, was actually below our \$150,000 cut-off, at just \$110,000. The average, for all the years, was just over \$670,000.

Table 1 - Variable Definitions & Descriptive Statistics: full sample (262 observations)

		<i>Maximum</i>	<i>Average</i>	<i>Minimum</i>
Size	Larger of firm's total revenue or total costs, in \$NZ2014, \$millions	8426	520	1.7
Ceopay	Remuneration, in \$NZ2014, of the highest paid person, \$000s	3815	673	110
Toppay	Total remuneration of all employees earning more than \$150,000 (in \$2014), \$millions, excluding CEO	257	10	0
Managers	Number of employees earning more than \$150,000 (in \$2014), excluding CEO	1078	43	0
Empx	Total number of employees, excluding the CEO and Managers	17671	1226	3

Any idea that there is a rigid relation between company size and CEO pay is at least qualified by the fact that the total revenues of Spark in 2014, at just under \$3.7 billion, were less than half that of the largest listed company by revenues, Fletcher Building (\$8.4 billion)<sup>11</sup>, even though, at \$1.9 million, Fletcher's CEO was paid only one half of the Spark boss. Fletcher also had the most staff over the \$150K threshold, and the largest salary bill for those staff, 1078 people pulling in \$257 million in total.

The average NZ listed company had a non-managerial workforce (EMPX) of 1226, with Fletcher Building (in 2014) and Augusta Capital Ltd (also in 2014) at the extremes of 17,671 and 3 employees. The average wage paid to these employees (EMPXWAGE) was \$64,000, with the highest-paying firm, at \$136,000 being Zintel (a quite small IT company), and the lowest, at a meagre \$15,000/year, SKYCITY Entertainment Group, a casino operator. Perhaps the latter employees relied largely on tips.

Table 2 reports time trends, using the sample of 228 observations on 114 firms with two years of data. The log of a variable of interest is simply regressed on the year, so that the coefficient on year is the annual rate of growth of the variable. Given the large cross sectional variation in size of firm and related variables, we would not of course

<sup>11</sup> Fletcher Building is however itself just about half the size of New Zealand's largest (non-listed) company, the dairy cooperative Fonterra, of which the CEO was the highest paid person in New Zealand (as far as we know), at \$4.18 million in 2014.

expect the points to lie close to a trend line, but this exercise can at least reveal whether or not there is a noticeable tendency for all or most firms to change in the same direction over time. All monetary variables are deflated by the Consumer Price Index.

Table 2 - Annual trend rates of growth, constant \$NZ2014: sample of 228 observations on 114 companies with two years of data

	<i>Size, \$Millions</i>	<i>Ceopay, \$000S</i>	<i>Toppay, \$Millions</i>	<i>Managers, Number</i>	<i>Empx, Number</i>	<i>Empx Wage, \$</i>
Coefficient on YEAR	0.008	0.033	0.046	0.046	-0.007	0.006
t-statistic of coefficient	0.5	5.2	3.2	3.4	-0.5	1.4

Size itself turns out to have no noticeable trend. CEO pay tends to grow at 3.3per cent, and quite statistically significantly so, implying a doubling in twenty one years. The total pay bill for employees earning more than \$150,000/year, TOPPAY, grows even faster, but its trend coefficient is exactly matched by the trend in the number of employees in this pay group (MANAGERS), implying, interestingly, no increase in the real salary of a typical manager, on average.

In contrast to the quite brisk growth in management ranks, there is no discernible trend in the size of the remaining workforce (EMPX), though there is a faint indication that their average pay has slightly increased. Thus, we do find evidence of expansion in the ranks of the highest paid employees (though not in their average pay), relative to firm size and to numbers of lower-paid workers.

#### 4. Modelling Top Pay

Can the expansion in managerial numbers account for some of the increase in CEO pay? We turn to econometric modelling of the determinants of CEOPAY in NZ listed companies. We will make use of what could be called the usual variables, firm size<sup>12</sup>, employee numbers, profitability, and bring in the new factor enabled by our unique data on numbers and remuneration of ‘managers’, employees earning more than \$NZ150,000/year, with which we will be able to test whether the number of direct or indirect ‘reports’ to the CEO are a factor in the determination of his or her remuneration package. We use the Eviews 8 statistical package.

The first OLS regression model shown on Table 3, with regressors in log or linear form and the log of CEO pay the dependent variable, reveals estimates of a firm size effect on CEO pay, with a moderately significant elasticity of 0.155. The number of managers is more significant and has a larger elasticity. There is evidence of a time trend. However, there are obvious multicollinearity issues with this model: in a cross section setting we would surely expect the number of managers to itself be at least in part determined by firm size (which we are here assuming to be an exogenous variable,

12 Our firm size variable performs better than two other possible size measures: value added and value of assets.

noting in particular from Table 2 the absence of a significant time trend), and we have already seen on Table 2 evidence of a time trend in manager numbers, suggesting that there have been systematic changes in organisational technology.

So, in the third column we show a simple regression of managers on firm size and the year, and do the same, for good measure, with the number of non-managerial employees, as shown in the fourth column. These regressions reveal unsurprisingly large and highly significant effects of firm size on manager and other-employee numbers, and also trend effects: positive for managers; negative for other employees. The annual trend growth in manager numbers comes out exactly the same as in the univariate trend model of Table 2, but the t-statistic is nearly doubled, because controlling for firm size allows the OLS regression package to express much more confidence in the precision of the trend coefficient estimate. The trend coefficient of 0.046 implies that, overall, and controlling for firm size, the managerial cohort grew by 140 per cent ( $\exp [19 \times 0.046] = 2.40$ ) from 1995 to 2014.

Table 3 - OLS Regression models, 262 observations

<i>Dependent variable</i>	<i>Log(Ceopay)</i>		<i>Log(Managers)</i>		<i>Log(Empx)</i>			
	<i>coeff.</i>	<i>t-stat.</i>	<i>coeff.</i>	<i>t-stat.</i>	<i>coeff.</i>	<i>t-stat.</i>		
<i>Constant</i>	-34.81	-5.1	-60.51	-9.6	-97.35	-6.9	38.91	2.4
<i>Log(Size)</i>	0.155	4.8	0.304	23.3	0.714	26.6	0.875	28.4
<i>Log(Managers)</i>	0.251	9.2						
<i>Log(Managers/ Managersf)</i>			0.251	9.2				
<i>Log(Empx)</i>	-0.034	-1.3						
<i>Log(Empx/Empxf)</i>			-0.034	-1.3				
<i>Year</i>	0.019	5.7	0.031	10.0	0.046	6.5	-0.022	-2.7
<i>Fire</i>	0.206	2.5	0.206	2.5				
<i>Rorhigh</i>	0.144	2.2	0.144	2.2				
<i>Rormed</i>	0.063	1.1	0.063	1.1				
<i>Rornegative</i>	0.052	0.8	0.052	0.8				
<i>R-Squared</i>	0.771		0.771		0.741		0.760	
<i>Adjusted R-Squared</i>	0.764		0.764		0.739		0.758	

Note that the elasticities with respect to firm size do imply that larger firms benefit from economies of scale: a firm twice as large as another firm will not need to employ twice as many managers or non-managerial workers.

We next use these two models to compute the predicted or “forecast” (as EViews terms it) values of both MANAGERS and EMPX, divide these into their actual values and use these, the multiplicative residuals of the two models, as regressors for CEOPAY, knowing that, by construction, neither will be correlated with SIZE or YEAR, and so will not interfere with getting good estimates of the full effects of these variables.<sup>13</sup>

<sup>13</sup> I am grateful to the Editor for suggesting this procedure. Note that the time trend estimate shown on Table 2 suggests that there is not a collinearity problem between SIZE and YEAR.

The results of applying this procedure to the CEOPAY model are quite striking, as shown on the second column of Table 3. The coefficient on log (SIZE) is now an estimate of all the effects of firm size on CEO pay, direct and indirect, and this net effect has an elasticity of 0.3, in line with the stylised fact emerging from investigations in other countries. The full time trend effect is revealed to be just over 3 per cent per year: that is, the whole relationship between CEO pay and firm size and the other variables is seen to secularly shift up by 3% each year

The procedure does not change the coefficients and significance of the two employee numbers variables. Our new data tell us that, for example, a firm with a managerial cadre twice the size of another firm's would, other things equal, pay its CEO 25 per cent more. But a firm with more sub-managerial employees than another would not thereby feel the need to better compensate its CEO, if anything, the effect goes slightly the other way. This seems likely to mean that the supervision and direction of "shop floor" workers is fully delegated to lower-tier managers, and is not considered a direct responsibility of the CEO.

So, the econometric results imply (a) that none of the increase in CEO pay in NZ listed companies is due to an increase in the overall size of the companies, because there is no trend in size; and (b) at least some of the increase can be attributed to the strong positive trend in manager numbers, given that manager numbers do have a stable relationship with CEO pay. How much? Our observation period spans nineteen years, from 1995 to 2014. The trend growth in CEO pay over nineteen years is 80 per cent ( $\exp[19 \times 0.031] = 1.80$ ). The growth accounted for by increases in number of managers is 25 per cent ( $\exp[19 \times 0.046]^{0.251} = 1.25$ ). Thus, we could say that about 31 per cent ( $25/80 = 0.31$ ) of the increase in average CEO pay in the NZ listed company sector can be accounted for by the swelling of the ranks of high-paid staff.

Looking now at the dummy variables in the model: we ask if the "FIRE" (Finance, Insurance, Real Estate) sector plays by different rules, as numerous overseas studies have found or suggested. The FIRE dummy comes in with a moderately significant coefficient of 0.206, which implies that, *ceteris paribus*, CEOs in this sector can expect to be about 20 per cent better rewarded than their peers in the 'real' economy, perhaps a premium less than is found in the more adventurous Finance sectors of the US and Europe.

Finally, we note the coefficients of the dummies for the rate of return on assets earned by the company. Their coefficients are quite large, but not precisely determined statistically. For what they are worth it seems that, relative to the omitted dummy category of low-but-positive rates of return, CEOs in both highly profitable and highly unprofitable (loss-making) firms do the best, in compensation terms.

## 5. Conclusion

In the New Zealand publicly listed company sector over the 1995-2014 period, remuneration of chief executive officers shows a strong upward trend: about an 80 per cent increase in total over the nineteen years. CEO pay is closely related to firm size (measured by turnover or sales), with an elasticity of 0.3, which is in line with findings from other countries. However, growth in firm size cannot account for any of the trend, because there was no systematic firm size growth over this period.

What we can do is examine how much of the overall trend in CEO pay can be accounted for statistically by growth in the numbers of high-paid employees who might be expected to report to the CEO, on which we use data on all such employees earning \$150,000/year or more, whom I assume can plausibly be called “managers”. The elasticity of CEO pay with respect to numbers of employees earning over \$150K is 0.251 and the trend growth in the numbers of these employees from 1995 to 2015 is 140 per cent; these numbers together accounting for a 25 per cent elevation in average CEO pay, which is just under one third of the total trend in this number.

We cannot know from these data what accounts for the other two thirds of CEO pay growth. And we do not know how to explain what appears on the surface to be a striking decline in the productivity of management, that is, the more than doubling over just nineteen years in the numbers of managers needed to run a company of a given size. Could part of it be due to some CEOs using their discretion to inflate the managerial bureaucracy, knowing that such will eventually justify higher pay for them? Such questions could fruitfully be the subject of further research, as could be the rather interesting empirical finding that, although managerial numbers have greatly increased, their average pay has not.

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