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Internal Labour Markets in Australia: Evidence from the Survey of Education and Training Experience

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Abstract

In recent years there has been important debate on the changing nature of the employment relationship, with some scholars claiming a significant weakening of the bond between employers and employees. An associated implication is that internal labour markets (ILMs) are becoming less prevalent in the economy. This paper uses data from the Australian Bureau of Statistics' Survey of Education and Training Experience 1993-2005 to explore whether the bonds between employers and employees are weakening, and hence whether ILMs are being dismantled. Measures of job tenure, training expenditure and earnings are examined. Results indicate little or modest change in the first two measures. In addition the paper finds no evidence of a change in the average return to job tenure in earnings functions. On balance, the paper does not find a weakening in the relationship between employers and employees in Australia. This in turn suggests that ILMs are not of declining importance in the Australian labour market.

JEL Classification: J300, J420, J630

1. Introduction

The changing nature of the employment relationship has been the subject of much discussion in popular, professional and academic circles for more than a decade. A number of scholars argue that it has been subject to fundamental change characterised by a significant weakening of the bond between employers and employees. Proponents of this view declare that there is a 'new deal at work' (Cappelli, 1999b) which is underwritten by a 'new psychological contract' (Stone 2001). Moreover, it is claimed that 'career jobs are dead' (Cappelli, 1999) and that the idea of the boundaryless career (Arthur and Rousseau, 1996) has replaced the expectation that careers will be played out within the boundaries of a single firm. Consequently, it has been argued that ILMs are being dismantled (Rubery, 1999). The work of another group of scholars questions

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this perspective. These researchers, examining data on job stability in advanced industrial economies, do not find convincing evidence that jobs are becoming less stable. Indeed they tend to find in favour of job stability. This is presented as evidence against the idea of any fundamental change in the employment relationship (Auer, 2007; Auer and Cazes, 2003; Doogan, 2005; Erlinghagen and Knuth, 2004; Fevre, 2007; Neumark, 2000; Souza-Poza, 2004; Stevens, 2005). The dilemma is succinctly captured in the following quote:

> While I have yet to meet a manager who believes that this change [in the employment relationship] has not stood his or her world on its head, I meet plenty of labor economists studying the aggregate workforce who are not sure what exactly has changed (Cappelli, 1999a, p. 113).

This paper extends the existing literature on the question of the changing nature of the employment relationship by examining it through the lens of ILMs. The concept of an ILM was introduced by Clark Kerr (1954) and John Dunlop (1957) in the 1950s and 1960s and was further developed by a number of institutionalist labour economists in the US during the 1970s and 1980s, in particular Peter Doeringer, Michael Piore and Paul Osterman (Doeringer and Piore, 1971; Osterman, 1984, 1987 and 1994; Osterman and Burton, 2005; Piore, 2002). In addition, a number of economists working in the more mainstream fields of new institutional economics (Baker *et al*., 1994a and b; Wachter and Wright, 1990; Williamson *et al*., 1975) and personnel economics (Lazear, 1992; Lazear and Oyer, 2004) have made important contributions to the study of ILMs. Doeringer and Piore (1971) provided the classic definition of an ILM:

> The basic assertion … is that there is an institutional structure to labor markets reflected in a sharp distinction between internal and external market arrangements. The internal labor market is defined by an enterprise, or a part of an enterprise, or by a craft or professional community (p. x).

Doeringer and Piore (1971) discussed two types of ILMs, enterprise and craft but focussed on the former. Enterprise ILMs were characterised by well defined job ladders, limited ports of entry towards the bottom of job ladders, promotion from within, seniority-based employment security rules, production processes that were heavily reliant on firm-specific skills, wages that were attached to jobs rather than individuals and a wage structure primarily determined by administrative rules linked to the logic of the internal job structure. Consequently, in enterprise ILMs job tenure was lengthy, training was extensive and wages were significantly insulated from external market forces. Doeringer and Piore argued that these ideal-typical features of enterprise ILMs were most relevant to US blue-collar manufacturing workplaces although they also argued that many features were present in white-collar and managerial labour markets.

Osterman (1984 and 1987) identified another ILM, called the salaried model that was a better description of the institutional rules governing the allocation of white-collar and managerial labour within firms and also describes how work is organised in innovative blue-collar work environments. The key features of the salaried model included, greater flexibility in the allocation of work, an implicit guarantee of lifetime employment based on work reassignment rather than lay-offs, less well defined job ladders and promotion sequences and wages that were more linked to individuals than to jobs with a greater role for merit considerations. As with the enterprise model, the salaried model was associated with lengthy job tenure, significant expenditure on training to facilitate worker reassignment, and wages that reflected a significant role for firm tenure.

A further consideration is that both enterprise and salaried ILMs are costly to establish because they require an administrative apparatus, such as a personnel or human resources department, to manage the operation of the ILM. Therefore ILMs are more economically feasible for large firms that are able to defray the significant set-up costs over a larger number of employees. Consequently the features of ILMs noted above will be more prevalent in large firms. This conjecture has been supported empirically (Baron *et al*., 1986; Kalleberg *et al*., 1996; Van Buren, 1992).

It is not the intention of this paper to discriminate between the enterprise and salaried versions of ILMs. Moreover it is beyond the scope of this paper to test all of the predictions that come from ILM theory.[1] However both the enterprise and salaried models have three key predictions: (i) long job tenure; (ii) substantial training expenditures; and (iii) an important role for job tenure in determining worker earnings. The purpose of this paper is twofold. First the paper uses Australian data to test these three predictions, including the prediction that these features should be more prevalent in large firms. In so doing the paper makes a contribution to the examination of ILMs in Australia. Second, the paper uses the same data to examine whether there has been any change in the importance of ILMs over time. In so doing the paper also makes a contribution to the broader debate on job stability mentioned at the outset of the paper.

To reiterate; from an empirical point of view the existence and prevalence of enterprise and salaried ILMs are indicated by data that reveal long job tenure, high levels of training and a significant role for job tenure in the determination of employees' earnings. Moreover, if the bond between employers and employees has been significantly weakened in recent times, and consequently ILMs are being dismantled, it is expected that job tenure will be declining, training provided by firms will be both falling and less oriented to equipping workers with firm-specific skills and finally the return to job tenure will also be decreasing.

The paper is structured as follows. Section 2 discusses data and methodology, in section 3 the results of the empirical investigation are presented and discussed. On balance, the evidence does not support the contention that ILMs are being dismantled in Australia. Section 4 of the paper provides some concluding comments.

[1] For example, the data used in this paper does not allow us to test for the existence of ports of entry and promotion from within.

2. Data and Methodology

Data

The Australia Bureau of Statistics (ABS) has conducted the *Survey of Education and Training Experience (SETE)* every four years since 1989. The data collected provides researchers with a rich source of information, for a large sample of workers, on a number of features of ILMs such as job tenure, training and wages. The present research draws on a sub-set of the *SETE* data pertaining to full-time and part-time wage and salary earners. Both of these groups are permanent employees, and as such are the most relevant category when considering questions relating to ILMs. Owner managers of incorporated and unincorporated enterprises are excluded from the analysis undertaken here and this is consistent with overseas studies of job tenure. In addition, casual employees are excluded from the analysis since by definition they tend not to be covered by ILMs. The analysis is conducted for persons, and separately for males and females. It is appropriate to estimate separately for males and females as females tend to have more interrupted employment spells than do males. This may in turn impact on the extent to which ILMs are relevant for them. This paper uses data from four waves of the survey – 1993, 1997, 2001 and 2005.

Methodology

The following sections describe the methodology employed to examine the data on job tenure, training and earnings.

Job Tenure

Job tenure refers to the amount of time an employee has spent working for their current employer. Two measures of job tenure are used to examine the strength of the employment relationship. The first calculates mean job tenure and the second is based on the proportions of workers who have job tenure of less than one year and those that have tenure of ten or more years (Neumark, 2000).

A complication in the comparability of these figures across the four waves must be acknowledged. From 1997 onwards the questions on job tenure are slightly different from those used in the 1993 survey. Between 1997 and 2005 the survey asked workers how long they had been with their current employer and their main period employer, while the 1993 survey only asked workers how long they had been with their main period employer. The main period employer is the employer with whom the employee had spent the most time in the past 12 months. For over 90 per cent of employees in the samples current employer and main period employer are the same. Notwithstanding this, the 1993 figures potentially overestimate mean job tenure. Norris and McLean (2000) were consulted to provide a check of the 1993 figures because they had calculated mean completed job tenure in Australia for 1984-1998 using the ABS's *Labour Mobility* survey which is based on job tenure with the current employer. They found for 1992 mean job tenure estimates are almost identical to the 1993 estimates reported here. We conclude therefore that at an aggregate level the difference between estimates based on current and main period employer is likely to be small.

The same cannot be assumed when the data are disaggregated by employee age or firm size. In this case there is likely to be much lower correlation between

current and main period employer for young, highly mobile workers, than for older workers. Likewise turnover patterns may differ between small and large firms, perhaps due to the presence of ILMs in the latter. If so the correlation between main period and current employer will differ between small and large firms. For these reasons the paper estimates and compares tenure figures across all four waves of data only for persons, males and females. When more disaggregated tenure estimates are presented by employee age and firm size, only 1997 through 2005 are compared.

Training

In the ILM literature an important component in the acquisition of firm-specific skills is on the job training (OJT). OJT involves learning by instruction from co-workers, learning by observing and learning by experimentation on the job (Doeringer and Piore, 1971). Consequently it is difficult to gather data on the extent and value of OJT provided by firms. While *SETE* does not gather specific information on OJT, it does gather information on work related training courses.[2] These courses are defined as 'structured learning activities undertaken primarily to obtain, maintain or improve employment-related skills or competencies ...and included training seminars, workshops and conferences, audio visual presentations, lectures and self-paced tutorials of a structured nature' (ABS, 2005 p. 7). Each wave of the survey examines work-related training in the 12 months prior to the survey period. This information is used in this paper as a proxy for ILM related training. Furthermore, according to Becker's (1975) theory of training, the acquisition of firm specific skills should be paid for by the employer. The *SETE* allows for some insight into who pays for work related training, and how this has been changing over time.

This paper uses data from the 1997 through 2005 waves to provide information on four relevant aspects of work-related training including information on:

- The percentage of employees who receive some versus no, training.
- Those employees who bear some, versus no, cost, in relation to that training.
- The number of training courses undertaken by those employees receiving training.
- The degree of general versus specific training.

The estimates presented in relation to these variables are also cross-referenced by employee gender and firm size. Changes in the way key variables are defined make it impossible to make meaningful comparisons between 1993 and the other years in relation to all of these questions. Consequently the paper reports only on the years 1997 through 2005.

Earnings

The empirical analysis in relation to earnings is conducted by estimating a cross-section log-wage equation for each wave of data. The equations are estimated for persons, and separately for males and females. The equation estimated has the following form:

[2] It should be noted that the *SETE* has sporadically collected data on OJT but not regularly enough to be included in this study.

$$lnW_i = \beta + EX_i\beta_1 + T_i\beta_2 + X_i\beta_3 + \varepsilon_i \quad (1)$$
$$i=1,\ldots\ldots,N$$

Where

lnW_i = the log hourly wage of employee *i*.
EX_i = potential experience of employee *i* measured in years.
T_i = job tenure of employee *i* measured in years.
X_i = a vector of variables including: gender, education, whether the employee is from a non-English speaking background, whether the employee is a union member, occupation, industry, region, firm size, public versus private sector, marital status, whether the employee has dependent children under the age of twelve, whether the employee has changed jobs in the past twelve months, whether any work-related training courses were undertaken in the previous 12 months, time spent on work related training courses undertaken in previous 12 months.

The Appendix to this paper contains a full description of each variable entering (1), plus the usual descriptive statistics.[3]

ε_i = a random disturbance term.

Equation (1) is a standard Mincer earnings equation that has been augmented with a variable capturing job specific tenure. The variables that are of interest to the research in this paper are the potential experience variable and the job tenure variable. For the sake of brevity, only these variables are discussed in detail.

Experience: This is the standard Mincer potential experience variable. It is defined as Age - (Years in school + 5). It is well known that this measure of potential experience overstates actual experience. This is so since it ignores interruptions to working life, something that will be particularly problematic in the case of females. The data used in this paper does not allow for the construction of a variable for actual experience. As such this paper follows the usual procedure in such cases and employs the Mincer proxy for actual experience. Kidd and Shannon (1997) provide a discussion of these issues.

The usual interpretation of the coefficient attached to this potential experience variable is that it captures the average return to an additional year of general training that accumulates with experience (Topel, 1991). This general training is by definition portable between firms. It is equally valuable across all firms who hire this type of labour. A quadratic of experience is also entered into the empirical model to capture the possibility of a non-linear relationship between earnings and experience.

[3] For brevity, descriptive statistics are provided for persons only. A full Appendix with descriptive statistics for males and females is available from the authors on request. The Appendix does not contain descriptive statistics for 1993. This is due to the fact that the educational attainment and occupational variables are defined somewhat differently in 1993, thereby making comparison with the other years uninformative.

Job Tenure: This variable measures tenure in each worker's current job. The coefficient attached to this variable is usually interpreted as capturing the average return to an additional year of job-specific training. This would be lost if the job were to end (Topel, 1991). A quadratic of job tenure is also entered into the empirical model to capture the possibility of a non-linear relationship between earnings and job tenure.

The estimates for these coefficients will allow us to test some key ideas. If ILMs are not an important feature of the Australian labour market we should expect to find little or no role for the job tenure variable in the formation of earnings ($\beta_2 = 0$). A significant role for job tenure on the other hand ($\beta_2 > 0$), is taken to be evidence in favour of ILMs. The estimates on the experience and job tenure variables will also allow us to examine whether there has been any change in the nature of the employer/employee relationship over time. In particular, if the employer/employee relationship has become more tenuous, as much recent literature has hypothesised, we should expect to observe a growth in the relative importance of experience, and a reduced role for job tenure, in the earnings equations.

An earlier version of the model included a variable that was the result of interacting job tenure and workplace size. If ILMs are more prevalent in larger firms then it would be expected that job tenure would be more highly rewarded in large than in small firms. This expectation was never confirmed by the data. The job tenure workplace size interaction always proved insignificant. This interaction was dropped from the final model.

3. Results

Job Tenure

Changes in both measures of job tenure are examined over the period 1993 to 2005. Mean job tenure is reported in table 1. The data shows a decline for males from 16.2 to 13.7 years, a fall of 15.4 per cent, which is partially offset by an increase for women from 11.7 to 12.2 years, a rise of 4.3 per cent, resulting in an overall decline for persons from 14.1 to 13 years, equal to a decline of 7.8 per cent.

Previous Australian research revealed that completed job tenure had been increasing for both males and females since the mid-1980s. Specifically, Norris and McLean (2000) found that between 1984 and 1998 average completed job tenure increased in Australia from 14.3 to 15.6 years for males and from 10.1 to 12.3 years for females, representing increases of 9.1 per cent and 21.8 per cent respectively. The estimates reported here indicate that since then average job tenure has fallen for males and remained the same for females resulting in little change overall. This result is particularly interesting, given that Australia was experiencing a lengthy expansion during this period and consequently job tenure would have been expected to undergo secular decline (Auer and Cazes, 2003).

Table 1 - Estimated Years of Completed Job Durations for the Stock of Jobs in Existence on Survey Date

Wage and Salary Earners	*1993*	*1997*	*2001*	*2005*
Persons	14.1	12.7	12.6	13.0
Males	16.2	14.3	14.2	13.7
Females	11.7	11.1	11.1	12.2

Note: These estimated completed job durations have been calculated using the approach outlined in Norris and McLean (2000, 99-100).

The estimates of average job tenure in table 1 are broadly consistent with the empirical literature on industrialized countries from the early 1990s that has typically revealed either stability or a small increase in job tenure (Auer, 2007; Auer and Cazes, 2003; Doogan, 2005; Erlinghagen and Knuth, 2004; Neumark, 2000; Souza-Poza, 2004; Stevens, 2005).

A similar pattern of results emerges from examining the second measure of job tenure and these estimates are reported in table 2. From 1993 to 2005 the proportion of employees with job tenure of less than one year increased for both males (20.6 to 23.9 per cent) and females (21.9 to 25.5 per cent) and this suggested less job stability. Disaggregation by age is also reported in table 2 and indicates that this rise in the proportion with less than 12 months tenure was greatest among workers less than 30 years of age. At the other end of the tenure spectrum the proportion of workers with job tenure of ten or more years has increased slightly over the period from 1993 (20 per cent) to 2005 (21.2 per cent) and this was due to a modest decline for males (24.5 to 22.1 per cent) which was more than offset by a more substantial increase for females (14.5 to 19.8 per cent). A notable finding is that among older males, those 50 years and over, the proportion with job tenure of 10 or more years has declined substantially and steadily, with falls of 6 to 13 percentage points depending on the age band. It is not clear whether this reflects males choosing to retire earlier or is due to a decline in job stability because of a change in the way that firms manage workforce reductions.

The findings presented in table 2 are broadly consistent with the existing literature for Australia and other industrialised countries. Wooden (1998) used the *Survey of Labour Mobility* to calculate the distribution of job tenure from 1975 to 1998 in Australia and found little overall change. More specifically, while the proportion of persons with job tenure of less than one year was virtually unchanged, a modest increase was found in the proportion of persons employed for 10 years or more. Auer and Cazes (2003) reported that for 14 European Union countries plus Japan and the United States over the period 1992 to 2000, job tenure of less than one year increased from 14.9 to 16.8 per cent and job tenure of ten years or more increased from 40.7 to 41.1 per cent.

Table 2 - Distribution of Job Tenure by Age 1997-2005

	Persons		*Males*		*Females*	
Years	*< 1 year (%)*	*≥ 10 yrs (%)*	*< 1 year (%)*	*≥ 10 yrs (%)*	*< 1 year (%)*	*≥ 10 yrs (%)*
1993						
All	21.2	20.0	20.6	24.5	21.9	14.5
1997						
All	22.1	20.9	21.6	24.2	22.7	17.2
15-19	51.4	0.0	49.4	0.0	52.2	0.0
20-24	34.0	0.4	32.1	0.7	37.7	0.2
50-54	10.0	45.4	9.8	50.6	10.2	39.3
55-59	9.9	47.8	11.3	51.1	7.6	42.5
60-64	7.1	60.4	5.4	61.3	11.2	58.8
2001						
All	24.2	21.1	22.6	24.0	25.8	18.0
15-19	50.8	0.0	49.4	0	52.1	0.0
20-24	37.5	0.2	33.9	0.2	41.4	0.16
50-54	13.0	42.1	10.1	48.2	15.9	35.6
55-59	10.3	47.9	11.9	46.6	8.6	49.2
60-64	8.2	53.4	9.0	54.6	6.8	51.6
2005						
All	24.6	21.2	23.9	22.1	25.5	19.8
15-19	56.2	0.0	55.2	0.0	57.1	0.0
20-24	41.9	0.4	38.0	0.5	45.8	0.4
50-54	13.6	40.0	13.2	40.0	12.3	40.0
55-59	11.4	44.9	14.0	44.9	7.7	44.9
60-64	8.5	51.0	10.6	48.1	5.3	52.0

Notes: SETE 1993 does not provide age breakdown by current period employer. Data on age groups 25-49 years are not the focus of analysis and are therefore not reported.

Job tenure was also examined by workplace size and these are reported in table 3. The proportion of workers with job tenure of less than one year declined with firm size for each of the survey waves examined. In addition, the proportion of workers with job tenure of 10 years or more increased consistently with the size of the workplace for each of the three survey waves. The same pattern was found for males and females but figures are not reported. These findings are consistent with the expectation that ILMs are more prevalent in large firms. Moreover table 3 indicates no systematic change over time in the relationship between firm size and these particular measures of tenure. Overall, the data on job tenure can be interpreted as evidence that ILMs continue to have an important place in the Australian labour market. This in turn suggests the continued resilience of the long-term employment relationship.

Table 3 - Distribution of Job Tenure by Workplace Size 1997-2005

	Workplace Size %					
Persons	*< 10*	*10-19*	*20-99*	*100-499*	*500-999*	*≥ 1000*
1997						
< 1yr	30.3	26.8	20.1	14.9		
≥ 10 yrs	13.3	14.7	21.8	28.9		
2001						
< 1yr	28.8	29.6	22.8	19.4	18.0	12.5
≥ 10 yrs	13.5	16.4	22.4	26.3	30.7	35.5
2005						
< 1yr	30.7	30.9	22.2	18.4	20.2	16.7
≥ 10 yrs	13.9	14.9	22.4	27.1	28.4	33.4

Notes: For *SETE* 1997 the largest size band provided by *SETE* was >100.

Training

The evidence from *SETE* in relation to training also fails to support the hypothesis that the relationship between employers and employees is becoming more tenuous. Indeed from 1997 to 2005 the percentage of all workers who received training from their employer increased from 48.3 per cent to 54.5 per cent (see table 4). In addition, the percentage of workers being provided with one or two training courses increased from 29.6 per cent to 35.3 per cent over the period.[4] Furthermore, of those that received training in general and specific skills from 1997 to 2005 the overwhelming majority received training in general skills; however, the percentage has fallen from 91 per cent to 81 per cent (see table 5). The converse of this is that the percentage receiving training in specific skills has increased from 9 per cent to 19 per cent (see table 5). From the point of view of Becker's (1975) theory of training, this rise in the percentage receiving training in specific skills should be associated with a decrease in the percentage of employees incurring training costs. The evidence from *SETE* is that this is not the case. This percentage has remained more or less unchanged at 10 per cent (see table 4).

Table 4 - Percentage of Employees receiving Training and Incurring some of the Cost of Training by Workplace Size 1997-2005

	Workplace Size %						
Persons	*All*	*< 10*	*10-19*	*20-99*	*100-499*	*500-999*	*≥ 1000*
1997							
Received Training	48.3	36.6	40.8	51.2	59.0		
Incurred Some Cost	10.4	19.1	10.3	10.0	6.2		
2001							
Received Training	51.6	35.4	45.5	54.7	63.9	66.3	69.2
Incurred Some Cost	11.2	17.8	11.2	10.4	8.5	8.5	10.0
2005							
Received Training	54.5	41.0	46.0	57.8	65.3	68.8	71.4
Incurred Some Cost	10.5	15.1	14.6	9.5	7.0	8.1	8.3

Notes: For SETE 1997 the largest size band provided by *SETE* was >100. The figures for 'Incurred Some Cost' represent those employees who incurred some direct cost associated with training, expressed as a percentage of those who received training.

[4] The data are not reported here but are available upon request.

Table 5 - Percentage of Employees receiving General and Specific Skills Training by Workplace Size 1997-2005

	Workplace Size %						
Persons	*All*	*< 10*	*10-19*	*20-99*	*100-499*	*500-999*	*≥ 1000*
1997							
General	45.4	29.5	34.9	43.8	50.5		
Specific	4.7	3.4	3.7	4.7	5.8		
2001							
General	41.9	28.7	36.9	44.6	52.6	52.6	54.8
Specific	8.7	5.1	7.5	8.8	10.5	12.5	14.1
2005							
General	44.2	33.6	38.6	46.5	52.9	56.1	55.4
Specific	10.3	5.3	5.8	9.6	11.6	11.4	15.4

Notes: For *SETE* 1997 the largest size band provided by *SETE* was >100.

Training data for 1997 to 2005 was also disaggregated by firm size. It was found that the proportion of workers receiving employer-provided training increased with firm size and this is consistent with evidence for the US (Frazis *et al*., 1998; Knoke and Kalleberg, 1994). Indeed, research in the US has found that one of the key factors underlying the positive relationship between firm size and training is the greater incidence of ILMs within large firms (Knoke and Kalleberg, 1994). Furthermore, the research reported in this paper also found that over time, larger firm size was associated with a greater percentage of training being for specific skills. For example, for firms with more than 100 employees, 5.8 per cent received training in firm specific skills in 1997; by 2005 this figure was 11.6 per cent (see table 5). Again, this is consistent with the expectation that ILMs are more likely to be present in large firms. Moreover, it suggests that the importance of ILMs in the Australian labour market is not significantly declining.

Overall, these findings in relation to training do not support the view that ILMs are being dismantled. Furthermore, the same pattern of results for all employees was also found for male and female employees.[5] Indeed the findings in relation to training, taken as a whole, are consistent with the idea that ILMs are becoming more important in the Australian labour market.

Earnings Equations

Table 6 reports the key results from earnings equations estimated for each wave of data from 1993 to 2005. A full set of results is available from the authors on request. In order to facilitate the discussion, table 6 does not report all the regression output associated with each earnings equation. Rather, it shows the coefficient estimates that are of direct relevance to the focus of this paper. As noted above these are the experience and job tenure variables.

[5] The data are not reported here but are available upon request.

Table 6 - Earnings Equations 1993-2005: Dependent Variable is Log-hourly Wages

Persons	*1993*	*1997*	*2001*	*2005*
Experience	.023** (20.59)	.028** (21.42)	.030** (21.44)	.024** (19.9)
Experience squared	-.0003** (-16.99)	-.0004** (-18.32)	-.0005** (-17.9)	-.0003** (-16.7)
Job tenure	.013** (9.79)	.012** (8.99)	.011** (7.77)	.013** (9.83)
Job tenure squared	-.0002** (-6.78)	-.0002** (-6.2)	-.0002** (-5.43)	-.0002** (-6.6)
Adj. R squared	0.4550	0.4731	0.4909	0.4326
F stat	166.8**	145.2**	149.6**	135.1**
Observations	8744	8513	8172	9330
Males	*1993*	*1997*	*2001*	*2005*
Experience	.023** (15.12)	.03** (17.07)	.033** (17.13)	.026** (15.26)
Experience squared	-.0003** (-12.67)	-.0005** (-14.56)	-.0005** (-14.3)	-.0004** (-12.8)
Job tenure	.013** (7.53)	.011** (6.35)	.01** (5.58)	.012** (6.25)
Job tenure squared	-.0002** (-5.11)	-.0002** (-4.46)	-.0002** (-4.04)	-.0002** (-4.11)
Adj. R squared	0.4457	0.4794	0.4869	0.4517
F stat	105.1**	95.8**	93.9**	76.5**
Observations	5569	5358	5094	4766
Females	*1993*	*1997*	*2001*	*2005*
Experience	.025** (14.67)	.027** (14.24)	.028** (13.8)	.021** (12.3)
Experience squared	-.0004** (-12.12)	-.0005** (-12.69)	-.0005** (-12.10)	-.0003** (-10.55)
Job tenure	.015** (7.19)	.015** (7.64)	.014** (6.49)	.015** (8.06)
Job tenure squared	-.0004** (-5.74)	-.0004** (-5.87)	-.0003** (-4.59)	-.0003** (-5.93)
Adj. R squared	0.4517	0.4559	0.4946	0.4228
F stat	61.81**	51.8**	58.9**	65.2**
Observations	3175	3155	3078	4564

Notes: ** and * imply significance at 1% and 5% respectively. The figures in brackets are t ratios.

The picture that emerges from the estimates in table 6 is as follows. General labour market experience dominates job tenure in both a numerical and statistical sense. Moreover it is evident that the coefficient estimates on the experience variable are stable across time. There is no evidence that the average return to general training has been changing in any systematic manner. This is true for males and females. The estimates indicate that firm specific job tenure, while not as important as general experience, nevertheless has a highly significant effect on earnings. This is true for males and females. There is also no evidence that the average return to job tenure has been changing over the period covered by the data. These results support the existence and continuing importance of ILMs in the Australian labour market.

These findings are consistent with a number of overseas single-firm studies (Baker *et al*., 1994b; Lin, 2005). However, they are not consistent with some recent overseas studies using more aggregated survey data by DiPrete, *et al*., (2002), Lazear and Oyer (2004) and Kwon and Meyersson Milgrom (2004), which have found job tenure playing a modest, and/or declining role in the determination of workers' earnings.

The findings of this study suggest that ILMs continue to be an important institutional feature of the Australian labour market. To some extent these findings are surprising given that Australia has been undergoing an economic expansion during which time it would be expected that many workers would take the opportunity to leave their current employer to secure a better job match with another employer and consequently job tenure statistics would reveal a secular decline (Auer and Cazes, 2003). However, an argument can be made that what accounts for these findings is, in fact, the particularly prolonged expansion in Australia and the associated dramatic tightening of the labour market that saw the unemployment rate fall from around 8 per cent to 5.5 per cent during the period covered by this study.

To elaborate, in the ILM literature, a number of key scholars propose that ILMs are either an optimally efficient solution to bargaining in the presence of imperfect information and asset-specific knowledge (Williamson, Wachter and Harris, 1975) or represent a good enough solution chosen by a firm trying to balance the competing goals of cost effectiveness, predictability, and flexibility in the face of technological, social and political constraints (Osterman, 1987 and 1994). According to both these views ILMs are good for firms. In the light of this, it would not be surprising if firms in Australia, facing a progressively tightening labour market and an emerging skills shortage, sought to maintain ILMs as a way of keeping their workforces intact. This would explain both the findings on the length of job tenure and the return to job tenure in the current study. In addition, the findings with respect to training would reflect the difficulty and expense firms face in using the market to 'buy-in' skills in a tightening labour market. Consequently, firms would seek to develop the skills of their existing workforce through training. This type of response by firms has already been documented in the ILM literature. For example, Osterman (1987) reported that in the late 1970s and early 1980s in the United States many firms faced a tightening market for computer programmers. Rather than 'buying-in' these skills, many firms responded by bringing computer programmers within their enterprise ILM. In particular, these firms tested secretarial and clerical staff to identify those with the aptitude to be trained in-house as computer programmers. The training was truncated with a significant firm-

specific component to reduce the ability of the workers to move to another employer. The new programmers were also cheaper to employ and if firms had need of a more skilled programmer they would recruit from the occupational market.

A limitation of the current study is that it has used only three empirical markers – job tenure, training and the return to job tenure – to test for the continuing relevance of ILMs in Australia. Consequently, the results reported here should be regarded with a measure of caution. Due to limitations associated with the data set used in the study it was not possible to examine other key features of enterprise and salaried ILMs, such as the existence of ports of entry, promotion from within and employment security provisions. However, knowing what is happening to these key features is crucial to forming a definitive view of whether ILMs are changing and in what ways? In order to conduct a more comprehensive investigation of ILMs in Australia data sets are required which enable such questions to be asked and this is an important task for future research. Another aim of future research is to come up with finer grained ways of testing for the presence of ILMs using existing data and this task is currently being undertaken by the present authors with respect to how to better model the return to job tenure.

4. Conclusion – Significance of Results

Taken as a whole, the findings presented here support the hypothesis that ILMs continue to play an important role in the Australian labour market and that the bond between employees and employers has not been significantly weakened. More specifically, consistent with both enterprise and salaried ILMs the analysis of job tenure revealed that long-term employment remains a significant feature of the Australian labour market generally and particularly of large firms. The training data showed that the proportion of workers receiving training has increased in Australia over the period 1993-2005 and that the importance of specific skills has also been increasing despite the fact that the proportion of workers contributing to the costs of training has remained unchanged. In other words, the evidence on training also indicated that ILMs are not declining. The analysis of earnings equations found that firm tenure has played a significant role in the determination of earnings and this role has not weakened overtime.

Appendix

Variable Definitions, Means and Standard Deviations. Persons 1997-2005

Variable	*1997*	*2001*	*2005*
Dependant variable is log-hourly earnings	2.8 (.40)	2.91 (.42)	2.91 (.39)
EXPER=Age – (years of schooling + 5)	22.54 (11.63)	23.3 (11.7)	24.5 (12.1)
TENUREC=years of tenure in current job	8.05 (8.41)	7.99 (8.6)	7.92 (8.55)
TRAIN=a dummy variable equal to 1 if some training undertaken in previous 12 months, zero otherwise	.57 (.49)	.59 (.49)	.61 (.48)

Variable Definitions, Means and Standard Deviations. Persons 1997-2005 (continued)

Variable	*1997*	*2001*	*2005*
TRAINTIME=time spent on all training course undertaken in previous 12 months, in hours	27.1 (68.7)	25.43 (64.1)	20.88 (55.1)
CHILD=dummy equal to 1 if has dependent child under 12 years of age, zero otherwise	.33 (.47)	.31 (.46)	.32 (.46)
MARSTAT=a dummy variable equal to 1 if married and zero otherwise	.65 (.47)	.65 (.47)	.68 (.46)
BNSEC= a dummy variable equal to 1 if born in a non-English speaking country, zero otherwise	.13 (.33)	.12 (.33)	.12 (.33)
MALE= a dummy equal to 1 if male, zero if female	.63 (.48)	.62 (.48)	.52 (.49)
UNION= a dummy equal to 1 if a union member, zero otherwise	.40 (.49)	.32 (.46)	.31 (.46)
PUBLIC= a dummy equal to 1 if employed in the public sector, zero otherwise	.30 (.46)	.27 (.44)	.27 (.44)
Occupational variables (Labourers omitted reference category)			
MANAGER=dummy variable equal to 1 if ASCO occupation is 'Managers and administrators', zero otherwise	.07 (.26)	.07 (.26)	.08 (.27)
PROF= dummy variable equal to 1 if ASCO occupation is 'Professionals', zero otherwise	.21 (.41)	.23 (.42)	.24 (.42)
APROF=dummy variable equal to 1 if ASCO occupation is 'Associate professionals', zero otherwise	.11 (.32)	.14 (.35)	.13 (.33)
TRAD= dummy variable equal to 1 if ASCO occupation is 'Tradespersons and related workers', zero otherwise	.14 (.35)	.13 (.34)	.11 (.31)
ADVCLER= dummy variable equal to 1 if ASCO occupation is 'Advanced clerical and service workers', zero otherwise	.03 (.19)	.03 (.18)	.03 (.18)
INTCLER= dummy variable equal to 1 if ASCO occupation is 'Intermediate clerical, sales and service workers', zero otherwise	.17 (.38)	.16 (.36)	.18 (.39)
INTPRODT= dummy variable equal to 1 if ASCO occupation is 'Intermediate production and transport and workers', zero otherwise	.10 (.30)	.09 (.29)	.08 (.27)
ELCLER= dummy variable equal to 1 if ASCO occupation is 'Elementary clerical, sales and service workers', zero otherwise	.05 (.23)	.05 (.21)	.06 (.25)
LAB=dummy variable equal to 1 if ASCO occupation is 'Labourers and related workers', zero otherwise	.06 (.24)	.05 (.23)	.06 (.24)
Education variables (left school before year 12 is omitted reference category)			
TERT=dummy variable equal to 1 if highest educational level is a bachelors degree, postgraduate degree, graduate diploma or graduate certificate, zero otherwise	.21 (.40)	.26 (.43)	.28 (.44)
ADVDIP=dummy variable equal to 1 if highest educational level is a diploma or advanced diploma, zero otherwise	.10 (.30)	.10 (.29)	.10 (.30)
ADVCERT= dummy variable equal to 1 if highest educational level is certificate III or IV, zero otherwise	.14 (.34)	.18 (.38)	.18 (.39)

Variable Definitions, Means and Standard Deviations. Persons 1997-2005 (continued)

Variable	*1997*	*2001*	*2005*
BASCERT=dummy equal to 1 if highest educational level is certificate I or II, zero otherwise	.13 (.33)	.01 (.10)	.01 (.10)
YEAR12=dummy variable equal to 1 if year 12 is highest educational level, zero otherwise	.13 (.34)	.16 (.37)	.16 (.37)
EARL=dummy variable equal to 1 if left school prior to year 12, zero otherwise	.27 (.44)	.27 (.44)	.26 (.43)
Firm size (Small firm is omitted reference category. Small firms have less than 20 employees.)			
SMALL=dummy variable equal to 1 if 19 or fewer employees at workplace, zero otherwise	.32 (.46)	.32 (.46)	.32 (.47)
LARGE=dummy variable equal to 1 if 100 or more employees at workplace, zero otherwise	.37 (.48)	.35 (.47)	.36 (.48)
MEDIUM= dummy equal to 1 if 20 to 99 employees at workplace, zero otherwise	.30 (.45)	.31 (.46)	.31 (.46)
JOBCHANGE=a dummy variable equal to 1 if the employee changed jobs in the last 12 months, zero otherwise	.04 (.19)	.06 (.24)	.06 (.23)
EXPERJC=EXPER x JOBCHANGE	.73 (4.13)	1.1 (5.01)	1.1 (5.1)
TENJC=TENUREC x JOBCHANGE	.03 (.49)	.05 (.82)	.02 (.44)
Industry Dummies	YES	YES	YES
Regional Dummies	YES	YES	YES

Note: Standard deviations are in brackets.

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