Comparison between Australian and Japanese Part-time Labour markets*

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1．Introduction

The economic environment of Japan changed substantially during the long-term economic stagnation that began in the 1990s, accompanied by the development of tertiary industries, intensification of international competition and advances in information technology. With these fundamental shifts in the socioeconomic background, the employment scenario in Japan has undergone significant changes, particularly, in terms of the growth of non-standard forms of employment and the rise in income inequality.

There are several reasons for the increase in the number of non-regular staff and workers, including part-time employees(PTs). One of the demand-side factors is that the economic recession exerted pressure on Japanese firms to reduce the wages. According to the General Survey on Diversified Types of Employment 2003, conducted by the Ministry of Health, Labour and Welfare (MHLW), approximately 50％ of the respondent firms answered that they had hired non-regular staff members and workers to reduce costs. Another factor is that firms began to seek greater flexibility in their employment policies as they became aware of the fluctuations in both the domestic and international markets. MHLW (2003) reports that 26.5％ of the respondent firms maintained non-regular staffs to adjust employment in accordance with the prevailing business cycle. Another explanation is that the advances in information technology has forced firms to reorganize their entire range of jobs into a few jobs that require experienced and skilled technological staff and many jobs that can be performed by unskilled labour.

The supply-side explanations for the casualization of the Japanese labour market emphasize that the increased rate of female labour market participation has led to an increase in the number of women engaged in non-regular employment. Moreover, it has been pointed out that in Japan, married women with young children tend to seek non-regular jobs, because of the limited availability of nurseries or other facilities that help with childcare and because of the long hours of work associated with full-time employment.

It is possible that the composite effects of both the demand- and supply-side factors have resulted in the growth of non-standard forms of employment in (or the casualization of) the Japanese labour market. While the reasons for casualization are diverse, the results of this phenomenon appear to be simple—increase in the number of low-wage jobs, decrease in household incomes and increase in income inequalities among the workforce.

An increase in part-time employment is observed not only in Japan but also in various countries. However, the rate of increase in the proportion of part-time employment to the total labour force and the seriousness of the problems associated with part-time employment vary with countries. In Japan, owing to the rapid development of the part-time labour market, policies are unable to cope with its negative effects on income distribution. Further, there are no long-term prospects for the part-time labour market. In this situation, it is essential to learn from the experiences of other countries in which changes in the labour market began earlier than in Japan. The experiences of other countries will provide us with useful information and prospects for the future labour market. This paper attempts to compare the wage structures of PTs in Japan with those of Australia to clarify the peculiar aspects and problems of Japanese part-time employment.

２．Data

The data used for the analysis are (1) the Japanese panel survey of consumers (hereinafter referred to as JPSC) and (2) the Household, Income and Labour Dynamics in Australia (HILDA) Survey. Both are the panel data in which the respondents are monitored over a period of time.

2-1. JPSC data

JPSC is a household-based panel survey, which was initiated in 1993. It has been conducted by the Institute for Research on Household Economics, a research institute governed by the Cabinet Office of Japan. It collects information about economic and subjective well-being, labour market dynamics and family dynamics over a period of time. Unlike in the case of the HILDA Survey, in this survey, all the respondents in a specific year are women.

There are three cohorts in the respondents: (1) Cohort A, which consists of a

group of young women aged between 24 and 34 who were selected from across Japan in 1993; (2) Cohort B, which comprises women aged between 24 and 27 in the year 1997; and (3) Cohort C, which comprises women aged between 24 and 29 in the year 2003. Although Waves 13 and 14 have now been released, I used the data from Wave 1 to Wave 11 for this research. The number of respondents in the three cohorts is as shown in Table 1.

Table 1　*JPSC respondents*

Wave	Year	Cohort A	Cohort B	Cohort C
1	1993	1500 entrants (aged 24—34)		
2	1994	1422 respondents		
3	1995	1342 respondents		
4	1996	1298 respondents		
5	1997	1255 respondents	500 new entrants (aged 24—27)	
6	1998	1196 respondents	442 respondents	
7	1999	1137 respondents	412 respondents	
8	2000	1102 respondents	386 respondents	
9	2001	1059 respondents	366 respondents	
10	2002	1032 respondents	344 respondents	
11	2003	980 respondents	323 respondents	836 new entrants (aged 24—29)

Note: Waves 12, 13 and 14 are not used in this paper, although they have now been released.

2-2. HILDA Survey

The HILDA Survey is a household-based panel study, which began in 2001. It collects information about economic and subjective well-being, labour market dynamics and family dynamics. This survey was initiated and funded by the Australian Government through the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA). The responsibility for the design and management of the survey rests with the Melbourne Institute of Applied Economic and Social Research, University of Melbourne[i]. Although Wave 7 has been released, Wave 1 to Wave 6 are used in this research. The number of respondents for the five waves is as listed in Table 2.

Table 2　*HILDA respondents*

	Respondents from Wave 1	Respondents from Wave 2	Respondents from Wave 3	Respondents from Wave 4	Respondents from Wave 5	Respondents from Wave 6
2001	13969					
2002	11993	1048				
2003	11190	705	833			
2004	10565	594	543	706		
2005	10392	572	482	494	819	
2006	10085	542	429	426	578	845

Source: *HILDA Survey Annual Report, 2007*

In this paper, only the female respondents aged between 24 and 45 are used for the analysis to be comparable with the JPSC survey.

3. PTs in Japan

Before proceeding to the econometric analysis, I will provide the definitions of PTs, as applied in Japan, since they are different from those applied by the OECD (2007) or the Australian Bureau of Statistics (ABS, 2007). This difference in definitions may lead to some confusion.

In Japan, there are three main definitions of PTs. They are as follows:

1) The Labour Force Survey conducted by the Ministry of Internal Affairs and Communications defines part-time workers as those who work for less than 35 hours a week[ii].

2) The Employment Status Survey conducted by the Ministry of Internal Affairs and Communications defines PTs as those employees in a particular workplace for whom the wage tables applied are rather different from those applied to regular employees. This survey identifies PTs with the same, or even longer hours of work, as full-time employees(FTs)[iii].

3) The Survey of Employment Diversification by the MHLW[iv] defines PTs as those who work for fewer hours per day or for fewer days per week than the regular employees in a particular workplace.

The definition of PTs specified in the JPSC, which is used in the analyses in the following subsections, is identical to that stated in (2). In addition to regular employees and PTs, the JPSC also identifies dispatched employees and others.

However, temporary and other types of employees as well as self-employed persons are excluded from the following analysis.

4. Part-time employment in Japan

The human resource management of Japanese enterprises apply completely different policies to PTs and FTs. First, the selection procedure for PTs is different from that for FTs, or regular employees. Typically, regular employees are carefully screened from among new graduates, and it is implicitly assumed that they will be employed by the same organization for many years. According to the Japan Institute for Labour Policy and Training (JILPT, 2006), while selecting new FTs, approximately 60% of Japanese companies conduct tests for general knowledge and academic proficiency, and approximately 50% conduct vocational aptitude tests. On the other hand, PTs are selected from among housewives and students without the use of such careful procedures.

Second, the career paths of regular employees are rather different from those of PTs. Newly-hired regular employees undergo a series of on-the-job training (OJT) activities at their workplace to gain a wide range of skills (Koike and Inoki, 2003). In contrast, PTs receive only limited formal training, as they are not expected to advance much in the internal labour markets. Thus, they eventually reach a dead end with respect to their careers.

Third, there exist substantial differences between the wage tables applied to regular employees and those applied to PTs. For regular employees, wages are mainly based on their job grades and age. According to Koike and Inoki (2003), 'the payment structure reflects the extent of work experience and the level of problem management'. On the other hand, the extent of experience is almost completely disregarded with respect to PTs, whose wage rates are determined by the external labour market.

In Japan, the wage rates for PTs are significantly lower than those for FTs. However, obtaining a precise estimate is difficult since the former are usually paid on an hourly basis, whereas the latter are paid on a monthly basis. The MHLW estimated that the average part-time hourly wage for female employees in 2002 was 930 yen[v], which was approximately 53% of the average wages that female FTs received, which is estimated by dividing their monthly wages by their monthly hours of work (MHLW (2004)).

Doeringer and Piore (1971) presented a hypothetical model in which the labour market is divided into the following two components: (1) a primary market, which is characterized by high wages, good working conditions, employment stability, and the possibility of advancement and (2) a secondary market, which is characterized by low wages, poor working conditions, high turnover rates and little possibility of advancement. This model appears to be useful for understanding the coexistence of regular and part-time employee labour markets in Japan. As discussed later in the paper, the transition from part-time to full-time employment continues to be rare.

5. Transitions from PTs to FTs in Japan

Table 3.2 presents the number of observations for PTs and FTs and the probability of transitions between the two employment statuses in each survey year. The proportion of PTs to the total number of employees rose during the survey period. The proportion of FTs who became PTs ranged between 1% and 5%, while that of PTs who changed their employment status to FTs ranged between 4% and 7% across all the waves, except for the Wave 1 PTs. The figures in Table 3 are smaller than their counterparts in the HILDA, in which 10.5% of the FTs and 26.0% of the PTs in 2002 changed their employment statuses to PTs and FTs, respectively, in 2003 (Second Statistical Report of the HILDA Survey). This table supports the hypothesis that the Japanese labour market is more dualistic than the Australian labour market.

Table 3　*Labour market transitions, JPSC data*

	Observations		Transitions in employment status	
Wave	FTs	PTs	Proportion of FTs who changed their employment status to PTs in the following year (%)	Proportion of PTs who changed their employment status to FTs in the following year (%)
1	485	186	1.86	10.22
2	451	201	2.66	5.97
3	408	218	3.92	5.96
4	357	236	1.68	6.78
5	526	322	3.23	6.52
6	467	332	4.93	6.02
7	422	329	3.32	4.26
8	378	349	2.91	5.44
9	366	351	4.10	6.12
10	333	343	3.00	5.80
11	376	343	2.39	8.75

Note: Respondents who have missing values for the employment statuses in either of the two
　　　successive years are deleted. Respondents are females aged between 24 and 46.

Source: Author's estimation based on the JPSC Survey, Wave 1 to Wave 11.

6. Part-time wage functions for Australia and Japan

In this section, the wage structure of PTs in both Japan and Australia are estimated.

6-1. Descriptive statistics

In this subsection, the hourly wages and hours of work per week for both Australian and Japanese PTs are compared.

In Japan, most of the PTs receive hourly wages, while in Australia, PTs are usually paid for a fortnight or for a week. Thus, the precise comparison of hourly wages between the two countries is not available. However, we are able to compare the part-time and full-time wages between the two countries.

In Table 4, the average hourly wages and average hours of work per week obtained from both the JPSC and the HILDA survey are listed. The hourly wages

for female PTs are about 70% of those estimated for their full-time counterparts in the JPSC. This proportion is higher than that obtained from the official statistics (MHLW, 2004). On the other hand, the average hours of work for PTs are approximately 63% of those for FTs in this survey. As a result, the weekly wage income for PTs is approximately 44% of that for FTs in the JPSC data. These figures indicate that the relative working conditions for PTs compared with those for FTs in Japan are fundamentally different from those in Australia.

Table 4 *Comparison of hourly wages, hours of work and wage income per week for female PTs in Australia and Japan*

	Hourly wages	Hours of work per week	Number of observations
Australia			
PT	22.98 AUD	20.2	2181
FT	19.77	43.0	2643
Japan			
PT	873.65 yen	27.2	4393
FT	1239.98	43.0	3188

Notes: Respondents aged over 46 or less than 24 are eliminated from the HILDA survey. The number of observations is different from that used in the econometric analysis due to the missing values.

Source: Author's estimation based on the JPSC Survey, Waves 1 to 11 and the HILDA Survey, Waves 1 to 6.

6-2. Wage functions for part-time employees

In this subsection, wage functions for part-time employees in Australia and Japan are estimated.

6-2-1. Hourly wage function for PTs in Japan

The hourly wages for PTs in Japan are estimated by using both random-effect and fixed-effect models. HW is hourly wage and X is the vector for explanatory variables. τ_j and e_{jt} are the fixed effect and the error term, respectively. In the random effect analysis, τ_j is regarded as a random variable independent of the error term.

$$\log(HW)_{jt}{}^* = \gamma X_{jt} + \tau_t + e_{jt} \qquad (1)$$

$$\tau_j \sim iid(0, \ \sigma_\tau^2) \qquad (2)$$
$$e_{jt} \sim iid(0, \ \sigma_e^2)$$

The explanatory variables and the descriptive statistics for them are given in Table 5 and Appendix A, respectively. The regression results based on the random-effect and fixed-effect models are as shown in Table 7. According to the Hausman test, the result based on the fixed-effect model is preferable to that based on the random-effect model.

Table 5　*Explanatory variables for part-time employment, JPSC*

Variables	Definitions
Independent variables	
Age	Respondent's age
Tenure	Tenure in years[vi]
SeniorH	Dummy = 1 if the respondent has a senior high school diploma; otherwise, Dummy = 0
JuniorC	Dummy = 1 if the respondent has a junior college diploma; otherwise, Dummy = 0
Tech	Dummy = 1 if the respondent has a technical college diploma; otherwise, Dummy = 0
BA	Dummy = 1 if the respondent has a Bachelor's degree; otherwise, Dummy = 0
MA	Dummy = 1 if the respondent has a Master's degree or Ph.D. otherwise, Dummy = 0
Industry dummies (reference: government, utilities and other industries)	
Primary	Dummy = 1 if the respondent works in the primary sector; otherwise, Dummy = 0
Const	Dummy = 1 if the respondent works in the construction sector; otherwise, Dummy = 0

Manu	Dummy = 1 if the respondent works in the manufacturing sector; otherwise, Dummy = 0
Wsale	Dummy = 1 if the respondent works in the wholesale and retail trade sector; otherwise, Dummy = 0
Finance	Dummy = 1 if the respondent works in the finance and insurance sector or in the real estate sector; otherwise, Dummy = 0
Trans	Dummy = 1 if the respondent works in the transportation sector; otherwise, Dummy = 0
Service	Dummy = 1 if the respondent works in the service sector; otherwise, Dummy = 0
Dependent variable	
HW[vii]	Hourly wage in yen

6-2-3. Weekly wage function for PTs in Australia

For PTs in Australia, the weekly wage function is estimated by both the random-effect and fixed-effect models. WW is wage income per week and Z is the vector for explanatory variables. v_i and u_{it} are the fixed effect for the ith individual and the error term, respectively.

$$\log(WW)_{it} = \beta Z_{it} + v_i + u_{it} \qquad (3)$$

$$\begin{aligned} v_i &\sim iid(0, \ \sigma_v) \\ u_{it} &\sim iid(0, \ \sigma_u) \end{aligned} \qquad (4)$$

The explanatory variables and their descriptive statistics are given in Table 6 and Appendix B, respectively. The regression results based on the random-effect and fixed-effect models are as shown in Table 8. According to the Hausman test, the result based on the fixed-effect model is preferable to that based on the random-effect model.

Table 6　*Explanatory variables for part-time employment, HILDA Survey*

Variables	Definitions
Independent variables	
Age	Respondent's age
Tenure	Tenure in years
CertI/II	Dummy = 1 if the respondent has Certificate I or II; otherwise, Dummy = 0
CertIII/IV	Dummy = 1 if the respondent has Certificate III or IV; otherwise, Dummy = 0
Diploma	Dummy = 1 if the respondent has a diploma or an advanced diploma; otherwise, Dummy = 0
BA	Dummy = 1 if the respondent has a Bachelor's degree; otherwise, Dummy = 0
MA	Dummy = 1 if the respondent has a Master's degree or a PhD; otherwise, Dummy = 0
Industry dummies (reference: Government, utilities and other industries)	
Primary	Dummy = 1 if the respondent works in the primary sector; otherwise, Dummy = 0
Const	Dummy = 1 if the respondent works in the construction sector; otherwise, Dummy = 0
Manu	Dummy = 1 if the respondent works in the manufacturing sector; otherwise, Dummy = 0
Wsale	Dummy = 1 if the respondent works in the wholesale and retail trade sector; otherwise, Dummy = 0
Finance	Dummy = 1 if the respondent works in the finance and insurance sector or in the real estate sector; otherwise, Dummy = 0
Trans	Dummy = 1 if the respondent works in the transportation sector; otherwise, Dummy = 0
Service	Dummy = 1 if the respondent works in the service sector; otherwise, Dummy = 0

Dependent variable	
WW[viii]	Weekly wage incomes in AUD

6-3. Comparison between the part-time wage structures of Australia and Japan

The wage function for the Japanese PTs is estimated in Table 7. The estimated result based on the fixed-effect model indicates that an increase in age and tenure raises the hourly wages by 0.8% and 0.7%, respectively. These figures imply that the effects of ages and tenure on hourly wages are almost negligible, considering that the wages for PTs are low in Japan. Table 7 also depicts that diplomas in senior high school, junior college and technical college and bachelor's degree have no significant effect on the hourly wages for PTs. The variable MA, which represents Master's degree or PhD is dropped, as there are no PTs with them in the JPSC survey.

Apart from the effect of education, wage differentials between different industries are observed in Table 7. For manufacturing and wholesale and retail sectors, the hourly wages for PTs are lower than those for the government or utilities sector by 10% and 7%, respectively. For the construction sector, on the other hand, the hourly wages for PTs are approximately 10% higher than those paid to their counterparts in the government or the utilities sector.

For the Australian PTs, the estimated results based on the fixed-effect model (Table 8) indicate that an increase in age raises the wage income per week by 7%. Certificate I/II, Certificate III/IV and Diploma raise the wage income per week by 50%, 19% and 54%, respectively, if other explanatory variables are held constant. The effects of qualifications on wage incomes could be overestimated in the fixed-effect model. However, in the random-effect model, Certificate III/IV, Diploma, BA and MA also increase the weekly wage incomes by 15%, 19%, 47% and 61%, respectively, if other variables are constant.

In sum, for the Japanese PTs, the effects of age, tenure and education on wage incomes are weak. In particular, the effects of vocational education on wages are almost negligible. This result, which is in striking contrast with that for Australia, suggests that the jobs performed by the Japanese PTs do not require much skill or knowledge. However, the relationship between skill and wages for PTs needs another survey, as the data pertaining to the skill level is not available in the JPSC.

7. Concluding remarks

This paper compared the wage structure of PTs in Japan with that of PTs in Australia. The analyses revealed that the part-time labour market of Japan is fundamentally different from that of Australia in terms of transitions to FTs, relative wages and hours of work compared with those for FTs and wage structure. It will take a considerable amount of time for Japanese PTs to attain working conditions comparable to those of their Australian counterparts.

The estimation revealed that the effect of education on part-time wages, which was conspicuous in Australia, was not observable in Japan. It suggests that either (1) Japanese firms do not expect PTs to have much skill or knowledge or (2) vocational education in Japan does not meet the labour demand. It is also noteworthy that the educational levels of Japanese PTs are much lower than those of their Australian counterparts. None of the PTs in the JPSC survey respondents had a Master's degree or higher degrees. The effects of age or tenure on part-time wages are also weak for Japanese PTs. It indicates that skill formation for PTs within firms is not sufficient in Japanese firms.

The tentative conclusion drawn from this analysis is that the problem of part-time employment in Japan is closely linked with that of the educational system. Vocational training or continuous education for PTs is essential for improving their working conditions.

As the educational systems and occupational structures of both countries are different, it is difficult to effectively compare the wage structures of both the countries. The relationship between education, occupation, skill formation within establishment and wages is set aside for future research. A significant amount of study remains to be conducted in this field.

Table 7 *Wage structure for PTs, Japan*

Dependent variable: log(Hourly wage)

	Random-effect Model			Fixed-effect Model		
	Estimated coefficient	z-value		Estimated coefficient	t-value	
Age	0.0027	2.27	**	0.0078	4.91	***
Tenure	0.0100	5.53	***	0.0069	3.31	**

	Estimated coefficient	t/z-value		Estimated coefficient	t/z-value	
Primary	-0.1048	-2.29	**	-0.0452	-0.86	
Const	0.0442	1.08		0.1018	2.08	**
Manu	-0.0996	-4.25	***	-0.0793	-2.94	***
Wsale	-0.0792	-3.76	***	-0.0600	-2.47	**
Finance	0.0012	0.03		0.0812	1.70	
Trans	-0.0468	-1.34		-0.0587	-1.47	
Service	0.0055	0.26		0.0047	0.19	
SeniorH	-0.0368	-1.12		(dropped)		
JuniorC	0.0275	0.72		(dropped)		
Tech	0.0517	1.42		(dropped)		
BA	0.2892	6.63		(dropped)		
MA	(dropped)			(dropped)		
Intercept	6.6706	130.63	***	6.4800	114.89	***
R-sq: within	0.0595			0.0689		
between	0.1317			0.0037		
overall	0.1422			0.0111		
F test that all u_j=0				F(890,1740)=8.63 Prob > F = 0.0000		
sigma_u	0.0595			0.2920		
sigma_e	0.1317			0.1339		
rho	0.1422			0.8262		
N	2640			2640		
Hausman specification test : Chi2(9)=51.29 Prob > Chi2 = 0.0000						

Note: *** is significant at the1% level; ** is significant at the 5% level; * is significant at the 10% level.

Source: Author's estimation based on the JPSC Survey, Wave 1 to Wave 11

Table 8 *Wage structure for PTs, Australia*

Dependent variable: log(Weekly wage incomes)

	Random-effect Model			Fixed-effect Model		
	Estimated coefficient	z-value		Estimated coefficient	t-value	
Age	0.0195	8.49	***	0.0730	14.25	***

Tenure	0.0146	6.08	***	-0.0035	-1.10	
Primary	0.0964	0.49		0.2369	1.01	
Const	0.3037	1.58		0.3375	1.49	
Manu	0.2794	1.49		0.3146	1.41	
Wsale	0.1036	0.57		0.2166	1.00	
Finance	0.2930	1.55		0.2650	1.17	
Trans	0.3360	1.78	*	0.2635	1.17	
Service	0.1666	0.92		0.2265	1.06	
CertI/II	0.1118	1.21		0.5032	2.97	***
CertIII/IV	0.1508	3.74	***	0.1919	2.59	**
Diploma	0.1992	3.91	***	0.5439	3.17	***
BA	0.4757	12.62	***	0.2016	1.31	
MA	0.6076	6.76	***	0.0329	0.14	
Intercept	4.6349	23.28	***	2.7621	9.72	***
R-sq: within	0.0397			0.0897		
between	0.1158			0.0077		
overall	0.1282			0.0172		
F test that all u_j=0				F(1936,2648)=5.10 Prob > F = 0.0000		
sigma_u	0.5878			0.8320		
sigma_e	0.4120			0.4120		
rho	0.6705			0.8030		
N	4599			4599		
Hausman specification test : Chi2(14)=211.23 Prob > Chi2 = 0.0000						

Note: *** is significant at the 1% level; ** is significant at the 5% level; * is significant at the 10% level.

Source: Author's estimation based on the HILDA Survey, Wave 1 to Wave 6.

Appendix A Descriptive statistics, the JPSC data

N=2640

Independent variables	Mean	Standard deviation
Age	33.351	4.947

Tenure	2.115	2.739
Senior high school	0.555	0.497
Junior college	0.138	0.344
Technical college	0.169	0.375
University	0.057	0.232
Industry dummies		
Primary sector	0.011	0.106
Construction sector	0.017	0.131
Manufacturing sector	0.152	0.359
Wholesale and retail trade sectors	0.382	0.486
Finance and insurance sectors	0.044	0.205
Transportation and communication sectors	0.027	0.161
Service sector	0.308	0.462
Dependent variable		
Hourly wage(yen)	873.659	368.326

Appendix B Descriptive statistics, the HILDA Survey

N=4599

Independent variables	Mean	Standard deviation
Age	36.261	5.915
Tenure in years	4.376	4.856
Certificate I/II	0.018	0.134
Certificate III/IV	0.143	0.350
Diploma or Advanced diploma	0.108	0.311
BA	0.267	0.442
MA or more	0.026	0.159
Industry dummies		
Primary sector	0.017	0.129
Construction sector	0.018	0.136
Manufacturing sector	0.040	0.195
Wholesale and retail trade sectors	0.232	0.422

Finance and insurance sectors	0.047	0.212
Transportation and communication sectors	0.032	0.176
Service sector	0.576	0.494
Dependent variable		
Wage and salary per week(AUD)	404.812	283.261

REFERENCES

Abe, Y. (2006) 'Work Experience of Japanese Women and the Part-time/Full-time Wage Gap', *Discussion Paper Series A*, No. 2006-165, Hokkaido University.

Australian Bureau of Statistics (ABS) (2001) Labour Force, Australia (Cat. No. 6203.0), October 2001.

_____(2007) 2006 *Yearbook Australia*, Canberra: ABS.

Doeringer, P. and M. Piore (1971) *Internal Labor Market and Manpower Analysis*, New York: Sharpe.

Kitamura, Y. (2005) *Panel Data Analysis*, Tokyo: Iwanami Shoten (in Japanese).

Koike, K. and T. Inoki (2003) College *Graduates in Japanese Industries*, Tokyo: Japan Institute of Labour (JIL).

Matsuura, S. and Y. Shigeno (2001) *Selections of Married Women and Household Savings*, Tokyo: Nippon Hyoronsha (in Japanese).

Ministry of Health, Labour and Welfare (MHLW) (2003) *General Survey on Diversified Types of Employment*, Tokyo: MHLW (in Japanese).

___ (2005) *White Paper on the Labour Economy 2004*, Tokyo: MHLW (in Japanese).

Ministry of Internal Affairs and Communication (MIAC) (2006) *Rodoryoku Chosa* (Labour Force Survey 2006), Tokyo: MIAC (in Japanese).

Nawata, K. and M. Ii (2004) 'Estimation of the Labor Participation and Wage Equation Model of Japanese Married Women by the Simultaneous Maximum Likelihood Method', *Journal of Japanese and International Economies*, 18(3): 301-315.

Organization for Economic Co-operation and Development (OECD) (2006) *OECD Employment Outlook 2006*, Paris: OECD.

Rebick, M. (2005) *The Japanese Employment System: Adapting to a New Economic Environment*, Oxford, UK: Oxford University Press.

The Japan Institute for Labour Policy and Training (2006) *Labour Situation in Japan and Analysis: General Overview 2006/2007*, Tokyo: JILPT.

Yashiro, N. (1997) *Economics of the Japanese Employment Practices*, Tokyo: Nippon Keizai Shinbunsha (in Japanese).

ACKNOWLEDGMENT

NOTES

ⅰ Data collection for Waves 1 to 8 has been sub-contracted to The Nielsen, a private market research company (http://www.melbourneinstitute.com/hilda/).

ⅱ Definition (1) is normally used for international comparisons and is not widely used in published official statistics or in research papers.

ⅲ According to the 2007 survey, approximately 14% of the part-time employees who worked for 200 days or more in a year worked for more than 40 hours per week—the statutory hours of work for full-time employees.

ⅳ The definitions of part-time workers as applied in Japan are best described in Rebick (2005).

ⅴ This is approximately equal to AUD 14, according to the Tokyo Market Exchange in March 2009.

ⅵ The tenure or the number of years worked in the present workplace is asked only in Waves 1, 5 and 11 for new entrants in the JPSC. Thus, I estimated it by examining whether or not the respondent worked in the same establishment for the consecutive years. If the respondent worked in the same establishment in the $(t+1)^{\text{th}}$ year, then I added one to the tenure she had in the tth year.

ⅶ For the respondents who receive daily wages, hourly wages are obtained by dividing daily wages by the hours of work per day. For the respondents who receive monthly wages, hourly wages are obtained by dividing monthly wages by hours of work per week multiplied by 4.32(average weeks per month). The data for hours of work per week is given by 10 zones, instead of actual hours, except for the new entrants.

ⅷ For the respondents who receive wages fortnightly, the weekly wages are obtained by dividing fortnightly wages by two. For the respondents who receive monthly wages, the weekly wages are obtained by dividing monthly wages by 4.32(average weeks per month).