AUSTRALIAN JOURNAL OF LABOUR ECONOMICS
VOLUME 20 • NUMBER 1 • 2017

Non-Regular Female Workers in Japan's Prolonged Economic Recession: Evidence from the Japanese Panel Survey of Consumers

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Abstract

Using the 1993-2014 Japanese Panel Survey of Consumers, this paper examined labour force participation and earnings of female workers with non-regular employment by birth cohort. The results confirmed that age and experience generally increased labour force participation of female workers with non-regular employment. Education and parents' cohabitation with financial sharing reduced labour force participation of part-time female employees, while being married and having children increased it. The reverse results were evident for female employees with fixed-term employment. Estimates also showed that female workers with non-regular employment earnt less than those with regular employment; however, variations in wage differentials across generations were more prominent for female workers with fixed-term employment than those with part-time employment. The returns to education decreased as a cohort progressed, the experience premiums were apparent only for the young cohorts, and an age premium was nonexistent across generations among Japanese female workers.

Key Words: Non-Regular Employment, Labour Force Participation, Wage, Cohort
JEL Classification: J21, J24, J31

1 * Any errors were the sole responsibility of the author. I thank anonymous referees and all participants at conferences for their comments on earlier versions. I also thank Mark Kolakowski for his editorial assistance. This research was partially supported by Faculty Research Grant to Rhode Island College, Rhode Island College Foundation, and Rhode Island College Alumni Affairs Office. The data used in this paper was obtained from the Institute for Research and Household Economics. Address correspondence to Sanae Tashiro, Department of Economics and Finance, Rhode Island College, 600 Mount Pleasant Avenue, Providence, RI 02908 or by email to stashiro@ric.edu.

1. Introduction

The prolonged recession and progressive labour law reforms[2] after 1990 in Japan led to substantial changes in structures of employment. During the 'Lost Decades', Japan's labour market experienced significant growth in the share of non-regular employment, especially among women (Abe, 2013; Asano *et al.*, 2013; Esteban-Pretel *et al.*, 2011; Kishi, 2013; Nakata and Ryoji, 2002; and Sano, 2012), with further increased expected due to the slowdown in productivity growth (Miyamoto, 2016). This raised the question of how non-regular employees fared worse than regular permanent employees in the prolonged recession.

Japan's employment was officially classified into three categories: permanent, fixed-term, and part-time. Permanent employment also was known as regular employment or full-time employment,[3] and a permanent employee[4] was hired directly by an employer under a specified contract with employment benefits. On the other hand, fixed-term and part-time employment was known as non-regular employment. Fixed-term employment, which includes a 'dispatched-temporary' or a 'fixed-term-contract', was also likely to became full time employment. A 'dispatched-temporary' worker was employed by a temporary labour agency, and dispatched to work for a specific firm for a fixed term, while a 'fixed-term-contract' worker was hired by an employer under the terms of a contract for a specified period of time. A part-time employee[5] was under an unspecified contract term with flexible working hours and earns a lower wage (relative to the wages of full-time employees), without employment benefits. However, whether part-time employees fared worse than full time employees in the prolonged recession had not been fully established.

Numerous studies had documented how non-regular workers were disadvantaged in terms of working conditions and career opportunities (Asano, 2011; Hori, 2014; and Takahashi, 2015). They were likely to develop less firm-specific human capital because non-regular workers had short job tenures, often being placed in lower-paid occupations, such as clerical and secretarial positions in which skills, training and knowledge were easily transferable to other firms, and thus earn lower wages (Acemoglu and Pischke, 1999). This raised the question of how education played a role in women's employment, and whether the returns of education changed over time among female workers with increased education and work commitments.

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2 Act on Improvement, etc. of Employment Management for Part-Time Workers (No. 76) amended in 1993 was to improve employment management for part-time workers, and Labour Standards Act (Article 14 of No. 49) amended in 2012 and Ordinance for Enforcement of the Labour Standards Act (Article 5 of No. 23) amended in 2013 set forth standards for fixed-term labour contracts in order to protect dispatched workers. See details on Labour Standards Act at the Japan Institute for Labour Policy and Training and the Ministry of Health, Labour and Welfare.

3 Full time employment was defined as employment with predetermined working hours per week of about 40 hours (e.g., 8 hours a day, 5 days a week), according to the Labour Force Survey conducted by the Statistics Bureau of the Ministry of Internal Affairs and Communications.

4 Permanent employee was also referred to as 'Sei Shyain' in Japanese.

5 Part-time employment in Japan includes 'paato' and 'arubaito.' 'Paato' refers to a traditional part-time employment and 'Arubaito' refers to part-time-temporary employment. See Houseman and Osawa (1995) for detail.

In the era of prolonged economic recession in Japan, the workforce population became more heterogeneous. The oldest cohort, born between 1965 and 1969, known as the 'Bubble generation',[6] entered the workforce during the economic miracle with ample job opportunities, and were in their 40s to 50s. The 'Ice Age generation',[7] born between 1970 and 1984, suffered from a prolonged hiring freeze during the 'Lost Decades', being in their 30s-40s. The youngest cohort, called the 'Yutori generation'[8], were born between 1985 and 1989, and were in their 20s. They joined the workforce after being schooled under the 'relaxed education system'[9] with a label of being academically inferior. This raised the question 'did the experiences of those entering the labour market during the prolonged recession differ from those who were already in the labour market?'

The first purpose of this paper was to contribute to the growing literature on non-regular employment. A large body of research evidenced non-regular employees being likely to face job insecurity (Takahashi, 2015), earn lower wages (Genda *et al.*, 2010; Ohta and Genda, 2007; Takahashi, 2015), and encounter an 'employee-employer mismatch' (Genda and Kurosawa, 2001; and Ohta *et al.*, 2008). This paper added to the literature by taking a closer look Japan, and examining how labour force participation and earnings of Japanese women differed by employment status with a particular focus on the era of Japan's prolonged economic recession and thereafter.

Another purpose of this paper was to expand on existing studies on the lifecycle of women's employment. A considerable literature documented women's decisions on employment status: lead to significant differences in women's earnings (Abe and Oishi (2007) for Japan); was largely influenced by the presence of children (Kishi (2013) and Fukuda (2006) for Japan; Baxter (2012) for Australia); and also varied by birth cohort (Kishi (2013) for Japan; Baxter (2012) for Australia). Existing studies confirmed that education had a uniform effect on labour market (Kishi (2013) for Japan, Baxter (2012), Austen and Seymour (2006) and Parr (2012) for Australia), and increased labour force participation, especially among younger cohorts (Baxter (2012) and Austen and Seymour (2006) for Australia). Moreover, marriage affected women's labour market outcomes differently, varying by birth cohort (Fukuda (2013) for Japan; Baxter (2012) for Australia; Goldin and Mitchell (2017) for the U.S.). This paper added to the literature by using cohort analyses to investigate how, in a Japanese context, labour market outcomes of women varied by birth cohort during the 'Lost Decades'.

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6 The "Bubble generation (also known as "Baburu sedai" in Japanese) refers to those who entered the workforce in the 1980s and the early 1990s at the height of Japan's postwar economic miracle.

7 The "Ice Age generation" (also known as "Hyogaki sedai" in Japanese) refers to those who entered the workforce during the "Lost Decade" and experienced difficulty in finding full-time employment. See As ano et al., 2013; Abe, 2013; Genda et al., 2010; and Ohta et al. 2008 for detail.

8 The "Yutori generation" (also known as "Yutori sedai" in Japanese) refers to those who were educated under the revised educational system, and they were often challenged by scholastic ability and competitiveness. See Fujioka (2008) and the Ministry of Education, Culture, Sports, Science and Technology (2001, 2003, 2008) for detail.

9 The "relaxed education system" (also known as "Yutori-kyoiku" in Japanese), starting 2002, reduced the hours and the content of the curriculum. See Fujioka (2008) and the Ministry of Education, Culture, Sports, Science and Technology (2001, 2003, 2008) for detail.

The results of this study first supported existing literature, finding labour force participation differed among Japanese women by employment status. Labour force participation of female workers with part-time employment declined with education and parents' cohabitation with financial sharing,[10] while it increased with experience, age, marriage, and the presence of a child. On the other hand, labour force participation of female workers with full time employment, both fixed-term and permanent, decreased with being married and the presence of a child. However, it increased with other socio-economics factors, including education, experience, age, parents' cohabitation with financial sharing, and metropolitan living. The effects were smaller for female workers with fixed-term employment relative to those with permanent employment.

This study also verified the following findings concerning the earnings of Japanese female workers. The wages of female employees in part-time employment were positively influenced by educational attainment of at least a Bachelor's degree and metropolitan living, but experience and age had no effect on earnings. On the other hand, the wages of those with fixed-term employment were positively related to age and metropolitan living, but inversely related to educational attainment of a high school diploma and an associate degree, while experience and age had no effect. Additionally, there were large within-occupation and within-industry wage differences that varied by employment status, and the premiums were smaller for female workers in non-regular, both part-time and fixed-term, employment than for those with permanent employment. Lastly, there were also between-occupation and between-industry wage differentials that also differed by employment status, and the disparities appeared to be smaller for female workers in part time employment than for those in full time employment.

The results of this study offered new key findings regarding the changing patterns of Japanese women's earnings by birth cohort. First, there was a considerable wage differential between part-time and permanent employment among all ages of female Japanese workers, which was also apparent across generations. Additionally, variations in wage disparity across cohorts became larger among female workers when they were aged 24-29. When aged 24-29 the wages of the 1965–1969 birth cohort, with part-time employment was 22 per cent lower than the wages of their same birth cohort counterparts aged 24-29 with permanent employment. While when aged 24-29 the wages of the 1985–1989 birth cohort, with part-time employment was 36 per cent lower. Similarly, there was a visible earning disparity between fixed-term and permanent employment among female workers of all ages, which also varied across generations. Furthermore, variations in wage disparity across cohorts became more prominent among Japanese female workers when aged 24-29. During this period, the wages of the 1985–1989 birth cohort with fixed-term employment did not differ from

10 Parents' cohabitation with financial sharing refers to a living arrangement in which a respondent cohabitates with parents in a form of a (i) "traditional integrated multi-generational household" or (ii) "single generation household." Those who were in "traditional integrated multi-generational households" (e.g., married women) tend to increase non-market hours in order to take care of family member in exchange for financial benefits provided by (usually the husband's) parents. Those who were in "single generation households" (e.g., single or young women, as well as divorced women with children) may had reduced non-market hours and/or increased financial pressure to assist family members or possibly to receive financial benefits from parents.

those with permanent employment, while the wages of the 1985–1989 birth cohort, when aged 24-29, with fixed-term employment were lower. Second, both the returns to education and the returns to experience differed for each cohort; education premiums decreased as a generation progressed, and experience premiums were apparent only for the 1980-1984 birth cohort of female workers at all ages. Lastly, age premiums were only apparent for older cohorts of Japanese female workers of all ages, suggesting that the premiums varied by each cohort; however, an age premium was nonexistent across all cohorts of female workers aged 24-29. These results suggested that the observed cohort wage differentials in relation to employment status, education, experience and age among Japanese female workers likely resulted not only from age effects and time trends but also from cohort effects.

This paper made four notable and new contributions. It first provided deeper insights into understanding long-term trends of labour force participation and wages of Japanese women with the binomial logit, the multinomial logit, and the Heckman's sample selection models using the 1993-2014 Japanese Panel Survey of Consumers data. It also found new patterns in Japanese women's earnings that varied by birth cohort, particularly with women in non-regular employment. Further, moving forward, it helps workers, firms, and policy makers in re-evaluating the ways to improve the current state of labour market welfare of female employees in Japan. Lastly, it was useful for developing new, or reexamining existing, policies to increase labour participation, reduce wage differentials, and decrease job segregation in Japan's labour market, as women's labour force participation became more in demand and important in light of the declining population and the aging society.

2. Empirical strategy and data

Empirical strategy

The first objective of this paper was to use the Japanese Panel Survey of Consumers to empirically examine long-term trends of labour force participation of Japanese women during the years 1993-2014 using the following binomial logit model.

$$p(y_{it} = 1) = \frac{e^{b' x_{it}}}{1 + e^{b' x_{it}}} \tag{1-1}$$

The likelihood of labour force participation being observed depended on socio-economic variables, (x_{it}), which included the respondent's: (i) education; (ii) experience; (iii) age; (iv) marital status; (v) number of children; (vi) parents' cohabitation with financial sharing; (vii) housing tenure; (viii) metropolitan living status; and (ix) birth cohort.

I extended the analyses with the following multinomial logit (MNL) model for employment choice with four employment outcomes: (a) part-time; (b) fixed-term; (c) permanent; and (d) not in the labour force.

$$p(y_{it} = j) = \frac{e^{\beta'_j x_{it}}}{\sum_{k=1}^{4} e^{\beta'_k x_{it}}}, \; j = 1,....,4 \tag{1-2}$$

I specified one of the employment outcomes, that was, (d) not in the labour force as the base outcome, and selected the remaining three employment outcomes: (a) part-time; (b) fixed-term; (c) permanent, as the dependent variables. A post-estimation analysis was recommended in both the logit and the MNL model; hence, I further estimated the marginal effects of all explanatory variables in the estimated specifications.

The second objective of this study was to examine long-term trends of wages among Japanese female workers, particularly attending to those with non-regular employment; that was, part-time and fixed-term employment, by birth cohort. To accomplish this, the empirical analyses were extended to estimate the standard wage equation, and researchers were aware of potential endogeneity bias, heterogeneity bias, and sample selection bias into employment (Newmark and Korenman, 1994; and Semykina and Wooldridge, 2010).

The wages of an individual were estimated over the life cycle in this study, so education can be treated as exogenous, and individuals in the data sample were drawn from a homogeneous population from longitudinal data, and thus both the endogeneity and the heterogeneity biases were not inherited or at least were minimal. Hence, I focused on the treatment of sample selection bias and employed the following Heckman's sample selection model, which considers a random sample of *I* observations and equations for respondent *I*, using the data sample that included both working and non-working individuals.

$$\begin{aligned} y_{1i}^{*} &= x_{1i}\beta_1 + \varepsilon_{1i} \\ y_{2i}^{*} &= x_{2i}\beta_2 + \varepsilon_{2i} \quad (i = 1, \ldots, I). \end{aligned} \tag{2-1}$$

The sample selection model consisted of: (i) a participation equation that

$$y_{1i} = \begin{cases} 1 & \text{if } y_{1i}^{*} > 0, \\ 0 & \text{if } y_{1i}^{*} \leq 0 \end{cases} \tag{2-2}$$

where y_{1i}* determined whether or not respondent *i* had participated in the labour force; and (ii) a resultant outcome (or wage) equation that

$$y_{2i} = \begin{cases} y_{2i}^{*} & \text{if } y_{1i}^{*} > 0, \\ \text{—} & \text{if } y_{1i}^{*} \leq 0 \end{cases} \tag{2-2'}$$

where y_{2i}* was observed when y_{1i}*=1, whereas y_{2i} need not take on any value when y_{1i}*≤ 0.

The participation equation (y1i*) that measured the likelihood of labour force participation being observed depended on socio-economic variables, (x1t), which were the same as (xit) in equation (1-1). The resultant outcome (or wage) equation (y2i*) was the actual log hourly wage of a respondent i at time t, (ln(wit)), was a function of control variables, (x2t), which include the respondent's: (i) education; (ii) experience; (iii) experience squared; (iv) age; (v) age squared; (vi) metropolitan living status; (vii) occupation; (viii); industry; and (ix) a mean zero individual error term at time t, (εi). The sample selection model was estimated with Heckman's two-stage procedure by employment status as well as by birth cohort.

Data

To estimate the proposed empirical models, this paper used microdata obtained from the 1993-2014 waves of the Japanese Panel Survey of Consumers (JPSC) conducted by the Institute for Research and Household Economics. The JPSC gathers information on the demographic status of Japanese females aged 24-34 years. Five cohorts were currently included, starting in 1993 with the oldest cohort, Cohort A, involving 1,500 Japanese women born between 1965 and 1969. In 1997 a further 500 Japanese females of the same age (Cohort B), born between 1970 and 1973, were surveyed, with 836 Japanese females aged 24-29 years (Cohort C) (born between 1974 and 1979) included in 2003. In 2008, 636 Japanese females aged 24-28 born between 1980 and 1984 (Cohort D) were included, and finally in 2013, 648 Japanese females of the same age, born between 1985 and 1989 (Cohort E), were included. There were 39,675 observations (see Appendix 1 for details on the initial data sample). The JPSC contains respondents' age, education, marital status, employment status, metropolitan living status, wage, weeks worked, and family members' characteristics.

In this study, I used several socio-economic variables. The respondents' 'education' dummy variables were constructed for five education levels: less than a high school diploma; a high school diploma or equivalent (GED); technical or trade school diploma; an associate degree; and at least a Bachelor's degree. The respondents' work experience was measured in total service length at work in years after graduation.[11] The respondent's employment status was divided into four categories: part-time; fixed-term; permanent; and not in the labour force. Other variables of interest include age, marital status, number of children, parents' cohabitation with financial sharing, housing tenure, metropolitan living status, occupation, and industry.

In addition, I used hourly wages. Earnings in the JPSC data were reported in three different measures: (i) monthly or weekly salary; (ii) daily earnings; and (iii) hourly wage, and the hourly wages were derived from these three variables. The hourly wage for individuals who reported daily earnings were calculated as the daily earnings divided by the hours worked per day. The hourly wage for individuals who reported a monthly salary was calculated by: (i) obtaining the salary per day (which was calculated as the monthly salary divided by the working days per month); and (ii)

11 The respondent's work experience was calculated as the sum of total months of work after graduation in the first survey year and total months of work in each year thereafter, and then this sum was divided by 12 months to obtain total years of work after graduation.

salary per day divided by the hours worked per day. The hourly wage for respondents who reported it was used as reported.

In order to examine the employment decisions and the wages of Japanese female workers, I constructed a dataset that included both working and non-working individuals for estimation. The likelihood of labour force participation being observed depended on various socio-economic variables, (x_{1t}), which were consistent with (x_{it}) in equation (1). Respondents who reported invalid responses for spouse's age and/or spouse's annual income were eliminated from the sample.[12]

In addition, the actual log hourly wage of a respondent *i* at time *t*, ($\ln(w_{it})$), was a function of control variables, (x_{2t}), which was also shown in (2). The hourly earnings in the data sample were top coded at \15,180, which represents only 0.01 per cent of the entire sample. The data sample was further restricted to respondents who had valid hourly earnings and those who reported hourly earnings of at least \150 per hour.[13] The log hourly wage, which was a dependent variable, was then calculated based on the hourly earnings. After these restrictions, the sample size for the wage equations for the 1993-2014 JPSC data, defined as the labour force participation data, was reduced to 39,635 (see Table 1 for details of this data sample).

Descriptive statistics

Table 1 reports selected socioeconomic characteristics of respondents by employment status for the years 1993-2014 using labour force participation data. First, educational attainment appears to steer employment selection among Japanese female workers. While nearly 60 per cent of female workers with no more than a high school diploma settled into part-time employment, only 37 per cent and 35 per cent of those with the same educational level entered fixed-term and permanent employment, respectively. The reverse situation holds: less than nine per cent of those with at least a Bachelor's degree settled into part-time employment, while approximately 21 per cent and 25 per cent of those with at least a Bachelor's degree aquaired fixed-term and permanent employment, respectively. It was evident that women with less education were more likely to accept part-time employment.

Second, marital status and the presence of children had large impacts on Japanese female workers' employment type. Nearly 80 per cent of part-time female workers were married, while 55 per cent of fixed-term and 50 per cent of permanent female workers were married. Similar trends existed for women with at least one child: they contributed 75 per cent of part-time female workers, about 50 per cent of fixed-term and 45 per cent of permanent female workers. It was apparent that being married and the presence of children reduced full time employment, both fixed-term and permanent, and increased part time employment that allowed flexible work arrangements to meet a high demand for household labour (Estévez-Abe, 2013; Okamura and Islam, 2011; and Tsutsui, 2016).

12 Invalid responses refer to the value expressed as '99', '999', or '9999' submitted by respondents in a questionnaire in the survey.

13 The data sample includes respondents who earn less than the minimum wage (that refers to the national weighted average amount per hour), which was set at 583 yen in 1993 and 764 yen in 2014. See details on minimum wages in Japan at the Ministry of Health, Labour and Welfare.

Lastly, parents' cohabitation with financial sharing, which refers to the living arrangement in a (i) 'traditional integrated multi-generational household' or (ii) 'single generation households,' affected both household income and one's non-market hours, and, in turn, affected Japanese women's employment decisions and their employment status. For example, women living in a traditional integrated multi-generational household (e.g., married women) were likely to devote increased non-market hours to caring for family members and/or benefit from financial contributions by parents, and thus they may had reduced their market hours. In contrast, those living in a single generation household (e.g., single or young women, as well as divorced women with children) possibly experience reduced non-market hours and/or increased financial pressure to assist family members, and thus increase market hours. Table 1 shows that about 28 per cent of Japanese women with part-time employment, 40 per cent of them with fixed-term employment, and 44 per cent of them with permanent employment were in households that had parents' cohabitation with financial sharing. These results indicated that parents' cohabitation with financial sharing affected women's labour force decisions and selection of employment.

Figure 1A, reveals a few important points, showing the overall trends of employment status by birth cohort for women of all ages. First, members of younger cohorts, many of whom were likely to be unmarried, were more likely than older cohorts to hold full time employment. In contrast, members of older cohorts, many of whom were likely to be married and/or a family caregiver, were more likely to select voluntary part-time employment or to be out of the labour force than members of younger cohorts. These results suggested the potential existence of age effects. Second, fixed-term employment was likely to be more common among the younger cohorts (Cohorts C, D and E), born between 1974 and 1989. In particular, members of the cohorts born between 1974 and 1984 (Cohorts C and D) appeared to be disadvantaged compared to the youngest cohort, with a lower percentage in permanent employment, and a higher percentage out of the labour force. This supports previous findings that 'Lost Decades' job seekers were likely to involuntarily land in non-regular employment (Abe, 2013; and Genda *et al.*, 2010).

Figure 1B shows additional data on the trends of employment status by birth cohort for women aged 24-29, in an attempt to control the age effects. It presents some interesting points. First, when the oldest members, the 'Bubble generation,'(Cohort A, born 1965–1969), were aged 24-29 they were less likely to be employed part-time, and more likely to stay out of the labour force relative to members of other cohorts at that age. Second, fixed-term employment was more pronounced among the younger cohorts, (Cohorts C, D and E, born between 1974 and 1989), which was consistent with the previous finding. Third, members of Cohort E (born 1985–1989), the youngest cohort, showed the highest percentage of members in permanent employment, followed by Cohort A, the oldest cohort (born 1965–1969). Lastly, it is worth noting that members of the cohorts born between 1974 and 1984 (Cohorts C and D) appeared to be disadvantaged since they had a lower percentage of permanent employment when they were 24-29 years of age, compared to other cohorts at the same age, supporting previous findings.

Figure 2 offers additional insights into the patterns of labour force participation of each birth cohort by employment status over the 1993 to 2014 period. To account for unbalanced panel data, labour force participation was measured by obtaining the number of respondents who were in a specific employment category, divided by the total respondents in a specific year in the data sample, and it was calculated for each employment status and for each year. Considering two major economic episodes, the 2007-2009 Great Recession and Japan's economic policy regime called 'Abenomics' that started in 2012,[14] Figure 2 presents the three remarkable points.

First, Figure 2A shows that labour force participation of the younger cohorts (Cohorts D and E, born between 1980 and 1989) in part-time employment increased over time regardless of these economic episodes, while that of cohorts born between 1965 and 1979 (Cohorts A, B and C) increased over time except during the Great Recession period. Second, Figure 2B confirms that although there were some year-on-year variations in labour force participation within each cohort in fixed-term employment, labour force participation in fixed-term employment of all cohorts increased over time. Lastly, Figure 2C shows that labour force participation of cohorts born between 1965 and 1979 (Cohorts A, B and C) in permanent employment was relatively constant until the Great Recession period, slowly rebounding afterwards. Conversely, labour force participation of the birth cohort of 1980-1984 (Cohort D) in permanent employment declined after they entered the labour market in 2008, while that among youngest birth cohort of 1985–1989 (Cohort E) increased after they joined the labour market in 2013. These results suggest that economic and political events appear to had affected labour force participation and the selection of employment status among Japanese women.

3. Empirical results

Japanese women's labour force participation decisions

Table 2 presents the empirical results of binomial logit and MNL estimates in order to examine the factors that influenced a respondent's labour force participation. Based on the marginal effects in Rows (1)-(4), Column (1), only educational attainment of at least a Bachelor's degree increased the average probability of Japanese women's decision to participate in the labour market (by 0.037). However, the MNL estimates in the same rows, Columns (2)-(4), show a different trend and offer more insight. Education, in general, increased the average probability of a respondent's decision to participate in the labour market with full time employment, both permanent and fixed-term. But, the education effects were less prominent for female workers with fixed-term employment than for those with permanent employment. This was because the effects were only 0.02 for female workers in fixed-term employment regardless of education, while the effects were the largest, 0.26, for female workers with at least a Bachelor's degree in permanent employment. On the other hand, education decreased the average probability of a respondent's decision to participate in the labour market

14 "Abenomics" refers to the new economic policies advocated by Prime Minister Shinzo Abe under the Abe cabinet since 2012, and it consists of three arrows: (1) unconventional monetary policy; (2) expansionary fiscal policy; and (3) economic growth strategies to encourage private investment. See Fukuda (2015) for detail.

with part-time employment. However, education effects varied by education level, for example, Japanese women with only a high school diploma decreased their labour market participation with part-time employment by 0.05, while those with at least a Bachelor's degree decreased it by 0.25.

As expected, both experience and age positively influenced the average probability of a respondent's decision to participate in the labour market, based on the estimates in Rows (5)-(6), Column (1). The MNL estimates offered additional insights by employment status, as shown in Rows (5)-(6), Columns (2)-(3). Experience effects on labour force participation were apparent for Japanese women, regardless of employment status; however, the effects were smallest for those with fixed-term employment (0.001) and were largest for female workers with permanent employment (0.021). As for age, it increased the average probability of a respondent's decision to participate in the labour market with part-time employment (by 0.007) and with fixed-term employment (by 0.004), while it reduced with permanent employment (by 0.009), according to Row (6), Columns (2)-(3). These results suggest that age increased Japanese women's labour force participation with non-regular employment. Additionally, firms had fewer incentives to hire full-time middle-age workers (Kambayashi and Kato, 2011), and to offer firm-specific human capital investment to older employees (Hashimoto and Kondo, 2012); and/or Japanese women prefer flexible work arrangements for their increased unpaid-work hours at home (Estévez-Abe, 2013; Okamura and Islam, 2011; and Tsutsui, 2016).

Unsurprisingly, both marital status and the presence of children significantly impacted on labour force participation among Japanese women, but the effect differed by employment status. Based on Rows (7)-(11), Columns (2)-(4), the negative effect of being married and having children was smaller for women with fixed-term employment (0.019 and 0.02-0.04, respectively) compared to those with permanent employment (0.125 and 0.05-0.10, respectively). On the other hand, being married and having children increased the average probability of a respondent's decision to participate in the labour market with part-time employment (by 0.039 and 0.026-0.031, respectively). Japanese women preferred to allocate their time for unpaid-work hours at home to family, leading them to move toward non-regular-work that allowed more flexible work arrangements, or non-labor-force-participation, after they get married and bear children, (Estévez-Abe, 2013; Okamura and Islam, 2011; and Tsutsui, 2016).

Column (1) in Table 2 further shows that parents' cohabitation with financial sharing reduced the average probability of a respondent's decision to participate in the labour market (by 0.028, as shown in Row (11), Column (1)). This finding was consistent with part-time and permanent employment, based on the estimates in the same row, Columns (2) and (4). These findings indicate that the increased unpaid-work hours at home for parents and/or the financial gain from parents outweigh the willingness to participate in the labour market, especially for those with part-time employment. Conversely, it increased the average probability of participating in the labour force among women with fixed-term employment (by 0.01, according to the same row, Column (3)). This suggests that the willingness to work dominated unpaid-work commitments at home and/or financial gains from parents given female workers with fixed-term employment were likely to be from younger cohorts and enter non-regular employment involuntarily.

Further, metropolitan living status increased the average probability of participating in the labour force among female workers with fixed-term employment, and housing tenure also increased it among those with permanent employment.

Japanese female workers' earnings by employment status

Table 3 presents the empirical results from the Heckman's sample selection estimates. Rows (1)-(21) in the table present the estimated coefficients from the outcome (or wage) equation, while rows (22)-(31) shows the estimated coefficients from the participation equation, separately, for each employment status, with Column (1) for part-time employment, Column (2) for fixed employment, and Column (3) for permanent employment.

The estimates of the outcome (or wage) equation in Rows (1)-(4), Column (3), in the table show that a significant positive return to education on wages was apparent for permanent female employees, and that effect got larger as the level of education increased (from 11 per cent (exp(0.102)-1) to 42 per cent (exp(0.353)-1)) relative to permanent female employees with 'less than a high school diploma.' On the other hand, the estimates in the same rows, Column (1), show that a positive return to education on wages was only observed for part-time female employees with only 'at least a Bachelor's degree' (by 14 per cent (exp(0.131)-1) relative to their counterparts. Moreover, the return to education was not only nonexistent for fixed-term female employees with 'technical or trade school' education and 'at least a Bachelor's degree,' but also a wage penalty was realised for those with a 'high school diploma' and an 'associate degree,' as presented in the same rows, Column (2). It was verified that the returns to education were smaller for female workers with non-regular employment.

Estimates in Table 3, Rows (5) and (7), Columns (1)-(3), convey unfavorable results in regard to the returns to experience and to age. Experience had no effect on the wages of female employees, regardless of employment status. This finding confirms firms' reluctance to offer firm-specific human capital investment to women who had short job tenures (Nakata and Ryoji, 2002)[15] and a zero return to experience on the earnings of Japanese female workers (Ono, 2010).[16] Age also had no effect on the wages among female workers in part-time employment, while it increased the wages of those with full time employment, both permanent and fixed-term, the premiums were smaller for female workers with non-regular employment (4% (exp(0.038)-1) vs. 6% (exp(0.055)-1)). This result indicates that an age-based wage premium existed only for those who work full time in the labour market, with the effect differing by employment status.

15 A large accumulation of wage differentials exist between male and female workers with equal productivity as a results of lower work appraisal points given to female workers by an employer and that the effect of job tenure through age and experience on the wages of women was less pronged compared to those of men in Japan. See Nakata and Ryoji (2002) for detail.

16 Japanese female workers did not benefit from the lifetime employment system, and Japanese women, who seek mid-career re-employment, in particular, did so into part-time or temporary position. See Ono (2010) for detail.

Table 3 also shows that there were substantial differences in wage premiums by employment status in relation to occupations. First, across all occupations, the wage premiums for female workers with non-regular employment, both part-time and fixed-term, were substantially lower than the premiums for those with permanent employment, as shown in Rows (11)-(15), Columns (1)-(3). Second, there was a large within-occupation wage dispersion that was different by employment status. In the professional occupations (O1), shown in Row (11), Columns (1)-(3), permanent female workers earnt 52 per cent (exp(0.418)-1) more than those in the same employment status with 'other' occupations (O6), while female workers with part-time and fixed-term earn only 29 per cent (exp(0.255)-1) and 19 per cent (exp(0.177)-1), respectively, more than their counterparts. These findings confirm not only that occupation but also employment status matters for female workers' wages. Lastly, between-occupation wage differentials were present, and they appear to be smaller for females working part-time than for those working full time. This was because the wages of part-time female workers who were in office administration (O3) and manufacturing & operations (O4) were not significantly different from those in the same employment status with 'other' occupations (O6), based on estimates in Rows (13)-(14), Column (1), but the earnings of permanent female workers who were in (O3) and (O4) were 42 per cent (exp(0.352)-1) and 18 per cent (exp(0.165)-1), respectively, lower than their counterparts, as shown in Rows (13)-(14), Column (3), suggesting occupational choice matters less for part-time employment.

Table 3 further confirms that there were differences in the wage premiums by employment status in relation to industries. First, there was a considerable within-industry wage dispersion that varied by employment status. In the public administration industry (I5), the wages of female workers with permanent employment status earn 16 per cent (exp(0.146)-1) more than those with the same employment status in 'other' industries (I6)), based on Row (20), Column (3); on the other hand, the wages of female employees with part-time employment did not differ, while the earnings of those with fixed-term were 23 per cent (exp(0.210)-1) less than their counterparts, as shown in the same row, Column (2). Second, between-industry wage differentials were apparent, varying by employment status. For part-time employment, industry differences had a minimal effect since the earnings of female workers, except for those who were in retail trade (I2), did not differ from the wages of those who were in 'other' industries (I6), as shown in Rows (16)-(20), Column (1). By contrast, industry differences had a larger effect, especially for those with permanent employment, as female workers who were in public administration (I5) earn 16 per cent (exp(0.146)-1) more, as shown in Row (20), Column (3), while those who were in service (I4) earn eight per cent (exp(0.074)-1) less, relative to their counterparts, based on Row (19), Column (3). Lastly, for all industries, the wage penalties were larger for those with fixed-term employment compared to those with permanent employment (e.g., 22% (exp(0.201)-1) vs. 12% (exp(0.111)-1) in retail trade (I2)), as in Row (17), Columns (2)-(3).

Japanese female workers' earnings by birth cohort

Table 4 presents the empirical results from the Heckman's sample selection estimates by birth cohort. In an attempt to capture the cohort effect and the age effect, two sets of the empirical results were presented by taking into an account for the nature of differences in both the time and the age span of each cohort in the data sample. Table 4A offers the estimates from Japanese women of all ages and Table 4B presents the estimates from Japanese women aged 24-29. The analyses in this section were focused on evaluating the effects of employment status and human capital investment on Japanese female workers' earnings.

A. Employment status

The estimates of the outcome (or wage) equation in Rows (1)-(2), Columns (1)-(5) in Table 4A show, for all cohorts, female workers with non-regular employment, both part-time and fixed-term, earn less than their same birth cohort counterparts with regular employment (that was, permanent employment). Additionally, wage differences between non-regular employment and regular permanent employment vary across each cohort. For example, the oldest cohort born between 1965 and 1969 (Cohort A) with part-time employment earns 39 per cent (exp(-0.331)-1) less than the same birth cohort with permanent employment, as shown in Row (1), Column (1), while the cohort born between 1970 and 1973 (Cohort B) with part-time employment earns 31 per cent (exp(-0.269)-1) less than their counterparts, as shown in the same row, Column (2). This phenomenon was also apparent for fixed-term employment: that was, the oldest birth cohort earns 14 per cent (exp(-0.133)-1) less than the same birth cohort with permanent employment, as shown in Row (2), Column (1), while the wages of the cohort born between 1974 and 1979 (Cohort C) were nine per cent (exp(0.090)-1) less than those of their counterparts, based on the same row, Column (3).

The wage disparities across cohorts in relation to employment status shown in Table 4A were likely to be drawn from age effects and time trends. To verify this, additional estimates of the outcome (or wage) equation in Table 4B were presented as a robustness check. The estimates first find that, across generations, the wages of female workers aged 24-29 with part-time employment were 22 per cent (exp(0.199)-1) - 36 per cent (exp(0.306)-1) lower than their same birth cohort counterparts aged 24-29 with permanent employment, according to Row (1), Columns (1)-(5). Furthermore, the penalties became larger as generations progress, which implies that there were some variations in wage differences and cohort-wage disparity among Japanese female workers aged 24-29. In contrast, wages of cohorts born between 1965 and 1969 (Cohort A) and 1974 and 1979 (Cohort C) with fixed-term employment did not differ from their counterparts, while wages of the youngest cohort, born between 1985 and 1989 (Cohort E), with fixed-term employment were 13 per cent (exp(-0.122)-1) less than the same birth cohort with permanent employment, according to Row (2), Column (5). This indicates sizeable variations in earning differences, and that a cohort-wage disparity among Japanese female workers aged 24-29 was evident across generations.

These results display a cohort-wage differential between part-time and permanent employment among Japanese female workers as a result of age effects and

time trends; however, the cohort effects appear to be minimal. In addition, there was a noticeable cohort-wage disparity between fixed-term employment permanent and employment among Japanese female workers due to both age and cohort effects and time trends over the period of 1993 to 2014.

B. Returns to human capital investment

Based on the estimates of the outcome (or wage) equation, Columns (1)-(5) in Table 4A, there were several undesirable results regarding the returns to human capital investment in relation to birth cohorts. First, according to Rows (3)-(6), educational attainment of at least a Bachelor's degree increased the wages of all cohorts, except for the 'Yutori generation,' the youngest cohort, born between 1985 and 1989 (Cohort E). Furthermore, the education premium was 24 per cent (exp(0.212)-1) for the oldest cohort born between 1965 and 1969 (Cohort A). It fell to 19 per cent (exp(0.172)-1) for the cohort born between 1980 and 1984 (Cohort D), and to zero for the youngest cohort born between 1985 and 1989 (Cohort E). These results indicate the return on education declined for Japanese women. Second, the return on experience was also minimal for Japanese women since an experience premium of ten per cent (exp(0.092)-1) was reported only for the cohort born between 1980 and 1984 (Cohort D), as shown in Row (7), Column (4). This possibly resulted from a lack of incentives for firms' to invest in human capital for women and middle-aged workers (Kambayashi and Kato, 2011). On the other hand, an age premium was present only for older generations because four to seven per cent premiums were observed only for the cohorts born between 1965 and 1979 (Cohorts A, B and C), based on the estimates shown in Row (9), Columns (1)-(3). This result likely was derived from age effects and time trends since the seniority system still played a role in determining workers' earnings.

The extended estimates in Columns (1)-(5) in Table 4B confirm the previous finding, indicating that educational attainment of at least a Bachelor's degree lifted the earnings of all cohorts with the exception of the youngest, Cohort E, born between 1985 and 1989. Additionally, the education premiums became smaller as a cohort progressed, and it became zero for this cohort, confirming previous findings. In addition, the extended estimates confirmed that a return on experience (of about 5% (exp(0.047)-1)) only existed for the cohort born between 1980 and 1984 (Cohort D), and that the return on experience was negligible for Japanese women aged 24-29, according to Row (7), Columns (1)-(5). On the contrary, the estimates reveal that an age premium was nonexistent for all cohorts of Japanese female workers aged 24-29, as shown in Row (9), Columns (1)-(5), suggesting cohort effects were absent. This result was likely because the age group was young (only 24-29 years of age). Therefore, additional analysis in order to ensure reliable conclusions.

These findings suggest returns to education decreased as a generation progressed, while the returns to experience were apparent only for the younger cohorts, suggesting a cohort-earning disparity in relation to education and experience for Japanese women due to age effects, time trends and cohort effects. Additionally, the cohort-wage differentials associated with age among Japanese women was apparently a result of mainly age effects and time trends.

C. Discussion on Japanese women's labour market outcomes

In light of the empirical findings in this study, there were a few important points that could enhance Japanese women's labour market outcomes. Labour force participation of Japanese women with part-time employment increased with age, experience, being married and the presence of children. Part-time employment serves a specific need for women, including married ones, who prefer flexible work arrangements. In order to improve the labour market welfare of part-time female workers, it was advantageous to have an educational attainment of at least a Bachelor's degree, metropolitan living, and employment in professional, and technical and healthcare support that allow them to earn wage premiums. Also, a sizable cohort-wage disparity between part-time and permanent employment was observed mainly due to age effects and time trends, but it was not apparent across cohorts.

With the aim of lifting the labour market welfare of fixed-term female workers, it was beneficial to aim for metropolitan living status and professional occupations that guarantee wage premiums, such as technical and healthcare support, and service and sales. In addition, age not only increased labour force participation but also wages; hence, Japanese women, particularly, mid-age career seekers, could enter the labour market with fixed-term employment status. Given this, it was expected that the prime-age in fixed-term employment would increase. Furthermore, there was a considerable cohort-wage differential between fixed-term employment and permanent employment across cohorts due to age effects and time trends, which were also present across generations due to cohort effects.

To improve the overall labour market welfare of women in Japan, the attainment of regular employment (rather than non-regular employment), at an earlier age, is favorable since it produced not only higher labour force participation and earnings, but also longer job tenure with a higher return from experience. To accomplish this, it is desirable for Japanese women to attain a higher level of education, given this increased permanent employment. Even though the returns to education diminished as a cohort progressed, acquiring appropriate knowledge, skills and training led to high-paying jobs, such as professional, and technical, and healthcare support occupations, in high-paying industries such as finance, insurance, real estate or public administration. Alternatively, government and private firms could reconsider existing programs, such as the Childcare Leave Act and work-life balance policies, that support women's participation and gender equity in the workforce, as Japanese women faced many challenges in the labour market (Kawaguchi, 2013; and 2015).[17]

17 Kawaguchi (2013, 2015) discusses the existing government policies that promote women's labour force participation in Japan, and documents the increased female retention and the improved gender equality in the workforce; however, there is still room for improvement in many areas for Japanese women, including slow relative wage growth, limited promotional opportunities at work, low retention after childbirth, and gender inequality in the workforce.

4. Concluding remarks

This paper examines recent long-term trends of women's employment, major determinants of labour force participation and earnings differentials among female workers, with a focus on non-regular employees during the prolonged economic recession in Japan. To do so, I employed the binomial logit, the multinomial logit model, and the Heckman's sample selection models using the 1993-2014 Japanese Panel Survey of Consumers data.

The empirical results of this study first validated existing findings in literature regarding labour force participation among Japanese women. In Japan, labour force participation of female workers with part-time employment declined with higher education and cohabitation with parents' who share finances, but it increased with experience, age, marriage, and the presence of a child. In the case of female workers with fixed-term employment, their labour force participation decreased with marriage and the presence of a child, but it increased with greater education, experience, age, parents' cohabitation with financial sharing, and metropolitan living.

This study also confirms the following findings concerning the earnings of Japanese female workers: the earnings of females in part-time employment were positively influenced by education and metropolitan living, but were not affected by experience and age. As for the wages of those with fixed-term employment, their wages were positively related with age and metropolitan living, but were inversely related to educational attainment of a high school diploma and an associate degree, while experience and age had no effect. Furthermore, there were large within-occupation and within-industry wage disparities that differed by employment status, and the premiums were smaller for female workers with non-regular employment than for those with full time employment. In addition, between-occupation and between-industry wage differentials that varied by employment status were apparent, and the differential appeared to be smaller for female workers with part time employment than for those with full time employment.

The results of this study present new findings revealing patterns of change in earnings of Japanese women by birth cohort. First, a sizeable wage differential between part-time and permanent employment among Japanese female workers of all ages was observed, with relatively consistent differentials observed across all cohorts; however, variations in wage disparity across generations becomes even larger when only considering workers aged 24-29. Likewise, there was not only a noticeable earnings disparity between fixed-term and permanent employment among female workers of all ages, and varied wage disparities across cohorts, but also a high degree of variation in wage disparity across generations when only workers aged 24-29 were examined. Second, the returns to education and the returns to experience both differ by cohort, such that education premiums decreased as a generation progressed, and experience premiums were apparent only for the 1980-1984 birth cohort. Lastly, the age premiums were only evident for earlier cohorts of Japanese female workers, regardless of age, suggesting premiums differ by cohort; however, when only female workers aged 24-29 were considered no age premium existed, across all cohorts. These results indicate that age effects, time trends and

cohort effects played a substantial role when determining the observed cohort-wage differentials in relation to employment status and human capital among Japanese female workers.

This paper extends existing literature by offering deeper insights into understanding long-term trends of labour force participation and wages of Japanese women in the prolonged recession period of 1993 to 2014. It also shows the ongoing transformation of earning patterns among Japanese women that vary by birth cohort, focusing on non-regular employment. The findings in this study show how socio-economic factors, employment selection and birth cohort affect labour market outcomes in Japan impacting the welfare of female workers. Further, as women's labour force participation becomes more in demand given Japan's the aging population, these findings informs employees, firms, and policy makers in initiating efforts to promote labour force participation, and reduce earning's penalties among female workers, while re-evaluating ways to improve the labour market welfare of female employees in Japan.

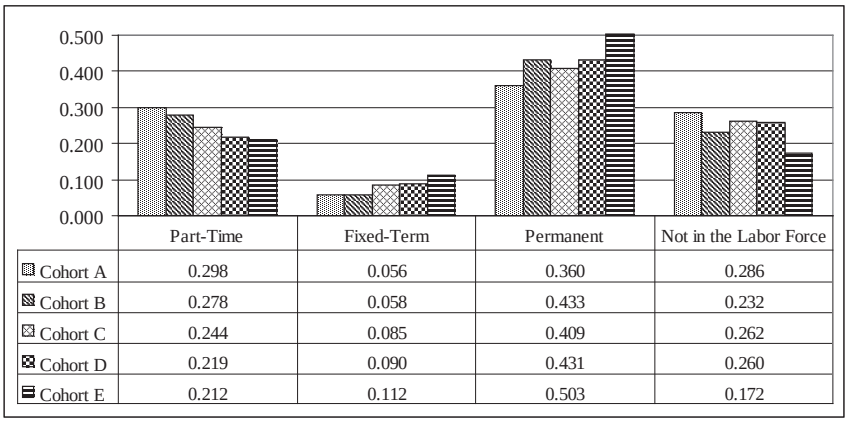
Table1 - Labour Force Participation Data: 1993-2014

	All Sample n=39635			*Part-Time n=10922*			*Fixed-Term n=2633*			*Permanent n=15453*			*No Employment n=10627*		
	Total	*Mean*	*S.D*	*Total*	*Mean*	*S.D*	*Total*	*Mean*	*S.D*	*Total*	*Mean*	*S.D*	*Total*	*Mean*	*S.D*
Education															
Less than HS Diploma	2406	0.061	0.239	863	0.079	0.270	93	0.035	0.185	514	0.033	0.179	936	0.088	0.283
High School Diploma or Equivalent	15519	0.392	0.488	5366	0.491	0.500	879	0.334	0.472	4903	0.317	0.465	4371	0.411	0.492
Technical or Trade School Diploma	6764	0.171	0.376	1748	0.160	0.367	451	0.171	0.377	2840	0.184	0.387	1725	0.162	0.369
Associate Degree	8219	0.207	0.405	2021	0.185	0.388	666	0.253	0.435	3346	0.217	0.412	2186	0.206	0.404
At least a Bachelor's degree	6727	0.170	0.375	924	0.085	0.278	544	0.207	0.405	3850	0.249	0.433	1409	0.133	0.339
Experience (= Total Service Length in Years)	39635	13.29	9.053	10922	14.68	7.683	2633	15.14	7.450	15453	17.3	8.35	-	-	-
Age	39635	34.91	6.989	10922	36.51	7.067	2633	35.58	7.240	15453	34.0	6.98	10627	34.45	6.55
Marital Status															
Married (yes=1)	27222	0.687	0.464	8473	0.776	0.417	1434	0.545	0.498	7793	0.504	0.500	9522	0.896	0.305
Unmarried (yes=0)	12413	0.313	0.464	2449	0.224	0.417	1199	0.455	0.498	7660	0.496	0.500	1105	0.104	0.305
Number of Children															
Zero	13940	0.352	0.478	2727	0.250	0.433	1327	0.504	0.500	8460	0.547	0.498	1426	0.134	0.341
One	6828	0.172	0.378	1857	0.170	0.376	374	0.142	0.349	2357	0.153	0.360	2240	0.211	0.408
Two	12910	0.326	0.469	4272	0.391	0.488	693	0.263	0.440	3261	0.211	0.408	4684	0.441	0.497
Three or more	5957	0.150	0.357	2066	0.189	0.392	239	0.091	0.287	1375	0.089	0.285	2277	0.214	0.410
Living & Financial Status															
Living & sharing finance w/ parents (yes=1)	13072	0.330	0.470	3056	0.280	0.449	1040	0.395	0.489	6758	0.437	0.496	2218	0.209	0.406
Living & sharing finance w/ parents (no=1)	26398	0.666	0.472	7813	0.715	0.451	1582	0.601	0.490	8633	0.559	0.497	8370	0.788	0.409
Housing Tenure															
Housing Tenure (yes=1)	26142	0.660	0.474	7311	0.669	0.470	1723	0.654	0.476	10502	0.680	0.467	6606	0.622	0.485
Housing Tenure (no=1)	13456	0.339	0.474	3598	0.329	0.470	907	0.344	0.475	4934	0.319	0.466	4017	0.378	0.485
Metropolitan Living Status															
Living in a Large City	10569	0.267	0.442	2741	0.251	0.434	869	0.330	0.470	4122	0.267	0.442	2837	0.267	0.442
Living in a Medium City	23726	0.599	0.490	6688	0.612	0.487	1502	0.570	0.495	9140	0.591	0.492	6396	0.602	0.490
Living in a Small City	5265	0.133	0.339	1488	0.136	0.343	250	0.095	0.293	2157	0.140	0.347	1370	0.129	0.335

Partner/Spouse															
Age	27222	38.65	7.649	8473	40.03	7.772	1434	39.75	7.625	7793	38.33	7.747	9522	37.53	7.242
Annual Income	25484	537.7	301.1	7944	515.7	274.3	1349	501.6	277.9	7240	519.7	316.7	8951	577.3	310.2

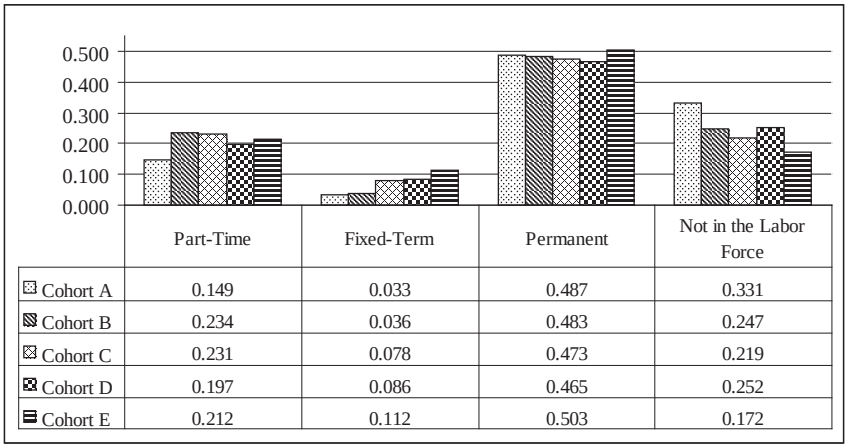
*Living & Financial Status: 165 out of 39635 (or 53/10922 part-time, 11/2633 fixed-term, 62/15453 permanent, 39/10627 unemployed) respondents had invalid responses.
*Housing Tenure: 37 out of 39635 (or 13/10922 part-time, 3/2633 fixed-term, 17/15453 permanent, 4/10627 unemployed) respondents had invalid responses.
*Metropolitan Living Status: 75 out of 39635 (or 5/10922 part-time, 12/2633 fixed-term, 34/15453 permanent, 24/10627 unemployed) respondents had invalid responses.
*Partner/Spouse Income: 1738 out of 27222 (or 529/8473 part-time, 85/1434 fixed-term, 553/7793 permanent, 571/9522 unemployed) married respondents had invalid responses.

Figure 1A - Overall Trends of Employment Status by Birth Cohort for Japanese Women All Ages: 1993-2014 (unit: per cent)



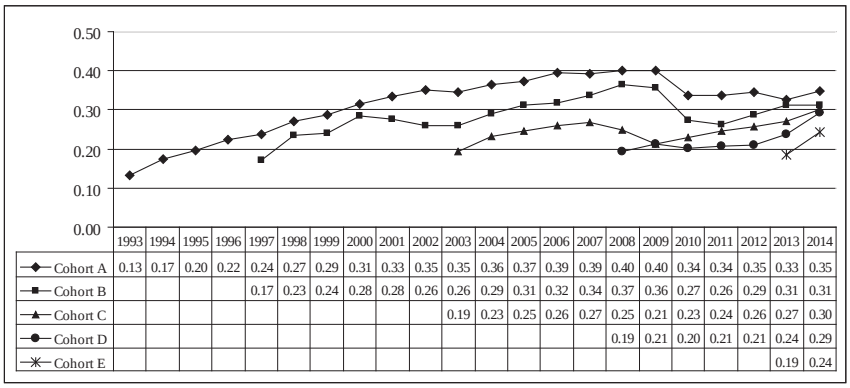
	Part-Time	Fixed-Term	Permanent	Not in the Labor Force
Cohort A	0.298	0.056	0.360	0.286
Cohort B	0.278	0.058	0.433	0.232
Cohort C	0.244	0.085	0.409	0.262
Cohort D	0.219	0.090	0.431	0.260
Cohort E	0.212	0.112	0.503	0.172

Figure 1B - Overall Trends of Employment Status by Birth Cohort for Japanese Women Aged 24-29: 1993-2014 (unit: per cent)



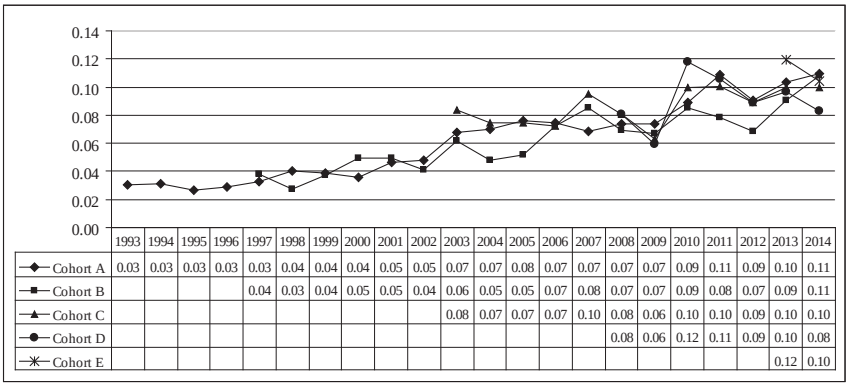
	Part-Time	Fixed-Term	Permanent	Not in the Labor Force
Cohort A	0.149	0.033	0.487	0.331
Cohort B	0.234	0.036	0.483	0.247
Cohort C	0.231	0.078	0.473	0.219
Cohort D	0.197	0.086	0.465	0.252
Cohort E	0.212	0.112	0.503	0.172

Figure 2A - Recent Trends of Employment Status by Birth Cohort: 1993-2014 – Part-Time (unit: per cent)



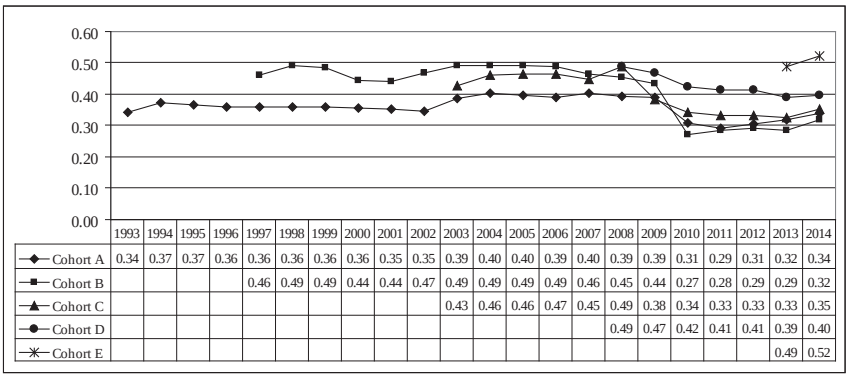
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Cohort A	0.13	0.17	0.20	0.22	0.24	0.27	0.29	0.31	0.33	0.35	0.35	0.36	0.37	0.39	0.39	0.40	0.40	0.34	0.34	0.35	0.33	0.35
Cohort B					0.17	0.23	0.24	0.28	0.28	0.26	0.26	0.29	0.31	0.32	0.34	0.37	0.36	0.27	0.26	0.29	0.31	0.31
Cohort C											0.19	0.23	0.25	0.26	0.27	0.25	0.21	0.23	0.24	0.26	0.27	0.30
Cohort D																0.19	0.21	0.20	0.21	0.21	0.24	0.29
Cohort E																					0.19	0.24

Figure 2B - Recent Trends of Employment Status by Birth Cohort: 1993-2014 – Fixed-Term (unit: per cent)



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Cohort A	0.03	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.07	0.07	0.08	0.07	0.07	0.07	0.07	0.09	0.11	0.09	0.10	0.11
Cohort B					0.04	0.03	0.04	0.05	0.05	0.04	0.06	0.05	0.05	0.07	0.08	0.07	0.07	0.09	0.08	0.07	0.09	0.11
Cohort C											0.08	0.07	0.07	0.07	0.10	0.08	0.06	0.10	0.10	0.09	0.10	0.10
Cohort D																0.08	0.06	0.12	0.11	0.09	0.10	0.08
Cohort E																					0.12	0.10

Figure 2C - Recent Trends of Employment Status by Birth Cohort: 1993-2014 – Permanent (unit: per cent)



	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Cohort A	0.34	0.37	0.37	0.36	0.36	0.36	0.36	0.36	0.35	0.35	0.39	0.40	0.40	0.39	0.40	0.39	0.39	0.31	0.29	0.31	0.32	0.34
Cohort B					0.46	0.49	0.49	0.44	0.44	0.47	0.49	0.49	0.49	0.49	0.46	0.45	0.44	0.27	0.28	0.29	0.29	0.32
Cohort C											0.43	0.46	0.46	0.47	0.45	0.49	0.38	0.34	0.33	0.33	0.33	0.35
Cohort D																0.49	0.47	0.42	0.41	0.41	0.39	0.40
Cohort E																					0.49	0.52

Table 2 - Logit & MNL Estimates and Marginal Effects of Participation Equation: 1993-2014
Dependent Variable: Labour Force Participation

n=39635	*Logit*		*Multinomial Logit (MNL)*					
Base=10627 (Not in the Labour Force)	*(1)*		*(2)*		*(3)*		*(4)*	
	In the Labour Force n=29008		*Part-Time n=10922*		*Fixed-Term n=2633*		*Permanent n=15453*	
Independent Variables	*Estimated coefficient*	*Marginal effect*	*Estimated coefficient*	*Marginal effect*	*Estimated coefficient*	*Marginal effect*	*Estimated coefficient*	*Marginal effect*
(1) High School with Diploma (yes=1)	0.020	0.002	-0.094	-0.048***	0.304**	0.012*	0.255***	0.043***
	(0.134)	(0.016)	(0.063)	(0.009)	(0.124)	(0.007)	(0.077)	(0.010)
(2) Technical or Trade School (yes=1)	0.155	0.018	-0.215***	-0.125***	0.627***	0.018**	0.768***	0.133***
	(0.145)	(0.017)	(0.071)	(0.010)	(0.131)	(0.007)	(0.083)	(0.011)
(3) Associate Degree (yes=1)	0.124	0.014	-0.271***	-0.133***	0.793***	0.030***	0.716***	0.124***
	(0.141)	(0.016)	(0.069)	(0.010)	(0.128)	(0.007)	(0.082)	(0.011)
(4) At least Bachelor's Degree (yes=1)	0.318**	0.037**	-0.579***	-0.248***	0.846***	0.020***	1.313***	0.255***
	(0.149)	(0.017)	(0.076)	(0.011)	(0.132)	(0.007)	(0.084)	(0.011)
(5) Experience (=Service Length in Years)	0.218***	0.025***	0.188***	0.004***	0.213***	0.001***	0.268***	0.021***
	(0.006)	(0.000)	(0.003)	(0.000)	(0.004)	(0.000)	(0.003)	(0.000)
(6) Age	0.022***	0.002***	0.037***	0.007***	0.063***	0.004***	-0.018***	-0.009***
	(0.007)	(0.001)	(0.003)	(0.000)	(0.005)	(0.000)	(0.003)	(0.000)
(7) Married (yes=1)	-0.998***	-0.115***	-0.603***	0.039***	-1.167***	-0.019***	-1.285***	-0.125***
	(0.090)	(0.011)	(0.057)	(0.007)	(0.075)	(0.003)	(0.058)	(0.006)
(8) Children (1)	-0.785***	-0.091***	-0.583***	-0.007	-0.989***	-0.023***	-0.816***	-0.052***
	(0.087)	(0.010)	(0.060)	(0.007)	(0.085)	(0.004)	(0.060)	(0.007)
(9) Children (2)	-0.909***	-0.105***	-0.589***	0.026***	-1.098***	-0.019***	-1.137***	-0.103***
	(0.096)	(0.011)	(0.057)	(0.007)	(0.081)	(0.004)	(0.059)	(0.007)

(10) Children (3 or more)	-0.825***	-0.095***	-0.511***	0.031***	-1.276***	-0.035***	-1.020***	-0.085***
	(0.109)	(0.013)	(0.064)	(0.008)	(0.101)	(0.005)	(0.069)	(0.008)
(11) Living & Sharing Finance w/ Parents (yes=1)	-0.241***	-0.028***	-0.282***	-0.026***	-0.093	0.007**	-0.237***	-0.010*
	(0.079)	(0.009)	(0.044)	(0.006)	(0.065)	(0.003)	(0.046)	(0.005)
(12) Housing Tenure (yes=1)	0.133**	0.015**	0.076**	-0.006	0.037	-0.005*	0.193***	0.025***
	(0.065)	(0.007)	(0.037)	(0.005)	(0.058)	(0.003)	(0.040)	(0.005)
(13) Metropolitan Living (Big City)	-0.031	-0.004	-0.006	0.008	0.275***	0.021***	-0.144**	-0.033***
	(0.100)	(0.012)	(0.056)	(0.007)	(0.088)	(0.005)	(0.059)	(0.007)
(14) Semi-Metropolitan Living (Medium City)	-0.051	-0.006	-0.040	-0.001	0.071	0.007*	-0.074	-0.011*
	(0.091)	(0.011)	(0.049)	(0.007)	(0.081)	(0.004)	(0.052)	(0.006)
(15) Constant	-1.419***	-	-2.511***	-	-5.886***	-	-1.761***	-
	(0.289)	-	(0.138)	-	(0.230)	-	(0.149)	-
Pseudo R-Square	0.372	-	0.236	-	0.236	-	0.236	-

Notes: Standard errors were shown in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% levels, respectively.

Table 3 - Heckman's Sample Selection Estimates of Wage Equation: 1993-2014; Dependent Variable: Log Hourly Wage

		(1) Part-Time		(2) Fixed-Term		(3) Permanent	
Independent Variables		*Estimated Coefficient*	*Standard Error*	*Estimated Coefficient*	*Standard Error*	*Estimated Coefficient*	*Standard Error*
Outcome (=Wage) Equation							
(1)	High School with Diploma (yes=1)	-0.063*	(0.033)	-0.183***	(0.052)	0.102***	(0.026)
(2)	Technical or Trade School (yes=1)	-0.038	(0.037)	-0.077	(0.056)	0.187***	(0.027)
(3)	Associate Degree (yes=1) (E4)	-0.023	(0.036)	-0.140**	(0.056)	0.217***	(0.027)
(4)	At least Bachelor's Degree (yes=1)	0.131***	(0.042)	0.016	(0.057)	0.353***	(0.029)
(5)	Experience	-0.003	(0.004)	0.004	(0.005)	0.003	(0.002)
(6)	Experience Squared	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
(7)	Age	-0.005	(0.011)	0.038***	(0.013)	0.055***	(0.005)
(8)	Age Squared	0.000	(0.000)	-0.001***	(0.000)	-0.001***	(0.000)
(9)	Metropolitan Living (Big City)	0.134***	(0.028)	0.158***	(0.032)	0.160***	(0.013)
(10)	Semi-Metropolitan Living (Medium City)	0.054**	(0.025)	0.084***	(0.030)	0.052***	(0.011)
(11)	Professional/Specialist/Mgmt/Teacher (O1)	0.255***	(0.055)	0.177***	(0.037)	0.418***	(0.018)
(12)	Programmer/Nurse/Nutritionist (O2)	0.412***	(0.050)	0.269***	(0.041)	0.513***	(0.016)
(13)	Office Administration (O3)	0.058	(0.038)	0.080***	(0.031)	0.352***	(0.013)
(14)	Manufacturing & Operations (O4)	0.056	(0.040)	0.051	(0.038)	0.165***	(0.019)
(15)	Services and Sales (O5)	0.081**	(0.040)	0.097***	(0.035)	0.273***	(0.016)
(16)	Manufacturing (I1)	-0.060	(0.040)	-0.061*	(0.033)	-0.024	(0.015)
(17)	Retail Trade (I2)	-0.078**	(0.036)	-0.201***	(0.033)	-0.111***	(0.014)
(18)	Finance/Insurance/Real Estate (I3)	0.038	(0.056)	-0.020	(0.038)	0.073***	(0.016)
(19)	Service (I4)	-0.003	(0.035)	-0.076***	(0.026)	-0.074***	(0.013)
(20)	Public Administration (I5)	0.060	(0.007)	-0.210***	(0.033)	0.146***	(0.017)
(21)	Constant	6.866***	(0.215)	6.405***	(0.228)	5.441***	(0.096)
	lambda	-0.863***	(0.275)	-0.275***	(0.091)	0.460***	(0.136)

Participation Equation							
(22)	High School with Diploma (yes=1) (E2)	0.186*	(0.100)	0.142	(0.159)	0.474***	(0.087)
(23)	Technical or Trade School (yes=1) (E3)	0.150	(0.117)	0.415**	(0.172)	0.536***	(0.094)
(24)	Associate Degree (yes=1) (E4)	-0.144	(0.107)	0.533***	(0.170)	0.556***	(0.093)
(25)	At least Bachelor's Degree (yes=1) (E5)	-0.117	(0.124)	0.376**	(0.174)	0.669***	(0.094)
(26)	Experience	0.034***	(0.005)	0.034***	(0.006)	0.042***	(0.003)
(27)	Age	0.037***	(0.006)	0.027***	(0.007)	-0.003	(0.004)
(28)	Metropolitan Living (Big City)	-0.014	(0.103)	-0.177	(0.133)	0.078	(0.069)
(29)	Semi-Metropolitan Living (Medium City)	-0.149*	(0.089)	-0.323***	(0.123)	0.045	(0.060)
(30)	Marital Status (married: yes=1)	-0.095	(0.094)	-0.322***	(0.099)	-0.286***	(0.059)
(31)	Constant	0.304	(0.249)	-0.637**	(0.324)	0.966***	(0.176)
(32)	Other Defined Control Variables	YES	-	YES	-	YES	-
	Rho	-1.000		-0.655		1.000	

Notes: Standard errors were shown in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% levels, respectively. Estimated coefficients of the number of children, parents' cohabitation with financial sharing, housing tenure, and birth cohort in the participation equation were not reported; yet they were available upon request. The base category was Japanese women with 'no high school diploma' for education, living in a 'small city' for metropolitan living, with ''other' occupations (O6)' for occupation, and with ''other' industries (I6)' for industry.

Table 4A - Heckman's Sample Selection Estimates of Wage Equation for Japanese Women All Ages: 1993-2014; Dependent Variable: Log Hourly Wage

	(1)		(2)		(3)		(4)		(5)	
	Cohort A		Cohort B		Cohort C		Cohort D		Cohort E	
Independent Variables	*Estimated Coefficient*	*Standard Error*	*Estimated Coefficient*	*Standard Error*	*Estimated Coefficient*	*Standard Error*	*Estimated Coefficient*	*Standard Error*	*Estimated Coefficient*	*Standard Error*
Outcome (=Wage) Equation										
(1) Part-Time Employment	-0.331***	(0.008)	-0.269***	(0.014)	-0.273***	(0.014)	-0.335***	(0.020)	-0.306***	(0.034)
(2) Fixed-Term Employment	-0.133***	(0.013)	-0.091***	(0.024)	-0.090***	(0.018)	-0.096***	(0.024)	-0.122***	(0.037)
(3) High School with Diploma (yes=1)	-0.028*	(0.014)	-0.058**	(0.026)	-0.016	(0.030)	-0.064*	(0.039)	-0.047	(0.073)
(4) Technical or Trade School (yes=1)	0.031**	(0.016)	0.027	(0.029)	0.022	(0.033)	0.031	(0.042)	0.058	(0.085)
(5) Associate Degree (yes=1) (E4)	0.028*	(0.015)	0.039	(0.027)	0.021	(0.031)	0.123***	(0.044)	-0.014	(0.084)
(6) At least Bachelor's Degree (yes=1)	0.212***	(0.017)	0.212***	(0.030)	0.206***	(0.033)	0.172***	(0.045)	0.104	(0.099)
(7) Experience	-0.010***	(0.003)	-0.007	(0.008)	0.014*	(0.007)	0.092***	(0.013)	0.047	(0.032)
(8) Experience Squared	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)	-0.004***	(0.001)	-0.002	(0.002)
(9) Age	0.042***	(0.004)	0.047***	(0.015)	0.070***	(0.021)	-0.058	(0.058)	-0.353	(0.290)
(10) Age Squared	-0.001***	(0.000)	-0.001***	(0.000)	-0.001***	(0.000)	0.001	(0.001)	0.007	(0.005)
(11) Metropolitan Living (Big City)	0.149***	(0.010)	0.142***	(0.020)	0.101***	(0.020)	0.233***	(0.031)	0.201***	(0.050)
(12) Semi-Metropolitan Living (Medium City)	0.036***	(0.009)	0.056***	(0.019)	-0.006	(0.018)	0.171***	(0.029)	0.125***	(0.047)
(13) Constant	6.081***	(0.089)	6.142***	(0.249)	5.536***	(0.331)	6.631***	(0.835)	11.216***	(3.844)
(14) Occupation and Industry	YES	-	YES	-	YES	-	YES	-	YES	-
lambda	-0.041*	(0.023)	-0.110**	(0.054)	0.085*	(0.046)	0.314***	(0.060)	0.202	(0.133)

Participation Equation										
(15) High School with Diploma (yes=1) (E2)	0.095**	(0.047)	-0.024	(0.092)	0.104	(0.086)	0.250**	(0.123)	0.535*	(0.280)
(16) Technical or Trade School (yes=1) (E3)	0.092*	(0.051)	0.080	(0.104)	0.277***	(0.095)	0.593***	(0.132)	0.910***	(0.294)
(17) Associate Degree (yes=1) (E4)	0.084*	(0.051)	0.102	(0.098)	0.201**	(0.090)	0.416***	(0.135)	0.771**	(0.302)
(18) At least Bachelor's Degree (yes=1) (E5)	0.181***	(0.057)	0.192*	(0.102)	0.324***	(0.092)	0.743***	(0.128)	1.353***	(0.285)
(19) Experience	0.111***	(0.002)	0.149***	(0.005)	0.141***	(0.004)	0.201***	(0.007)	0.361***	(0.021)
(20) Age	0.050***	(0.002)	0.053***	(0.006)	-0.028***	(0.006)	-0.027**	(0.012)	-0.138***	(0.038)
(21) Marital Status (married: yes=1)	-0.540***	(0.044)	-0.117	(0.082)	-0.505***	(0.062)	-0.638***	(0.088)	-0.229	(0.191)
(22) Children (1)	-0.521***	(0.048)	-0.637***	(0.087)	-0.316***	(0.064)	-0.301***	(0.088)	-0.443	(0.202)
(23) Children (2)	-0.783***	(0.045)	-0.765***	(0.087)	-0.261***	(0.064)	0.056	(0.096)	0.165	(0.229)
(24) Children (3 or more)	-0.794***	(0.048)	-1.023***	(0.100)	-0.170**	(0.081)	0.400***	(0.132)	0.248	(0.325)
(25) Metropolitan Living (Big City)	0.000	(0.038)	-0.124	(0.089)	-0.095	(0.073)	0.076	(0.100)	0.223	(0.238)
(26) Semi-Metropolitan Living (Medium City)	-0.085**	(0.033)	-0.005	(0.081)	-0.066	(0.068)	0.081	(0.092)	0.163	(0.226)
(27) Constant	-1.742***	(0.084)	-1.773***	(0.198)	0.575***	(0.193)	-0.163	(0.359)	2.222**	(1.013)
(28) Other Defined Control Variables	YES	-	YES	-	YES	-	YES	-	YES	-
Rho	-0.108	-	-0.292	-	0.224	-	0.773	-	0.533	-

Notes: Standard errors were shown in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% levels, respectively. Estimated coefficients of occupations and industry (in the outcome (wage) equation) and parents' cohabitation with financial sharing and housing tenure (in the participation equation) were not reported; yet they were available upon request.

Table 4B - Heckman's Sample Selection Estimates of Wage Equation for Japanese Women Aged 24-29: 1993-2014; Dependent Variable: Log Hourly Wage

	(1)		(2)		(3)		(4)		(5)	
	Cohort A		Cohort B		Cohort C		Cohort D		Cohort E	
Independent Variables	*Estimated Coefficient*	*Standard Error*	*Estimated Coefficient*	*Standard Error*	*Estimated Coefficient*	*Standard Error*	*Estimated Coefficient*	*Standard Error*	*Estimated Coefficient*	*Standard Error*
Outcome (=Wage) Equation										
(1) Part-Time Employment	-0.199***	(0.023)	-0.275***	(0.023)	-0.239***	(0.022)	-0.296***	(0.025)	-0.306***	(0.034)
(2) Fixed-Term Employment	-0.070	(0.043)	-0.114**	(0.049)	-0.036	(0.029)	-0.094***	(0.030)	-0.122***	(0.037)
(3) High School with Diploma (yes=1)	-0.014	(0.041)	-0.024	(0.044)	0.011	(0.049)	-0.031	(0.048)	-0.047	(0.073)
(4) Technical or Trade School (yes=1)	0.076*	(0.045)	0.001	(0.049)	-0.010	(0.053)	0.059	(0.053)	0.058	(0.085)
(5) Associate Degree (yes=1)	0.097**	(0.044)	0.081*	(0.046)	0.011	(0.052)	0.191***	(0.056)	-0.014	(0.084)
(6) At least Bachelor's Degree (yes=1)	0.229***	(0.047)	0.218***	(0.049)	0.156***	(0.054)	0.207***	(0.057)	0.104	(0.099)
(7) Experience	-0.001	(0.006)	0.005	(0.008)	-0.021*	(0.012)	0.047***	(0.017)	0.047	(0.032)
(8) Experience Squared	0.000	(0.000)	0.000	(0.000)	0.001**	(0.000)	-0.001*	(0.001)	-0.002	(0.002)
(9) Age	0.299	(0.203)	0.336	(0.221)	0.082	(0.208)	0.078	(0.207)	-0.353	(0.291)
(10) Age Squared	-0.005	(0.004)	-0.006	(0.004)	-0.001	(0.004)	-0.002	(0.004)	0.007	(0.005)
(11) Metropolitan Living (Big City)	0.098***	(0.027)	0.097***	(0.032)	0.147***	(0.028)	0.232***	(0.036)	0.201***	(0.050)
(12) Semi-Metropolitan Living (Medium City)	0.037	(0.024)	0.050*	(0.028)	0.036	(0.025)	0.160***	(0.034)	0.125***	(0.047)
(13) Constant	2.262	(2.720)	2.249	(2.954)	5.603**	(2.793)	5.031*	(2.764)	11.216***	(3.844)
(14) Occupation and Industry	YES	-	YES	-	YES	-	YES	-	YES	-
lambda	-0.115***	(0.037)	-0.015	(0.050)	-0.064	(0.060)	0.200***	(0.069)	0.202	(0.133)

Participation Equation										
(15) High School with Diploma (yes=1) (E2)	-0.004	(0.109)	-0.094	(0.145)	0.108	(0.156)	0.201	(0.168)	0.535*	(0.280)
(16) Technical or Trade School (yes=1) (E3)	-0.011	(0.127)	-0.058	(0.169)	0.299*	(0.175)	0.591***	(0.180)	0.910***	(0.294)
(17) Associate Degree (yes=1) (E4)	0.049	(0.127)	-0.019	(0.158)	0.173	(0.168)	0.469**	(0.189)	0.771**	(0.302)
(18) At least Bachelor's Degree (yes=1) (E5)	0.251*	(0.141)	-0.177	(0.164)	0.376**	(0.172)	0.839***	(0.177)	1.353***	(0.285)
(19) Experience	0.096***	(0.005)	0.111***	(0.007)	0.189***	(0.008)	0.241***	(0.011)	0.361***	(0.021)
(20) Age	0.001	(0.022)	0.137***	(0.027)	0.015	(0.026)	-0.127***	(0.026)	-0.138***	(0.038)
(21) Marital Status (married: yes=1)	-0.878***	(0.103)	-0.146	(0.126)	-0.307**	(0.125)	-0.557***	(0.113)	-0.229	(0.191)
(22) Children (1)	-0.657***	(0.092)	-1.080***	(0.126)	-0.713***	(0.128)	-0.349***	(0.122)	-0.443**	(0.202)
(23) Children (2)	-0.834***	(0.100)	-1.296***	(0.138)	-0.801***	(0.132)	0.000	(0.133)	0.165	(0.229)
(24) Children (3 or more)	-0.826***	(0.154)	-1.610***	(0.206)	-0.844***	(0.206)	0.175	(0.200)	0.248	(0.325)
(25) Metropolitan Living (Big City)	-0.030	(0.097)	-0.166	(0.127)	-0.144	(0.127)	0.079	(0.137)	0.223	(0.238)
(26) Semi-Metropolitan Living (Medium City)	-0.157*	(0.082)	-0.041	(0.114)	-0.024	(0.113)	0.129	(0.127)	0.163	(0.226)
(27) Constant	0.339	(0.583)	-3.365***	(0.729)	-0.706	(0.697)	2.190***	(0.706)	2.222**	(1.013)
(28) Other Defined Control Variables	YES	-	YES	-	YES	-	YES	-	YES	-
Rho	-0.317	-	-0.043	-	-0.176	-	0.563	-	0.533	-

Notes: Standard errors were shown in parentheses. ***, **, * indicate significance at the 1%, 5% and 10% levels, respectively. Estimated coefficients of occupations and industry (in the outcome (wage) equation) and parents' cohabitation with financial sharing and housing tenure (in the participation equation) were not reported; yet they were available upon request.

Appendices

Appendix A1 - Initial Data Observations by Birth Cohort: 1993-2014

Panel #	*Year*	*Age*	*Total*	*Cohort*	*Obs*	*Cohort*	*Obs*	*Cohort*	*Obs*	*Cohort*	*Obs*	*Cohort*	*Obs*
1	1993	24-34	1500	A	1500								
2	1994	25-35	1415	A	1415								
3	1995	26-36	1341	A	1341								
4	1996	27-37	1289	A	1289								
5	1997	24-38	1749	A	1249	B	500						
6	1998	25-39	1628	A	1193	B	435						
7	1999	26-40	1537	A	1131	B	406						
8	2000	27-41	1481	A	1098	B	383						
9	2001	28-42	1421	A	1057	B	364						
10	2002	29-43	1373	A	1030	B	343						
11	2003	24-44	2139	A	980	B	323	C	836				
12	2004	25-45	1980	A	944	B	312	C	724				
13	2005	26-46	1870	A	904	B	292	C	674				
14	2006	27-47	1774	A	875	B	278	C	621				
15	2007	28-48	1706	A	847	B	271	C	588				
16	2008	24-49	2284	A	828	B	260	C	560	D	636		
17	2009	25-50	2168	A	799	B	255	C	541	D	573		
18	2010	24-51	2089	A	778	B	246	C	522	D	543		
19	2011	27-52	2024	A	765	B	243	C	507	D	509		
20	2012	28-53	1966	A	750	B	234	C	496	D	486		
21	2013	24-54	2550	A	735	B	231	C	480	D	456	E	648
22	2014	25-55	2391	A	704	B	222	C	462	D	436	E	567
All	**1993-2014**	**24-55**	**39675**	**Cohort A**	**22212**	**Cohort B**	**5598**	**Cohort C**	**7011**	**Cohort D**	**3639**	**Cohort E**	**1215**
Born Year	**1959-1989**	**-**	**-**	**1959-1969**	**-**	**1970-1973**	**-**	**1974-1979**	**-**	**1980-1984**	**-**	**1985-1989**	**-**
Age	**-**	**24-55**	**-**	**24-55**	**-**	**24-44**	**-**	**24-40**	**-**	**24-34**	**-**	**24-29**	**-**

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