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Economic Crisis and Women's Labor Force Return after Childbirth:
Evidence from South Korea

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Abstract: From the 1980s to the late 1990s, South Korea experienced a remarkable economic boom. The outbreak of the Asian financial crisis in late 1997 brought an interruption in these developments. It was only after 2002 that the country regained its economic growth. This study examines how women's labor force return after childbirth (with and without career interruption) varied before, during and after the crisis. Logistic and hazard regression models were applied to the Korea Labor and Income Panel Study (KLIPS waves 1-10). The study reveals an increase in women's post-birth work return without career interruption since the 1980s. The Asian financial crisis boosted the immediate return pattern. Women's own human capital accumulation and the implementation of job-protected maternity leave further contributed to this pattern. Women who underwent career interruption were also more likely to re-enter the labor market during and after the crisis than before. A relatively brief absence from work increased their chance of resuming the previous job or a job of similar occupational status. An interruption longer than three years was more likely to lead to downward occupational mobility. Downward moves were especially common during the period of financial crisis.

Key words: Asian financial crisis, social policy reform, human capital accumulation, labor force return after childbirth, career prospects, South Korea

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Introduction

Women's labor force participation has been increasing around the world since the 1960s. Increases in women's education, growing preferences among women for non-domestic roles, men's gradual acknowledgement of the benefits of women's employment, growth in female-dominated occupations, and many other factors have been conducive to these increases (England and Farkas 1986). Still, when becoming a mother, most women take some time out of the labor force for childcare. Whether mothers return to the labor force after childbirth, and when they return, vary across contexts.

A great deal of research has addressed women's labor force return after childbirth. By and large, driving forces for return and mothers' career challenges have been the main foci. Women's own accumulation of human capital, family policies facilitating a reconciliation of work and family commitment, and household financial needs have been documented as factors that either enhance or hinder women's return to work after childbearing (Even 1987; Gustafsson et al. 1996; Dex et al. 1998; Stier et al. 2001; Rønsen and Sundström 2002; Baker and Milligan 2008; Baum II 2003; Berger and Waldfogel 2004; Lalive and Zweimüller 2009). The length of timeout has been congruously argued to have played a pivotal role in determining women's career prospects upon return. A longer break from work often leads to reduced job status and a lower paid position (Gupta and Smith 2002; Smeaton 2006; Aisenbrey et al. 2009; Gangl and Ziefle 2009; Evertsson and Duvander 2010).

Most relevant research concentrates on industrialized and developed societies in Europe and North America, while not much relevant knowledge is documented for developed countries in East Asia. The link between economic swings and women's labor force return after childbirth is rarely addressed in the literature, though the impact of economic crisis on other aspects of family dynamics such as family formation and fertility has been widely documented (Sobotka et al. 2011). This study contributes to closing these gaps by focusing on South Korea (hereafter Korea), a developed society in East Asia that has in recent decades witnessed dramatic economic ups and downs, substantial education expansion, increases in female labor force participation, family policy reform, and social value change. It demonstrates how Korean women's post-birth labor force behavior varies before, during and after the Asian financial crisis and what career prospects women are faced with during these periods.

This is the first study to focus on Korean women's post-birth labor force return from an individual level perspective. It demonstrates when Korean women return to the labor market after childbirth, and what factors are associated with their return and their career prospects upon return. It examines whether factors that matter in Western contexts are also relevant in the Korean context and what specific influence the Korean context may have on women's labor force return after childbirth.

The outline of the paper is as follows. The first section reviews literature on the main driving forces for women's post-birth labor force return in Western populations, followed by an account of research findings related to women's career prospects upon return to work. The second section introduces the specific socio-economic context of Korea. The third section accounts for the data used for the analysis as well as the research design. The fourth section presents and discusses the main findings. The last section draws some conclusions by relating the study results to findings from other contexts.

Women's post-birth labor force return and career prospects

In previous literature, women's human capital accumulation, the institutional settings concerning the reconciliation of work and family responsibilities, and household financial needs have been found to constitute the main factors affecting women's work return after childbirth. In this section, I will summarize how these factors may be associated with women's post-birth employment and how the length of timeout may influence women's career prospects in different contexts.

Women's human capital accumulation

Women's pre-birth human capital accumulation, either through education or at work, is frequently argued to have played a pivotal role in women's post-birth labor force return (Gustafsson et al. 1996). In the first place, high educational attainment is important in securing job continuity. Based on the Luxembourg Income Study, Pettit and Hook (2005) find that across the 19 selected countries women with high levels of education are more likely to be employed

after childbirth than are the less educated¹. Waldfogel et al. (1999) draw a similar conclusion in their comparative study on labor force participation of women with young children in the US, Britain and Japan.

The accumulation of human capital is a lifetime process (Mincer and Polachek 1974). In the post-school life stage, much of the continued accumulation occurs at work. Pre-birth employment experience, earning power, and occupational status have been found to be closely associated with women's employment continuity after childbirth. For example, Even (1987) finds a positive effect of prior work experience on women's labor force return in the US. He finds that working late into pregnancy is a strong indicator of work return. Gustafsson et al. (1996) make similar discoveries in the context of West Germany, finding that the more experience a woman collects from pre-birth jobs, the earlier she will resume employment after childbirth. Dex et al. (1998) discover that high income at the pre-birth job encourages women to resume employment quickly. Smeaton (2006) finds that women employed in professional and managerial occupations in Britain have more incentive to return to work after childbirth than others. In short, women with greater labor force engagement should, all else being equal, have a higher return intensity and faster return speed than others.

It is notable that highly educated women have a better chance than others of acquiring jobs of high occupational status and attracting enhanced salaries. Leaving such employment positions for a childrearing break may render high opportunity costs. To maintain stability, security, high earning levels and career enhancement, highly educated women may return to jobs more quickly than others. Further, they have more opportunities to make the best of their economic resources to combine caring and career. In a context short of public childcare services, the highly educated are more able to afford private childcare than are others (Smeaton 2006). The less educated, on the other hand, have less to lose from temporary labor market disengagement and are thus more likely to resume homemaker positions after childbirth, as is the case in West Germany (Gustafsson et al. 1996).

¹ The selected 19 countries are Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Finland, France, Germany, Hungary, Italy, Luxembourg, Netherlands, Norway, Poland, Russia Federation, Sweden, the UK and the US.

Family policies

Entitlement to job-protected maternity or parental leave proves to have increased women's continuous attachment to the labor force after childbirth in many contexts. The timing of return is largely determined by policies regulating how long the leave can be paid. A woman usually considers the possible benefits before deciding whether or not to return to work at a certain point of time (Klerman and Leibowitz 1994, 1998a, 1998b, 1999, and Berger and Waldfogel 2004).

Women eligible for leave benefit are found to have higher intensity of return to their pre-birth employment or to return to work more quickly than non-eligible women do. For example, the Maternity Leave Legislation (MLL) in the US has increased the number of mothers who return to their pre-birth jobs; women entitled to this leave are more likely to take a leave of up to the legally set duration and return to work more quickly than non-eligible women (Baum II 2003; Berger and Waldfogel 2004, Waldfogel et al. 1999). In Canada, too, job-protected maternity leave entitlement has increased eligible women's job continuity with their pre-birth employer (Baker and Milligan 2008). Swedish mothers who are eligible for the paid parental leave resume employment much faster than non-eligible mothers (Rønsen and Sundström 2002). Maternity/parental leave policies in Britain and Japan are also found to have increased women's employment after childbirth (Waldfogel 1998; Waldfogel et al. 1999).

However, extensive parental leave coupled with few childcare options may encourage the breadwinner-homemaker model, with women staying at home to care for children and men working in the paid labor force. For example, Austria expanded its parental leave to two years in 1990, with the overwhelming majority of eligible women taking advantage of the longer parental leave. Regulations facilitating the uptake of parental leave in the case of a second or subsequent birth led to a further expansion of labor market absence among many women (Pettit and Hook 2005; Lalive and Zweimüller 2009).

The public provision of childcare service can reduce a household's financial burden of childcare and promote mothers' labor force return. The absence of affordable and good-quality childcare can be a major barrier to mothers' re-employment (Waldfogel et al., 1999; OECD 2007). Pettit and Hook (2005) find that in countries (e.g. the Czech Republic) where public childcare provision is low, having a child under three years of age hinders women's employment probability; while in countries where the provision is high (e.g. Belgium, Sweden or Denmark), the hindering role of having small children in the household is less pronounced.

The possibility to work flexible hours and take days off to care for sick children can also facilitate the reconciliation of work and family life, and therefore promote women's labor force return (OECD 2007). For example, mothers in Sweden, the UK, and Belgium have the right to reduced working hours while their child is small (Smeaton 2006; OECD 2007; Laurijssen and Glorieux 2011). If working mothers have more time to attend to their children, their work-life conflict is greatly reduced.

Financial needs and economic uncertainty

A household's financial needs comprise another important factor that influences women's decision on whether and when to return to work after becoming a mother. Women in greater financial need usually return to the labor force quickly (Klerman and Leibowitz 1994, 1998a, 1998b, 1999). Smeaton (2006) asserts that economic imperatives increasingly dictate women's employment decisions. She finds that household financial burden due to mortgage debt pushed British mothers into early work return in the mid-1990s. Besides this, the financial pressure of raising a child alone drove single mothers back to work more quickly.

Sobotka et al. (2011) review how economic recessions are related to family formation and fertility in the developed world. They find no unanimous effect of economic recessions on fertility trends. Kreyenfeld et al. (2012) summarize how economic uncertainties are related to fertility across Europe. The issue of how recessions may affect women's post-birth labor force participation is much less explored worldwide. Still, Pettit and Hook (2005) find that the employment intensity of married women and women with children is high when the current unemployment rate is high, indicating that an unstable economic environment can prompt married women and women with children to take up work. Economic instability may enhance women's participation in the labor force when their husbands or partners face high risks of being laid off.

Other factors

Apart from these considerations, some other factors have been found to play a role in re-employment decisions. The presence of small children in the household depresses women's employment, as do plans to have more children (Smeaton 2006). High educational attainment or high earning power of a husband reduces women's probability of returning to the labor market,

and lengthens their career interruptions (Gustafsson et al. 1996; Dex et al. 1998). Attitudes toward women's employment and its assumed consequences for the well-being of the family also affect women's return to the labor market. In general, the rising economic activities of women have led to changes in attitudes toward the gendered division of labor. People are gradually acknowledging women's labor force participation and men's involvement in family responsibilities (Lee and Eun 2005). Yet, research also shows that women who believe that children and family will suffer if a mother goes out to work have a lower intensity of resuming employment after childbirth than do women who disagree with this statement; younger cohorts resume employment more quickly than older cohorts, with younger women tending to hold a more positive view toward employment and economic independence (Smeaton 2006).

Women's career prospects upon return

Most women have to face career challenges upon labor force return after childbirth. The timing of return is essential for career development; a longer break from work may permanently damage a woman's employment and earnings profile (OECD 2007). In the US, a long childbearing-related absence from work reduces women's chance of an upward occupational move and increases their risk of a downward occupational move (Aisenbrey et al. 2009). Also in Sweden, it has been shown that women's career prospects are better if they return to paid work sooner rather than later. An employment interruption longer than 16 months reduces a woman's chance for an upward occupational move (Evertsson and Duvander 2010). Studies from the US, Germany and Denmark find that returning women suffer a wage penalty (Budig and England 2001; Gupta and Smith 2002; Gangl and Ziefle 2009).

These penalties for longer work interruptions are largely due to skill atrophy (Mincer and Polachek 1974). Absence from the labor force involves a discontinuity of job skill acquisition. Prolonged non-participation may lead to a depreciation of existing skills. The longer the break, the higher the depreciation of human capital. Women who take longer breaks are often regarded by employers as less productive and less committed to work than those who take a short or no leave of absence (Görlich and De Grip 2009). This perception may place women in unfavorable positions, and further influence their chance of re-employment, promotion and payment when they return to work (Sigle-Rusthon and Waldfogel 2007; Stier et al. 2001).

In summary, previous studies conducted on Western societies have demonstrated that women's own pre-birth human capital accumulation, policy configurations to facilitate the combination of work and family responsibilities, and financial needs are the main driving forces for women's labor force return after childbirth. A longer timeout from the labor force usually leads to a lower intensity of labor force return as well as less promising career prospects. There is relatively little knowledge on how business cycles may be associated with women's post-birth work return and their career prospects upon return.

The context of Korea

Korea has experienced dramatic economic booms as well as severe economic crisis in recent decades. These economic developments have been accompanied by pronounced institutional, social and demographic changes: a rise in women's educational attainment, an increase in female labor force participation, family policy reform, and changes in social attitudes toward women's non-domestic roles. These factors have all influenced various aspects of women's life, including their economic activity after childbirth.

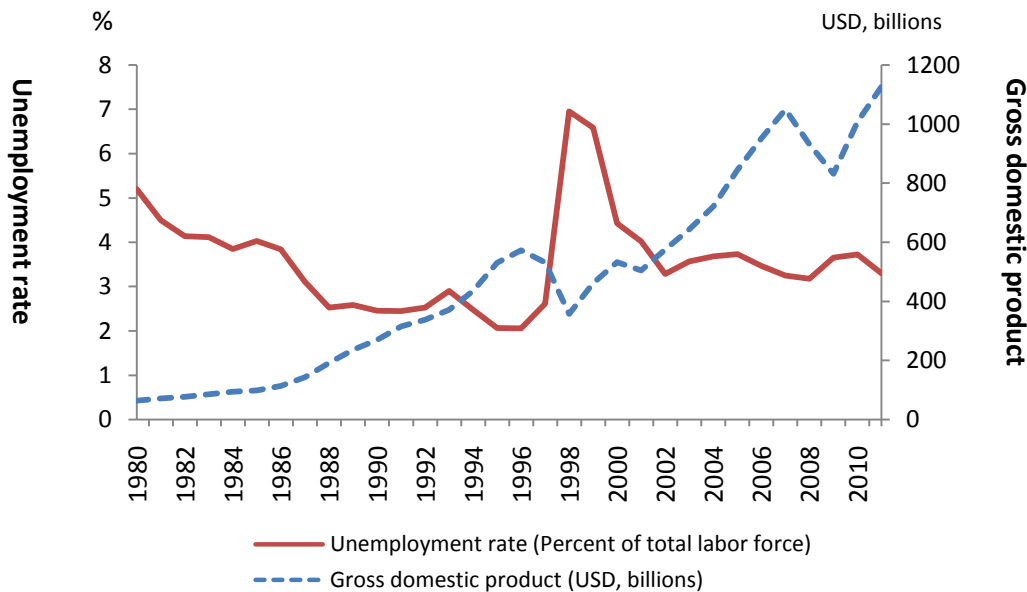
Korea's economic development and the influence of the Asian financial crisis

Korea's gross domestic product (GDP) increased steadily from the early 1980s to the late 1990s (Figure 1). During this economic boom period, many large companies in Korea developed their own strong internal labor market system that offered insiders considerable job stability and relatively high salaries (Kye 2008). However, the outbreak of the Asian financial crisis in November 1997 added uncertainty to the relatively stable context. Korea's GDP dropped dramatically, and the unemployment rate skyrocketed in 1998. Economic uncertainty was felt in every corner of society.

With a mission of preventing an exacerbation of the crisis and reinvigorating national economy, the *Labor Standard Act* was amended in 1998. The previous employment protection system was abolished. The labor market was overhauled and restructured; the prevalence of internal labor markets weakened (Kye 2008). Many firms implemented layoffs for self-protection; a great deal of regular employment positions were converted to irregular ones, which increased the number of part-time and temporary jobs on the labor market. A large number of workers either turned to

temporary jobs or became unemployed. Workers at large companies with an established internal labor market system were less likely to experience job turnover than were workers from other companies (Kye 2008). It was not until 2002 that the country had regained its economic growth. Thereafter, its GDP expanded rapidly until 2008, when Korea was hit by another wave of economic disturbances.

Figure 1: Gross domestic product (GDP) and unemployment rate since 1980, Korea



(a) Source: International Monetary Fund, World Economic Outlook Database, April 2011

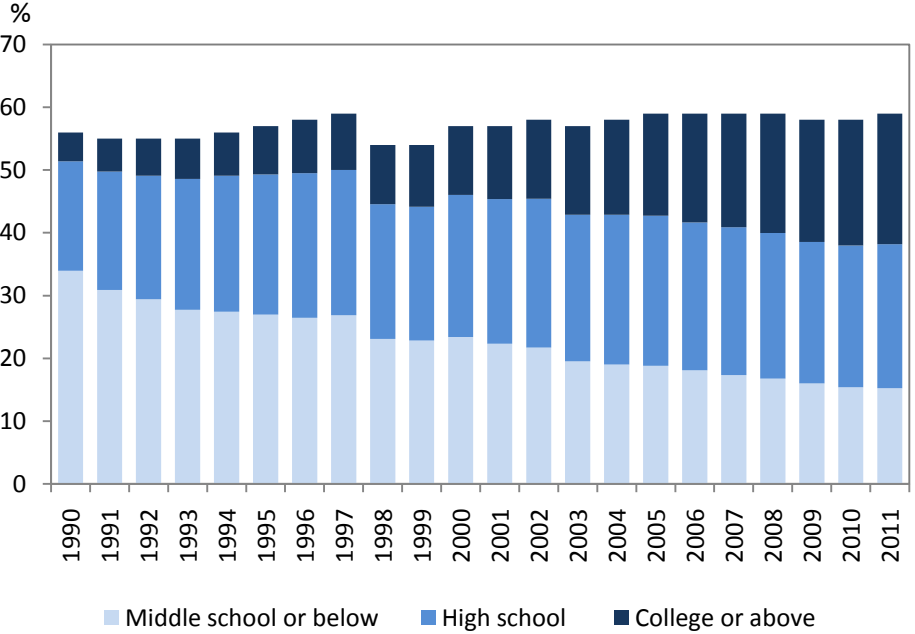
Rise of women’s educational attainment and labor force participation

“The educational advancement of young Korean women during the last three decades is nothing but spectacular and, to our knowledge, unprecedented in the recent history of the world”, remark Tsuya, Choe and Wang (2009:16). Statistics show that the proportion of female high school graduates who advanced to higher education was only 20% in 1975. This number had increased to 34% in 1985, to 50% in 1995, and to 81% in 2005 (Choe and Retherford 2009; Frejka et al. 2010). In Korea, high education is a necessity for attaining a well-paid and secure job (Seth 2002; Eun 2007; Choe and Retherford 2009).

However, the high educational attainment does not give Korean women as high labor market rewards as it does for men. Their labor force participation does not develop at the same pace as

their educational attainment; instead, their employment rates have been increasing at a very slow pace (Figure 2). As a consequence of the financial crisis, the rate even dropped in 1998. Since the turn of the century, the rate level has been relatively flat. Over time, the labor force has become increasingly dominated by highly educated women.

Figure 2: Employment rates of women (aged 20-49), by educational attainment of employed women and years, Korea, 1990-2011



(a) Source: Author’s own calculation based on OECD labor force statistics database & Korean Statistical Information Service (KOSIS) 2012

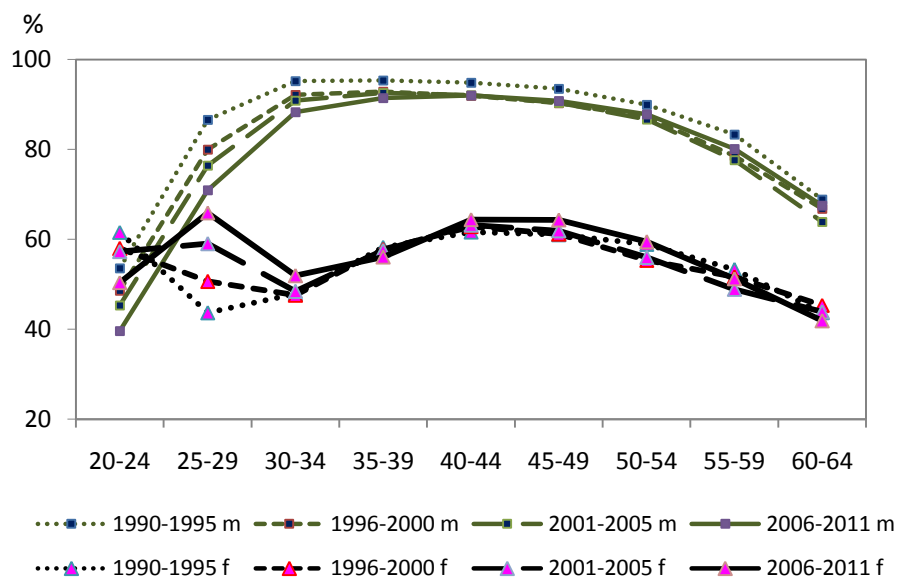
To encourage women to enter the labor market, the Korean government launched the *Equal Employment Act* in 1988, prohibiting discrimination against women in employment, wages, and working conditions. It also prohibited discrimination against employed women due to marriage, pregnancy or child delivery. Meanwhile, a female public employee target system was established to enhance the recruitment of women in the public sector (Cho 2000). However, only around 25% of the total female workforce held regular positions in the 1990s. As of 2011, this figure had increased to around 40% (Statistics Korea 2011).

Korean women's family commitment and labor market restrictions

Figure 3 shows the employment rates of men and women over the life course by calendar periods. The rates of women aged above 25 have been much lower than those of men for all calendar periods. In sharp contrast to men's employment profiles, women's labor force participation is sharply reduced at the primary childbearing ages (25-34). These M-curved patterns across time indicate that female labor-force behavior has not changed much over the past decades: most women interrupt their employment during their childbearing years. The low employment rates (of about 60% since 1990s, see Figure 2 and Figure 3) additionally indicate that it is typical of Korean women to temporarily or permanently sacrifice their career for the sake of family formation and expansion.

This withdrawal from the labor market further implies that gender equality does not progress in tandem with the rise of women's educational attainment in Korea. Once women have established a family, both society and their family expect them to leave the labor market to care for their husband and children at home. At this stage, men act as the sole economic supporter in the family and women play their role as the primary caregiver, holding the main responsibility for household chores and raising children.

Figure 3: Employment rates by age, calendar period and gender, Korea



(a) Source: OECD 2012a

Apart from family and social expectations, demanding labor market conditions may also push women back home for care responsibilities. Workers in Korea do not have much opportunity to work flexible hours. The normal weekly working hours per person in Korea has been the highest among OECD countries (OECD 2012b). In 2000, Koreans had to work 52 hours per week on average, well above the OECD average of 40 hours. As of 2011, this was reduced to 45 hours per week. Korean women either work long hours or do not work at all. Besides this, the gender wage gap in Korea has been the largest among OECD countries (OECD 2012b). In such a context, Korean women might not have much incentive to remain in their job upon family formation. Nonetheless, Figure 3 displays that the number of women who drop out of the labor market at ages 25-34 has been decreasing, implying that social expectations and labor market restrictions are weaker obstacles to some women's labor market engagement. Attracted by the labor market, some women may find it difficult to give up paid work for homemaking (Eun 2007).

Family policy reform

Women's work return after childbirth is closely dependent on a nation's policy regulations. Job-protected maternity/parental leave, the provision of childcare and the possibility to work flexible hours are the three policy directives recommended by OECD to facilitate women's reconciliation of work and family life (OECD 2011). Measured against these policy directives, Korea's achievement has been far from sufficient. First, working flexible hours have been almost impossible in Korea, as mentioned above; only very recently did working mothers gain the right to work reduced hours. Second, day care services for children below three years of age were rather limited before 2008, when childcare was mainly a private responsibility. The government was giving way to the private sector or the family in regard to the responsibility for childcare (Won and Pascall 2004). Korea was ranked the worst, or one of the worst, among OECD countries in public expenditure on childcare and early education services from 1998 to 2007 (OECD 2012a). As of 2005, 20% of children below three years of age had access to childcare services². Since 2008, however, the Korean government has made significant efforts to reduce the burden of childrearing. In 2008, the childcare enrollment rate for children under three years of age had increased to 38%, reaching and surpassing the OECD average of 30% (OECD 2012a).

² In the same year, the childcare participation rate for children aged below three was 62% in Denmark and 45% in Sweden (OECD 2012a).

As regards maternity leave, 60 days of unpaid leave remained unchanged in Korea from 1953 to 2001. In 2001, 90 days of fully paid maternity leave (with 100% income compensation) was implemented, with the stipulation that at least 45 days of the leave be used after childbirth (K-H Lee 2009; MOEL 2011a; MOEL 2011b). Dismissal during maternity leave is prohibited; women have the legal right to return to the same or a similar position (ILO 2006). For women under the coverage of employment insurance (for at least 180 days), their employer covers the income compensation for the first 60 days and the insurance covers the remaining 30 days (Kim 2007; Peng 2009). Since 2006, the insurance covers the total maternity leave period for employees in small- and medium-sized companies (90 days); for insured women in large companies, the employer still has to take responsibility for two-thirds of the leave (Suzuki 2008; K-H Lee 2009; Peng 2009; MOEL 2011a). For employees with no insurance coverage, the employer should in principle take full responsibility for offering the leave and benefit. However, this is mainly a recommendation. In practice, financial burdens often prevent employers from granting women their benefits (K-H Lee 2009).

Since 2001, employees with employment insurance can enjoy job-protected parental leave with a flat-rate compensation of 200,000 KRW (around 130 USD) per month for 10.5 months, in addition to the 90-day fully paid maternity leave (ILO 2006; Suzuki 2008; Kim 2007; Peng 2009). The financial support for parental leave was set to reflect around one-eighth of women's average income and one-tenth of men's (K-H Lee 2009). Consequently, women's uptake of parental leave was very low and fathers' uptake was negligible (OECD 2006). Beginning in 2011, however, the employment insurance provides 40% of the ordinary wage for 12 months, rather than the previous flat rate (MOEL 2011a). The uptake of parental leave has started to rise since then.

Social attitudes toward women's employment

The traditional view of the woman as a wife and mother has long been dominant in Korean society. A working girl was not valued on the marriage market in the 1980s, because she was not believed to be a good wife (Park 1991). However, economic development, educational expansion and the rise of women's employment in recent decades have posed direct challenges to such cultural traits. With the number of women in the labor force increasing, there has been a growing recognition that women have the right to be self-actualized both within and outside the home.

Based on the 2003 Korean General Social Survey, Lee and Eun (2005) find that 62% of women in the sample are “liberal” to different degrees, believing that children can grow up well when mothers work outside the home. The rest of the women are “conservative”, with a strong negative view toward women’s employment, believing that taking care of the home is fulfilling; that small children and family life will suffer if mothers work outside the home. In contrast, the majority of men (67%) hold a firm negative view toward women’s employment, believing that what women need in life is family and children, and that it is good for every member of the family if the women stays home and provides care. However, the unexpected arrival of the financial crisis, which brought great uncertainty to Korean society, made men suddenly aware of the financial advantage of having a working wife. Employed women have become favored on the marriage market, and working wives have become more socially acceptable (Anderson and Kohler 2013).

In short, Korea experienced a dramatic economic boom from the 1970s to the late 1990s and an intense financial crisis during the period of 1998-2001. Since the 1980s, women have become increasingly involved in the labor market, though at a slow pace. Family policies facilitating the reconciliation of work and family life have been improved, though not yet or only very recently reaching the standard set by OECD. In current Korean society, traditional views of women as wives and mothers are starting to lose ground to the gradual acknowledgement of women’s non-domestic roles.

Research questions

Based on relevant research on other developed societies and the specific socio-economic context of Korea, my main research questions are:

1. What are the possible driving forces of Korean women’s labor force return after childbirth?
2. How does women’s labor force return after childbirth vary across business cycles?
3. How does women’s labor force return after childbirth vary by the length of timeout?
4. How do women’s career prospects vary by the length of timeout and across business cycles?

Data and methods

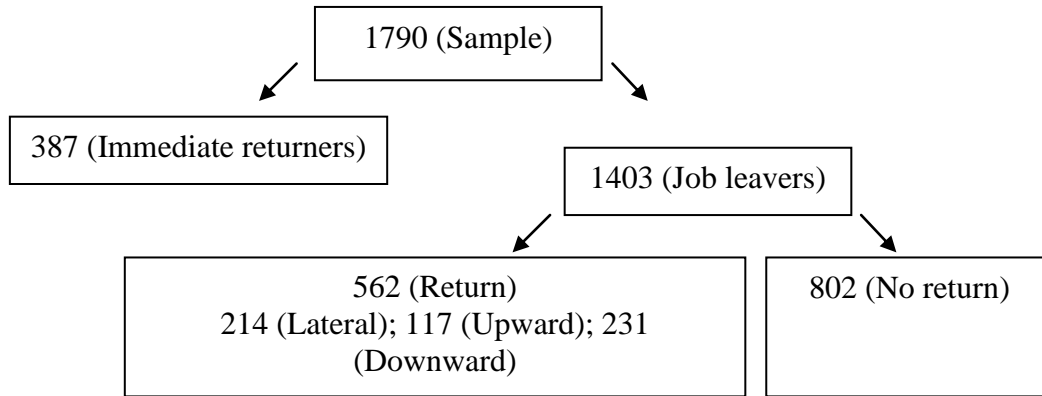
Data used for analyses are from waves 1 to 10 of the Korea Labor and Income Panel Study (KLIPS), Korea's only labor-related panel survey, initiated by the Korea Labor Institute. The first wave was conducted in 1998 with an original sample of 5,000 households in urban areas. Direct face-to-face interviews with the household reference person or the spouse were carried out to collect retrospective and current information on household members aged above 15 years. Data on individual's demographic characteristics (such as birth history and marital status changes), educational attainment, work history, and job characteristics were collected. The survey was subsequently conducted annually to track changes in characteristics of households as well as individuals. If an individual within a household turned 15, or if an individual aged above 15 joined a sampled household, he or she was included in the survey. New respondent data were collected regarding retrospective information. If some members of a household moved out and formed new families, the new households and their members were tracked as well. The most recent data for this study are from wave 10, conducted in 2007.

I concentrate on women who have experienced a first birth. Since non-marital childbearing is very low in Korea, I furthermore concentrate on the vast majority of women who had their child within their first marriage. Among these women, I focus on those who had previously been employed (Appendix 1). For employed women, the data provide detailed information on their work history, including the exact month that each job started and ended. The data do not provide information on whether or when women took maternity or parental leave. There are practically no reports of leave-taking around childbirth. It seems that our female respondents do not regard taking maternity leave as a career interruption if they return to their previous employer immediately after the leave period expires. This makes it impossible to distinguish between those who did not interrupt their employment at childbirth at all, and those who took a brief maternity leave.

Given that working women could claim a two-month unpaid maternity leave before 2001 and a three-month job-protected paid maternity leave after the policy reform of late 2001, and that uptake of parental leave had been rather low before 2007 (our last interview year), a woman will be defined as an immediate returner if her employment record does not show any employment interruption from the pre-birth job until the third month (before the 2001 policy reform) or the

fourth month (after policy reform) after childbearing. In contrast, women who reported a break from their pre-birth job around first birth are defined as job leavers.

Table 1: Descriptive statistics for women under observation



Appendix 1 exhibits the number of cases involved in this study. A total of 2,748 women had labor market experience before giving birth for the first time. As their labor market characteristics are not traceable in our data, 332 non-wage earners are excluded³. Thirty-five women whose pre-birth work experience was less than three months are further excluded, as I am only looking at women with noticeable work experience. Women with their husband’s information missing at the time of first birth and women who gave birth for the first time during singlehood are not taken into account. To be able to examine women’s career opportunity upon return, I also exclude women with missing information on pre-birth and post-birth occupations. The observation time of this study is fixed to the period from 1980 to 2007.

Following the selection criteria, a total sample of 1,790 women enters observation (Table 1). Of these women, 387 show no employment interruption and 1,403 interrupt their employment around the birth of their first child. Of these job leavers, 562 returned to the labor force before they turned 45 or the last interview time, or within ten years after the first birth; the remaining 802 had not returned to the labor market before the end of our observation time.

Given the features of the data distribution, I design a three-stage analysis based on two samples. At the first stage, I apply logistic regression model to the whole sample to capture how human capital accumulation, family policy change, business cycles and financial needs may have been

³ Non-wage earners are mainly workers working for family businesses or housewives working at home.

associated with mothers remaining in employment without any reported career interruption around the birth of their first child. At the second stage, I run hazard regression models to explore the labor force return intensity of the job leavers. At the third stage, I perform competing risk models to study the post-birth career prospects of women who experienced employment interruptions.

Table 2 presents descriptive statistics of the included variables in the first no-career interruption model. I have used categorical covariates to make it easy to further explore interaction effects between covariates. “Calendar years” is a very important indicator, as its estimates can reveal how women’s early job return after first birth varies across time. Calendar years are grouped into four large periods. The 1980s (1980-1989) indicates a decade of economic growth; the 1990s (1990-1997) stands for a consecutive economic boom period; 1998-2001 refers to the economic downturn period following the 1997 Asian financial crisis; and 2002-2007 indicates the period of economic recovery as well as the period after the initiation of the family policy reform.

The cluster of variables for women’s human capital accumulation consists of variables related to their educational attainment and labor market characteristics before their first birth. Women’s educational attainment is grouped into low, middle and high, representing an educational level of middle school or below, high school and university or above, respectively.

Women’s labor market characteristics are represented by occupational status, type of workplace, income, and the length of work experience prior to first birth. Occupational status, workplace and income are measured at a woman’s last pre-birth job. Based on Socioeconomic Index (SEI) scores of occupations as defined by Ganzeboom and Treiman (1996), a woman’s occupational status is stratified as low, middle or high (see Appendix 2). Occupations with an SEI score lower than 40 (e.g. elementary workers) are labeled as low status. Occupations with an SEI score higher than 50 (e.g. managers and professionals) are labeled as high status. Occupations with a score between 40 and 50 (e.g. clerks and sales workers) are specified as middle status.

Table 2: Descriptive statistics of variables for immediate return model (Logistic regression)

	Obs	%	Returns	%		Obs	%	Returns	%
Calendar years					Workplace				
1980-1989	519	29	87	22	Private	955	53	158	41
1990-1997	555	31	118	30	Public	268	15	161	42
1998-2001	314	18	66	17	Missing	567	32	68	18
2002-2007	402	22	116	30	Income				
Woman's age					Low	227	13	16	4
15-24	447	25	65	17	Middle	513	29	55	14
25-29	1,093	61	259	67	High	569	32	257	66
30-34	223	12	61	16	Missing	481	27	59	15
35-44	27	2	2	1					
Woman's education					Husband's education				
Low	188	11	27	7	Low	173	10	26	7
Middle	927	52	122	32	Middle	738	41	101	26
High	675	38	238	61	High	879	49	260	67
Work experience					Husband's income				
≤2 years	271	15	36	9	Low	401	22	69	18
2< years≤5	718	40	128	33	Middle	371	21	79	20
>5 years	801	45	223	58	High	311	17	99	26
Occupational status					Missing	413	23	82	21
Low	262	15	33	9	Non-employed	294	16	58	15
Middle	1133	63	214	55					
High	395	22	140	36					
Total	1790		387			1790		387	

(a) Source: KLIPS, author's own calculations

Workplace depicts whether the woman's employment was in the private or public sector. Public sector covers workplaces such as schools, hospitals, government and government branches, government-related companies, foundations and state-owned enterprises; these represent workplaces that offer regular and more stable employment positions. All other workplaces outside the public sector are considered "private".

Income after tax is divided evenly into three categories based on the income distribution within each calendar year: values lower than the 33rd percentile represent low level of income; values higher than the 66th percentile represent high level of income; and values in between stand for the middle level. Women who fail to report the above labor market characteristics are categorized as "missing" in each respective covariate.

Work experience before first birth is evenly distributed into less than two years, two to five years and more than five years, representing short, middle and long work experience before first birth. Other factors that may influence women's work return are controlled for. Women's age is grouped into 15-24, 25-29, 30-34, and 35-44⁴. Husband's educational attainment and income at the time of the first birth are taken into consideration, as ignoring these features could cause bias in the results, especially in a study on an East Asian country where the husband has been considered the main breadwinner of the household.

At the second stage, I apply hazard regression to the sub-sample of women who experienced career interruption around their first birth. The dependent variable at this stage is the intensity of job return among job leavers. All the explanatory factors examined at the first stage of the analysis are covered at this stage as well. Occupational status, workplace and income reflect the characteristics of women's last job before first birth; educational level and work experience are fixed at the time of first birth; and all other covariates are updated month by month from the time of first birth (see Appendix 3).

Three additional variables are included. "Time since first birth" (time-variant) is the basic time factor. This variable is grouped into four categories representing 1-15 months, 16-36 months, 37-60 months, and more than 60 months after first birth, respectively.

In recognition that some women might have left the labor market before childbirth, the length of pre-birth employment absence (fixed at first birth) is controlled for and specified in three groups: 0-3 months, 4-12 months, and more than 13 months. Further, "number of children" (time-variant) examines whether the process of having additional children depresses women's labor force return. It deserves note here that more than 50% of women who return to the labor force after taking a break at first birth are mothers of two children, demonstrating that their second child was born during the period of labor-market absence which had started around the birth of their first child.

Women who have experienced a career interruption may be confronted with great career challenges. At the third stage, I further explore the career prospects of job leavers based on the same sub-sample of women as in the second-stage analysis. Competing risks of making a lateral, upward, and downward occupational move are estimated respectively by three separate hazard

⁴ The first and last age groups are on a ten-year basis, because when grouped on a five-year basis the number of cases within each group was too limited for analysis.

regression models. Within each model, I estimate one transition while censoring for the occurrence of the other two. Occupational moves are measured in the changes of SEI scores between the pre-birth and the first post-birth occupation categories. As mentioned, the matched SEI score of a certain occupation is based on the classifications by Ganzeboom and Treiman (1996) (see Appendix 2). A positive change of at least 10% in SEI scores at a woman's first job upon return is defined as an upward move. A negative change of 10% or more is defined as a downward move. A change within a range of 10% positive and negative is considered a lateral move. According to this classification, 214 women resumed their previous job or got a job of similar status; 117 women took a job of higher occupational status; and 231 women underwent a downward occupational move (also see Table 1).

For the second- and third-stage analyses, our observation starts from the month of first birth and stops at the month when a woman returns to the labor force. The episodes are censored at the time when the youngest child turns ten years old or the woman turns 45 years old, or at the last interview time, whichever comes first. The observation is also censored when a marriage disruption occurs. The length of the employment interruption covers the entire period out of work, including any extension of the work absence by a second or a third birth, provided these later births occur within the same interruption period that started after the first birth. That is, there is no censoring at the arrival of a woman's second or third child.

Results on immediate work return without career interruption

Table 3 presents odds ratios of women's immediate labor force return after childbirth from the logistic regression models. Model 1 involves calendar years, woman's age and educational attainment. Models 2 to 4 include women's pre-birth labor market characteristics: work experience, occupational status, workplace, and income. Model 5 takes into account husbands' educational attainment and income. The likelihood ratio tests show that the inclusion of women's labor market features significantly improves the model fit.

Model 1 shows no clear pattern of women's immediate labor force return across calendar periods. The return probability during the economic downturn period (1998-2001) was slightly reduced; the probability for 2002-2007 slightly exceeds that of other periods. When women's labor market characteristics, especially income, are taken into account a more pronounced trend

occurs. An overall increase in immediate work return emerges: the relatively depressed work return during the recession period disappears; instead, there occurs an upward trend beginning in the 1980s. During the period after the crisis ended, women's immediate return did not resume the pre-crisis pattern. Instead, the trend developed upward at a faster speed. The inclusion of husband's education and income strengthens the overall increasing trend.

The findings reflect that, once individual-level factors are controlled for, unstable economic conditions may foster women's job continuity after childbirth without employment interruptions. Women tried to keep a more intimate link with the labor market to reduce life uncertainty brought about by the financial crisis. During the period when the economy was recovering, women still held tight to the labor market. Apart from the boosting effect of economic uncertainty, other factors may also be at play in this upward development. The job-protected maternity leave implemented in late 2001 may have exhilarated women's early job return during 2002-2007. Besides, women's increasingly closer engagement in the labor market, the gradual prevailing positive attitudes toward employment among women, and the awareness of the merit of having a working wife among men during the unstable economic period may have encouraged women back to the labor force immediately after childbirth.

Highly educated women have significantly higher odds of resuming employment quickly than do the lower educated, which is often the case in other developed countries as well. When women's labor market features are considered, the difference between high and low educated women is significantly reduced; the estimated value of "high education" stepwise loses its significance. In contrast, the return rate of the middle educated women remains significantly low. The low and high educated women are more likely to make an immediate return to the labor force after childbirth.

Women's work characteristics are strongly associated with their early labor force return. The length of work experience significantly raises women's chance of immediate return. The return odds of women with work experience of more than five years are more than three times those of women with experience of less than two years. The inclusion of other work factors in Models 3-4 reduces the difference between the levels but does not alter the pattern. The immediate return probability for women with high occupational status (e.g. managers or professionals) exceeds that of women with lower status. The inclusion of workplace and income significantly reduces the estimation significance of previous factors. The return odds of public employees are nearly

six times those of women employed in the private sector. The positive association between women's income and immediate job return is very strong. The return probability of high-income earning women is more than nine times that of low-income earning women, all else being equal. Neither husband's educational attainment nor his income makes a statistically significant difference to a woman's immediate return to the labor market. Still, it can be discerned that women with a high-income husband appear more likely to return to the labor force immediately after childbirth than those whose husband's earning power is weaker. This result is partly due to the effect of assortative mating; namely, women tend to date and marry men of a type that matches their own. A comparison of the estimates for the earning power of women and men indicates that a woman's immediate labor force return is much more sensitive to her own income than to that of her husband.

Ages 25-34 are the peak return ages for women when we ignore their labor force characteristics. When all other factors are standardized, younger women become more likely to return to work quickly than women at older ages, as was discovered in the context of Britain.

To disentangle how women's post-birth job continuity varies over time, I run interaction models between calendar periods and other covariates, with all other factors standardized. Results show that since the 1980s women with a high educational level, long work experience, high income, high occupation prestige, and employment in the public sector have been forerunners in immediate labor market return. The results indicate that human capital accumulation enhanced women's job continuity over time. Women with favorable labor market assets (those with high educational attainment, long work experience, high occupation prestige, public sector employment or strong earning power) have had an increasingly higher probability of making an immediate return after childbirth than others since the 1980s. Resuming employment quickly has been their strategy for ensuring career development. This holds true both during the financial crisis period and the period when economic growth had resumed. If they spent a longer time away from the labor market, they would probably have to face higher opportunity costs than others. Employers, on the other hand, might prefer to keep these women in their jobs rather than recruit new workers who may need more on-the-job training and may not be as competitive.

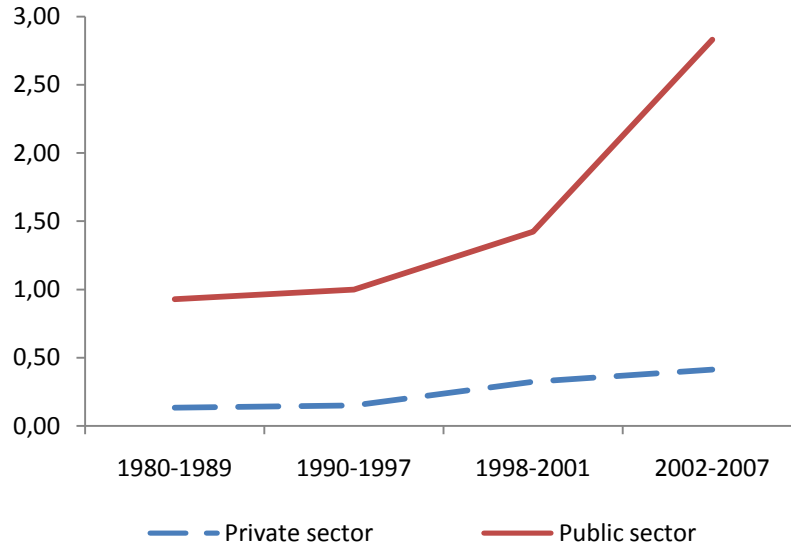
Table 3: Odds ratios of women's immediate return to the labor force after childbearing, Korea, 1980-2007

	Model 1	Model 2	Model 3	Model 4	Model 5		
	OR	OR	OR	OR	OR		
Calendar years							
1980-1989	1	1	1	1	1		
1990-1997	1.09	1.12	1.23	1.11	1.15		
1998-2001	0.86	0.84	1.06	1.34	1.42		
2002-2007	1.15	1.06	1.38	1.90	2.02	***	***
Woman's age							
15-24	1	1	1	1	1		
25-29	1.20	0.79	0.68	**	0.63	**	**
30-34	1.33	0.68	0.59	**	0.50	***	***
35-44	0.26	*	0.12	***	0.09	***	***
Woman's education							
Low	1	1	1	1	1		
Middle	0.85	0.65	0.52	**	0.52	**	*
High	2.92	***	2.38	***	1.08		1.16
Work experience							
≤2 years		1	1	1	1		
2< years≤5		1.60	**	1.35	1.07		1.08
>5 years		3.61	***	3.05	2.22	***	2.24
Occupational status							
Low		1	1	1	1		
Middle		1.42	1.17	1.04	1.04		
High		2.12	***	1.58	1.28		1.24
Workplace							
Private			1	1	1		
Public			6.27	***	5.86	***	5.89
Missing			0.77		0.98		0.97
Income							
Low					1		1
Middle					1.76	*	1.84
High					9.07	***	9.42
Missing					2.64	***	2.81
Husband's education							
Low							1
Middle							0.86
High							0.90
Husband's income							
Low							1
Middle							0.94
High							1.28
Missing							1.36
Non-employed							1.21
Constant	0.15	0.08	0.11	0.05	0.04		
Log likelihood	-870.82	-840.65	-762.96	-697.32	-694.94		

(a) Note: ***p<.01; ** .01<p<.05; * .05<p<.10

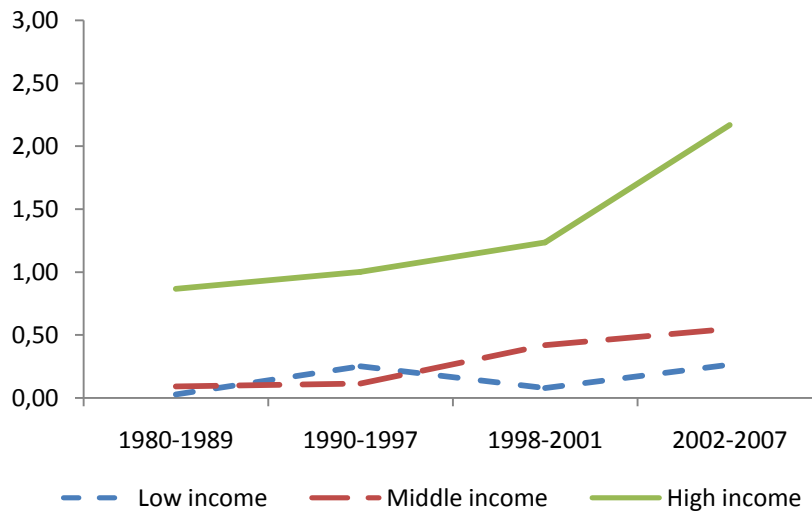
(b) Source: KLIPS, author's own calculations

Figure 4: Odds ratio of women’s immediate return to labor force after childbirth, by calendar periods and pre-birth workplace, Korea, 1980-2007 (Reference category: Public sector, 1990-1997)



(a) Source: KLIPS, author’s own calculations

Figure 5: Odds ratio of women’s immediate return to labor force after childbirth, by calendar periods and pre-birth income, Korea, 1980-2007 (Reference category: High income, 1990-1997)



(a) Source: KLIPS, author’s own calculations

Some interactions reveal striking changes after 2001. Figures 4-5 show that the increase in immediate job return for employees in the public sector or those with high income was slow and steady from 1980 to 2001; the increase turned very strong thereafter. Considering that women with a well established career, such as public employees, were the potential beneficiaries of the 2001 maternity leave reform, the increase in immediate return after 2001 may imply that their eligibility for the job-protected (but brief) leave may have stimulated them to resume work quickly when the leave period expired. Other factors, such as women's increasingly closer attachment to the labor force, their desire to keep a close connection to the labor force to reduce life uncertainty during the financial crisis period and thereafter, and more career opportunities for these women during the economic recovery period may be also at play. In contrast, the immediate return probability of women with a looser bond to the labor market did not increase as much after 2001.

As a robustness check, I have tried to also control for women's working hours (in the form of full-time or part-time employment) in the analysis; this does not cause any significant change to the model results. Still, I find that full-timers have higher odds of job continuity than do part-time employees. An interaction model reveals that part-timers were more likely to resume employment immediately after childbirth during the 1980s; this is probably because short working hours can more easily be combined with childcare. Since the 1990s, however, full-timers have become the leading group of immediate labor market return. I have also tried using other background factors (e.g. women's religion, childhood residence and education of her parents) as regressors. However, the inclusion of these factors does not significantly improve the model fit.

Results on job leavers' work return

Table 4 presents the work return intensity and competing risks of career outcomes of women who experienced a career break around first birth as estimated from the main effects models. The results are presented in the form of relative risks. Estimates for variables related to women's labor market characteristics mostly appear insignificant; this likely stems from the selection of job leavers into the pool of women under observation at this stage of our study. The very career-oriented women were more likely to return to the labor force immediately after childbirth,

leaving a more home-oriented group under the risk of returning to work after a distinct career interruption. Nonetheless, the differentiations across sub-groups deserve close attention.

Estimation of the basic time factor in the return model reveals a V-shaped timing pattern of labor force return among job leavers. This V-shaped return pattern also reveals itself in the career prospect models. Job leavers return to work either as soon as possible (within 15 months after first birth) or after their first child turns three years old. The first peak may be driven by women's employment resumption after taking some maternity and parental leave. The second peak time occurs as their child approaches kindergarten age and needs less of the mother's attention. Our estimation of the "pre-birth timeout" variable shows that the shorter a woman had been away from the labor force before childbirth, the more likely she is to resume employment.

The estimation of the calendar year variable reveals that job leavers' labor force return intensity is closely associated with the business cycle. During Korea's economic boom period (1980-1997), job leavers' labor force return intensity increased visibly. However, the return intensity became especially pronounced during the financial crisis of 1998-2001. When Korea's economy recovered during the period of 2002-2007, women's return intensity leveled off and declined somewhat, but was still considerably higher than before the financial crisis. It seems that the crisis had given mothers staying at home an urgent signal: to try to get a job. In other words, the financial crisis boosted mothers' labor force return. It deserves noting that during the period of 2002-2007 when the crisis was over, job leavers' work return rate did not return to the level of the pre-crisis period.

Women aged below 35 have a higher return intensity than do older women. An increase in the number of children seems to depress women's labor force return intensity. This also reveals that many job leavers had their second child during the same timeout period after becoming a mother before returning to the labor force. It also partly explains why many women return to work three years or more after first birth.

I find no significant relationships between women's pre-birth human capital accumulation and their work return after a timeout. Occupational status at pre-birth job does not make a difference in the re-employment of job leavers. Relatively, women with high income have a slightly higher return intensity than do others.

Table 4: Hazard ratios of job leavers' work return and career prospects, Korea, 1980-2007

	Career prospects							
	Return		Lateral		Upward		Downward	
	Haz. Ratio	P>z	Haz. Ratio	P>z	Haz. Ratio	P>z	Haz. Ratio	P>z
Time since first birth (t-v)								
1m≤timeout≤15m	2.29	***	3.83	***	1.83	*	1.12	
15m<timeout≤36m	1		1		1		1	
36m<timeout≤60m	1.57	***	1.28		1.16		2.07	***
>60m	1.79	***	1.89	**	1.17		2.09	***
Pre-birth absence								
≤3 months	1		1		1		1	
4-12 months	0.55	***	0.25	***	1.04		1.03	
≥13 months	0.43	***	0.26	***	0.73		0.68	*
Calendar years (t-v)								
1980-1989	0.44	***	0.54	***	0.41	***	0.29	***
1990-1997	1		1		1		1	
1998-2001	2.59	***	1.44	*	2.61	***	4.86	***
2002-2007	2.09	***	1.40	*	0.90		4.47	***
Woman's age (t-v)								
15-24	0.92		0.84		1.14		0.79	
25-29	1		1		1		1	
30-34	0.94		0.81		1.22		0.96	
35-44	0.75	*	0.59	*	0.84		0.82	
Number of children (t-v)								
1 child	1		1		1		1	
2 children	0.93		0.79		1.30		0.88	
3+ children	0.72		0.67		0.29		0.86	
Woman's education								
Low	1.31		1.24		1.04		1.68	*
Middle	1		1		1		1	
High	0.94		1.01		1.79	**	0.75	
Work experience								
≤2 years	1.04		0.93		1.25		1.15	
2< years≤5	1		1		1		1	
>5 years	0.92		0.91		1.07		0.91	
Occupational status								
Low	0.96		1.36		2.60	***	0.19	***
Middle	1		1		1		1	
High	0.99		0.63	**	0.31	***	1.75	***

Table 4: Continued

	Career prospects							
	Return		Lateral		Upward		Downward	
	Haz. Ratio	P>z	Haz. Ratio	P>z	Haz. Ratio	P>z	Haz. Ratio	P>z
Workplace								
Private	1		1		1		1	
Public	0.94		1.02		1.16		0.83	
Missing	3.73	***	3.28	***	4.14	***	5.03	***
Income								
Low	1		1		1		1	
Middle	1.11		1.32		1.08		1.02	
High	1.15		1.50	*	1.15		0.92	
Missing	0.86		1.05		1.53		0.48	***
Husband's education (t-v)								
Low	0.94		0.79		0.81		1.29	
Middle	1		1		1		1	
High	0.94		1.05		0.98		0.83	
Husband's income (t-v)								
Low	1.25	*	1.52	*	0.86		1.28	
Middle	1		1		1		1	
High	1.04		1.42		0.94		0.86	
Missing	1.62	***	1.51	*	1.13		2.06	***
Non-employed	0.93		1.06		0.62		1.00	
Constant	0.00		0.00		0.00		0.00	
No. of subjects	1403							
No. of returns	562		124		117		231	
Time at risk	100856							
LR chi2(30)	365.83		229.79		132.47		260.74	

(a) Note: ***p<.01; ** .01<p<.05; * .05<p<.10

(b) Source: KLIPS, author's own calculations

The effect of the husband's education on job leavers' re-employment is not clear, but the effect of his income is. When the husband's earning power is low, a woman's return intensity becomes elevated at a significant level, suggesting that women have a greater willingness and higher incentive to resume work when the household is in financial need. A comparison with the estimates for income of women suggests that the labor force return of job leavers is somewhat more susceptible to the husband's earning power than to the woman's own labor market characteristics.

An interaction between calendar years and time since first birth reveals that the V-shaped return pattern has been persistent over the decades. But the return rates of women who had been away from the labor market for at least three years were especially high during the crisis period. To discern who was most likely to return to the labor force within 15 months, I further run interactions between time since first birth and women's individual labor market characteristics (see Appendix 4). These interactions reveal that women with long work experience, high occupational status, stable employment positions, and high income were the most likely to return within 15 months. These women's close engagement with employment worked to attract them back to the labor force after a relatively short break. Other interaction terms reveal no striking patterns and are thus not reported.

Results on job leavers' career prospects

Estimations from the main effects models on job leavers' career prospects are also presented in Table 4. The last three columns of this table reveal some important trends and patterns. Estimates for basic time factor demonstrates how job leavers' career prospects vary by the length of timeout after first birth when all other covariates are controlled for (see also Figure 6). It is clear that labor force return within 15 months after childbirth significantly enhances a woman's chance of resuming her pre-birth job or a job of similar status. Returning to work within 15 months also increases the propensity of getting a job of higher occupational level, while a timeout longer than 15 months dramatically reduces these chances. At three years after childbirth the probability is highest for a downward occupational move. Such a negative association between the length of timeout and mothers' career prospects upon post-birth labor force return are often attributed to skill atrophy (Mincer and Polachek 1974). During career interruptions, the job-specific human capital accumulation process halts and previously collected skills may depreciate. Employers' conceptions may also corner these women in unfavorable positions when they attempt to re-enter the labor market.

Figure 6: Career opportunities upon return of job leavers by time since first birth, standardized for all other covariates (separate model for each transition, risks relative to those at 16-36 months after first birth), Korea, 1980-2007

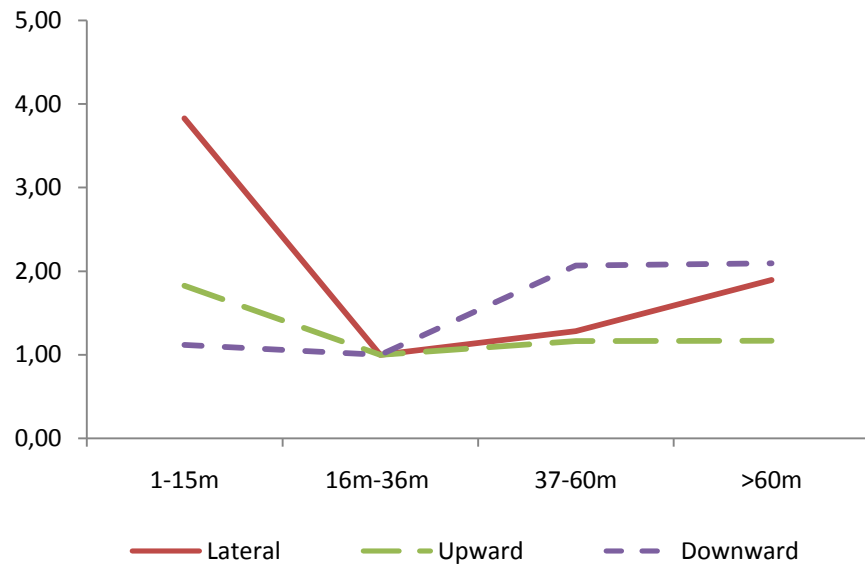
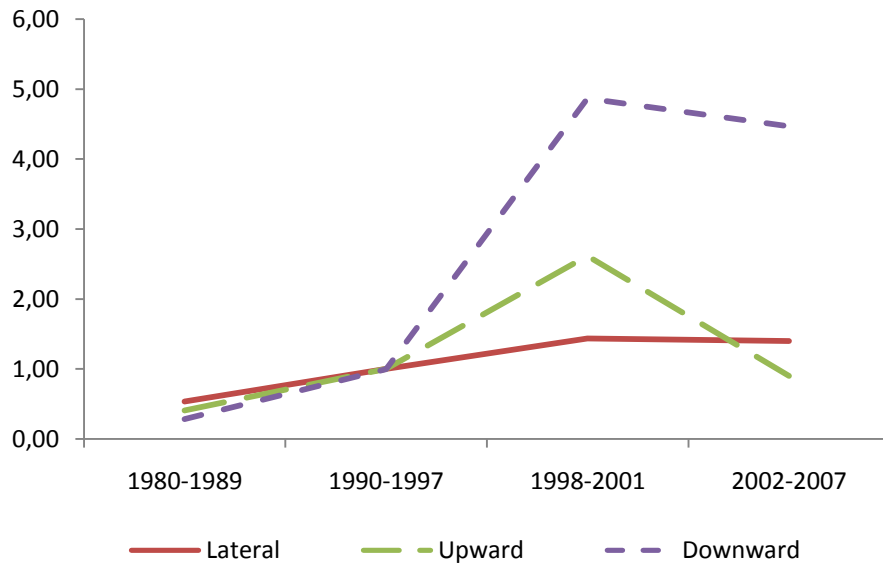


Figure 7: Career opportunities upon return of job leavers by calendar periods, standardized for all other covariates (separate model for each transition, risks relative to those of 1990-1997), Korea, 1980-2007



(a) Source: KLIPS, author's own calculations

Estimation for calendar years reveals that women overwhelmingly took jobs of lower occupational status during the economic downturn period (see also Figure 7). Even after Korea recovered from the financial crisis, this striking pattern of downward occupational moves persisted. The development of resuming a previous or similar job is not as striking. It has been on the rise at a slow pace. Upward occupational moves seem to have been somewhat more common during the recession period, but returned to previous levels when the financial crisis was over.

These results can be understood from various perspectives, among which two can be pointed out. First, under unstable economic conditions, women were too keen on getting a paid job at all to care about the job's occupation prestige. Any paid job during such a critical time meant that the family was less exposed to the risk of social insecurity. Second, the overall labor market restructuring after the crisis led to a sudden shrinkage of regular employment positions and a relative expansion of irregular or temporary jobs, which increased women's chance of taking a job of lower occupational status during this period and thereafter.

Even if estimated parameters for women's human capital accumulation are mostly insignificant, we can spot that women with a low educational level are more likely to make a downward move; the highly educated are more likely to make an upward move. Women with low occupational prestige have a relatively higher probability of making a lateral or upward move; those with high occupational status are under the highest risk of making a downward move. This is largely due to ceiling effects: it is difficult for a woman who once held a high status job to get a job with even higher prestige after a career break.

I also run each of the hazard regressions using only one at a time of the four labor market characteristics as a regressor. This does not change the other parameters in the model visibly. I furthermore include working hours (in the form of full-time or part-time job) in the analysis and find that previous full-timers had relatively higher return rates than part-timers. Women who once worked full time are more likely than part-timers to return to their previous job, take a job of similar status, or make a downward occupational move upon return. Part-timers, on the other hand, have more chance of making an upward move after a career break. However, this variable does not significantly improve the model fit and is thus not included in the presentation. I find no significant or meaningful interactions for career prospects; the results are thus omitted. I also run

a multinomial regression model to explore job leavers' career prospect upon return. The patterns and trends discovered are similar to the findings from the hazard regression models.

Conclusion

This study enriches our understanding of women's labor force return after childbirth by providing the first insight into patterns in Korean women's labor market return and its linkages to economic trends. I designed a three-stage analysis of Korean women's job continuity after childbirth without career interruption, of patterns in labor force return after any career interruption, and of career prospects upon return to work before, during, and after the Asian financial crisis (1998-2001). Contributions of factors such as women's own human capital accumulation and family policy development were explored. Some findings are fairly consistent with those of previous empirical research conducted in other developed societies, and some are typical for the Korean context.

First, the main driving forces for women's post-birth labor force return found in other developed societies also apply to the Korean society. The results show that women's own human capital accumulation substantially contributes to women's job continuity after childbirth without employment interruption. Women well-established on the labor market (those with long work experience, high occupational status, employment in the public sector, and high income) have a significantly higher probability of resuming employment immediately after childbirth without career interruption. If these women do experience job breaks, they are more likely to return to work soon rather than at a later time.

Second, women's work return behaviors were different during economic up- and downturns. The immediate return without career interruption showed an upward trend since the 1980s. During the crisis period when the labor market was restructured and the risks of being laid off were high, women held much tighter to the labor force than before. When the economy recovered, instead of resuming the pre-crisis low return pattern, women's immediate work return rates kept increasing. The job-protected maternity leave reform of 2001 seems to have fostered eligible women's job continuity as women with a well-established career, such as those with employment in the public sector, strikingly increased their probability of resuming their pre-birth job after the

policy reform. These are the groups with the highest chance of being qualified for the new maternity leave.

The labor market return of mothers who experienced employment interruption is also closely related to the business cycle. Their labor force return rates increased slowly during the economic boom period from 1980 to the late 1990s. However, the economic downturn during 1998-2001 changed the return pattern markedly; it encouraged mothers staying at home to re-enter the labor market more swiftly. Their employment may have been regarded essential in protecting their families against economic insecurity. When the crisis was over, these women's return rates declined somewhat but still remained at a significantly higher level than before the crisis.

These are remarkable results, as one would expect that after an economic crisis, women should return to their pre-crisis behavior. It seems, however, that the economic crisis has spurred a change in women's work return behavior. Apart from the pushing effect of the financial crisis, increasing working opportunities along with the economic recovery and the increasingly positive attitudes toward maternal employment may have supported these developments.

Third, the timing of women's post-birth work return in Korea is polarized and takes on a V-shape. Women who underwent career interruptions either took a short break of less than 15 months or a long break of at least three years. Women with greater human capital accumulation tended to resume employment quickly or with only a short break. Others tended to provide childcare at home until the first child was older. Some women had their second child during the same timeout period of first birth.

Fourth, women who immediately returned to the labor force after childbirth overwhelmingly resumed their pre-birth jobs. The career prospects of women who experienced employment interruptions are diverse. Their career opportunities were closely associated with the length of timeout, as found in previous research in other contexts. A quick return within 15 months is strongly related to a lateral or upward occupational move, while an employment interruption longer than three years increases the likelihood of moving down the career ladder. During the crisis period and the period of economic recovery, these women overwhelmingly took jobs of lower occupational status. Labor market restructuring and women's concerns about getting a paid job at all arguably contributed to this development.

Returning to the labor market after childbirth is one of many important transitions in a woman's life. The patterns of return do not only depend on women's own characteristics, but are also

shaped by contextual factors. Evidence from this study on Korea suggests that the financial crisis that broke out in late 1997 triggered a noticeable change in women's post-birth labor market return behavior. The economic volatility pushed women to hold tighter to the labor force than before. To get a job at all during the downturn mattered more than its occupational status. Further, women did not resume their pre-crisis return behavior when the economy recovered. Other factors such as women's own human capital accumulation, social policy development and labor market restructuring also arguably matters for recent trends in return behavior. Future research should address how patterns evolve during more extended economic recovery and continued restructuring of the social context of Korea.

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Appendix 1: Description of excluded and included cases for the analyses of women’s labor market return after childbearing in Korea

Number of women who experienced childbearing	4150	
Number of women with pre-birth work experience	2748	
Number of women included in analysis	1790	
Reasons for exclusion:	Excluded	Remaining
		2748
Working as non-wage earners before first birth	332	2416
Less than three months’ work experience before childbearing	35	2381
Unavailable husband’s information and first birth during singlehood	178	2203
Missing information on women's pre- and post-birth occupation	306	1897
Returning to the labor market before 1980	107	1790

Appendix 2: Korean Standard Classification of Occupations (KSCO) and corresponding Socioeconomic Index (SEI) scores based on Ganzeboom and Treiman (1996)

KSCO	SEI score
1. Managers	55
2. Professionals and related workers	70
3. Clerks	45
4. Service workers	40
5. Sales workers	40
6. Skilled agricultural, forestry and fishery workers	23
7. Craft and related trades workers	34
8. Equipment, machine operating and assembling workers	31
9. Elementary workers	20

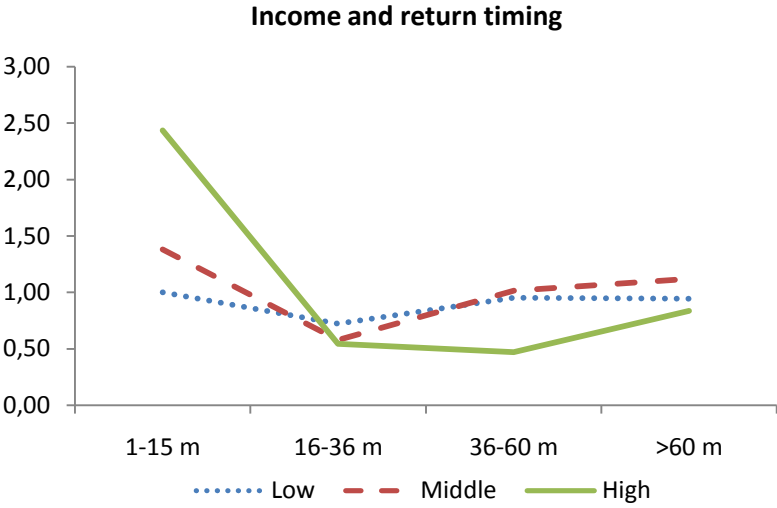
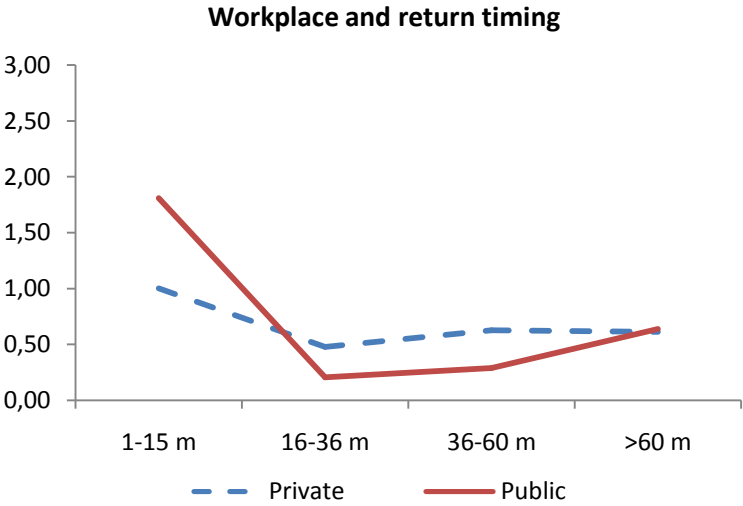
Appendix 3: Descriptive statistics of variables for return and career prospect models of job leavers (Hazard)

	Return		Lateral		Upward		Downward	
	Person-months	Returns	Person-months	Returns	Person-months	Returns	Person-months	Returns
Time since first birth (t-v)								
1m≤ timeout≤15m	13418	128	13418	79	13418	24	13418	25
15m<timeout≤36m	23448	89	23448	32	23448	22	23448	35
36m<timeout≤ 60m	23023	126	23023	34	23023	26	23023	66
>60m	40967	219	40967	69	40967	45	40967	105
Pre-birth absence								
<=3 months	9296	107	9296	64	9296	12	9296	31
4-12 months	34829	206	34829	58	34829	50	34829	98
>=13 months	56731	249	56731	92	56731	55	56731	102
Calendar years (t-v)								
1980-1989	22887	62	22887	35	22887	16	22887	11
1990-1997	35208	170	35208	75	35208	45	35208	50
1998-2001	18252	138	18252	39	18252	31	18252	68
2002-2007	24509	192	24509	65	24509	25	24509	102
Woman's age (t-v)								
15-24	6029	41	6029	21	6029	11	6029	9
25-29	38409	223	38409	100	38409	44	38409	79
30-34	40908	231	40908	74	40908	51	40908	106
35-44	15510	67	15510	19	15510	11	15510	37
Number of children (t-v)								
1 child	45562	266	45562	128	45562	50	45562	88
2 children	51159	279	51159	81	51159	66	51159	132
3+ children	4135	17	4135	5	4135	1	4135	11
Woman's education								
Low	14600	74	14600	33	14600	22	14600	19
Middle	60878	329	60878	120	60878	66	60878	143
High	25378	159	25378	61	25378	29	25378	69

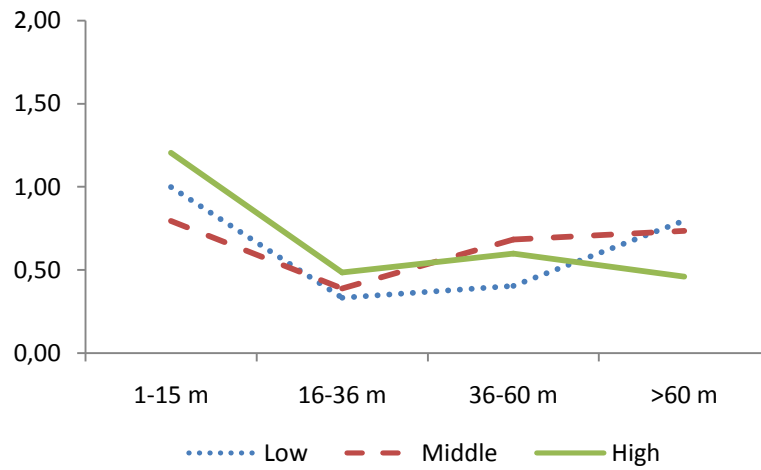
Appendix 3: Continued

	Return		Lateral		Upward		Downward	
	Person-months	Returns	Person-months	Returns	Person-months	Returns	Person-months	Returns
Work experience								
≤2 years	17809	96	17809	31	17809	21	17809	44
2< years≤5	45011	246	45011	97	45011	48	45011	101
>5 years	38036	220	38036	86	38036	48	38036	86
Occupational status								
Low	18754	98	18754	47	18754	41	18754	10
Middle	65580	367	65580	139	65580	69	65580	159
High	16522	97	16522	28	16522	7	16522	62
Workplace								
Private	59746	250	59746	87	59746	39	59746	124
Public	9244	28	9244	11	9244	5	9244	12
Missing	31866	284	31866	116	31866	73	31866	95
Income								
Low	35003	155	35003	44	35003	26	35003	85
Middle	26631	132	26631	52	26631	20	26631	60
High	12415	64	12415	31	12415	10	12415	23
Missing	26807	211	26807	87	26807	61	26807	63
Husband's education (t-v)								
Low	11893	60	11893	23	11893	16	11893	21
Middle	46205	269	46205	100	46205	59	46205	110
High	42758	233	42758	91	42758	42	42758	100
Husband's income (t-v)								
Low	22452	150	22452	62	22452	29	22452	59
Middle	21310	103	21310	34	21310	27	21310	42
High	20474	91	20474	39	20474	18	20474	34
Missing	23321	156	23321	53	23321	32	23321	71
Non-employed	13299	62	13299	26	13299	11	13299	25
Total	100856	562	100856	214	100856	117	100856	231

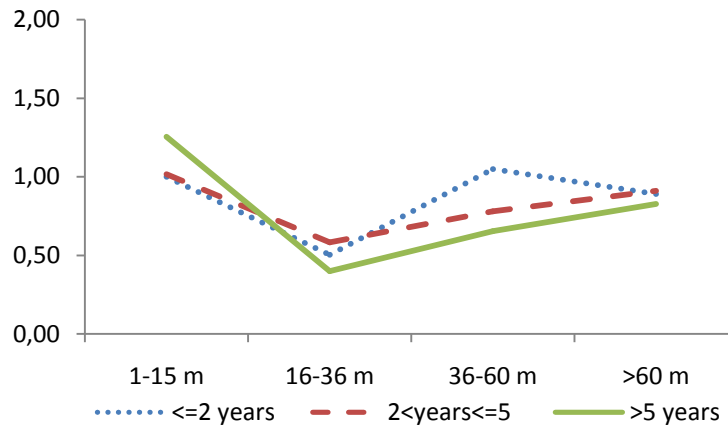
Appendix 4: Labor force return of job leavers, by time since first birth and women's labor market characteristics, Korea, 1980-2007



Occupational status and return timing



Work experience and return timing



Source: KLIPS, author's own calculation

