Women's Economic Opportunities and Childbearing Within Marriage in

Italy, Spain, and Japan

Kei M. Nomaguchi

Department of Sociology

University of Calgary

2500 University Drive, N.W.

Calgary, Alberta, Canada, T2N 1N4

Phone: (403) 210–3812

Fax: (403) 282–9298

Email: knomaguc@ucalgary.ca

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ABSTRACT

Using data from the Fertility and Family Surveys and the National Family Research, this study examines the trends in women's employment and the pace of childbearing among married women born in 1945-1964 in three industrialized countries where gender relations remain less egalitarian: Italy, Spain, and Japan. Results suggest that across cohorts women's employment was negatively related to the pace of childbearing for all countries, except for second births in Japan, even after controlling for education, age at marriage, and regions of residence. Women's employment after marriage before a first birth increased among younger cohorts in Spain and Japan, but not in Italy; and women's employment after a first birth increased among younger cohorts only in Spain. "The increased women's employment hypothesis" was useful only in explaining the slower pace of childbearing among Spanish married women in younger cohorts compared with those in earlier cohorts.

INTRODUCTION

In the second half of the 20th century, fertility in almost all industrialized countries declined to below replacement levels. Paradoxically, below-replacement fertility has been more prevalent to countries where gender relations remain less egalitarian and thus childrearing may be seen as the primary source of happiness in adult women's lives. Between 1965 and 1995, for example, total fertility rate (TFR) in Italy declined from 2.66 to 1.20 children per woman, which is one of the lowest records in the world (Council of Europe, 2001). In Spain, the drop was even greater: TFR in Spain declined from 2.94 to 1.18 children during the same period (Council of Europe, 2001). In Japan, although the decline was less dramatic, partly because Japanese fertility was already relatively low in the mid-1960s, TFR in Japan declined from 2.14 to 1.42 children per woman during the same period (Ministry of Health, Labour, and Welfare, 2003).

Many scholars have argued that today's very low fertility in less feminist countries is largely because of the increase in women's labor force participation in a conjunction with a lack of social and institutional change in supporting working women to combine childrearing with employment (Delgado Perez and Livi-Bacci, 1992; Morgan, 2003; Pinnelli, 1995). In most industrialized countries, the period when fertility declined overlap with the period when women's labor force participation rates increased dramatically. The reason for the women's movements to the labor force is still debatable – it may be partly because of the increase in women's levels of education, the decline in real wage for men, and the increase in divorce rates. Combining childrearing with paid work has been a challenging task for mothers in modern economy where workplaces are typically located outside of the home and not family-friendly. The degree of the "maternal incompatibility" with paid work seems to be greater in those "family-oriented" less feminist countries such as Italy, Spain, and Japan, than in relatively more

individualistic and gender-egalitarian countries such as the United Kingdom and Sweden, because the social welfare system in family-oriented countries relies heavily on women's unpaid work for caregiving for children and elderly and have been slow in adapting to changes in women's economic and family roles (Chesnais, 1996; Morgan, 2003). As McDonald (2000) noted, with such slow changes in the heavily unequal division of labor between husbands and wives in family work, many women perceive having children as too costly.

Despite the theoretical attention, relatively less empirical research has carefully investigated whether "the increased women's labor force participation hypothesis" explains the fertility decline in less egalitarian countries. In this paper, I examine the trends in women's employment, the pace of having a first and a second child, and the relationship between the two, focusing on married women who were born between 1945 and 1964 in three less feminist countries – Italy, Spain, and Japan. This paper will contribute to the previous literature at least in the following three ways:

First, I examine the extent to which *married* women in younger cohorts increased their economic activities during particular life stages when employment and childbearing decisions are most intense: after marriage before a first birth and after a first birth. In the previous studies, women's labor force participation tends to be too broadly defined, e.g., many studies include all women ages 18-64 when examining the trends in female labor force participation rates and its correlations with fertility levels. Including all women regardless of marital statuses and their ages makes analysis of the relationship between women's employment and fertility less clear because the degree of constraints of women's employment for childbearing vary markedly by marital status and when it happens during women's life stages.

Second, I examine whether women in younger cohorts differ from their counterparts in earlier cohorts in the pace of having a first and a second child, and if the pace was delayed among those in younger cohorts, whether the delay is related to the increase in their economic activities outside the home. In countries where most births occur within marriage, fertility decline can be influenced by two different demographic processes: marriage behavior and childbearing behavior within marriage. Focusing on changes in childbearing behaviors among married women, this study seeks for better understanding of changes in women's roles in marriage and their implications for fertility under the social context where marriage remains a key institution leading to inequality between women and men.

Finally, several scholars have suggested that Italy, Spain, and Japan may share similar trends in fertility, marriage, and gender relations (e.g., Raymo, 2003) that probably could be called patterns in "family oriented" or "less gender-egalitarian" countries. Little empirical research has investigated whether that may be the case, however. This study compares three countries by examining the same set of analyses for each country.

BACKGROUND

Fertility Trends in Italy, Spain, and Japan: Birth Cohort Approach

This paper focuses on four birth cohorts of married women in Italy, Spain, and Japan who were born between 1945 and 1964 to examine the trends in childbearing, their labor force participation, and the link between the two factors. Given that most women in these countries give births in their 20s, we may say that the majority of women in the earliest cohort, i.e., those who were born between 1945 and 1949, went through their primary childbearing years from the mid-1960s to throughout the 1970s; women in the 1950-1954 cohort went through their primary

childbearing years during the 1970s to the early 1980s; women in the 1955-1959 cohort went through their primary childbearing years from the mid-1970s to throughout the 1980s; women in the 1960-1964 cohort went through their primary childbearing years during the 1980s to the early 1990s. The younger cohorts, particularly those who were born in the early 1960s, went through their childbearing years when TFR in these countries declined dramatically.

Figure 1 presents cumulative fertility rates by age and birth cohort for all women who were born between 1945 and 1965 in Italy, Spain, and Japan. In Italy, it appears that no cohorts achieved replacement level fertility: Women who were born in 1945, who appear to have the highest level of fertility, had 1.93 children on average in their lifetime. Those who were born in 1950 had a similar pattern and level of childbearing, but those who were born in the mid-1950s appear to have lower levels of fertility, especially in their late 20s and thereafter. Those who were born in 1960 and thereafter show much lower levels of fertility at all ages. In Spain, it appears that fertility started to decline a little later than in Italy: Spanish women who were born in 1945 had 2.33 children on average. Those who were born in the 1950s, however, do not seem to have achieved above replacement level fertility. Those who were born in 1960 and thereafter show a lower level of childbearing at all ages, with some increase in early childbearing among those who were in 1960. In Japan, women born in 1945 had 2.1 children on average, and those who were born in 1950 had children in a similar pace with those in the earlier cohort. Compared with these two earlier cohorts, those who were born in 1955 show a lower level of fertility at age 25, but seemed to "catch up" in their 30s. Women who were born in the 1960s show lower levels childbearing in all ages which suggest that they will have a lower level of completed fertility.

[Figure 1 about here]

In sum, in Italy, Spain, and Japan, women in younger cohorts, especially those who were born in the 1960s, suggest a slower pace and a lower level of childbearing than those in earlier cohorts. One question not clear in Figure 1 is to what extent the decline in fertility among women in younger cohorts reflects delayed or declined childbearing within marriage. Unlike Northwestern European and North American countries where nonmarital childbearing has increased among women in younger cohorts, almost all births in Italy, Spain, and Japan remain occurring within marriage, although it has become relatively higher in Spain than in two other countries. Nonmarital births relative to all live births in 1990 was 6.5 percent in Italy, 9.6 percent in Spain (Council of Europe, 2001), and 1.1 percent in Japan (Ministry of Health, Labour, and Welfare, 2003). When childbearing is closely linked with marriage, fertility rate can be influenced by marriage behaviors significantly. Many scholars have argued that the postponement of marriage, and probably the increase in those who do not marry in their life time, accounts for the large part of the decline and delay in fertility in Italy (Pinnelli, 1995), in Spain (Delgado Perez and Livi-Bacci, 1992, Ahn and Mira, 2001), and in Japan (Tsuya and Mason, 1995).

Relatively less is known whether childbearing has been delayed after marriage in those countries (but see Bettio and Villa, 1998 for Spain; National Institute of Population and Social Science Research, 2003*a* for Japan). I thus focus on childbearing within marriage. Changes in the timing of marital childbearing may have some implications that women's roles in marriage have been changing among those in younger cohorts. Change in women's roles in marriage and family is a particularly relevant issue in Italy, Spain, and Japan because it has been documented that gender relations in marriage and family have changed only very slowly in these countries.

Women's Employment and Fertility in Industrialized Countries

One of the most often cited explanations for the decline in fertility among younger cohorts in Italy, Spain, and Japan is the increase in women's economic opportunities, in particular, the increase in women's labor force participation. The relationship between women's labor force participation and fertility has a long history of research (for a review, see Brewster and Rindfuss, 2000). Although the causal direction is still debatable, i.e., whether women refrain from childbearing because of paid work activities, or women's childbearing plans affect women's labor force participation, many scholars agree that women who are attached to the labor force postpone childbearing or have fewer children compared with those who are not attached to the labor force (Rosenfeld, 1996). The basic assumption for the inverse relationship between women's labor force participation and childbearing is the "maternal role incompatibility" thesis – that childrearing is inherently in conflict with economic activities in the industrialized world (Stycos and Weller, 1967). When it is difficult for a woman to combine maternal role with paid work role simultaneously, she has to either drop out of the labor force, or postpone or forego their childbearing. The neo-classical economic theory contends that as women's economic opportunities increase, the "opportunity costs" of children for women increase, i.e., the costs of bearing and raising children relative to their potential to earn money and build a career increases (Becker, 1981). While the opportunity costs depend on women's "tastes" for children, women in younger cohorts in Italy, Spain, and Japan seem to have increasingly found having children more costly than beneficial. In Italy, Spain, and Japan, as in other industrialized countries, women in younger generations grew up in the social environment where more women have a better education and better economic opportunities than before. Unlike in other countries, however, combining maternal role with paid work in a simultaneous

fashion remains less common. Chesnais (1996) and McDonald (2000) suggest that the maternal role incompatibility with economic roles is greater in countries where gender relations in the family remain less egalitarian, such as Italy, Spain, and Japan, than other countries where women have enjoyed relatively more egalitarian relationships with men in the family. Under the social expectation that women should stay at home while they have young children, women can have only limited substantive and psychological support for combining paid work with childrearing. Morgan (2003) suggests that fertility decline in Italy during the latter half of the 20th century has been much more sensitive to the increase in female labor force participation than fertility decline in the United States.

Empirical studies have suggested inverse relationships between employment and childbearing among Italian, Spanish, and Japanese women, although research in the English literature is scares. In Italy, Di Tommaso (1999) found a negative relationship between employment and fertility by measuring employment as women's earnings rather than women's employment status. In Spain, few studies in the English literature have investigated whether women's labor force participation after marriage is related to the timing of first births. In Japan, research has found that married women who are employed are more likely to postpone having a first birth than those who are not employed (Nagase, 1999; Sasai, 1998).

Much less is known about to what extent the increase in women's labor force participation explains the cohort differences in childbearing within marriage. Despite the theoretical attention, empirical research on the "increased women's labor force participation thesis" has been limited. Typically, studies examine the upward trends in female labor force participation for all women in working ages, i.e., ages 15-64, but do not take it into account that the implications of female labor force participation for maternal roles vary by marital status and

life stages (but see Retherford, Ogawa, and Matsukura, 2001). First of all, in Italy, Spain, and Japan, the decision-making between paid work and childbearing is relevant almost only when women are married. Second, the maternal incompatibility with paid work is most intense around the transition from marriage to parenthood and when women have young children. Hence, in this paper, I examine the extent to which married women's labor force participation increased in younger cohorts with special attention to two particular life stages when childbearing decision become intense: after marriage before a first birth (for the timing of a first birth), and after a first birth (for the timing of a second birth). Then I examine whether the increase in labor force participation among married women in these life stages – if any – explains the delay in transitions to a first and a second birth within marriage among women in younger cohorts.

Other Factors Related to Women's Labor Force Participation and Childbearing

Previous studies have suggested that women's levels of education, age at marriage, and regions of residence, and cohabitation as a prelude to marriage are closely associated with the link between women's labor force participation and childbearing. In my analysis, I use these factors as controls.

Women's Levels of Education. According to Becker's theory (1981), women with a higher education are more likely to be in the labor force than those with a lower education, because the higher human capital increases values of women's time and thus increase women's opportunity costs of dropping out of the labor force. The inverse relationship between women's employment and timing of childbearing can be partly because of higher levels of education. Besides the economic factors, education is associated with less family-oriented values. Previous studies have produced inconsistent results, however. In Italy, some studies have found that there

is a negative relationship between women's levels of education and childbearing (Pinnelli and Derose, 1995), but other studies emphasize that such relationship is more indirect through marriage behavior (Blossfeld and Derose, 1992). Similarly, in Japan, many scholars found that women with a four-year college education are more likely to postpone a first birth after marriage than those with lower levels of education (Fukuda, 1998; Nagase, 1999; Sasai, 1998), but other studies suggest that education may not be related to the timing of a first birth within marriage once the age when women married is controlled (Ogawa and Retherford, 1993; Shirahase, 2000). In Spain, studies have found that married women with a higher education are likely to postpone first births (Ahn and Mira, 2001), even after controlling for age at marriage (Martin, 1992). Fewer studies have investigated the relationship between education and the timing of a second birth. A few studies have suggested there is no relationship between education and timing of second birth in Japan (Ogawa and Retherford, 1993; Sasai, 1998) and in Spain (Ahn and Mira, 2001).

Age at Onset of Exposure. The life course perspective (e.g., Elder, 1985) suggests that postponement of marriage should be related to the timing of childbearing after marriage, but it leads to contrasting predictions. On the one hand, one might make an opposite prediction: postponement of marriage may be related to a faster pace of having a first birth within marriage because for women who delayed marriage, the decision to get married may be almost equivalent with the decision to start having children. On the other hand, one might expect that postponement of marriage should be related to the delay in having a first birth within marriage. The explanations are twofold. One may be called "selection effects," which suggest that women who had characteristics that are associated with delay in childbearing, such as a lower "taste" for having children (Marini and Hodsdon, 1981) and less traditional views of marital relationships

(Morgan, Rindfuss, and Parnell, 1984), may be selected to delay entry into marriage. The other may be called "life event effects." The experience of staying single may lead women to less traditional attitudes towards marriage and children. Furthermore, the postponement of the onset of childbearing may decrease women's ability to have children, by increasing the possibility of infertility (Bongaarts and Potter, 1983).

Previous studies have produced inconsistent results. In Italy, some studies suggest no differences by age of women in the timing of having a first birth (Billari and Kohler, 2002). In Spain, Martin (1992) found that women who marry at older ages tended to make longer transition to first births, but it was largely because they were less likely to conceive their first child before marriage. In Japan, studies have found that women who marry at the age of 29 or later tend to make a slower transition to motherhood after marriage than those who marry at younger ages (Fukuda, 1999, Ogawa and Retherford, 1993, Sasai, 1998).

With similar arguments, many have suggested that the timing of a first birth is related to the pace of having a subsequent birth. Studies have found that the postponement of onset of childbearing is positively related to the delay of having a second birth in Italy (Kohler, Billari, and Ortega, 2002) and in Japan (Sasai, 1998).

Regions of Residence. Fertility rates often differ by regions within a country. Reasons for differences in fertility rates by regions include both economic and cultural factors. For example, very expensive housing costs in urban areas may be one reason for the lower rates of having children among those who live in urban areas than those who live in rural areas. Housing issues are suggested as a major cause of delayed childbearing in Japan (Fukuda, 1999, Morgan, Rindfuss, and Parnell, 1984) as well as in Mediterranean countries (Delgado Perez and Livi-Bacci, 1992; Pinnelli, 1995; Pinnelli and De Rose, 1995). In Italy, many studies have found that

fertility levels differ between Centre/North and South (Delgado Perez and Livi-Bacci, 1992). As

Delgado Perez and Livi-Bacci (1992) noted, a large part of the regional differences in fertility

rates may reflect urban-rural differences between the two regions. In Spain, Martin (1992) found

very small differences in the timing of having a first birth between rural and urban areas. In

Japan, some studies found that women who grew up in urban areas are more likely to delay entry

into motherhood after marriage (Ogawa and Retherford, 1993). Others studies found that

women who currently live in metropolitan areas are less likely to have a first birth (Sasai, 1998)

and have fewer children (Yashiro, 1998).

Cohabitation as a Prelude to Marriage. Although the levels remain much lower than

in Northwestern European and North American countries, cohabitation in Italy and Spain has

become more common among those in younger generations than those in earlier generations.

For example, in Italy, Billari and Kohler (2002) estimate that whereas about 95 percent of

women who were born between 1952 and 1955 entered directly into marriage, whereas the figure

decline to 90 percent for women in 1961-1965 cohort. Studies have suggested that cohabitating

couples without marriage are more likely to postpone childbearing than married couples (Pinnelli

et al., 2002), although the differences may vary by generation (Billari and Kohler, 2002). In

Japan, cohabitation rates remain very low (Iwasawa, 2000).

RESEARCH QUESTIONS

In this paper, I examine whether the "increased women's employment hypothesis" is useful in

explaining cohort differences in the timing of childbearing within marriage in three countries,

Italy, Spain, and Japan, where gender relations are relatively less egalitarian. I address the

following four questions:

1) In each country, did married women in younger cohorts make slower transitions to first births and second births compared with those in earlier cohorts?

2) To what extent, in each country, did women's labor force participation increase in younger cohorts during two life stages when the conflict between economic activities and childbearing decisions may be most intense: after marriage and before a first birth, and after a first birth?

3) Is the delay in childbearing within marriage in younger cohorts, if any, associated with increases in women's labor force participation, after controlling for levels of education, age at marriage, and regions of residence?

4) Do three countries show similar patterns in the relationship between the delay in childbearing within marriage and increases in women's employment?

DATA AND METHODS

Data and Sample

Italy. Data for Italy are drawn from the 1995 Fertility and Family Survey (FFS) conducted by the Population Activities Unit of the Economic Commission for Europe of the United Nations (ECE). More information about the FFS is available at the ECE's website at http://www.unece.org/ead/pau/ffs/. The Italian data consist of a nationally representative sample of 6,030 adults (1,266 men and 4,824 women) who were ages 18 to 49 at the time of the survey in 1995-1996. For the first birth analysis, I selected the sample as follows: I selected 2,568 women who were born between 1945 and 1964 and were currently married in their first marriage or divorced or widowed. Then I excluded 95 women because of missing data for the date of marriage or their first birth or both, and excluded 102 women because the reported date of their

first birth was earlier than the date that they reported that their marriage started. Finally, I

excluded 160 women who got married age 30 or older because the youngest respondents were 30

years old at the time of survey. The final sample size is $n = 2,211$. The sample for the second

birth analysis was selected as follows: I selected 2,388 women who were born between 1945

and 1964, were currently married in their first marriage or divorced or widowed, and had at least

one child. Then I excluded 105 women who had missing data for the date of a first birth or a

second birth or both, and excluded 53 women who reported that the date of their second birth

was earlier than the date of their first birth or within 5 months from their first birth. Finally, I

excluded 127 women who got married age 30 or older. The final sample size is $n = 2,103$.

Spain. Data for Spain are also drawn from the 1995 FFS. The Spanish data consist of a

nationally representative sample of 6,012 adults (1,991 men and 4,021 women) who were ages

18-49 when they were surveyed in 1994-1995. For the first birth analysis, I first selected 2,028

women who were born between 1945 and 1964 and were currently married in their first marriage

or divorced or widowed. Then I excluded 126 women because of missing data for the date when

their marriage started or the date when their first child was born or both, and excluded 49 women

who reported that their first birth occurred before their marriage started. Finally, I excluded 94

women who got married age 30 or older. The final sample size is $n = 1,759$. For the second

birth analysis, the sample was selected as follows: I selected 1,926 women who were born

between 1945 and 1964, were currently married in their first marriage or divorced or widowed,

and had at least one child. Then I excluded 430 women who had missing data for the date of a

first birth or a second birth or both, and excluded 20 women who reported that the date of a

second birth was earlier than the date of a first birth or only after 6 months from a first birth.

Finally, I excluded 43 women who got married age 30 or older. The final sample size is *n* = 1,433.

Japan. Data for Japan are drawn from the 1998 Japanese National Family Research (NFR) conducted by the Japanese Society of Family Sociology (JSFC) in Tokyo with a Grant-in-Aid for Scientific Research by the Ministry of Education, Science, Sports and Culture, Japan. Data are publicly available through the Information Center for Social Science Research on Japan, Institute of Social Sciences at the University of Tokyo. The NFR consists of a nationally representative sample of 6,985 men and women aged 28 to 77 in December 1998. Data were collected by self-administered questionnaires in February 1999, which were delivered to each respondent by staff members from the contracted agency. The response rate was 66.5 percent.[1]

For the first birth analysis, I first selected the 1,406 women who were born between 1945 and 1964, were currently married in their first marriage or divorced or widowed with information when their marriage ended, and had information about the number of children they had ever had. I excluded the 76 women who did not have information about the year when their marriage began and the year when the first child was born. I excluded the 27 women who reported that their first birth occurred before marriage. Finally I excluded 100 women who married at age 30 or older. Thus, the final sample is *n* = 1,203. For the second birth analysis, I first selected the 1,259 women who were born between 1945 and 1964, were currently married in their first marriage or divorced or widowed with information when their marriage ended, and had at least one child. I exclude 11 women because they reported that their second child was born

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[1] The characteristics of the NFR sample are similar to those in the 1995 Japanese Census or Basic Labor Force Survey, with some exceptions. The percentage of those who are currently married is slightly higher in the NFR than in the Japanese census (Japan Society of Family Sociology, 2000). The percentage of those who were employed for younger people (aged 50 or younger) is higher in the NFR than in Labor Force Survey, whereas the percentage of those who were employed for older people is lower in the NFR than in the Basic Labor Force Survey.

within 6 months from the date when their first child was born or earlier than that. Finally I

excluded 72 women who married at age 30 or older. Thus, the final sample is $n = 1,176$.

Methods

For the multivariate analysis, I use the Cox continuous-time hazard models to estimate

the log odds that a married person i has a first child at time t, or the log odds that a married

person with one child i has a second child at time t. I include only time-constant variables in the

models. Thus, the model is written as:

$$\log h_i(t) = \alpha(t) + \beta_1 x_{i1} + \ldots + \beta_k x_{ik}$$

where $\alpha(t) = \log \lambda_0(t)$. This indicates that the log odds that a married person i has a first or a

second child at time t depends on the value of x_1 (Allison, 1995, p 138).

Dependent variables

Monthly rates of the transition from marriage to a first birth is measured as the risk that

a married woman i has a first birth at time t, which is calculated by the product of two factors: 1)

duration of exposure, i.e., months since a woman began their marriage, and 2) a dichotomous

variable which is coded 1 for a woman who was married without children at month $t - 1$ and had

a first child in a given month t, and is coded 0 for a woman who was married without children in

a given month $t - 1$ and remained childless in a given month t (Allison, 1995: 113). I right-

censor childless women at the time when they were married for 15 years, or at the time of the

interview, whichever comes earlier.

Monthly rates of the transition from a firth birth to a second birth is measured as the risk

that a married woman with one child i has a second child at time t, which is calculated by the

product of two factors, 1) duration of exposure, i.e., months since the birth of her first child, and

2) a dichotomous variable which is coded 1 for a woman who was married with one child at

month $t-1$ and had her second child in a given month t and is coded 0 for a woman who was

married with one child in a given month $t-1$ and did not have an additional child in a given

month t. I right-censor women who did not have a second birth when they were married for 15

years, or at the time of the interview, whichever comes earlier.

Independent Variables

Birth Cohort. I grouped respondents into the following four birth cohorts based on the

calendar year when they were born: 1945-1949, 1950-1954, 1955-1959, and 1960-1964. In the

analyses for Italy and Japan, I use the 1945-1949 cohort as the reference group. For Spain, I use

the 1950-1954 cohort as the reference group rather than the 1945-1949 cohort, because fertility

stared declining later in Spain than in other two countries. The level of fertility among Spanish

women in the 1950-1954 cohort is more closer to the level of fertility among Italian and Japanese

women in the 1945-1949 cohort (see Figure 1).

Women's employment status after marriage and before a first birth (for the analysis of

first birth rate only) is a dichotomous variable for Italy and Spain, and a categorical variable for

Japan. In the Italian and Spanish surveys, respondents were asked to report work history about

all the jobs they had ever hand, including information about the starting and ending dates (in

month and year) for each job (e.g., "In what month and year did you start the job we are talking

about?"; and "When did you quit the job which you have described the characteristics of?"). I

create a dichotomous variable where those who were employed after marriage before a first birth

are assigned 1s and others are 0s. In the Japanese survey, respondents were asked whether they

quit their job when they married, which include three categories: (a) not employed around marriage, (b) continued being employed, (c) left the job when married. In the multivariate analysis, three dichotomous variables are created for each of the three categories, and those who were not employed around marriage are used as the reference group.

Women's employment status after a first birth (for the analysis of second birth rate only) is measured as a dichotomous variable where women who were employed after a first birth are assigned as 1 and others as 0. For Italy and Spain, the variable was created in the same way as women's employment status after marriage before a first birth described above. The Japanese survey, instead of asking a direct question of whether they were employed after each birth, asked women whether they had quit working due to childbirth and when it was. By combining this information with information about whether women were employed after marriage and when women had children, I constructed a variable which indicates whether women were employed after their first birth (1 = *employed*).

Women's level of education is a categorical variable indicating the highest degree they have completed in Italy and Spain data and the highest degree they have enrolled in Japanese data. In Italy and Spain, (a) primary level and less; (b) secondary level (level 2, stage 1); (c) high school level (level 2, stage 2); and (d) college level (level 3). In Japan, it includes: (a) high school education or less, (b) high school education, (c) junior college or vocational school beyond high school, and (d) four-year college or more. In the multivariate analysis, four dichotomous variables are created for each of the four categories.

Age at marriage (for the first birth analysis only) and age at first birth (for the second birth analysis only) are continuous variables measured in months.

Regions of residence in childhood are available only for the Spanish and Japanese surveys. In Japanese survey, respondents were asked in which area from the three categories, (a) large cities, (b) small cities, and (c) rural areas, they lived for most years until they completed elementary school. In the Spanish survey, respondents were asked the size of the community they lived most of the time up to age 15. I created a categorical variable including (a) large cities (with 100,000+ population), (b) small cities (with 10,000-99,999 population), and (c) small towns (with less than 10,000 population). In the multivariate analysis, three dichotomous variables are created for each of the three categories. Those who grew up in large cities are used as the reference group. For Italy, instead of regions of residence in childhood, I use current regions of residence. I created a categorical variable which includes: (a) North, (b) central, and (c) South and islands. In the multivariate analysis, three dichotomous variables are created for each of the three categories.

Cohabitation as a prelude of marriage (Italy and Spain only) is a dichotomous variable where those lived with their spouse before marriage are assigned 1s and others are 0s. Information about cohabitation is not available in the Japanese survey.

RESULTS

First Birth

Figure 2 presents the cumulative proportion of married women who had a first birth by duration of marriage for four birth cohorts (based on the Kaplan-Meier estimates). Among Italian married women, those in younger cohorts took longer than those in earlier cohorts in becoming a mother since marriage. Among those in the late 1940s cohort, one half became mothers within 15 months from marriage and three-fourths became mothers within 2 years and 3

months. Those who were born in the early 1950s show a very similar pace of becoming mothers.

Compared with them, for married women in the early 1960s cohort, it took 20 months for a half

of them to become mothers, and it took 3 years and 5 months for three-fourths of them to

become mothers. Married women in younger cohorts in Spain also delayed their first birth

compared with their counterparts in earlier cohorts, especially those in the early 1960s cohort.

The median months for the transition from marriage to a first birth for those in the early 1960s

were 20 months, compared with 12 months for those in the 1945-1949 cohort and 14 months for

those in the 1950-1954 cohort. It took 3 years and 1 month for three-fourths of those in the

earlier 1960s cohort to become a mother, whereas it was less than 2 years for those in the early

1940s cohort. In Japan, unlike two other countries, the pace of the transition from marriage to a

first birth changed little across cohorts. In all cohorts, a half of Japanese married women became

mothers within 13 to 14 months from marriage and three-fourths of them became mothers within

22 to 26 months after marriage, which are relatively short intervals compared with Italian and

Spanish married women.

[Figure 2 about here]

Descriptive statistics for other variables in the first birth sample are shown in Table 1.

Three countries show different patterns in the trends in labor force participation rate after

marriage before a first birth. In Italy, almost a half of married women in the 1945-1949 cohort

were employed before a first birth, which is relatively high compared with two other countries.

However, participation rates increased very little over time, with 53.3 percent of those in the

1960-1964 employed after marriage and before a first birth. In Spain, the vast majority of

married women in the 1945-1949 cohort stayed at home after marriage before a first birth.

However, employment in this stage of women's lives became more common among those in

younger cohorts, with 44.3 percent employed among those in the 1950-1954 cohort, 53.8 percent employed among those in the 1955-1959 cohort, and 55.8 percent employed among those in the 1960-1964 cohort. In Japan, 45 percent of married women in the 1945-1949 cohort were employed before a first birth. More Japanese married women in younger cohorts were employed before a first birth than in earlier cohorts, with about 60 percent for those in the 1960-1964 cohort.

[Table 1 about here]

The distribution of married women by levels of education suggests the increase in the levels of education among those in younger cohorts in all countries as widely suggested. Among Italian and Japanese married women, those in younger generation tended to marry late, with some fluctuations in the percentage of Italian women who married age 20 or younger. Spanish married women in younger cohorts, however, show rather a polarization between those who married very early and those who married relatively late. For example, among those who were born in the early 1960s, whereas about 20 percent reported that they married before age 20, another 20 percent reported that they married at age 26 or later. In Italy, the distribution of married women by regions of current residence suggest that the proportion of those who were living in South relative to other regions became greater among those in younger generations, probably reflecting regional differences in marriage rates in younger cohorts: women in North are more likely than women in South not to marry until in their 30s or even in their life time (note that this study includes only those who married before age 30). In terms of regions of residence in childhood in Spain and Japan, both countries suggest the increase in those who grew up in larger cities over time.

Results of the multivariate analyses for Italy, Spain, and Japan are presented in Tables 2.1, 2.2, and 2.3 respectively. For all countries, Model 1 examines cohort differences. Model 2 adds employment status after marriage before a first birth. For Spain and Japan, Model 3 adds levels of education; Model 4 adds age at marriage; and Model 5 adds regions of residence in childhood. For Italy, Model 3 adds regions of current residence; Model 4 adds levels of education; and Model 5 adds age at marriage. I changed the order between Model 3 and Model 5 for Italy, because the variable for regions of residence is measured differently for Italy than for two other countries. Finally, in Italy and Spain only, Model 6 adds whether women lived with their spouse before marriage. In each country, there were about 10 percent of women who had a first birth within 6 months from marriage. Because results changed little regardless of whether I included these respondents or not, I decided to include them in my sample.

In Italy, married women who were born after 1950 made significantly slower transitions to a first birth than those who were born in earlier years (Table 2.1). Compared with those in the 1945-1949 cohort, married women in the 1955-1959 cohort was only 86.1 percent (i.e., exp [-0.15]) as likely to have a first child in a given month, and those in the 1960-1964 cohort was only 82.7 percent (i.e., exp [-0.19]) as likely to have a first child in a given month. Although women's employment is negatively related to the pace of having a first birth, the reduction in the coefficients for cohort differences is very small from Model 1 to Model 2, suggesting that the increase in women's employment does not explain very much about the delay in the transition to a first birth among younger cohorts. Note that by adding the region variable, cohort effects become greater (Model 3). Whereas married women living in South are less likely to delay a first birth compared with those living in other regions, the proportion of those who live in South among married women (who married before age 30) increased in younger generations (see Table

1), reflecting the delay or decline in marriage among those who live in North. Models 4 and 5 suggest that having a higher education and having married at older ages are negatively related to a first birth. The coefficients for the 1955-1959 cohort effect became non-significant, suggesting that the increase in levels of education and age at marriage explain the delay in having a first birth in this cohort. By adding education and age at marriage variables, the coefficients for employment declined from –0.54 to –0.50 and from –0.50 to –0.46 respectively, suggesting that education and age at marriage also explain part of the negative association between women's employment and a having a first birth. Cohabitation is not related to the pace of having a first birth (Model 6).

[Table 2.1 about here]

As noted in the method section, in the models for the Spanish data, to make comparable analyses of cohort differences with other two countries, I used women in the 1950-1954 cohort as the reference group, rather than women in the 1945-1949 cohort who had a relatively high fertility levels. Compared with those who were born between 1950 and 1954, married women in the 1955-1959 did not differ in the pace of having a first child after marriage (Table 2.2). Those in the 1960-1964 cohort, however, delayed childbearing significantly: they are only 74.1 percent (i.e., exp [-0.30]) as likely to have a first child in a given month as those in the 1950-1954 cohort.). The earlier cohort, i.e., those who were born between 1945 and 1949 did not actually show any significant difference in the pace of the transition from marriage to a first birth from those in the 1950-1954 cohort. Women's employment is negatively related to the pace of having a first child: Married employed women were only 59.5 percent (i.e., exp [-0.52]) as likely to have a first child in a given month as their counterparts who were not employed (Model 2). Married women with a university level education are less likely to have a first child in a given month compared

with those with a lower level of education (Model 3), but it appears that this is largely because women with a university level education are likely to have marred at older ages, which is significantly related to the delay in having a first birth (Model 4), and they are likely to grow up in a large city, which is also related to the delay in having a first birth (Model 5). By adding education and age at marriage, the coefficients for women's employment changed little, suggesting that neither education nor age at marriage explain much about the negative relationship between women's employment and first birth rates. Whether women lived with the spouse before marriage does not matter for those results described above (Model 6).

[Table 2.2 about here]

In Japan, as seen at bivariate level, there is little difference in the pace of having a first child among married women by cohorts (Table 2.3). Employment after marriage before a first birth is negatively related to the pace of having a first child: Employed married women are only 60 percent (i.e., exp [-0.51]) as likely to have a first birth in a given month as those who are not employed. Married women with a four-year college degree tend to postpone having a first child. However, by adding education variable did not change the coefficients for women's employment, which suggest that levels of education do not explain the negative relationship between women's employment and the pace of having a first child. Age at married is not related to the pace of having a first child. Married women who grew up in large cities are likely to postpone having a first child compared with those who grew up in rural areas.

[Table 2.3 about here]

In sum, three counties show different patterns in the trends in the pace of having a first birth, the labor force participation, and the relationship between the two among married women who were born between 1945 and 1964. It appears that "the increased women's labor force

participation thesis" was useful only in explaining the delay in having a first birth within marriage among Spanish women in younger cohorts. Now let us turn to the second birth analysis.

Second Birth

Figure 3 presents cumulative proportion of married women with one child who had a second birth by months since a first birth for four birth cohorts. As seen in the first birth transitions, Italian and Spanish married women in younger cohorts made slower transitions to a second birth than their counterparts in earlier cohorts, but in Japan the pace of transitions to a second birth by cohort fluctuated. A half of Italian married women with one child in the 1945-1949 cohort had a second child within 4 years from their first birth, whereas it took 10 months longer for those in the 1960-1964 cohort. For Spanish married women, the median months between a first and a second birth were a little longer for those in the 1960-1964 cohort (i.e., 3 years and 9 months) than for those in earlier cohorts (i.e., 3 years for those in the 1945-1949 cohort and 3 years and 1 month for those in the 1950-1954 cohort respectively). Among Japanese married women, the second birth intervals were much shorter than their counterparts in Italy and Spain. In Japan, those who were born between 1950 and 1954 show a little slower transition to a second birth than those in other birth cohorts (3 years for those in the 1950-1954 cohort versus 31 to 32 months for other cohorts).

[Figure 3 about here]

Table 3 presents descriptive statistics for other variables in the second birth sample. Labor force participation rate after a first birth before a second birth among married women varies by country and cohort. Italian married women with one child have higher levels of labor

force participation rate than Spanish and Japanese married women with one child. For example, among the youngest cohort (i.e., 1960-1964 cohort), 50.8 percent of Italian married women with one child were employed after their first birth, compared with 36.9 percent of their Spanish counterparts and only 25.6 percent of their Japanese counterparts. Among Italian married women, labor force participation rate during this life stage was already high among the 1945-1949 cohorts (i.e., 46.7 percent) and thus there was only moderate increase in participation rate from earlier to younger cohorts. For Spanish married women, there was a dramatic increase in the labor force participation rates during this life stage from only 20.4 percent among those in the 1945-1949 cohort. Among Japanese married women, however, labor force participation rates at this life stage did not change or rather fluctuated across cohorts.

[Table 3 about here]

Results of multivariate analyses for Italy, Spain, and Japan are presented in Tables 4.1, 4.2, and 4.3 respectively. For each country, as in the first birth analysis, 5 models for Japan and 6 models for Italy and Spain were examined. In Italy, married women in younger cohorts postponed having a second child compared with those in earlier cohorts. Compared with those in the 1945-1949 cohort, married women in the 1955-1959 cohort were only 81.9 percent as likely to have a second child in a given month; and those in the 1960-1964 cohort were only 85 percent as likely to have a second child in a given month (Model 1). Employment after a first birth is negatively related to the probability of having a second child in a given month, with employed married women being only 45.8 percent as likely to have a second child in a given month as non-employed married women (Model 2). As Models 3 to 5 suggest, this is partly because women who are employed during this stage of life (i.e., after a first birth) are likely to live in North, less likely to have a lower level of education, and more likely to have delayed their first birth, which

are all negatively related to the likelihood of having a second birth in a given month. It is note worthy that married women with a higher level of education do not differ from those with a secondary level education in the pace of transition from a first birth to a second birth, controlling for cohort differences, employment, and age at first birth. Whether the marriage began by cohabitation is not related to the pace of having a second birth (Model 6).

[Table 4.1 about here]

For Spain, I used the 1950-1954 cohort as the reference group rather than the 1945-1949 cohort, as I did for the first birth analysis. Compared with women in the 1950-1954 cohort, women in the earlier cohort, i.e., the 1945-1949 cohort, were 1.19 times (i.e., exp [0.17]) more likely to have a second birth in a given month. Women in the 1955-1959 cohort did not show any significant difference from those in the 1950-1954 cohort. Women in the youngest cohort, i.e., the 1960-1964 cohort, made a slower transition from a first birth to a second birth: they were only 88 percent (i.e., -exp [-0.13]) as likely as the 1950-1954 cohort to have a second birth in a given month, although the significant level is only marginal ($p < 0.10$). Women's employment is negatively related to second births, with employed mothers with one child being only 68 percent (i.e., exp [-0.39]) as likely to have a second birth in a given month as their non-employed counterparts (Model 2). By adding the employment variable, the coefficients for the 1960-1964 cohort became much smaller and not statistically significantly, suggesting that the delay in having a second child among this younger cohort was mostly because of the increase in employment. Interestingly, and unlike in the case of Italy, married women with a university level of education is *more* likely to have a second birth in a given month compared with those with a secondary stage 1 level education (Model 3). Again unlike Italian married women, age at first birth is not related to the likelihood of having a second birth in a given month (Model 4).

There is no difference by region of residence in childhood (Model 5). Cohabitation is not related to rates of second births (Model 6).

[Table 4.2 about here]

In Japan, there is little change in the pace of having a second birth across cohorts. Unexpectedly, employment is not related to the pace of having a second birth (Model 2). Levels of education also do not matter for the pace of having a second birth (Model 3). Only factors related to the pace of having a second birth are age at first birth and regions of residence in childhood. Women who had their first child at age 28 or older are only 66 percent (i.e., exp [-0.41]) as likely to have a second child in a given month as women who had their first child at younger ages (Model 4). Compared with women who grew up in a rural area, women who grew up in a small city are 84.4 percent (i.e., exp [-0.17]) as likely to have a second child in a given month and women who grew up in a large city are only 81.9 percent (i.e., exp [-0.41]) as likely to have a second child in a given month (Model 5).

[Table 4.3 about here]

In sum, as seen in the first birth analysis, three countries show different patterns in cohort differences in the pace that married women had a second child and how women's employment are related to such cohort differences. Again, it appears that "the increased women's labor force participation thesis" was useful only in explaining the delay in having a second birth within marriage among Spanish women in younger cohorts.

DISCUSSION

The relationship between the increase in women's labor force participation and the decline in fertility in industrialized countries in the latter half of the 20th century has been of

great interests among many social scientists. The widely agreed assumption is that because of the incompatible nature of maternal role and paid employee role, women who are employed tend to delay or limit their fertility. As women's labor force participation rates increased over time, fertility levels declined to below replacement levels. The inverse relationship between women's employment and fertility may be more prevalent to countries where gender relations remain less egalitarian than countries where women enjoy relatively greater independence in economic roles and family life (Chesnais, 1996, McDonald, 2000; Brewster and Rindfuss, 2000).

This study sought to provide empirical evidence for the relationship between the increase in women's labor force participation and the delay childbearing among married women in three less feminist countries, Italy, Spain, and Japan, focusing on those who were born between 1945 and 1964, from generations who went through their childbearing years when the nations' fertility levels were about replacement levels to generations who went through their childbearing years when the national level fertility started declining. By focusing on childbearing within marriage, this study tried to capture some indications of changing women's roles in marriage in these rather less gender-egalitarian countries. By carefully examining the trends in married women's labor force participation during the particular life stages when employment and childbearing decisions become most intense, i.e., after marriage before a first birth, and after a first birth and before a second birth, this study provided a relatively clear picture of changes in married women's economic roles and their relationship with childbearing decisions. Table 5 presents a summary of findings. Below I return to each question I raised in this paper and discuss the findings.

[Table 5 about here]

Did women's labor force participation rates after marriage before a first birth and after a first birth increased among younger cohorts in each country? As suggested in Figure 4, three countries vary in the levels and trends in married women's employment during the two stages of their lives. Among Spanish married women, labor force participation rates increased dramatically from those in the late 1940s cohort to those in the early 1960s cohort in both stages of their lives. In Japan, whereas women's employment after marriage before a first birth increased in younger cohorts, their employment rate after a first birth remained low with only one-fourth of those are in the labor force, suggesting that many Japanese women in younger cohorts are no better than those in earlier cohorts in finding ways to combine paid work with childrearing simultaneously. It may be that it takes longer for Japanese society to change social norms associated with maternal roles than it takes to alter ideas about wives' roles to change. In contrast, Italian women did not show much increase from earlier to younger cohorts in both stages. Del Boca (2002) argues that the lack of childcare and part time opportunities constraint women from both labor force participation and childbearing. It is note worthy, however, that Italian married women in earlier cohorts already had a relatively high rate of labor force participation in both after marriage before a first birth and after a first birth (e.g., 49.3 percent and 46.7 percent respectively for the 1945-1949 cohort), and more importantly, their labor force participation rates after a first birth were as high as those before a birth for all cohorts. It may be that Italian people may have more favorable views regarding maternal employment, especially when they have young children, compared with Spanish and Japanese people. Future research is warranted.

[Figure 4 about here]

Was childbearing delayed within marriage among younger cohorts compared with earlier cohorts in each country? In Italy and Spain, married women in younger generations slowed the pace of childbearing within marriage compared with those in earlier generations. In Japan, however, women who were born in the early 1960s had their first and second births as quickly after marriage as those who were born in the late 1940s after they married. These suggest that the decline in over all fertility among younger cohorts in Japan is largely a function of the delay and decline in marriage rather than changes in childbearing within marriage, whereas in Italy and Spain, childbearing behaviors may also have contributed to the decline in overall fertility levels. Two decades ago, Morgan and his colleagues (1984) described Japanese marriages as "child-centered" compared with American marriages where couples value the quality of their relationship besides rearing children. As Tsuya and Mason (1995) noted, the close link between marriage and procreation has discouraged Japanese women in recent cohorts from getting married because marriage is a turning point for them to take a traditional role of women who devote themselves to children.

What was the relationship between women's employment and the pace of childbearing in each country? Women's employment is negatively related to childbearing among married women regardless of cohorts and birth order in all three countries except for second births in Japan. The finding of no relationship between employment and the timing of a second birth for Japanese women is surprising. In the Japanese setting where maternal employment after a first birth has been low, it is possible that those who are in the labor force during this period are a highly selected group. Research in U.S. suggests that how soon mothers with an infant return to work depends on the rewards they would get from the job and how easy for them to combine paid work with childrearing simultaneously (e.g., Desai and Waite, 1991). Thus, they may be

those who have enough support to combine childrearing with paid work, e.g., living with their mother who is available to take care of their child, working at government settings where workplaces are more gender-egalitarian than corporations (National Institute of Population and Social Science Research, 2000).

Was the delay in childbearing within marriage among women in younger cohorts related to the increase in women's labor force participation? My findings suggest that the "increased women's employment hypothesis" appeared to be useful only in explaining changes in childbearing among Spanish married women. In Spain, married women born in the early 1960s delayed first births compared with those who were born in the early 1950s partly because more women in the younger generation than in the earlier generation were in the labor force and delayed their marriage. Women in the early 1960s cohort delayed second births largely because, again, more women were in the labor force after their first birth. In Italy, the increased women's employment thesis was not very relevant largely because employment rates did not change much from the early to the younger cohorts examined in this paper. In Japan, the finding of no changes in the pace of having a first birth by birth cohort, whereas women's labor force participation after marriage before a first birth increased among those in the younger cohorts, which is negatively related to the timing of first birth, needs some explanations. One possibility is that even though more married women are in the labor force in younger cohorts than in earlier cohorts, it may not mean that women in younger cohorts have a strong commitment to the labor force, thus they may not see their paid job as competing with childbearing. Yamada (2001) maintains that many Japanese women in younger cohorts desire to become stay-at-home mothers despite the increase in their educational levels and occupational experiences. Comparative analysis of women's attitudes towards combining occupational careers with childrearing by generation may help us

better understand variations in changes in women's economic roles, changes in childbearing patterns, and the link between the two.

I acknowledge limitations of this study. First, the use of retrospective information about reproductive history and work history may raise some questions regarding how accurate respondents' answers are. In the FFS (for Italy and Spain), respondents were asked to report when they started and ended each job in month and year. It is not clear how well respondents recall the month and year they started and ended each job, especially when it happened many years ago. Second, I limited the analysis only for women who married before age 30, because in the FFS the youngest people who were born in 1964 were age 31 at the time of interview. Given that the proportion of women who marry at age 30 or older has increased in younger cohorts, women who married before age 30 in younger cohorts may be different from their counterparts in earlier cohorts.

All in all, this study suggests that three "family-oriented" or "less gender-egalitarian" industrialized countries – Italy, Spain, and Japan – show more variations than similarities in the trends in changes in married women's economic roles and their associations with childbearing decisions within marriage. Future research on cross-national variations in changing social norms regarding maternal roles and changing opportunity structures in the labor market for women will help us further understand the trends and variations in the relationship between women's economic opportunities and childbearing.

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Table 1. Descriptive Statistics for Variables in First Birth Transition Analysis by Birth Cohort: Italy, Spain, and Japan.

	Italy				Spain				Japan			
	Birth Cohort				Birth Cohort				Birth Cohort			
	1945-1949	1950-1954	1955-1959	1960-1964	1945-1949	1950-1954	1955-1959	1960-1964	1945-1949	1950-1954	1955-1959	1960-1964
Labor Force Participation												
% Employed After Marriage Before First Birth	49.3	46.0	51.6	53.3	35.6	44.0	53.9	56.2	44.9	52.3	50.4	59.7
% Quit the Job When Married	---	---	---	---	---	---	---	---	42.5	36.3	40.7	37.1
Education												
Less Than High School	46.6	33.0	22.0	10.0	61.7	45.5	31.0	16.4	17.9	11.4	7.4	2.4
High School	23.1	33.3	32.0	37.5	30.4	37.7	42.9	50.6	61.7	58.8	58.1	54.0
Junior College	23.2	25.7	38.3	44.3	4.4	8.6	12.5	15.2	13.2	21.6	23.7	31.9
College	7.2	8.1	7.8	8.2	3.6	8.2	13.7	17.8	7.1	8.2	10.7	11.7
Age at Marriage												
< 20	19.0	22.4	25.6	18.9	10.8	9.7	18.4	19.2	---	---	---	---
20-22/age 23 or younger	34.5	39.8	31.8	32.3	35.0	38.6	39.0	29.6	54.4	51.0	48.9	41.1
23-25/ages 24-26	33.0	25.4	25.2	27.4	36.7	38.3	30.0	31.1	35.9	38.2	37.4	39.5
26+/age 28+	13.6	12.4	17.5	21.5	17.5	13.5	12.7	20.1	9.8	10.8	13.7	19.4
Region of Childhood												
Rural	---	---	---	---	43.8	40.7	34.8	33.1	47.0	50.3	38.9	31.5
Small city	---	---	---	---	32.4	30.6	33.2	31.2	29.0	26.1	38.9	42.7
Large city	---	---	---	---	23.8	28.7	32.0	35.7	24.0	23.5	22.2	25.8
Region of current residence												
North	47.5	44.6	41.4	44.4	---	---	---	---	---	---	---	---
Central	19.2	21.2	21.6	17.9	---	---	---	---	---	---	---	---
South	33.3	34.2	37.0	37.8	---	---	---	---	---	---	---	---
% Cohabitation with Spouse Before Marriage	1.2	1.2	1.3	4.0	0.3	1.9	1.6	4.8	---	---	---	---
Number of Cases	456	607	570	578	281	392	522	564	379	306	270	248
		2,211				1,759				1,203		

Table 2.1 Coefficients from Cox Hazard Models Predicting the Transition Rates From Marriage to First Birth: Italian Women (n = 2,211)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Birh Cohort												
Born 1945-1949	---	---	---	---	---	---	---	---	---	---	---	---
Born 1950-1954	0.03	0.06	0.02	0.06	0.01	0.06	0.03	0.06	0.01	0.06	0.01	0.06
Born 1955-1959	-0.15	0.06 *	-0.13	0.06 *	-0.15	0.07 *	-0.10	0.07	-0.12	0.07 +	-0.12	0.07 +
Born 1960-1964	-0.19	0.06 **	-0.17	0.06 *	-0.19	0.07 **	-0.14	0.07 *	-0.15	0.07 *	-0.15	0.07 *
Labor Force Participation												
Employed after marriage before first birth			-0.66	0.04 ***	-0.54	0.05 ***	-0.50	0.05 ***	-0.46	0.05 ***	-0.46	0.05 ***
Regions of Residence												
North					-0.17	0.06 **	-0.18	0.06 **	-0.17	0.06 **	-0.17	0.06 **
Central					---	---	---	---	---	---	---	---
South and Islands					0.20	0.06 **	0.17	0.06 **	0.17	0.06 **	0.17	0.06 **
Education												
Primary level or less							0.02	0.06	0.00	0.06	-0.01	0.06
Secondary, 1st stage (Level 2 stage 1)							---	---	---	---	---	---
High school (Level 2 stage 2)							-0.20	0.06 ***	-0.15	0.06 **	-0.15	0.06 **
University level (Level 3)							-0.27	0.09 **	-0.19	0.09 *	-0.19	0.09 *
Age at Marriage												
Age < 20									0.15	0.06 *	0.15	0.06 *
Ages 20-22									---	---	---	---
Ages 23-25									-0.09	0.06	-0.09	0.06
Ages 26 or older									-0.15	0.07 *	-0.15	0.07 *
Cohabitation with Spouse before Marriage											0.18	0.16
-2 LOG L	16,896 ***		16,677 ***		16,631 ***		16,608 ***		16,591 ***		16,590 ***	
DF	3		4		6		9		12		13	

Table 2.2 Coefficients from Cox Hazard Models Predicting the Transition Rates From Marriage to First Birth: Spanish Women (n = 1,759)

	Model 1 b	Model 1 SE	Model 2 b	Model 2 SE	Model 3 b	Model 3 SE	Model 4 b	Model 4 SE	Model 5 b	Model 5 SE	Model 6 b	Model 6 SE
Birh Cohort												
Born 1945-1949	0.08	0.08	0.01	0.08	0.01	0.08	0.02	0.08	0.02	0.08	0.02	0.08
Born 1950-1954	---	---	---	---	---	---	---	---	---	---	---	---
Born 1955-1959	-0.11	0.07	-0.05	0.07	-0.01	0.08	-0.05	0.07	-0.04	0.07	-0.04	0.07
Born 1960-1964	-0.30	0.07 ***	-0.24	0.07 ***	-0.16	0.08 *	-0.19	0.07 **	-0.18	0.07 *	-0.18	0.07 *
Labor Force Participation												
Employed after marriage before first birth			-0.52	0.05 ***	-0.49	0.05 ***	-0.47	0.05 ***	-0.46	0.05 ***	-0.46	0.05 ***
Education												
Primary level or less					0.08	0.06	0.06	0.06	0.04	0.06	0.04	0.06
Secondary, 1st stage (Level 2 stage 1)					---	---	---	---	---	---	---	---
High school (Level 2 stage 2)					-0.15	0.08 +	-0.13	0.08	-0.10	0.08	-0.10	0.08
University level (Level 3)					-0.25	0.08 ***	-0.16	0.08 +	-0.12	0.09	-0.12	0.09
Age at Marriage												
Age < 20							0.20	0.07 **	0.19	0.07 *	0.19	0.07 *
Ages 20-22							---	---	---	---	---	---
Ages 23-25							-0.10	0.06 +	-0.11	0.06 +	-0.10	0.06 +
Ages 26 or older							-0.26	0.08 ***	-0.27	0.08 ***	-0.26	0.08 ***
Region of Residence in Childhood												
Small town									---	---	---	---
Small city									-0.09	0.06	-0.09	0.06
Large city									-0.21	0.06 ***	-0.21	0.06 ***
Cohabitation with Spouse before Marriage											-0.03	0.16
-2 LOG L	13,139 ***		13,032 ***		13,015 ***		12,987 ***		12,976 ***		12,976 ***	
DF	3		4		7		10		12		13	

Table 2.3 Coefficients from Cox Hazard Models Predicting the Transition Rates From Marriage to First Birth: Japanese Women (n = 1,203).

	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	SE	b	SE	b	SE	b	SE	b	SE
Birh Cohort										
Born 1945-1949	---	---	---	---	---	---	---	---	---	---
Born 1950-1954	-0.09	0.08	-0.07	0.08	-0.05	0.08	-0.05	0.08	-0.05	0.08
Born 1955-1959	-0.09	0.08	-0.08	0.08	-0.04	0.08	-0.04	0.08	-0.03	0.08
Born 1960-1964	-0.03	0.08	0.03	0.08	0.08	0.09	0.07	0.09	0.09	0.09
Labor Force Participation										
Not employed around marriage			---	---	---	---	---	---	---	---
Employed after marriage before first birth			-0.51	0.10 ***	-0.52	0.11 ***	-0.52	0.11 ***	-0.52	0.11 ***
Quit the job when married			-0.13	0.11	-0.15	0.11	-0.15	0.11	-0.14	0.11
Education										
Less than high school					0.09	0.10	0.08	0.10	0.07	0.10
High school					---	---	---	---	---	---
Junior college					-0.09	0.07	-0.09	0.08	-0.07	0.08
Four-year college					-0.29	0.11 **	-0.29	0.11 **	-0.26	0.11 *
Age at Marriage										
Age < 23							0.03	0.06	0.02	0.06
Ages 24-26							---	---	---	---
Age 27 or older							0.07	0.10	0.07	0.10
Region of Residence in Childhood										
Rural									---	---
Small city									-0.12	0.07 +
Large city									-0.16	0.08 *
-2 LOG L	8,455		8,409 ***		8,399 ***		8,398 ***		8,393	
DF	3		5		8		10		12	

Table 3. Descriptive Statistics for Variables in Second Birth Transition Analysis by Birth Cohort: Italy, Spain, and Japan.

	Italy				Spain				Japan			
	Birth Cohort				Birth Cohort				Birth Cohort			
	1945-1949	1950-1954	1955-1959	1960-1964	1945-1949	1950-1954	1955-1959	1960-1964	1945-1949	1950-1954	1955-1959	1960-1964
Labor Force Participation												
% Employed After First Birth	46.7	46.2	51.6	50.8	19.2	25.1	30.1	36.9	26.3	30.8	25.4	25.6
Age at First Birth												
< 20	11.4	13.6	18.5	11.9	6.1	5.6	9.1	17.4	---	---	---	---
20-23/age 24 or younger	36.0	39.6	33.2	31.9	36.0	36.3	46.4	35.8	48.7	40.4	39.2	36.4
24-26/age 25-27	33.7	29.0	21.8	25.8	40.0	38.8	26.0	28.4	35.8	40.1	38.5	39.3
27+/age 28+	19.0	17.8	26.5	30.4	17.9	19.4	18.6	18.4	15.6	19.5	22.3	24.4
Education												
Less Than High School	47.5	33.3	23.3	11.5	61.4	44.8	32.8	19.9	18.3	11.9	7.7	2.5
High School	23.0	34.2	33.3	38.6	30.5	39.0	44.4	54.0	61.8	58.6	56.5	55.0
Junior College	23.3	25.0	36.3	42.4	4.7	7.8	10.1	13.3	13.2	21.9	25.0	31.0
College	6.3	7.5	7.1	7.5	3.5	8.4	12.7	12.9	6.7	7.6	10.8	11.6
Region of Childhood												
Rural	---	---	---	---	43.9	41.7	36.0	36.7	47.3	51.0	40.8	31.4
Small city	---	---	---	---	33.0	30.2	32.9	32.7	29.0	26.2	37.7	44.2
Large city	---	---	---	---	23.1	28.1	31.1	30.6	23.7	22.8	21.5	24.4
Region of current residence												
North	46.5	43.6	40.6	43.6	---	---	---	---	---	---	---	---
Central	19.9	21.5	20.2	18.1	---	---	---	---	---	---	---	---
South	33.6	34.9	39.3	38.4	---	---	---	---	---	---	---	---
% Cohabitation with Spouse Before Marriage	1.53	1.48	1.98	5.38	1.0	1.5	1.7	4.4	---	---	---	---
Number of Cases	437	575	540	551	260	351	447	375	372	302	260	242
		2,103				1,433				1,176		

Table 4.1 Coefficients from Cox Hazard Models Predicting the Transition Rates From First to Second Birth: Italian Women (n = 2,103).

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Birh Cohort												
Born 1945-1949	---	---	---	---	---	---	---	---	---	---	---	---
Born 1950-1954	-0.05	0.07	-0.06	0.07	-0.06	0.07	-0.03	0.07	-0.04	0.07	-0.04	0.07
Born 1955-1959	-0.20	0.07 **	-0.21	0.07 **	-0.28	0.07 ***	-0.22	0.08 **	-0.24	0.08 **	-0.24	0.08 **
Born 1960-1964	-0.16	0.08 *	-0.15	0.08 *	-0.22	0.08 **	-0.14	0.08 +	-0.18	0.08 *	-0.16	0.08 *
Labor Force Participation												
Employed after first birth			-0.78	0.05 ***	-0.60	0.06 ***	-0.57	0.06 ***	-0.53	0.06 ***	-0.53	0.06 ***
Regions of Residence												
North					-0.12	0.07	-0.12	0.07 +	-0.11	0.07	-0.10	0.07
Central					---	---	---	---	---	---	---	---
South and Islands					0.59	0.07 ***	0.57	0.07 ***	0.57	0.07 ***	0.57	0.07 ***
Education												
Primary level or less							0.20	0.07 **	0.18	0.07 **	0.18	0.07 **
Secondary, 1st stage (Level 2 stage 1)							---	---	---	---	---	---
High school (Level 2 stage 2)							-0.05	0.07	0.02	0.07	0.02	0.07
University level (Level 3)							-0.03	0.11	0.11	0.11	0.11	0.11
Age at First Birth												
Age < 20									0.09	0.08	0.11	0.08
Ages 20-23									---	---	---	---
Ages 24-26									-0.19	0.06 **	-0.19	0.06 **
Age 27 or older									-0.32	0.08 ***	-0.32	0.08 ***
Cohabitation with Spouse before Marriage											-0.25	0.17
-2 LOG L	15,436 *		15,212 ***		15,067 ***		15,051 ***		15,026 ***		15,023 ***	
DF	3		4		6		9		12		13	

Table 4.2 Coefficients from Cox Hazard Models Predicting the Transition Rates From First to Second Birth: Spanish Women (n = 1,433).

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
Birh Cohort												
Born 1945-1949	0.17	0.08 *	0.14	0.08 +	0.16	0.08 +	0.16	0.08 +	0.16	0.08 +	0.16	0.08 +
Born 1950-1954	---	---	---	---	---	---	---	---	---	---	---	---
Born 1955-1959	-0.07	0.07	-0.05	0.07	-0.06	0.07	-0.06	0.07	-0.06	0.07	-0.07	0.07
Born 1960-1964	-0.13	0.07 +	-0.08	0.07	-0.08	0.08	-0.09	0.08	-0.09	0.08	-0.09	0.08
Labor Force Participation												
Employed after first birth			-0.39	0.06 ***	-0.39	0.06 ***	-0.40	0.06 ***	-0.41	0.06 ***	-0.41	0.06 ***
Education												
Primary level or less					0.04	0.06	0.03	0.06	0.03	0.06	0.03	0.06
Secondary, 1st stage (Level 2 stage 1)					---	---	---	---	---	---	---	---
High school (Level 2 stage 2)					0.01	0.10	0.02	0.10	0.01	0.10	0.01	0.10
University level (Level 3)					0.34	0.09 ***	0.32	0.10 ***	0.31	0.10 **	0.30	0.10 **
Age at First Birth												
Age < 20							0.15	0.10	0.14	0.10	0.14	0.10
Ages 20-23							---	---	---	---	---	---
Ages 24-26							-0.04	0.06	-0.05	0.06	-0.05	0.06
Age 27 or older							0.13	0.08 +	0.13	0.08 +	0.13	0.08 +
Region of Residence in Childhood												
Small town									---	---	---	---
Small city									0.08	0.06	0.08	0.06
Large city									0.06	0.07	0.06	0.07
Cohabitation with Spouse before Marriage											0.20	0.18
-2 LOG L	12,325 **		12,282 ***		12,269 ***		12,262 ***		12,260 ***		12,259 ***	
DF	3		4		7		10		12		13	

Table 4.3 Coefficients from Cox Hazard Models Predicting the Transition Rates From First to Second Birth: Japanese Women (n = 1,176).

|	Model 1		Model 2		Model 3		Model 4		Model 5	
	b	SE	b	SE	b	SE	b	SE	b	SE
Birh Cohort										
Born 1945-1949	---	---	---	---	---	---	---	---	---	---
Born 1950-1954	-0.12	0.08	-0.12	0.08	-0.12	0.08	-0.10	0.08	-0.11	0.08
Born 1955-1959	0.08	0.09	0.08	0.09	0.09	0.09	0.13	0.09	0.14	0.09
Born 1960-1964	-0.07	0.09	-0.07	0.09	-0.07	0.09	-0.04	0.09	-0.02	0.09
Labor Force Participation										
Employed after marriage before first birth			-0.01	0.07	-0.01	0.07	0.01	0.07	0.00	0.07
Education										
Less than high school					-0.09	0.10	-0.12	0.10	-0.15	0.10
High school					---	---	---	---	---	---
Junior college					-0.04	0.08	0.02	0.08	0.04	0.08
Four-year college					-0.13	0.11	0.00	0.12	0.02	0.12
Age at Marriage										
Age < 24							0.13	0.07 +	0.12	0.07 +
Ages 25-27							---	---	---	---
Age 28 and older							-0.41	0.09 ***	-0.42	0.09 ***
Region of Residence in Childhood										
Rural									---	---
Small city									-0.17	0.07 *
Large city									-0.20	0.08 *
-2 LOG L	8,724		8,724		8,722		8,686 ***		8,677 ***	
DF	3		4		7		9		11	

Table 5. Summary of Findings

	Italy	Spain	Japan
Levels and Trends in Married Women's Employment Rates by Life Stages			
After marriage before 1st birth	Higher, Stable	Lower, Increasing	Higher, Increasing
After 1st birth and before 2nd birth	Higher, Stable	Lower, Increasing	Lower, Stable/Declining
Gap in employment rates between the two stages	Small	Large	Large
Relationship Between Women's Labor Force Participation and the Pace of Childbearing			
First birth	Negative	Negative	Negative
Second birth	Negative	Negative	No relationship
Trends in the Pace of Childbearing Within Marriage			
Transition from marriage to first birth	Longer	Longer	Little change
Transition from first birth to second birth	Longer	Longer (merginal)	Little change
Cohort Differences in the Pace of Childbearing are Explained by Women's Labor Force Participation			
First birth	Yes, a little	Yes, largely	n/a
Second birth	Yes, a little	Yes, largely	n/a

Figure 1. Cumulative Fertility Rates by Age and Birth Cohort: Italy, Spain, and Japan
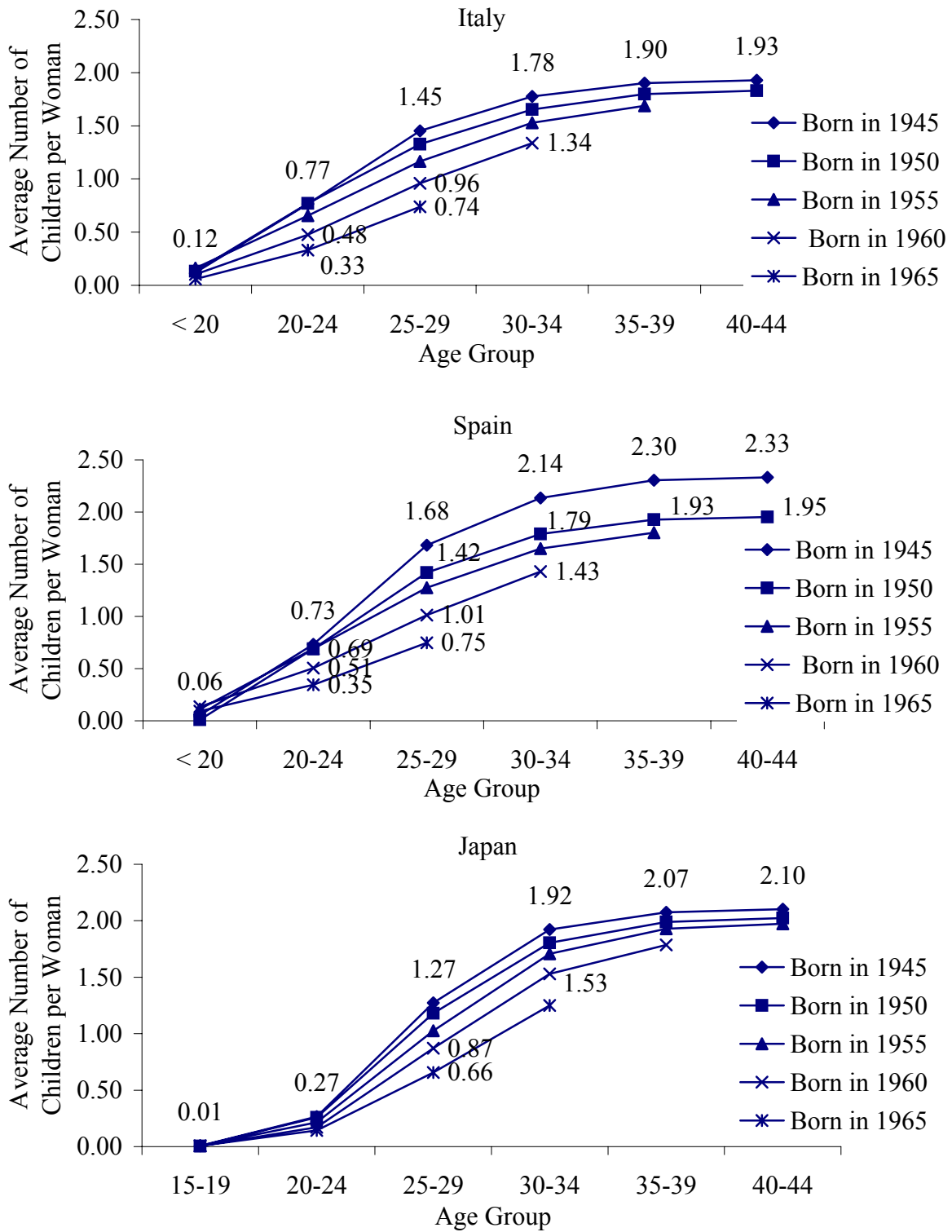
Figure 2. Cumulative Proportion of Married Women Who Had a First Birth by Months Married and Birth Cohort.
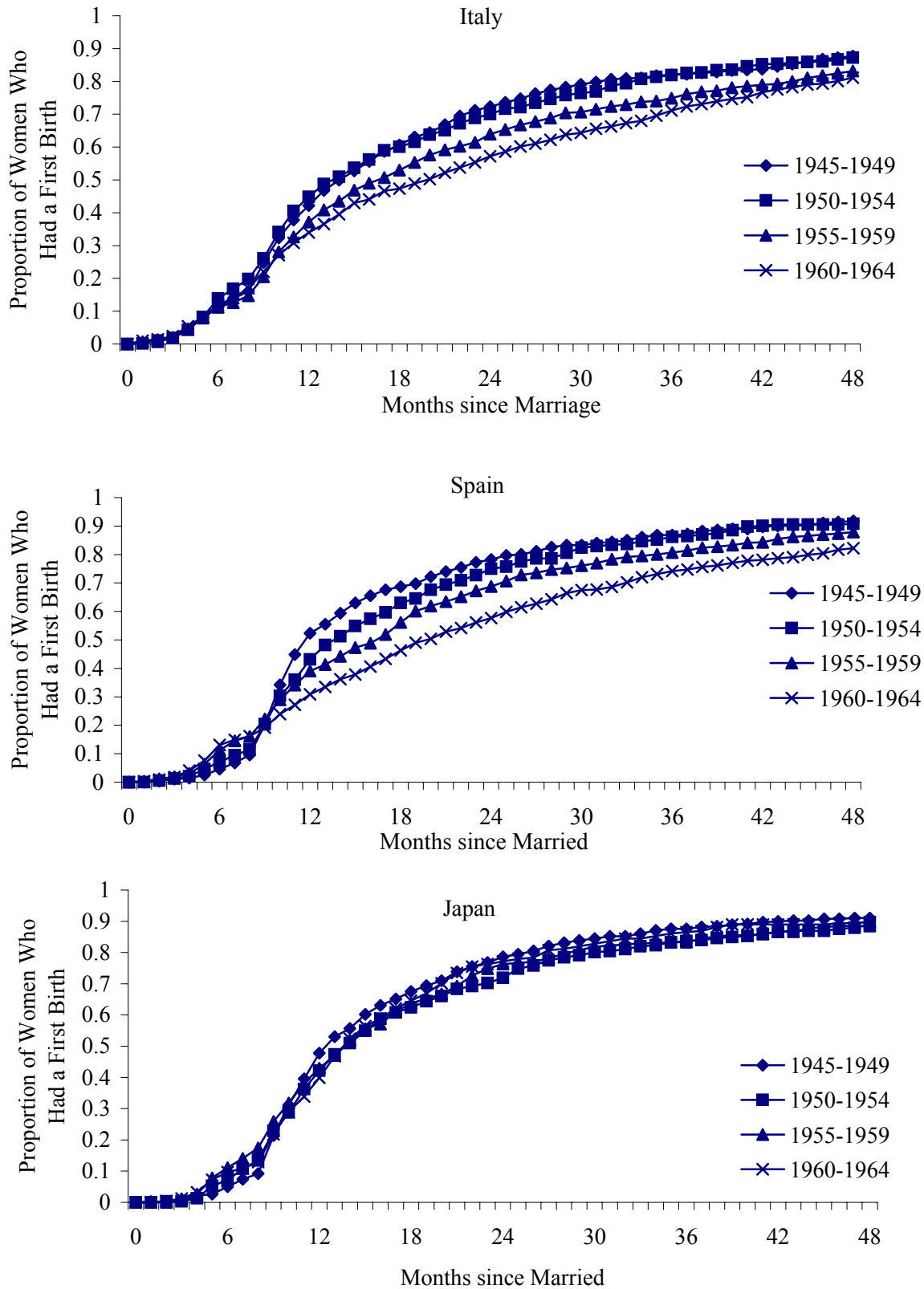
Figure 3. Cumulative Proportion of Married Women Who Had a Second Birth by Months Since a First Birth and Birth Cohort.
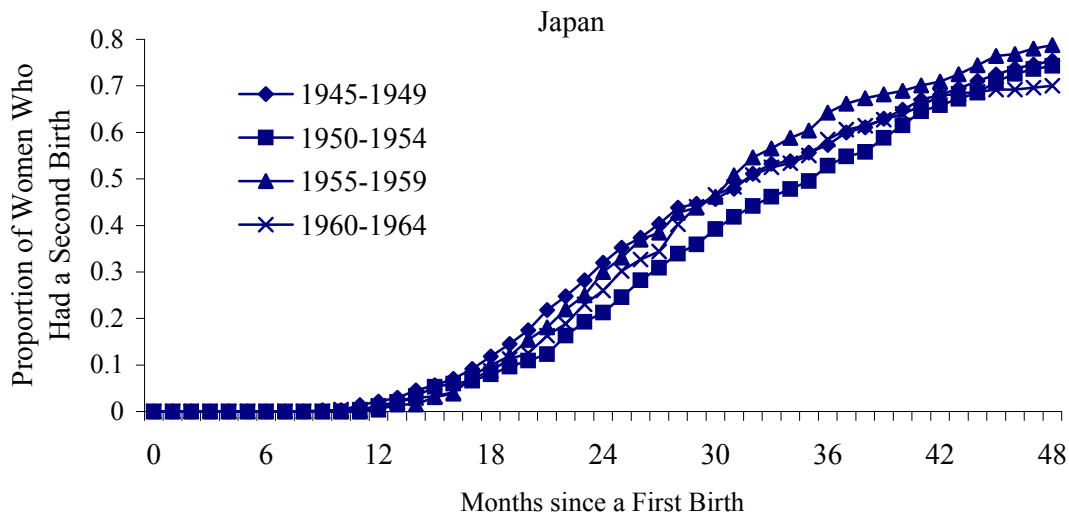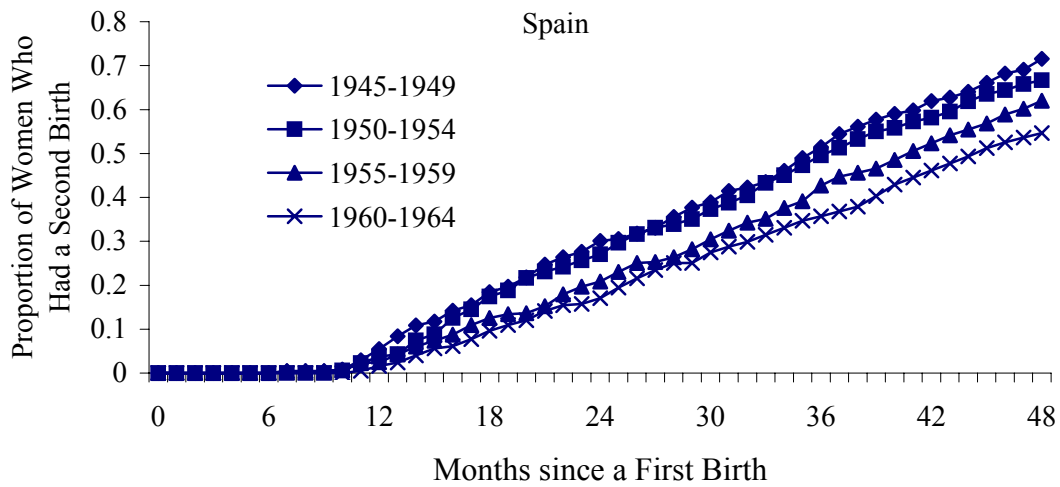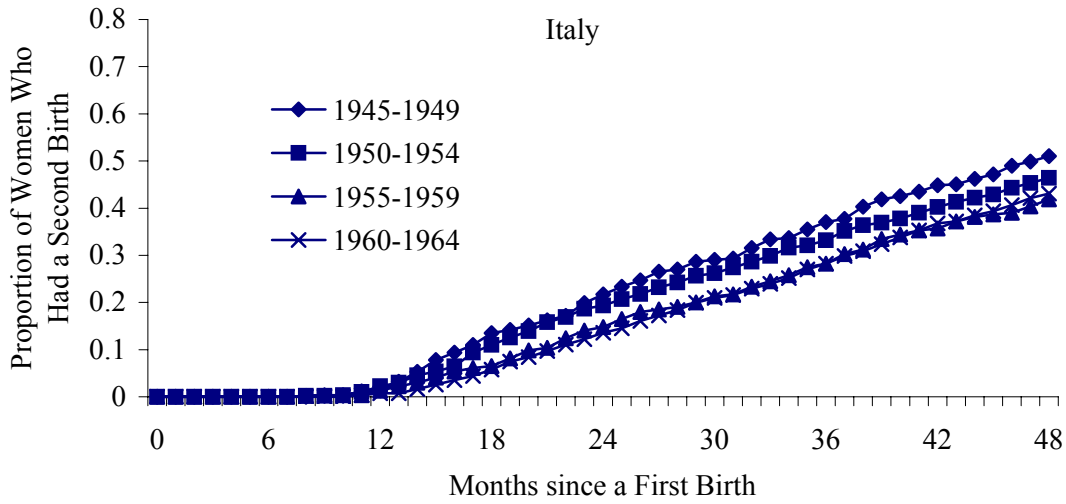
Figure 4. Married Women's Labor Force Participation Rates by Birth Cohort and Life Stage: Italy, Spain, Japan