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Research Article

Leaving the parental home in post-war Japan: Demographic changes, stem-family norms and the transition to adulthood

Setsuya Fukuda

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Leaving the parental home in post-war Japan: Demographic changes, stem-family norms and the transition to adulthood

Setsuya Fukuda¹

Abstract

Leaving home is a key life event in the transition to adulthood, but it has been relatively less explored in demographic studies of contemporary Japan. This paper examines the relationship between home-leaving intensities of young adults and the rapid social, economic, and demographic changes that took place in post-World War II Japan. By using event-history analysis, the study focuses on 1) family and socio-demographic characteristics, 2) stem-family norms, and 3) proximities of life events and leaving home as the main factors affecting the chances of leaving home. This study aims to explain cohort trends and sex differentials in home-leaving behaviors among young adults in post-war Japan.

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1. Introduction

Leaving the parental home has been extensively studied in Western countries². It is often studied as a topic closely related to such issues as the independence of young adults (Goldscheider and Goldscheider 1987, Goldscheider and DaVanzo 1989, Goldscheider and Goldscheider 1993a), parent-adult child relationships (Goldscheider and Goldscheider 1989, 1993b, Jong Gierveld, Liefbroer, and Beekink 1991, Buck and Scott 1993), the changing roles of marriage as an adult status (Goldscheider and Goldscheider 1993a, Goldscheider and Goldscheider 1994), educational opportunities (Wagner 1990, Nilsson and Strandh 1999), increasing job insecurity among young adults (Keilmann 1987, Jacob and Kleinert 2008), and the availability of both the intra- and the extra-familial resources needed to establish a separate household (Avery, Goldscheider, and Alden 1992, Whittington and Peters 1996, Garasky, Haurin, and Haurin 2001). Some scholars have also argued that the patterns of leaving home reflect institutional settings inherent in the historical roots of the region, such as welfare regimes (Fussel and Gauthier 2004, Newman and Aptekar 2007), family ties (Reher 1998), and family systems (Kurosu 1996a, 1996b, van Poppel, Oris, and Lee 2004). In the field of demography, the emergence of non-traditional living arrangements, such as cohabitation and extramarital birth, are interpreted as a sign of the Second Demographic Transition (SDT) (van de Kaa 1987, 2001, Lesthaege 1995). Patterns of leaving home are compatible with such non-traditional family behaviors, and are considered to be important factors in explaining the regional divergence in the processes of the SDT (Lesthaege and Moors 2000). Therefore, leaving home, particularly its incidence before marriage, is one of the important indicators in understanding the current development of family behaviors.

Over the last half of the 20th century, Japan became highly industrialized, and achieved one of the highest living standards in the world. At the same time, Japanese families underwent enormous social and demographic changes during the post-World War II period. Family size became smaller as fertility rapidly declined, the population became more concentrated in urban areas than in rural areas, and the center of gravity of the labor force shifted away from the manufacturing and agricultural sectors, and towards the service industry. As a result, compositions of family characteristics varied significantly by successive cohorts. Furthermore, each cohort faced different macro contexts as a consequence of economic fluctuations, institutional changes, and erosion of the traditional norms regarding family and household formations. As shown in this paper, these changes in macro contexts facilitated important changes in the transitions

² In this study, leaving home, home-leaving, and nest-leaving are used interchangeably.

to adulthood in post-war Japan. For example, as in other industrialized countries, more young adults enrolled in tertiary education and more single women entered full-time employment, even as the employment of young adults became more insecure, and people began to marry later and less. There is, however, little research into how these social, economic, and demographic changes affected the living arrangements of young adults in post-war Japan.

Compared with other related topics, leaving home has received less attention in demographic studies of contemporary Japan. The research on the timing of leaving home was, until the late 1990s, largely hindered by the data availability and methodologies. A number of previous studies used cross-sectional data to analyze parent-child coresidence among single young adults (Kojima 1989, 1990, Iwakami 1999, Suzuki 2001, 2002, 2003) or among newlyweds (Tsuya 1990). These studies identified several social, economic, and demographic characteristics of both young adults and parents associated with the probabilities of intergenerational coresidence at a certain life stage. Studies of parent-adult child coresidence could not, however, make concrete conclusions about the behavioral aspects of household changes, since they did not model the transition rates of residential changes. Furthermore, these studies failed to make any causal inference regarding the formation of parent-adult child coresidence, as they were unable to set an appropriate time ordering between explanatory variables and dependent variables.

Studies of another type used descriptive methods of survival analysis, such as life tables and Kaplan-Meier methods, to depict the trends in leaving home (Suzuki 1997, 2001, 2002, 2003, 2007, Ando 2001). They could favorably describe the age patterns of leaving home by a number of covariates, such as sex, birth cohort, and other socio-demographic variables. However, these methods have some limitations when it comes to explaining the complex mechanisms of leaving home behaviors. In sum, most previous studies did not model how the transition rate of nest-leaving is dependent on a broader set of covariates.

In 1999, the Society of Family Sociology of Japan conducted a survey known as the National Family Research of Japan 1998 (NFRJ-98). The release of the NFRJ-98 data in 2001 made it possible for the first time for researchers to analyze transition rates of leaving home in Japan in multivariate models, such as event-history analysis³. The most recent studies of leaving home, such as Fukuda (2003) and Sawaguchi and

³ Another data set previously used for the analysis of leaving home is the National Survey on Household Changes (NSHC), conducted by the National Institute for Population and Social Security Research (NIPSSR) in 1994, 1999, and 2004. Although they contain detailed information on timing and reason of first leaving home with a large sample size, the data have been not suitable for event-history models because they do not have retrospective information on respondents' family and demographic characteristics when respondents are at risk of leaving home (Suzuki 2003).

Shimazaki (2004), analyzed the hazards of nest-leaving using the NFRJ-98 data. Fukuda (2003) gave detailed analyses of socio-demographic determinants of nest-leaving by sex and by reasons for leaving home, while Sawaguchi and Shimazaki (2004) mainly focused on social strata differentials in the hazards associated with leaving home. Although the NFRJ-98 provides the first available nationally representative data for modeling nest-leaving behaviors in Japan, so far few papers on the survey have been made available in international languages, such as English⁴. This study is primarily based on my previous paper (Fukuda 2003), but focuses to a greater extent on explaining cohort trends of home-leaving through the application of more sophisticated analytical methods. In addition, to cover the entire post-war period, the 1930s cohort has been added to the analysis.

The goal of this study is to investigate the trends and determinants of leaving home, a dynamic aspect of household changes among young adult ages. Using data from a nationally representative survey, the NFRJ-98, this paper addresses the following research questions through multi-variate event-history analysis:

- 1) Which socio-demographic factors explain nest-leaving behaviors in post-war Japan?
- 2) Does the norm of the traditional stem-family play a role in nest-leaving behaviors in contemporary Japan?
- 3) How do proximities of nest-leaving and other life events change by sex and cohort?

Each research question is designed to explain the cohort trends of nest-leaving in post-war Japan in terms of 1) the compositional changes in family characteristics, 2) the historical roots of the stem-family, and 3) the changes in the transition to adulthood. By addressing these research questions, the changes and degrees of stability in living arrangements among Japanese young adults can be extensively investigated. This study includes separate analyses for men and women, followed by a discussion of the distinct sex differentials in leaving home behaviors in Japan. Thus important sex differences in leaving home and household formation will also be revealed.

2. Leaving home in industrialized countries

Leaving the parental home is one of the key events during the transition to adulthood. Leaving home is an event which results in the residential independence of young adults

⁴ Ando's (2004) paper may be the only exception written in English which examines leaving home and its synchronization with other life events, such as first job and first marriage during the post-war period using the NFRJ-98.

from their parents. It “signifies initial or sometimes final farewell to youth and which often entails the loosening of the spatial, financial and sometimes emotional ties between parents and children” (van Poppel and Oris 2004, p1).

In many industrialized countries, leaving home was closely linked with marriage up until the 1950s and early 1960s. Since then, however, many young adults have been leaving home before marriage to live on their own in separate households, often sharing with roommates or cohabiting with a sexual partner, especially in Northern Europe such as Great Britain, Scandinavia, and the Low Countries, as well as in much of Germany, Austria, and North America (Cordon 1997, Goldscheider 1997, Bianchi and Casper 2000, Lesthaeghe and Moors 2000, Billari, Philipov, and Baizan 2001, Aassve et. al. 2002, Corijn and Klijzing 2001, Fokkema and Liefbroer 2008). In these countries, leaving home has been often studied as a manifestation of the desire of young adults to be independent from their parents. The phase of social independence among young adults who are single is considered to be a new life stage which has emerged since the 1960s (Goldscheider and Goldscheider 1994, Rosenfeld 2006).

On the other hand, Southern European countries, such as Italy, Greece, Spain, and Portugal, show substantial delays in marriage, along with prolonged periods of living at home (Cordon 1997, Lesthaeghe and Moors 2000, Billari, Philipov and Baizan 2001, Corijn and Klijzing 2001, Aassve et. al. 2002, Fokkema and Liefbroer 2008). In these countries, leaving home is still strongly linked to marriage (Reher 1998, Billari et al. 2002, Fokkema and Liefbroer 2008). While the delay in marriage is part of the reason for the diversification of living arrangements among young adults in Northern European and North American countries, young adults in Southern Europe simply prolong the period of coresidence with their parents as marriage is delayed. Previous studies in Mediterranean Europe are, therefore, focused on such questions as why young adults do not leave the parental home until later ages (Rossi 1997, Scabini and Cigoli 1997, Cordon 1997, Holdsworth 1998, 2000, Holdsworth and Solda 2002, Tobío 2001, Viazzo 2003), or what the consequences are of prolonged periods spent at home (Dalla Zuanna 2001, Livi-Bacci 2001, Billari and Rosina 2004). Compared to the situation in other industrialized countries, the increase in coresidence with parents in these countries is sometimes seen as a psychological failure of young adults to become independent from their parents (Rossi 1997, Scabini and Cigoli 1997, Dalla Zuanna 2001)⁵.

⁵ A similar argument is also made when the delay in residential independence was observed during the 1980s in the United States and other European countries (e.g. Kiley 1983, Littwin 1986). Scholars, however, concluded that the major causes of delay in leaving home in Western European countries and the United States are a decline in marriage caused by fewer employment opportunities and the need for a longer education (Cherlin, Scabini, and Rossi 1997), as well as a higher chance of returning home due to an increase in non-family living (Goldscheider 1997), divorce and non-married motherhood (Glick and Lin 1986).

The north-south division in living arrangements of young adults in Western Europe is, however, not simply due to differences in perception and prevalence of youth independence in the two regions. The patterns of leaving home and living arrangements of young adults are closely related to the family and fertility behaviors of the populations within each country. Lesthaeghe and Moors (2000) perceive the destandardization of patterns of home-leaving and household formation to be the most salient characteristics of the SDT⁶. They have argued that country-specific differences in the living arrangements of young adults can be largely classified into two types: high prevalence of independent living and premarital cohabitation, or prolonged periods spent at home as singles (Lesthaeghe and Moors 2000). This classification perfectly overlaps with the aforementioned north-south division in living arrangements among young adults in Western countries. These north-south differences in living arrangements can, they insist, be explained by the historical context, which leads to variations in such factors as the following: 1) the type of welfare state, which determines the sources of subsidies for economic independence among young adults; 2) the prevalence of tertiary education, which increases the earning potential of young adults, while also fostering individualism and egalitarian gender roles; 3) the degree of post-materialist values, which are tolerant of alternative life styles; and 4) the degree of familistic values transmitted from the parental generation (Lesthaeghe and Moors 2000).

One of the historical roots which is deeply relating to the patterns of leaving home is family systems. Among several aspects of the family system, Reher (1998) has argued that the strength of family ties explains the north-south divide in living arrangements in Western Europe. He divides European countries into two categories, one with strong family ties, and another with relatively weak family ties. The connection between leaving home and marriage, and the degree of responsibility taken by families for caring for the most vulnerable family members, such as infants and the elderly, are suggested as being two good indicators of the distinction. The family system in a country is classified as having strong family ties, or vice versa, depending on the extent to which leaving home and marriage are related, and care responsibilities for vulnerable members are handled by families.

Reher (1998) made a simple geographical distinction between these two family systems in Europe. He characterized the central and northern regions of Western Europe, as well as the North American countries, as having relatively weak family

⁶ They refer to the destandardization as “the classic sequence of finishing school, entry into the labor force, home leaving linked to marriage, and subsequent parenthood is being reordered in ever larger segments of the population. New phases of single living, sharing dwellings with age mates, premarital cohabitation, and fertility prior to marriage with or without a partner have been added, and these can occur before the end of education or before entry into the labor force.” (Lesthaeghe and Moors 2000, p153).

links, and the Mediterranean region as having strong family ties. The origins of the different family systems are then examined from several perspectives, such as history, religion, and descent routes. He also tries to explain various social differences that exist in European countries—for example, in the rates of divorce, extramarital birth, homelessness, unemployment, single parenthood, and suicides—in applying his definition of family systems. Reher (1998) insists that, although family and family forms are converging in a similar direction in Western European and North American countries, differences in family systems, which can be seen as outcomes of societies' own historical trajectories, will persist into the future.

Japan has a lot in common with Southern European countries in terms of the formation of families and households. For example, Japanese young adults, especially women, tend to live with their parents until marriage (Suzuki 2001, 2002, 2003, Ando 2001); cohabitation is uncommon in Japan, even as the average age at marriage continues to rise; marriage still plays a crucial role in childbearing among couples; and the fertility rate is one of the lowest in the world⁷. Furthermore, statistics show that 70% of elderly care was undertaken by coresidential family members in 2004 (Ministry of Health, Labor, and Welfare 2005). Therefore, Japan can certainly be classified as a country with strong family ties based on Reher's (1998) definition. While it is widely known that the Japanese characteristics associated with strong family ties—such as prolonged parent-adult child coresidence, late marriage, low fertility rates, and care for the elderly by coresidential family members—are similar to those seen in Southern European countries, questions remain about how close these similarities are, whether these similarities are substantial or only temporal, and whether these two regions have a common background.

One of the keys to understanding the similarity lies in patterns of leaving home and living arrangements among young adults in the two regions, Southern Europe and Japan. Although leaving home in pre-industrial Japan has been studied extensively in the field of historical demography in connection with the stem-family system in Japan (Kurosu 1996a, 1996b, 2004), the household dynamics of young adults in contemporary Japan were largely neglected until the late 1990s⁸. The topic became an increasingly important issue in Japan after it was shown that the number of young adults living with their parents had grown enormously over the last few decades (Yamada 1999, Nishi and Kan 2005). Research into leaving home can also provide insight into such issues as the

⁷ In the age group 18-34, proportions of never-married who are in consensual union are 1.9% and 2.3% for men and women, respectively, in 2005 (NIPSSR 2007). Proportion of non-marital childbirth among total birth is 2.1% in 2006 Japan (Ministry of Health, Welfare, and Labor 2006). Total fertility rate in Japan was at a record low of 1.26 in 2005 but recovered afterwards and reached 1.37 in 2008.

⁸ The numbers of young adults coresiding with parents are not clear from official statistics until the Statistical Bureau first tabulated them from the 1995 census in 2000 (Statistical Bureau 2000).

transition to adulthood, independence of young adults, parent-adult child relationships, household formation, and family systems in contemporary Japan. This paper does not intend to show any comparative results of living arrangements in Japan and Southern European countries. Instead, it aims to provide detailed examinations of the trends and determinants of the living arrangements of Japanese young adults in the post-war period, and, ultimately, to serve as a basis for future comparative studies.

3. Living arrangements of young adults in Japan

In this section, we review the trends in living arrangements among young adults in Japan since 1980. From 1970 to 2000, the proportion of never-married people increased dramatically in Japan. For example, according to the census, the proportion of the never-married in Japan aged 30-34 increased from 11.6% to 42.9% for men, and from 7.2% to 26.6% for women. Singulate mean age at first marriage (SMAM) also showed significant increases, from 27.5 to 30.8 for men, and from 24.7 to 28.6 for women (NIPSSR 2008). In the United States and some European countries, the trend towards later and less frequent marriage is linked with diversified living arrangements of young adults (Goldscheider 1997, Bianchi and Casper 2000). This is, however, not the case in Japan.

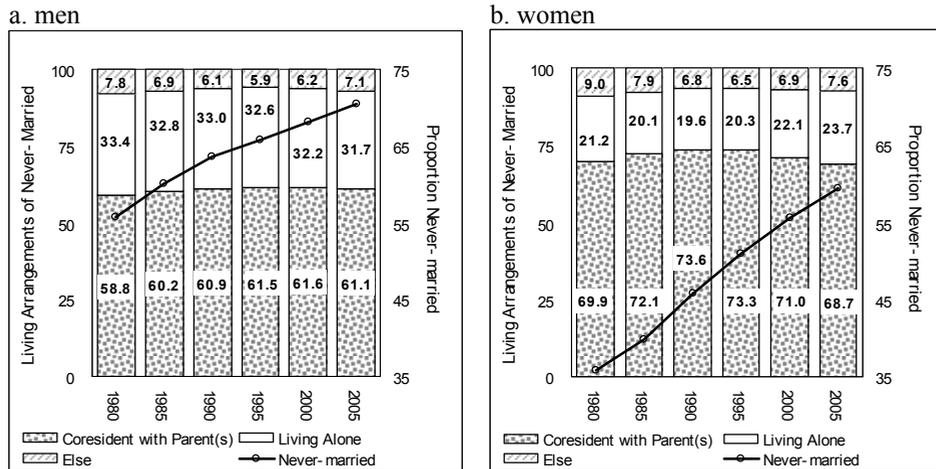
Figure 1 shows the distributions of living arrangements of never-married young adults in Japan in the period of 1980-2005⁹. In Figure 1, all rates are standardized to the five-year group age structure of year 2000. Therefore, differences in age structures of each period do not affect these rates. It is clear from Figure 1, that a majority of the Japanese young adults live with their parents while they are single. Among never-married young adults, 60% of men and 70% of women aged 20-34 have lived with their parents over the past 25 years. These proportions seem noticeably higher than in the United States or in Northern and Central European countries¹⁰ but they are very close to those of Southern European countries (Fokkema and Liefbroer 2008). It is, however, rather surprising that the living arrangements of young adults are relatively stable in any

⁹ Young adults in the living arrangement “else” include persons in either non-relative households; institutional households such as school dormitories, hospitals, social institutions, camps of self-defense forces, and reformatory institutions; persons living in other families, probably as servants; persons living with only brothers or sisters and persons in other types of living arrangements.

¹⁰ For example, in the United States, 45.3% of single men and 39.1% of single women ages of 20-29 lived with their parent(s) in 1980, while these percentages declined to 41.6% and 36.2%, respectively, in 2000 (Rosenfeld 2006).

given period, while the proportions of the never-married in this age group increased substantially.¹¹

Figure 1: Living arrangements of never-married men and women aged 20-34: 1980-2005*



* Living arrangements are standardized to the age structure of the never-married population in 2000.

* Proportions of never-married are standardized to the age structure of population in 2000.

Sources: Author's re-tabulation of the Population Census of Japan, various years, Statistics Bureau.

It should also be noted that only a few types of living arrangements are practiced by unmarried young adults who are not living in their parental home. The one-person household has been the dominant option for young adults who left home before marriage in the past 25 years. In contrast to Western countries, non-family living situations, such as room sharing, group living in college dormitories or military barracks, and cohabitation have not been common among single young adults in Japan. As Figure 1 shows, young adults who live in these non-family living situations are classified as “else,” and the shares of the population living in such arrangements are well below 10% for both sexes over the entire period¹² (see Note 9 for the details of

¹¹ Standardized proportions of the never-married increased from 55.8% to 70.5% for men, and 35.8% to 59.4% for women at this age group during 1980-2005 (based on author's calculation of the *Population Census of Japan*).

¹² Among those in residual living arrangements, however, the proportions of young adults in non-relative households which are essentially considered as non-marital consensual households are rapidly increasing

“else” category). In addition, according to the latest survey in 2005, the percentages of never-married people in Japan aged 18-34 who are in consensual unions were 1.9% for men and 2.3% for women¹³ (NIPSSR 2007). In sum, about three-quarters of young adults living away from the parental home are essentially living alone in Japan. In line with this trend, the proportion of Japanese women aged 20-24 who live alone has been shown to be as high as in Western European and North American countries, such as the Netherlands, France, Canada, Austria, and Germany (Lesthaeghe and Moors 2000).

In contrast to the never-married, the majority of married young couples live in nuclear households. Figure 2 shows the living arrangements of married men and women aged 20-34 in the period from 1980-2005. Around 70%-80% of young couples settle in independent households away from their parents¹⁴. The percentages of couples who live with parents have decreased by half over the past 20 years. The figure shows that growing numbers of young couples have been choosing to live in their own households after marriage. This result is consistent with several surveys showing a stronger preference for a nuclear family household among younger cohorts¹⁵. In other words, traditional norms of intergenerational coresidence appear to be eroding among young married couples in recent years¹⁶.

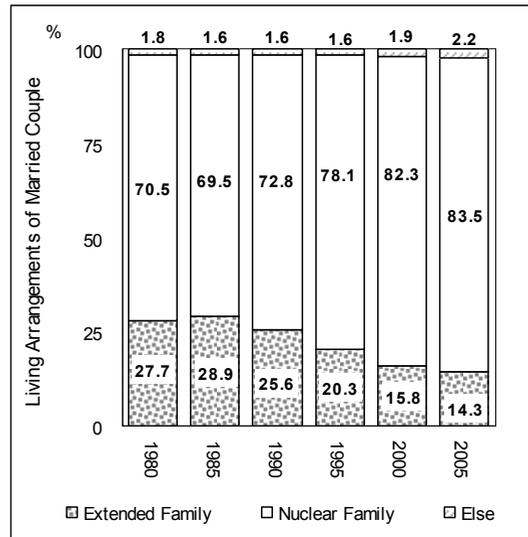
(Nishi and Kan 2008). As evident from the population census, the share of young adults in non-relative households among “else” increases from 4.3% to 20.8% for men, and 5.5% to 25.8% for women in the period between 1980 and 2005 (based on author’s calculation of the *Population Census of Japan*).

¹³ However, some evidence suggests that cohabitation is slowly developing among younger generations in Japan. According to Iwasawa (2005), about 20% of first married women ages 25-34 have ever experienced cohabitation in Japan. In addition, 30% of first consensual unions formed by women ages 25-34 were cohabitation. Furthermore, a half of women who have neither cohabited nor married at ages 20-24, expressed a wish to experience cohabitation in the future. Therefore, cohabitation may be more common in the future in Japan as it is perceived more positively by younger generations.

¹⁴ Married persons in the living arrangement “else” are persons in one-person households; non-relative households; institutional households; other families’ households, probably as servants; and relatives’ households without parents.

¹⁵ Empirical results show decreasing support for intergenerational coresidence as a choice of post-marital living arrangement in recent periods. In 1993, 61.5% of married women under 69 years old agreed to the statement, “It is better for elderly parent(s) to live with a married son” while 50.4% of them agreed with the idea in 1998 (Nishioka 2000).

¹⁶ The recent studies of post-marital living arrangement show, however, that low proportions of intergenerational coresidence in recent marriage cohorts are gradually turned over as marriage duration becomes longer (Nishioka 2000, Kato 2005). In Kato’s (2005) study, after 10-15 years of marriage, the proportion of intergenerational coresidence is converged to around 30% in all marriage cohorts between 1940-1989. Based on this result, Kato (2005) concluded that Japanese family system has not completely changed from the stem-family to the conjugal nuclear family; rather, it has been changed to a modification of the stem-family with the formation of a nuclear family only in early family stages.

Figure 2: Living arrangements of married couples aged 20-34: 1980-2005*

* Rates are standardized to the age structure of the married population in 2000.

Sources: Author's re-tabulation of the Population Census of Japan, various years, Statistics Bureau.

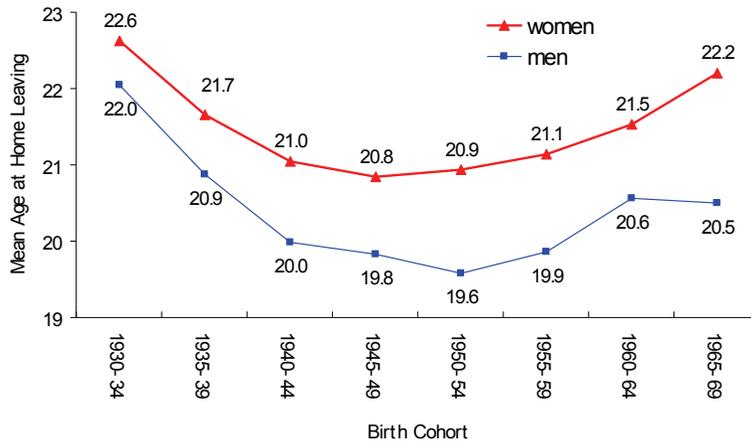
The sharp contrast between the living arrangements of single and married young adults suggests that marriage is a strong determinant of leaving the parental home and of forming a separate household for Japanese young adults. On the other hand, the delay in marriage among younger cohorts implies continuity of coresidence with parents for the majority of young adults. The rapidly rising proportions of the never-married have led to a noticeable increase in the number of unmarried adults living with their parents in Japan. The population census shows that the number of never-married young adults who live with their parents has grown enormously, from 4.3 million to 5.7 million among men, and from 3.2 million to 5.2 million among women between 1980 and 1995¹⁷. Their proportions also increased from 6.4% to 8.7% of the total population over the same period. After 1995, these numbers and proportions remained around the same level until 2005, as the higher proportions of never-married were offset by smaller cohort sizes in younger cohorts. The rapid increase in the numbers of young adults living with their parents during the 1980s and the mid-1990s drew both public and

¹⁷ These numbers are actual numbers before standardizing the rates.

academic attention as a “new” phenomenon. Scholars have focused on the issues of why young adults are staying in the parental home longer (Takahashi and Voss 2000, Suzuki 2001, 2002, Fukuda 2003, Takada 2004) and what the demographic consequences of the late departure of adult children from the parental home are likely to be (Yamada 1999, Raymo 2003a, Suzuki 2003, Raymo and Ono 2004). It is, however, important to understand that the given increase in the number of young adults coresiding with their parents is a consequence of both delays in marriage, and the seemingly unchanged household formation patterns of unmarried young adults. While the proportion of the never-married is increasing, the living arrangements of this group do not show clear changes. Therefore, explaining the stability in living arrangements among singles is a key to understanding household patterns among Japanese young adults. In the next section, we turn our attention to the home-leaving patterns of young adults, a dynamic aspect of the household changes.

4. The patterns of leaving home in Japan

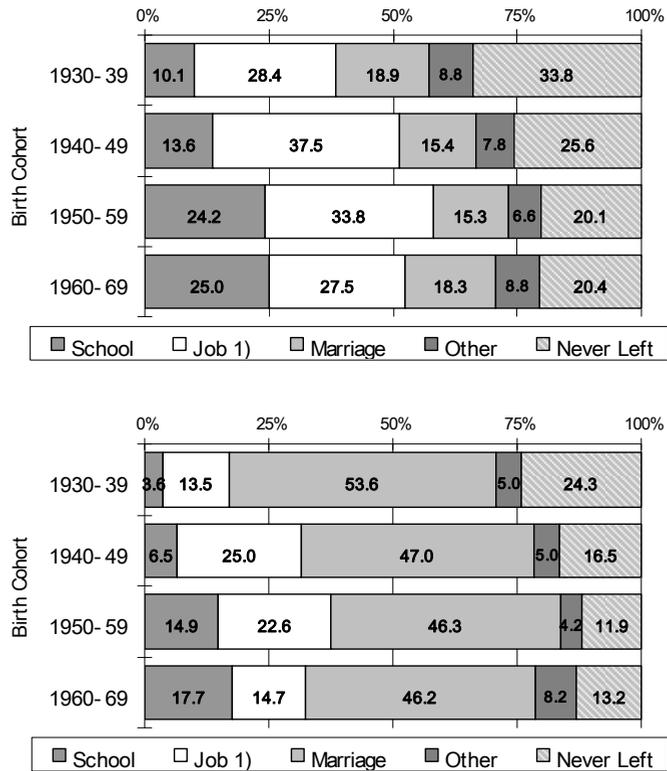
The patterns of leaving home in Japan have a number of distinct features that set them apart from those seen in Western countries. One of these features is that men leave the parental home earlier than women (Suzuki 2003). The timing of the departure from the home is displayed in Figure 3. The age at leaving home for men is about one year below that of women in all cohorts. Previous studies of Japanese nest-leaving also confirm the same trend using both mean and median age at leaving home (Suzuki 1997, 2001, 2002, 2007, Ando 2001). In other Western countries, and even in East Asian countries, such as China and Korea, women tend to leave home earlier than men (Zeng et al 1994, Suzuki 2003). In these countries, women leave home earlier because women’s ages at either marriage or cohabitation are, on average, younger than those of men (Goldscheider 1997, Suzuki 2001, 2007). Japan, where women also tend to marry at younger ages than men, seems to be the only country where men leave the parental home earlier than women among the contemporary industrialized countries (Suzuki 2002).

Figure 3: Age at leaving the parental home by sex and birth cohort*

* Calculated from the five-year-old age-specific rates of first home-leaving at ages 15-34.
Sources: Author's analysis of the Fifth National Survey on Household Changes, 2004, NIPSSR.

The seemingly contradictory sex differential in the timing of leaving home is caused by distinct patterns of pre-marital nest-leaving by sex. Figure 4 shows the percentage distributions of the routes out of the parental home. It is clear from the figure that men have a strong tendency to leave home before marriage for reasons of schooling or employment, while women are much more likely to leave home at the time of marriage. As a result, the mean age at leaving the parental home is lower for men than for women. Note that the figure is based on the first home-leaving. Therefore, the figure also suggests that the majority of Japanese women spend their entire single lives in the parental home. These sex differentials in the routes out of the parental home reflect norms and parental expectations regarding gender roles, and shape the different life course experiences of Japanese men and women. These differences will be discussed in greater detail in the next section.

Figure 4: Reasons for leaving the parental home by sex and birth cohort*



1) Includes any kinds of job-related reasons, such as employment, transfer, job change, job search, retirement and unemployment.

* Based on first home-leaving of all ages.

Sources: Author's re-tabulation of the Fifth National Survey on Household Changes, 2004, NIPSSR.

The reasons for leaving the parental home show another unique feature of Japanese nest-leaving: Japanese young adults leave the parental home mostly for reasons related to the life course. Among both men and women, about 90% of nest-leaving is for schooling, employment-related reasons, or marriage. The Fifth National Survey on Household Changes (NSHC), on which Figure 4 is based, offers a choice of “to be independent from parents” as one of the reasons for leaving home. But only around 5%

of the men and 2% of the women surveyed in each cohort chose this as their reason for leaving home¹⁸. Thus, in most cases, the decision to leave the parental home is made to pursue one of these life events, and not solely to experience residential autonomy¹⁹. This is in contrast to the situation in the United States, where pre-marital nest-leaving is a norm (Goldscheider and Goldscheider 1994, Settersten JR. 1998), and young adults are increasingly leaving the parental home to become independent of their parents (Goldscheider and Goldscheider 1994, 1999).

The nest-leaving trends show distinct patterns by birth cohorts as well. For both men and women, the mean age at leaving the parental home shows the U-shaped pattern by birth cohort (see Figure 3). The age at leaving home is lowest among the 1940s and the 1950s cohorts, which experienced a large internal migration from rural towns to urban cities for the purposes of acquiring better education or employment. This large migration flow corresponds with the period of rapid economic growth between 1955 and 1973 (see Figure 6 in section 5). Thus it is not surprising that the shares of both men and women who left home for job-related reasons are the largest among the 1940s and the 1950s cohorts (see Figure 4). Thereafter, the age at nest-leaving shows delays among the 1960s cohorts. The delay is mainly due to a trend towards later marriage, and to the concentration of the youth population in metropolitan areas in the 1960s cohorts (Suzuki 2002). The delay in nest-leaving is especially pronounced among women in the 1960s cohorts. Women's home-leaving directly reflects marriage trends, because their nest-leaving is closely linked to marriage.

It is a paradox, however, that the age at leaving home is increasing, while the living arrangements among unmarried young adults remain relatively stable for more than two decades. The key to understanding this paradox can be found by looking at cohort changes in the share of young adults who never left home. Figure 4 indicates that, for both sexes, leaving the parental home is less common among the 1930s cohorts. Among members of this group, one-third of men and one-quarter of women never left home during their young adulthood. The share of those who never left home gradually decreased and stabilized starting with the 1950s cohorts. In sum, leaving home is delayed among younger cohorts, but the proportion of young adults who

¹⁸ The proportions are calculated by excluding unknown reasons. Women in the 1960s cohort are the only exception, as they reported that 5% of their home-leaving was to become independent from their parents.

¹⁹ The choice of "being independent from parents" is not mutually exclusive to other reasons. Therefore, one can argue about whether choosing independence as a reason for leaving home is a matter of perception of young adults about their nest-leaving. Also, the nest-leaving experiences of household members are reported by household heads in the NSHC survey. Since it is known that parents and young adults have a different perceptions on the children's living arrangements (Goldscheider 1997), the reasons for nest-leaving shown here may be biased more favorably to parents who have dependent young adults at home. This might serve as a partial explanation for the low percentage of respondents who said they left home to be independent from their parents, especially among younger cohorts in Japan.

eventually leave the parental home is increasing. This later but higher prevalence of leaving home among younger cohorts should, at least to some extent, explain the stable living arrangements of unmarried young adults.

Note also that the low incidence of nest-leaving implies that a substantial proportion of young adults, especially in older cohorts, never left home at all, and succeeded the family by forming extended households. Japan has a tradition of the stem-family (for a detailed discussion, see Ochiai (2000)). In a stem-family system, the heir is expected to stay at home and take over the family. As a result, leaving home was much more common among non-heirs. Using regional household registration data from the late 19th century Japan, Kurosu (1996b, 2004) confirms that the probability of leaving home at a given age is very low through the life course of heirs, who are either the eldest sons or eldest daughters without male siblings, compared to that of non-heirs. In Figure 4, the proportion of those who never left is higher for men. This is most likely due to the fact that men are, by custom, more likely to be heirs than women. It is worth noting that the tradition of the stem-family norms may continue to influence nest-leaving behaviors in post-war Japan. If it still regulates young adults' household formation patterns, the norm of the stem-family may provide some explanation for the high prevalence of coresidence with parents among single young adults in recent Japan. This study further examines the effects of stem-family norms on the nest-leaving behaviors of recent cohorts, and their implications for the living arrangements of young adults.

As nest-leaving in Japan is highly proximate to life events that typically take place during the transition to adulthood, the trends of home-leaving reflect both the opportunity and constraint structures of the life courses of Japanese young adults. The patterns of nest-leaving also suggest that those structures are specific to gender and cohorts. In the next sections, we will further investigate the effects of several social, economic, and demographic factors on young adults' decisions to leave the parental home, and their relationships to nest-leaving trends in post-war Japan.

5. Determinants of leaving home in Japan

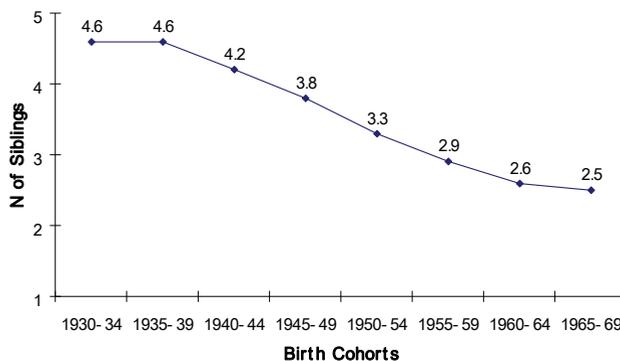
The Japanese family has undergone rapid economic, social, and demographic changes in the post-war period. These changes can be described as follows: fertility transition, urbanization, industrial transformation, economic growth, educational upgrading, and marriage delay. In this section, we review the effects of these social, economic, and demographic changes on leaving the parental home of young adults in post-war Japan.

5.1 Demographic changes

One of the major demographic changes in relation to nest-leaving behaviors is the decline in the number of siblings in each family. The decline in sibling numbers is due to the fertility decline in the post-war period. The large fertility decline, or so-called fertility transition, took place in Japan between 1947 and 1957, with TFR declines from 4.54 to 2.04 in this period. The decline in the period fertility corresponded to the reduction in cohort fertility (Otani 1993). As a result, the average number of siblings declines significantly in successive cohorts.

Figure 5 shows the average number of siblings by birth cohort. The figure is based on the number of surviving siblings in 1994. Among the 1930s cohorts, young adults had an average of 4.6 siblings in adulthood. If we take mortality until age at the survey date into account, this number should be a little higher at young adult ages of this cohort. The numbers gradually decline in successive cohorts, and reached 2.5 in the 1960s cohorts. Previous studies in other countries consistently find that nest-crowding is positively correlated to the risk of nest-leaving, as crowding makes the prospect of privacy and independence from family more desirable for young adults (Golscheider and DaVanzo 1989, Haurin et. al. 1997, Golscheider and Golscheider 1998). The same relationship is also found in nest-leaving in Japan. Having large numbers of sibling is positively correlated to premarital home-leaving (Sawaguchi and Shimazaki 2004), especially leaving home for employment (Fukuda 2003). But sibling numbers negatively correlate to leaving home for schooling, and correlate positively to marriage for women only (Fukuda 2003).

Figure 5: Average number of siblings by birth cohort*



* The numbers include the respondent himself, and are based on surviving siblings at the time of the survey.
Sources: The Third National Survey on Household Changes, 1994, NIPSSR.

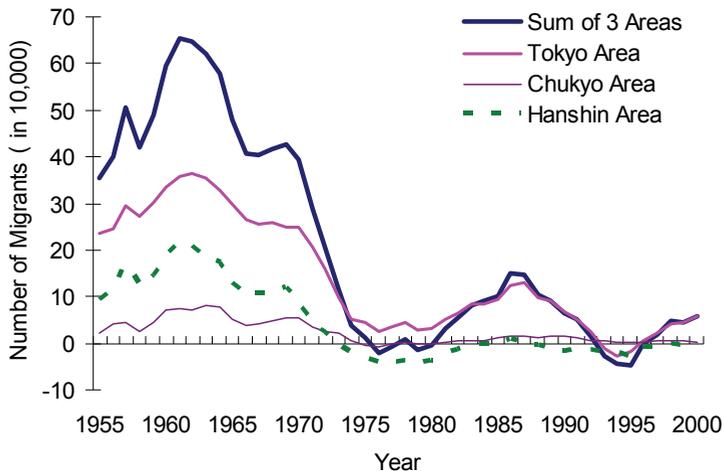
As the number of siblings decreases, the likelihood of being an heir increases inversely. Men are, however, much more likely to be an heir than women, since a woman can be an heir only when she does not have any male siblings in her family. As previously mentioned, in pre-industrial Japan, both heir sons and heir daughters have much lower probabilities of home-leaving than non-heirs, following the traditional household formation patterns of the stem-family (Kurosu 1996b, 2004). In contemporary Japan, the persistence of the stem-family norm provides social justification for both parents and adult children, especially heir child, to stay together, even after the marriage of the child. In fact, Morgan and Hiroshima (1983) pointed out that the extended family still fits well into modern aspects of family life in Japanese society, where housing is expensive and public supports for childcare are scarce. Previous studies found that heirs tend to have lower risks of leaving home than non-heirs (Sawaguchi and Shimazaki 2004), and that these effects persist weakly until the 1960s cohort (Fukuda 2003). Therefore, this study also expects that heirs will have lower risks of leaving home, given that nest-leaving in Japan is affected by the norm of the traditional stem-family.

It should also be noted that the stem-family system can create a large number of nuclear families in the later phase of demographic transition. In the later phase of demographic transition, fertility is still relatively high, while mortality has already declined to very low levels. Therefore, large numbers of children survive until their adult ages. Since only one child can stay at home with the parents in a stem-family, the rest of the non-heir children have to leave the parental home, and consequently, create nuclear families. In fact, nuclear households including one-person households showed an enormous increase during the post-war period in Japan. According to the census data, the share of nuclear and one-person households in total number of households increased from 63.0% in 1955 to 85.7% in 2000. As evidenced from the increase in both numbers and shares of nuclear type households, it has been believed, as an established theory (e.g. Morioka 1993), that the Japanese family system has undergone a shift from the traditional stem-family to the conjugal family type. However, if it is indeed true, the negative effects of being an heir on nest-leaving risks should be weaker in successive cohorts, and even disappear at a certain cohort. Otherwise, it will be concluded that leaving home behaviors in post-war Japan, to some extent, still follow the traditional norms of the stem-family. Thereby, as some demographers and sociologists suggest (Harada 1978, Itoh 1994, Ochiai 1997, Kato 2005), the post-war increase in nuclear type households should be due to the demographic pressure within a family and not so much with the changes in the family system. This hypothesis will be re-examined by investigating the effects of being an heir by sex and birth cohorts with a different model specification from my previous study.

The change in the geographical distribution of the youth population is another important factor affecting nest-leaving behaviors in post-war Japan. In previous studies, young adults living in small towns or in rural areas were found to have distinctively positive effects on nest-leaving risks in Japan (Fukuda 2003, Sawaguchi and Shimazaki 2004). In Japan, where leaving home before marriage is strongly associated with schooling or employment, the size of a city is one of the major factors that affect the likelihood of a young adult leaving the parental home. Urban-rural distributions of pre-leaving young adults are significantly different across cohorts. Census data shows that 35%–40% of young adults in the cohorts born before 1960 grew up in metropolitan areas, while these figures rise to around 50% in the subsequent cohorts (Nakagawa 2001). Therefore, more young adults in the 1960s cohorts and younger have grown up in large cities, and they are less likely to reside in rural areas than those in older cohorts.

The geographical distributions of youth populations are consequences of migration behaviors in parental generations. Statistics on internal migration show a huge migration inflow to metropolitan areas between 1955 and 1970, during the period of rapid economic expansion (see Figure 6). As a result of the migration inflow, the percentages of population residing in the three biggest cities—Tokyo, Osaka, and

Figure 6: The number of net migrations in the three biggest metropolitan areas in Japan: 1955-2000*



* Tokyo Area: Saitama-ken, Chiba-ken, Tokyo-to and Kanagawa-ken.

Chukyo Area: Gifu-ken, Aichi-ken and Mie-ken.

Hanshin Area: Kyoto-fu, Osaka-fu, Hyogo-ken and Nara-ken.

Sources: Annual Report on Internal Migration in Japan 2007, 2008, Statistic Bureau.

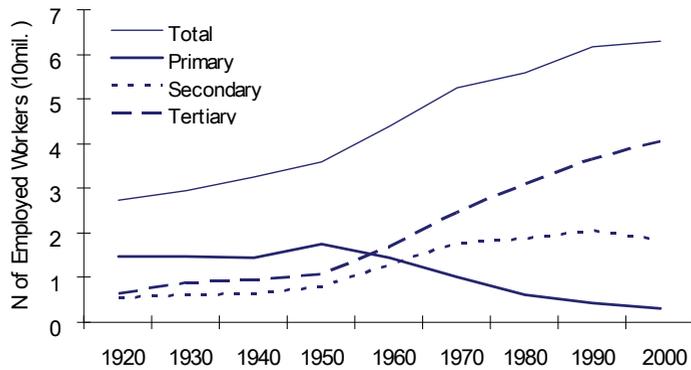
Nagoya—increased from 33.4% in 1960 to 44.2% in 2000 (Statistics Bureau, various years). Studies of internal migration and urbanization have shown that large numbers of young adults in the 1940s and the early 1950s cohorts moved from rural areas to large cities to enter the labor force during this period (Itoh 1984, Ishikawa 1999, Ezaki 2002, Inoue 2002). Many of those migrants started to settle down and form their families in the suburbs of these large cities (Tani 2002). For this reason, the proportions of young adults who reside in large cities are more pronounced in the 1960s cohort, the children of the migration cohorts. Therefore, members of the 1960s cohort, many of whom already live in or close to a large city, are expected to have less motivation to leave the parental home before marriage than their preceding cohorts.

5.2 Changes in socio-economic status of family of origin

The socio-economic status (SES) of families has also undergone a substantial transformation. First, as reflected by the industrial transformation that took place during the post-war period, fewer workers are employed in the primary sectors, such as agriculture, fishing and logging since 1950 (see Figure 7). Instead, we see strong increases in the numbers of workers in the secondary and tertiary industries (also see Figure 7). As a result, fewer young adults are from families employed in the primary sectors in successive cohorts. Second, industrial transformation also caused a change in the employment status of the family heads. Figure 8 also shows the shares of self-employed and family workers among the male employed population. The proportion of men who are self-employed or family workers has decreased in recent periods, while the proportion of men who are employees is increasing. This trend implies that young adults with self-employed fathers are also decreasing in successive cohorts. Finally, the educational backgrounds of fathers also vary across cohorts. As shown in Figure 10, the progression to university or junior college education has been increasing during the post-war period. Therefore, the share of fathers with tertiary education rises substantially in successive cohorts.

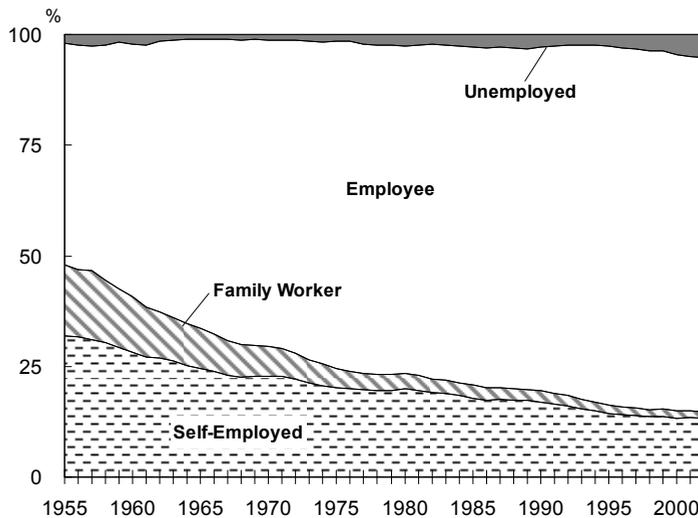
Parental SES has complex effects on leaving home in Japan. Fukuda (2003) found that a father's high occupational position has a positive effect on leaving home for men, while the likelihood that a woman will leave home is higher when the father's occupational status is low or unknown. The reason-specific analysis of leaving home shows that the father's high education, as well as a high occupational position, positively correlates to leaving home for schooling for both sexes (Fukuda 2003). The father's high occupational position continues to facilitate men's home-leaving for

Figure 7: Employed population by industrial sectors: 1920-2000



Sources: Population Census of Japan, various years, Statistics Bureau.

Figure 8: Proportions of male labor force population by employment status: 1953-2005



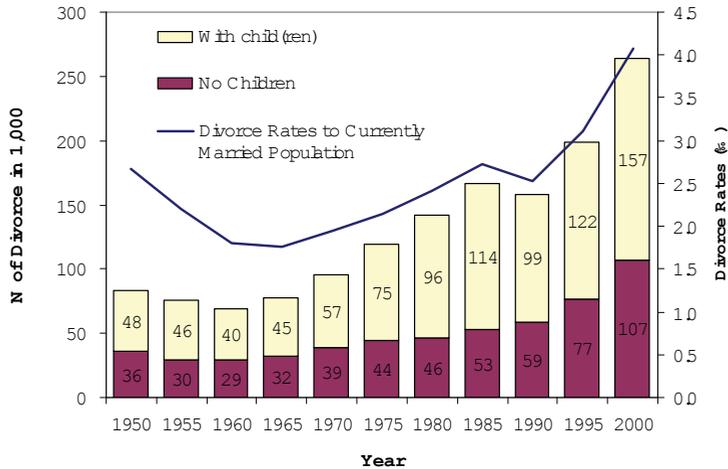
Sources: Annual Report of the Labor Force Survey, various years, Statistics Bureau.

employment, while women's employment-related home-leaving is much more common among daughters with fathers who work in a primary sector, or with fathers whose occupational status is low or unknown (Fukuda 2003). Sawaguchi and Shimazaki (2004) combine the educational levels and occupations of fathers to reflect the social strata of the family of origin, and examine their effects on the risk of premarital and marital home-leaving. Their analysis shows that fathers with higher levels of education slightly facilitate men's premarital home-leaving only.

Family intactness also affects the timing and occurrence of nest-leaving. Parental divorce and remarriage tend to cause conflicts within family relationships, and are thus known to be strong factors that facilitate early nest-leaving or nest-leaving for cohabitation in Western countries (Aquilino 1991, Kiernan 1992, Goldscheider and Goldscheider 1998). As shown in Figure 9, both numbers and rates of divorce have increased significantly since 1960 in Japan. The incidence of divorce in Japan in 2000 was as high as the rates in France, Germany, and Sweden (Council of Europe 2005) but was still significantly lower than the divorce rate in the US (U.S. Department of Health and Human Services 2001). As the divorce rate increases, younger generations are more likely to experience parental divorce. Along with the rise in divorce rates, remarriage has become more common over the past 50 years. Although period trends of remarriage are not monotonic, the remarriage rates of, for example, divorced or widowed women in 2000 aged 25-29, 30-34, and 35-39 are, respectively, two times, three times, and five times higher than corresponding ages-specific rates in 1950 (see Table 1).

The rise in divorce and remarriage in parental generations certainly affects the nest-leaving behaviors of young adults in post-war Japan. There has been no research done, however, to examine the effects of parents' marital dissolution on leaving the parental home in Japan. Unfortunately, our data also does not allow us to investigate the effects of family intactness because of the lack of information on the marital histories of parents. Instead of parental divorce or remarriage, the effects of parental death before young adults reach the age of 15 will be examined in this study. Children's obligations towards the family and the amount of support they are expected to give to their family of origin are highly dependent on parental survivorship (Alter and Capron 2004). In two agricultural villages in northeastern Japan of the 18th and 19th centuries, when both parents were present in household, children were less likely to leave home (Kurosu 2004). The presence of both parents is considered as a proxy for the economic and social stability of the household. Therefore, children from more economically secure

Figure 9: Number of divorce and divorce rates: 1950-2000



Sources: Vital Statistics, various years, Ministry of Health, Labour, and Welfare.

Table 1: Remarriage rates in divorced or widowed women by age: 1950-2000

	1950	1960	1970	1980	1990	2000
20 - 24	87.95	144.77	141.00	271.39	193.75	140.49
25 - 29	68.39	96.69	163.72	218.71	185.20	148.50
30 - 34	30.12	38.00	69.93	99.69	114.59	107.17
35 - 39	10.62	14.16	28.07	40.37	49.50	54.66
40 - 44	4.78	4.75	11.11	16.92	23.67	25.67
45 - 49	2.42	2.32	4.63	7.88	13.93	15.52

Sources: Vital Statistics, various years, Ministry of Health, Labour, and Welfare. Population Census of Japan, various years, Statistical Bureau.

and socially stable households are more likely to be protected from early departure from the parental home to take up outside employment²⁰ (Kurosu 2004). If this pattern still exists, being raised in a one-parent family should correlate to a higher risk of nest-leaving than belonging to an intact family.

5.3 Changing patterns of the transition to adulthood

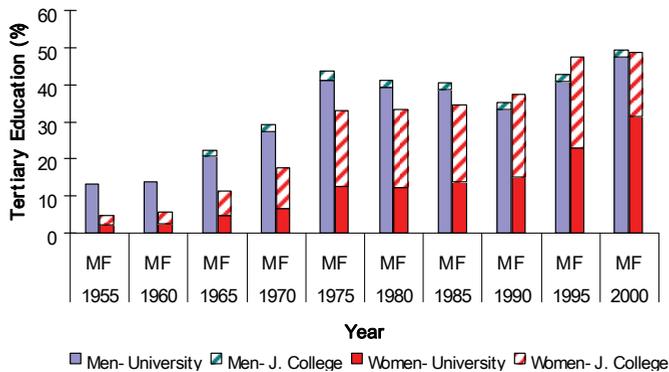
As shown in Figure 4, schooling, employment, and marriage are major life events corresponding to the occurrences of leaving home in Japan. The timings, occurrences, and proximities of these life events and nest-leaving strongly affect the levels and timing of leaving home within each cohort. Here, I refer to schooling, employment, and marriage as major life events constituting the transition to adulthood, and examine their trends and effects on the occurrences of leaving home in post-war Japan.

5.3.1 Schooling

Pursuing higher education is seen as one of the most promising strategies for climbing the social ladder in industrialized societies. The level of education is a major determinant of occupation and income opportunities in modern societies (Shavit and Müller 1998). Japan is not an exception. As shown in Figure 10, the proportion of young adults who enrolled in tertiary education, such as two-year junior colleges and four-year universities, increased dramatically by the middle of the 1970s²¹. Along with the increase in enrollment to tertiary education, the share of those leaving home for education among the 1950s and 1960s cohorts doubled from their preceding cohorts for both men and women (see Figure 4). The decision to pursue higher education facilitates the departure of young adults from the parental home, especially when the educational institution is not within a commutable distance.

²⁰ In our data, over three-quarters of widowed one-parent families are due to the father's death. Therefore, using the one-parent family as a proxy of economic stability of the household may make sense. However, we must be careful that the reference group of one-parent families in our definition is both two-parent families and one-parent families caused by divorce. In particular, the presence of divorced one-parent families in the reference group can make our interpretation ambiguous although we have no information on their proportion in our data.

²¹ Among both men and women, high school education has been almost universal since the late 1970s (Ministry of Education, Culture, Sports, Science, and Technology, various years).

Figure 10: School enrollment rates by sex and type of schools: 1955-2000

Sources: School Basic Survey, various years, Ministry of Education, Culture, Sports, Science, and Technology.

Note, however, that enrollments to tertiary education do not show a monotonic rise in post-war Japan. They stagnated during the 1980s, and started to resume in the 1990s. There is some evidence that progression to higher education is inversely related to the demand for a young labor force in the labor market in developed countries (Whitfield and Wilson 1991, Blanchflower and Freeman 2000, Card and Lemieux 2000). A study shows that the stagnation and resumption in progression to tertiary education in Japan also reflects the economic performance in the post-war period (Ohta 2002). Progression to university and junior college is especially high during a period of recessions, i.e., the oil shock recession in the mid-1970s, and Japan's "lost decade" of the 1990s caused by the bursting of the bubble economy in 1991. Therefore, young adults' choices between work and higher education are affected by labor market conditions to some extent.

There is also a strong sex difference in the types of tertiary education pursued in Japan. Throughout the post-war period, women's enrollment in tertiary education showed more stable gains than among men. As a result, enrollment in tertiary education, which includes both two-year junior college and four-year university, was even higher among women than among men in some years after 1990. Women, however, are much more likely to be enrolled in junior colleges than universities, while most of the men in tertiary educations are enrolled in universities. Raymo (1998) made a clear distinction between university and junior college in terms of human capital investments. He refers to Brinton's (1993) work, which found that the curricula of junior colleges have a strong emphasis on such subjects as home economics, education, literature, and foreign languages, or subjects which tend to attract young women whose

marriage aspirations are greater than their career aspirations (Raymo 1998). Relative to junior college graduates and those with lower levels of education, women who have graduated from university generally possess greater labor market skills, higher age-wage profiles, and slightly better chances of entry into large firms, which typically offer higher wages (Ishida 1998). Therefore, the sex differentials in progression to university education reflect the gender difference in human capital investment.

Under the male bread-winner family system, men are more strongly encouraged by society than women to obtain higher levels of education, to be employed by a large company, or to have a higher-status job. It is expected that attendance at four-year universities is more strongly related to the rates of nest-leaving than at two-year junior colleges because the former involves more investment in human capital and results in greater economic returns throughout the individual's career. It is more rational for parents to send their children outside the home and to support them financially in pursuing a university education than it is for them to encourage attendance at a two-year junior college.

Education also has secondary effects on the timing of leaving home by legitimating the choice of occupation, earnings potential, preference for living arrangements, and the timing of marriage. Fukuda (2003) also found that highly educated men tend to leave home for employment more frequently than men with lower levels of education, while the opposite is true among women leaving home for employment. Highly educated men tend to gain entry into large firms (Ishida 1998), which typically have branches all over Japan. Therefore, they have a higher chance of leaving home after employment due to transfers. On the other hand, highly educated women are less likely to be employed by large firms than similarly educated men (Ishida 1998). In addition, women are less likely to work in a position which requires a transfer to other branches, since they tend to be seen as a supplemental labor force within a company (e.g. Ogasawara 1998).

Educational attainment also affects preferences on intergenerational living arrangements in Japan. Extended family living of parents and a married child is formed, in general, to increase economic advantages of the household. Previous studies show that incidence of intergenerational coresidence is high when income or consuming levels of either one of two generations are low (Kojima 1989, Funaoka and Ayusawa 2000, Nishioka 2000). Other studies also found that a highly educated parent is less likely to live with a married child (Ogawa 1997, Tabuchi and Nakazato 2004). Similarly, the highly educated never-married are more likely to be away from parents than their less educated counterparts (Suzuki 2002, 2003). This tendency remains to be statistically significant even after controlling for young adults' own income (Iwakami 1999). Therefore, education facilitates separate livings of two generations by making them favorable to live away from each other.

Education also affects marriage timing in Japan. In Japan, high levels of education or income among women correlate negatively to marriage formation (Tsuya and Mason 1995, Ogawa 1997, Higuchi 2001, Retherford, Ogawa and Matsukura 2001, Ono 2003, Raymo 2003b, Raymo and Iwasawa 2005). This could be because women with high earnings potential do not fit in the traditional form of marriage, in which the husband specializes in labor market activities while the wife keeps the home and rears the children (Tsuya and Mason 1995). Yet stable employment, preferably with a high salary, is a crucial factor that influences whether men marry (Kato 2004). Therefore, it is expected that highly educated women will stay at home longer if they did not leave home during their education. On the other hand having a high level of education facilitates the trend towards men leaving home after education.

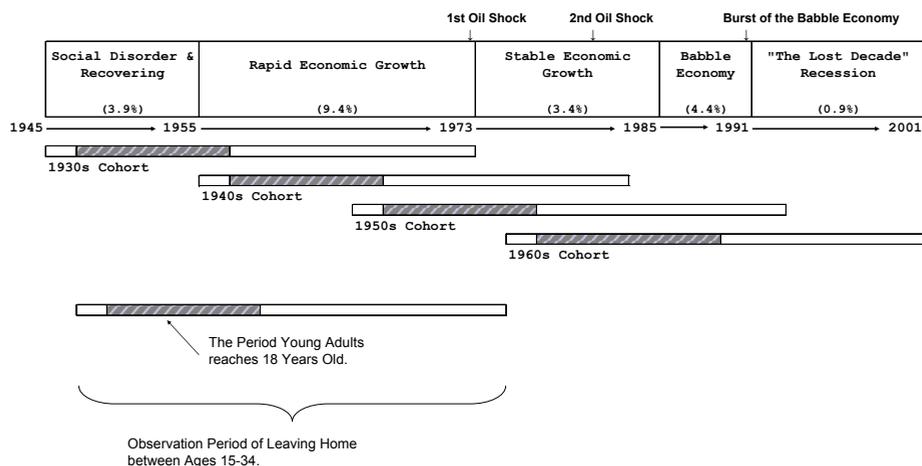
5.3.2 Employment

After graduation, the timing of entry into the labor market affects the timing of other life events in the transition to adulthood. In particular, the process by which individuals establish their careers and achieve economic independence has significant effects on family formation among young adults (e.g., Oppenheimer and Lewin 1999). The transition to the labor market is itself much affected by the macroeconomic situation, such as the business cycle or supply and demand in the labor market.

As displayed in Figure 11, the macroeconomic conditions in 1945-2001 can be briefly broken down into five phases: 1) the social disorder and recovery phase in 1945-1955, 2) the period of rapid economic growth in 1956-1973, 3) the stable economic growth era in 1974-1985, 4) the bubble economy in 1986-1991, and 5) the “lost decade” recession in 1992-2001.

For both men and women, employment was a major reason for leaving home among the 1940s and the 1950s cohorts (see Figure 4). The young adults of the 1940s and 1950s cohorts entered the labor market during the period of rapid economic growth era in 1956-73, a time in which labor markets demanded the young labor force to catch up with the rapidly expanding economy. Although they are relatively large cohorts, including the baby boom cohorts of 1947-1949, the rapid economic growth favorably absorbed them into the labor market, since young labor was in such strong demand. In addition, the labor force attachment of single women, which was not common in the 1930s cohort, was largely triggered at this time. As a result, the full-time employment of single women became common and stabilized in subsequent cohorts (Ogawa 1997, Ando 2001).

Figure 11: Macroeconomic conditions in Post-War Japan



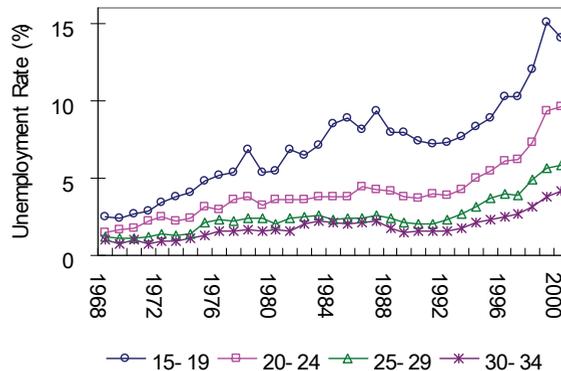
* Numbers in parenthesis are average GDP growth rates (Maddison 2003) in respective periods.

It is, however, a particular phenomenon among the 1940s and the 1950s cohorts that so many young adults left home for employment. As shown in Figure 4, far fewer young adults left home for job-related reasons among the 1930s and 1960s cohorts than among the cohorts of the 1940-1950s. The expansion of tertiary education might partially decrease the proximity of leaving home and employment. Moreover, the labor demand in urban areas declined following the period of stable economic growth in the 1970s, largely due to the slowdown in economic growth after the two oil shocks, and the government's move to localize the manufacturing industry (Tani 2002).

The labor market conditions of young adults turned to be favorable again during the bubble economy of the late 1980s. In the bubble economy era, private companies employed as many new recruits as possible to increase their productivities to catch up with the rapidly increasing demands. As a result, the active job openings-to-applicant ratio reached 1.4 in 1991 and it was even recorded as high as at 2.86 for university graduates in the same year (Works Institute 2008). One of the reasons behind these high hiring motivations of private companies is that they generally had a shortage of young labor force in the beginning of the economic boom since they employed fewer young employees during the late 1970s (Japan Institute for Labour Policy and Training 2008). Therefore, in a given expansion of the employment opportunities, young adults in the bubble era could easily make a transition from school to work.

On contrary to the bubble cohorts of the 1960s cohort, more recent cohorts suffered from the economic recession of the 1990s, which is often called Japan's "lost decade." The employment of young adults became increasingly insecure during the 1990s. As shown in Figure 12, the unemployment rates among young adults rose steeply after the collapse of the bubble economy in 1991. The picture was similar for women, although unemployment rates among women aged 15-19 were lower than among men, while unemployment levels among women aged 25-29 and 30-34 were higher than among men. As unemployment rates are higher at younger ages, less-educated young adults who graduated only from junior high school or high school faced more severe labor market conditions than young adults with higher education.

Figure 12: Unemployment rates of men by age: 1968-2000

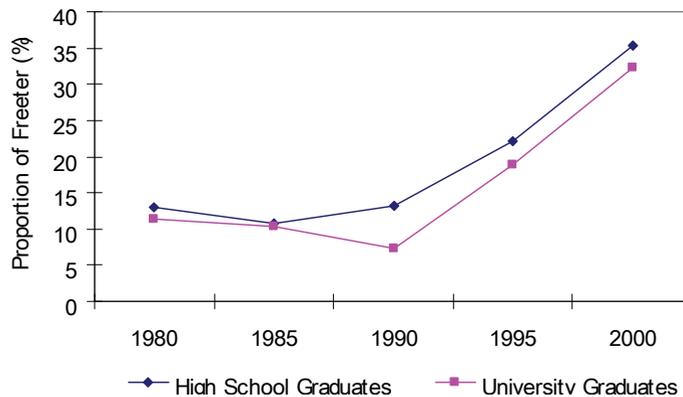


Sources: Annual Report of the Labor Force Survey, various years, Statistics Bureau.

The long slump has caused structural changes in the employment of young adults as well. Since the 1990s, young adults across the educational spectrum have been more likely to be employed in non-regular positions, such as part-time worker, temporary worker, and contract employee, popularly referred to as *freeters* (Genda and Kurosawa 2001, Kosugi 2001). Figure 13 displays the ratios of young adults who got such temporary job positions immediately after graduating from high school or university. These ratios almost tripled between 1980 and 2000. During the 1980s, the ratios of temporal job workers among newly employed graduates were around 10% for both high school and university graduates. In 2000, however, about one-third of graduates got a temporary job upon leaving education. Although university graduates have a better chance of being fully employed, surprisingly, the educational differences in the ratios are remarkably small. While these figures certainly include young adults who are

voluntary taking up temporary jobs for such reasons as postponing the moratorium and waiting for better job prospects, the smooth transitions from school to work have no longer been assured since the last decade of the 20th century in Japan. In general, the economic status of young adults has been declining in recent cohorts relative to preceding cohorts. Several surveys show that young adults with less secure jobs are more likely to live with their parents (Cabinet Office 2003, Oishi 2004, NIPSSR 2007). Therefore, the increase in job insecurity among young adults should negatively affect home-leaving in recent period.

Figure 13: Ratio of temporal job workers (freeters) among employed school graduates: 1980-2000



Sources: White Paper on the National Lifestyle Fiscal Year 2003, 2003, Cabinet Office.

As we have seen, labor market conditions have been much affected by business cycles in post-war Japan. Periodic changes in the labor market can affect a large number of young adults at the same time. For this reason, the labor market experience of young adults can vary dramatically from one cohort to another. In addition, whether or not a young adult is able to get a stable job should certainly affect the individual's values, life style, and economic status, thus affecting the timing and occurrence of other transitions in the life course, such as leaving home and marriage. Our analyses reveal the proximity and duration effects of employment on leaving home by allowing both effects to be changed by cohorts. Unfortunately, however, I could only partially investigate the recent decline in economic status of young adults and its effects on leaving home since our data does not include the 1970s and younger cohorts, who have directly faced the 1990s downturn in the Japanese economy.

5.3.3 Marriage

The proportions of the never-married aged 30-34 increased from 11.6% in 1970 to 42.9% in 2000 for men, and from 7.2% in 1970 to 26.6% in 2000 for women. The rapid development of later and less marriage is strongly related to the trends towards educational upgrading and job insecurity among young adults.

As for women, attaining higher education strongly increases women's ages at the initial exposure to the risk of marriage (Blossfeld 1995). While marriage risks among Japanese women with a university education show some signs of catching up when these women reach their mid-twenties (Tsuya and Mason 1995), their lifetime probabilities of being never-married are estimated as being the highest among all educational levels (Ogawa 1997, Retherford et al. 2001, Raymo 2003b, Raymo and Iwasawa 2005). Panel studies of marriage further show that women with higher incomes are less likely to marry in Japan (Higuchi 2001, Ono 2003).

Other studies, however, also show that women whose employment status is unemployed, part-time, or fixed-term contract have lower risks of marriage than those in regular full-time employment (Nagase 2002, Sakai and Higuchi 2005). Iwasawa and Mita (2008) pointed out that the workplace used to function as a matchmaking system for young men and women. Women in these non-standard work arrangements have been excluded from this system. Thus women who do not have regular full-time positions may have lower risks of marriage. In Japan, therefore, high earning potential among women has been negatively correlated to marriage, while women's entry into full-time regular employment facilitates marriage.

The effects of education on men's marriage are rather complex because of different specifications of models across studies. Otani (1993) analyzed first marriage among men aged 18-34, and found a positive effect of university education on arranged marriage, although the effect becomes negative for love marriage and for overall first marriage. Looking only at men aged 23-34, Raymo (2003a) showed that men's education has negative effects on marriage formation, assuming proportional effects of education during the risk ages. Kato (2004) set up separate models by age groups and allowed for the effects of education to be changed during the risk ages. He finds that men's university education is negatively correlated to early marriage, while it has positive effects on marriage in the early thirties. Therefore, educational upgrading of men has delaying effects on men's marriage formation.

These studies also show that a man's occupation is an important factor in marriage. Men with full-time jobs (Otani 1993), white-collar jobs (Raymo 2003a), and full-time jobs in large companies (Kato 2004) have higher risks of first marriage than other men. Sakai and Higuchi (2005) also found that the experience of being a "freeter," which is defined as a never-married young adult who is unemployed or employed part-time in

the post-graduation period, decreases the likelihood of men's marriage. Therefore, in addition to education, economic stability is an important factor in marriage rates among Japanese men.

As we have seen in Figure 1, the prolongation of single adulthood has not led to an obvious rise in the residential independence of young adults in Japan. Therefore, continuing delays in marriage also delay the departure of young adults from the parental home. The delaying effects of marriage on home-leaving are stronger for women than for men, since marriage is a major reason for leaving home among women. At the same time, coresidence with parents after marriage is a typical living arrangement for the heir of the traditional stem-family (Kurosu 1996a, 1996b, 2004). A study of post-marital living arrangements indicates, however, that increasing proportions of newlyweds in the 1960s cohort chose to live separately from their parents (Kato 2005). The later but higher prevalence of leaving home in the recent cohorts may suggest that young adults are more likely to leave home late for marriage.

Because more than 90% of nest-leaving by young adults occurs as a result of one of these life events, they are considered to be proximate determinants of leaving the parental home in Japan. The overall effects of these proximate variables on rates of home-leaving should be expressed as a function of the occurrences of proximate variables and the proximity of these variables to leaving home at a given age. Due to the rapid socio-economic changes in post-war Japanese society, the timing and occurrences of these events vary significantly according to the cohorts (Ando 2001). Also, given the high degree of gender role differences in the society, large sex differences in the patterns of the transition to adulthood can be seen (Ando 2001, Sawaguchi and Shimazaki 2004). It is, however, entirely not clear how strong the proximities of these life events and leaving home are, or how the proximities change over cohorts. The investigation of the proximities of these life events and nest-leaving is potentially important in understanding the implications of nest-leaving in the life courses of Japanese young adults. It also allows us to predict the timing and levels of nest-leaving within the cohorts. In the analysis, I examine the proximities of these life events and leaving home as immediate effects of life events, and allow their effects to be changed by each cohort.

In the following sections, the research questions mentioned here are empirically examined by employing event-history analysis using individual data from a nationally representative survey. The details of data and methodologies are discussed in the next section.

6. Data and variables

6.1 Data

The data is from the survey of the National Family Research of Japan 1998 (NFRJ-98),²² which was conducted in January and February of 1999. The NFRJ-98 data is a nationally representative survey of men and women aged 28 to 77 at the time of December 1998. The samples are chosen by the stratified multi-stage random sampling technique from all over Japan. The survey was carried out with a self-administered questionnaire using a drop-off and pick-up method, which is a standard survey procedure in Japan. Out of 10,500 questionnaires distributed, 6,985 were successfully completed. The respondent rate is, therefore, 66.5%.

The NFRJ-98 survey is especially designed to gather information on the life course and family relationships of individuals in a wide range of cohorts. Respondents were asked retrospective information about the dates of life event experiences, such as graduation/drop-out from the highest level of education pursued, the timing of the first home-leaving, first job, first/current marriages, and the birth of children. The dates of event occurrences are measured by either calendar month or age²³. This retrospective information made it possible for us to construct event-history models of nest-leaving with time-varying covariates, such as first employment and first marriage. Information on respondents' family backgrounds is also asked retrospectively. It also allows us to use a broader set of covariates on characteristics of respondents' family of origin. These features make data from the NFRJ-98 the most suitable for modeling and examining the transition rates of nest-leaving in Japan.

The birth cohorts of 1930-1970 are chosen for analyzing nest-leaving behaviors from April 1945 to December 1998. The observation period covers the era of substantial changes in social, economic, and demographic structures in post-war Japan. Thus, it is possible to study how determinants of nest-leaving differ across cohorts which have faced different social, demographic, and economic contexts during the transition to adulthood.

²² The author gratefully acknowledges the use of the National Family Research of Japan 1998 (NFRJ-98) conducted by the National Family Research committee of Japan Society of Family Sociology. The data was provided by the Social Science Japan Data Archive, Information Center for Social Science Research on Japan, Institute of Social Science, the University of Tokyo.

²³ Among the valid responses to the dates of each event occurrence, around 90% of answers are given by calendar months, while the remaining 10% are given by either age or year of the events only.

The sample size is in total 5,885 (2,830 men and 3,055 women), which includes only samples with no missing values on the date of nest-leaving²⁴. After eliminating the samples with left-censoring and with missing values on any of the covariates, the sample size is reduced to 5,297 (2,573 men and 2,724 women). Since men and women have distinct patterns of nest-leaving, models are constructed separately by sex.

6.2 Definitions of event variables

In the NFRJ-98, the question on the nest-leaving experience is formulated as follows: “Have you ever lived away from your parent(s) for one year or more to pursue education, employment, marriage, military service, etc.? If so, please indicate when you left (provide information about your first departure, even if you later returned to your parents’ home)”. In sum, the definition of the event is given as living apart from parents more than one year for a variety of life course reasons. Note also that only the dates of the initial departure from home are obtained in the survey. Therefore, we cannot treat nest-leaving as a repeatable event in our data. In addition, questions about the occurrences and dates of returning home are not asked at all in this survey.

I defined the risk of nest-leaving as starting from February in the year following the 15th birthday, and ending in the last month of age 34. Young adults are required to attend school until March following their 15th birthday in the post-war educational system. Thus, nest-leaving before the period of compulsory education has been completed is unlikely to be the result of the child’s own decision, or may even be due to misreporting²⁵. These early nest-leavers make up 4.9% of the cohort of 1930-70. They are treated as left-censoring, and are simply excluded from the analyses. On the other hand, age 34 may be too old to serve as an end point in the transition to adulthood. Japanese young adults in recent cohorts are however, increasingly prolonging their coresidence with parents well beyond their 30s due to the later marriage trend. For these reasons, I set the maximum age of nest-leaving at 34, which also maintains comparability of risk periods across cohorts. In sum, the observation is right-censored whenever the following happens first: deaths of both biological parents, reaching age 35

²⁴ 136 respondents (49 men and 87 women) have missing values on the date of nest-leaving in subjective cohorts.

²⁵ The first half of the 1930s cohorts, however, were under the pre-war educational system and their compulsory education ends at the end of March following the 12th birthday. For this reason, nest-leaving under age 15 is most frequently observed in the 1930s cohort. In our analysis, those early nest-leavers in the 1930s cohort have to be neglected to keep the same criteria across cohorts, although they should not be treated as unusual cases.

before leaving the parental home, and the survey date corresponding to the period when the respondents are at risk of nest-leaving.

The occurrences of nest-leaving are measured in the accuracy of months. When the months of nest-leaving are missing, values of one to 12 are imputed randomly from a uniform distribution. However, when nest-leaving occurs at the same age or year as other events, such as first employment and first marriage, I assume that they occur in the same calendar month as those corresponding events²⁶.

A similar procedure is applied when the months of other life events are missing. For starting the first job, the event is assumed to have occurred in April, which is a typical month for starting new jobs in Japan. Those missing months of first marriage are imputed randomly from a uniform distribution, taking values from one to 12. The percentages of analytical samples with these month imputations are 5.4% for nest-leaving, 9.3% for first employment, and 4.4% for first marriage. In total, 12.5% of analytical samples are subject to any of these imputations.

Furthermore, I construct a time-varying covariate of schooling to higher education, i.e., four-year university or two-year junior college. In the absence of retrospective educational histories, I manipulate the calendar months of schooling to tertiary education to be April following the 18th birthday. It is an approximation that assumes all those highly educated respondents followed the model educational trajectory without any delays when they entered tertiary education. However, this assumption seems too rigid, especially for men, since men are more likely than women to delay enrollment in university by several years²⁷. Therefore, the assumption is relaxed by adjusting some of enrollment dates to April following the 19th or 20th birthdays when the following criteria is fulfilled: 1) the respondent's education is "university or graduate school," 2) the respondent's age at graduation is one to three years later than model educational trajectories, and 3) nest-leaving occurs at age of 19 or 20. As a result, 9.8% of enrollment dates are changed accordingly among university graduates. Although statistics are not available before 1984, the share of delayed enrollees in junior college/university was estimated at 16% in average between 1984 and 1995 (author's calculation of the *School Basic Survey*). I believe that this adjustment is the best that is possible. However, it may still underestimate delayed enrollment among junior college/university-educated young adults. By making the contingency of education and nest-leaving less frequent than the actual occurrences, the effects of schooling on the intensities of nest-leaving would be underestimated to a certain degree. Because men

²⁶ When more than two events occurred in the same age/year as nest-leaving, I assumed marriage as a corresponding event to nest-leaving.

²⁷ The share of delayed enrollees in junior college/university was, in average, estimated at 30% for men, and 1% for women in the period between 1984 and 1995 (author's estimation from the *School Basic Survey*).

tend to be more frequently delayed in their entry into tertiary education than women, the underestimated effects of schooling would be larger for men than for women.

6.3 Definitions of covariates

To operationalize the explanatory variables I have discussed earlier, the following covariates are used in the models: 1) demographic factors, i.e., the number of siblings, heir status, death of one parent before the respondent is aged 15, and the size of the town of origin; 2) socio-economic status of family of origin, i.e., father's education and father's occupation when the respondent is aged 15; 3) life event experiences, i.e., schooling to higher education²⁸, first employment after education, and first marriage; and 4) a macroeconomic variable, i.e., Gross Domestic Product (GDP) growth rates. In addition to these covariates, age is used for calculating baseline hazards in the all models. Dummy variables of 10 year-group birth cohorts are also included in the models to indicate cohort-specific trends of nest-leaving hazards.

Definitions of these covariates are as follows. First, the number of siblings is a continuous variable including deceased siblings excluding the respondent himself or herself. More than 9 siblings are coded as 9 in the analyses. Second, dates of parental death are measured by year. Respondents are coded as "1" when one parent died before the age of 15, and are otherwise coded as "0"²⁹. Those who have missing values on the year of parental death are coded as "missing;" this approach was preferred to eliminating them from the analytical sample, since substantial numbers of respondents in older cohorts fall into this category. When both parents died before leaving home, respondents are considered as right-censored. Size of the town of origin asks respondents to identify the place they lived longest before the age of 12. The choices are 1) rural area, 2) town or small city, and 3) capital of the prefecture or large city of equal population size or more.

Heir status is, however, not originally measured in the survey. In Japanese stem-family system, the oldest sons are expected to be heirs, while oldest daughters are given heir status only if there are no male siblings (Kurosu 1996b, 2004). The heir status has to be systematically deduced from the number of siblings, the number of surviving siblings at the survey date, and sex and birth year of up to three oldest surviving

²⁸ Higher education consists of two-year junior colleges, technical schools, and four-year universities. Our data show that the percentage of university enrollment in the higher education category is 27.7% for women and 82.8% for men.

²⁹ When respondents have both biological and stepparents, information about parents is given for the father and mother who had the longest custody of the respondent.

siblings. Therefore, heir status cannot be identified when 1) there are any missing values on sex and birth year of the listed siblings, and 2) there are more than four surviving siblings, and none of the listed siblings is an heir. To retain the sample size, those who cannot be identified according to their heir status are coded as “heir missing.” The missing values on the heir status are more frequently observed in older cohorts where sibling size is larger and surviving older siblings are fewer than those of younger birth cohorts.

Father’s education is coded as 1) low/middle, 2) high, and 3) unknown. Fathers with at least some tertiary education such as university, junior college, technical school, high school and its equivalents under the old system are coded as high, and those with less than tertiary education are coded as low/middle. Father’s work status has five categories: 1) managerial position, which is, by definition, corporate owner, executive, board member, or a managerial position no lower than the chief of a section; 2) non-managerial full-time employee; 3) self-employed worker in the agriculture, forestry, or fishing industries; 4) self-employed worker in other industries; and 5) others, including unknown and temporary worker, part-time worker, or home handicraft worker³⁰.

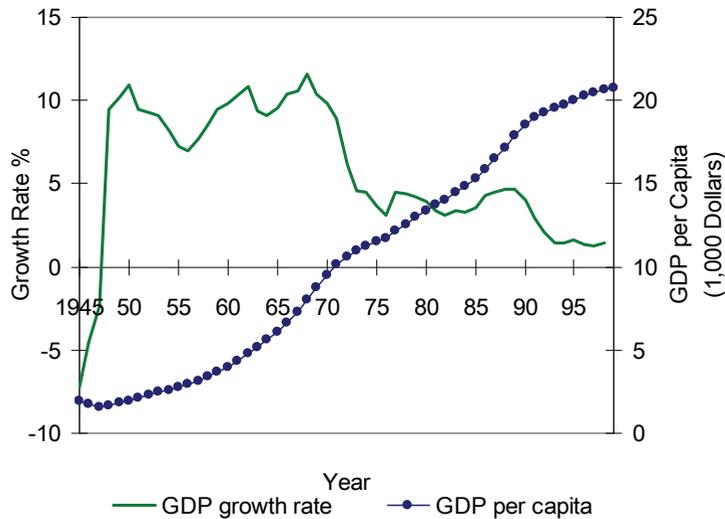
GDP growth rates are retrieved from the statistics calculated by Maddison (2003) to measure business cycles of the observation period³¹. To capture the substantial economic trends, the yearly rates are smoothed by taking a five-year moving average. Figure 14 displays five-year moving averages of the GDP growth rates. Furthermore, these averaged GDP growth rates are lagged one year backwards. Therefore, the average of GDP growth rates at year t is a moving average of the GDP growth rates between $t-3$ to $t+1$ year. The calculated rates are used as a fiscal year base which starts from April and ends in March of the next year. These macro data are merged with individual person-period records corresponding to April of each year. Since both the school calendar and the employment calendar follow the fiscal year in Japan, merging these macro data in a way that changes its value in the cycle of the fiscal year is crucial for measuring the effects of labor market conditions on nest-leaving behaviors.

Finally, life event experiences are operationalized in a form of conditional splines which will be discussed in the next section.

³⁰ In cases where the father was absent at that time, the occupation of the primary person on whom the respondent was dependent (e.g., mother, grandfather, or uncle) is given.

³¹ I used Maddison’s data instead of the official statistics released by the Japanese government for the following reasons. First, official data have missing values in the war years. Second, official data have a connection problem due to the changes in the methods of calculating GDP. Using Maddison’s data, one can avoid these problems with reasonable assumptions which are widely accepted by economists. The correlation coefficient of GDP growth rates from official data and Maddison’s data is very high, at 0.993 within the period of 1956 to 2000.

Figure 14: Trends in GDP growth rates and GDP per capita in Japan: 1945-1999*



* Based on the 1990 International Geary-Khamis dollars in five-year moving averages.
Sources: Maddison (2003)

7. Methods and models

7.1 Methods

Among a series of the event-history analysis, the piecewise linear-spline models (PLSM) are used in my analysis. The PLSM is a kind of proportional hazard model which assumes continuous time in the underlying hazard. The mathematical representation of the model is as follows:

$$\ln h(t) = \gamma T(t) + \beta' X(t)$$

where $\ln h(t)$ is the log-hazard of the event's occurrences at time t , $\gamma T(t)$ represents a duration pattern of the baseline hazard, and $\beta' X(t)$ is the proportional effect of

covariates on the baseline hazard. In the PLSM, the baseline hazard function, $\gamma T(t)$, is specified as a piecewise-linear spline³² in which the risk period is divided into several spells by freely chosen nodes. The log-hazard is assumed to increase or decrease linearly in a given spell, and its slopes are allowed to vary between the spells. The PLSM is known to be very flexible to fit several popular duration patterns (Lillard and Panis 2003). Several experimental analyses are conducted to find a suitable number and locations of nodes. As a result, five nodes are chosen to be placed at ages 15.5, 17, 18.5, 21, and 30 to represent age patterns of leaving home. Using these five nodes, risk duration is divided into six spells, namely, ages 15-15.5, 15.5-17, 17-18.5, 18.5-21, 21-30, and 30-34. They basically distinguish in-school ages from graduation ages, and partially represent age patterns of marriage at later ages. Coefficients of each baseline spline indicate linear changes in log-hazard by unit of year in a given spell.

The analyses are carried out by statistical software, aML (Lillard and Panis 2003). The aML has many sophisticated features in various regression models³³. One of the specialties of aML in hazard models is the PLSM with overlapping splines. In the overlapping spline models, the hazard is expressed as a function of several durations besides the baseline duration. For example, in our analysis, the baseline duration is age by month. By employing overlapping spline models, it is, however, possible to simultaneously model how the risk of nest-leaving changes in the periods after individuals experience various life events, such as schooling to tertiary education, first employment, and first marriage. These duration dependencies are expressed in the forms of splines, and go into effect right after each life event takes place during the risk period. Splines of this kind are called conditional splines (Lillard and Panis 2003).

Since the conditional splines can include an intercept in its function, it is possible to incorporate not only duration dependencies, but also an immediate upward or downward shift in the hazard at the time the time-varying covariate is in effect. Similar to baseline hazards, conditional splines also need to be specified by number and location of nodes in duration since event occurrences. As a result of several experimental analyses, two nodes with one intercept are chosen for each life event. Nodes are placed after one and five years following event occurrences. Therefore, effects of the life events are expressed by an intercept and three spells of 0-1 year, 1-5 years, and five years and more since event occurrences. The intercept captures an immediate shift in nest-leaving hazards caused by the occurrence of the life event. The value of the intercept indicates the amount of the shift caused in log-hazard by the event

³² The piecewise-linear spline is also known as generalized Gompertz or piecewise-linear Gompertz (Lillard and Panis 2003).

³³ aML is a freely available online. Details are given by the URL: <http://www.applied-ml.com/index.html>.

occurrence. Coefficients of duration splines are interpreted as linear change in log-hazard by unit of year in the duration.

Typically, nest-leaving occurs in the same month, or even a few months before such life events as schooling, employment, and marriage. This is because people would simply need to move to the place where they experience these life events before they actually happen. This fact contradicts the temporal ordering of nest-leaving and those life events, and makes causal inference difficult. In the causal analysis of interacting processes, Willekens (1991) points out that the temporal ordering of events seemingly conflicts with the fact that human beings can think prospectively. He suggests that causal inference should rely on the causal priority made in the human mind, rather than on the observed temporal sequence of behavior (Willekens 1991). It is clear from the reasons for nest-leaving in Figure 4 that decisions to leave the parental home are made to pursue other life events, such as schooling, employment, and marriage. Therefore, the causality can be set from these life events to nest-leaving in our analysis. For this reason, in my analyses, it is arbitrarily assumed that the decisions to pursue those life events are made two months before they actually occur. Then, I use the time of decision making as the time of state change in these life event variables. This procedure made it possible for us to retain the temporal ordering of the causal relationship between life events and nest-leaving.

Estimating those conditional splines has been particularly meaningful in my analysis. It allows us to express both the immediate shifts and subsequent duration dependencies in the effects of life events on the hazards of nest-leaving. For example, the effects of schooling should cause the rise and fall in the risk of nest-leaving around the time of schooling, while the effects of being highly educated might become manifest some time after schooling. The same applies to other life event variables, such as first employment and first marriage. Especially while the proximity of marriage and nest-leaving is an important indication of the stem-family system, e.g., incidence of intergenerational coresidence, previous studies have totally neglected to model the duration dependencies of marriage on the hazard of nest-leaving. Therefore, it is not clear that no nest-leaving at the time of marriage suggests permanent coresidence with parents, or only a temporary residential arrangement. Similarly, previous studies failed to answer such a question as why the highly educated never-married tend to live away from parents (Iwakami 1999, Suzuki 2002). Is it because highly educated young adults simply leave home at the time of schooling or because they tend to live away from parents by having more resources, opportunities or preferences to establish their own household? Although answering these questions is theoretically important, it hardly made any distinctions between the proximity and the duration dependency in the effects of life events on the nest-leaving hazards. Simultaneous estimation of the immediate effects and duration dependencies of life events would be able to answer these

questions. By incorporating conditional splines of life events, such as schooling, first employment, and first marriage, I expect to enrich our understanding of the proximities and duration dependencies of life events in nest-leaving behaviors.

7.2 Models

Parameter estimations are conducted separately by sex because of the given distinct patterns of leaving home among men and women in post-war Japan. To address our research questions, I estimated the following series of nested models for the transitions to first nest-leaving. In Model 1 to Model 5, the stepwise modeling is used to clarify the intervention processes of the sets of covariates on hazards of leaving the parental home. Such covariates as 1) cohort, 2) socio-economic status of family of origin, 3) demographic factors, 4) life event experiences, and 5) macro economic variable are sequentially included into the models, and their net effects on hazard of nest-leaving are examined simultaneously. Proximities and duration-dependent effects of life events on leaving the parental home are examined by conditional splines.

Note also that coefficients of cohorts can be interpreted as nest-leaving intensities of each cohort, net of other covariates. Thus, a series of the nested models enables us to access how cohort trends of nest-leaving are explained by the sets of covariates mentioned above. By holding socio-demographic and macro-economic factors, as well as the patterns of the transition to adulthood constant across cohorts, the coefficients of cohorts in Model 5 therefore potentially indicate cohort differences in young adults' preferences regarding residential autonomy.

$$\text{Model 1: } \ln h(t) = \gamma T(t) + \beta_1 \text{COHORT}$$

$$\text{Model 2: } \ln h(t) = \text{Model1} + \beta_2 \text{SESF}$$

$$\text{Model 3: } \ln h(t) = \text{Model2} + \beta_3 \text{DEMO}$$

$$\text{Model 4: } \ln h(t) = \text{Model3} + \beta_4 \text{LIFE}$$

$$\text{Model 5: } \ln h(t) = \text{Model4} + \beta_5 \text{MACROECO}$$

$$\text{Model 6: } \ln h(t) = \text{Model5} + \beta_6 \text{COHORT} \times \text{HEIR}$$

$$\text{Model 7: } \ln h(t) = \text{Model6} + \beta_7 \text{COHORT} \times \text{LIFE}$$

In Model 6, the interaction effects of cohort and heir status are examined to investigate the effects of the stem-family norm in leaving home behaviors. The heir status differences in nest-leaving hazards are examined within each cohort in the model.

Finally, in Model 7, interaction terms of life events and cohorts are included. In the model, conditional splines of life events such as schooling, employment, and marriage are estimated for each cohort simultaneously. In this way, both proximate effects and duration dependent effects of life event variables are estimated for each cohort.

8. Results

8.1 Descriptive statistics

Table 2-a and Table 2-b describe sample characteristics at the time of either event occurrence or censoring by sex and cohort. The trends of nest-leaving by sex and cohort from our data are briefly summarized here. For men, the incidence of nest-leaving is much lower among the 1930s cohort than among subsequent cohorts. This may be due to the social disorder in the late 1940s, caused by the defeat in World War II. Also, the death of an heir son during the war might cause a younger son to stay home to take over the role of the deceased heir. In the 1940s cohorts and younger cohorts, men's proportions which experience leaving the parental home are at similar levels. The timing of nest-leaving is, however, delayed among younger male cohorts. For women, both the incidence levels and timing of nest-leaving are remarkably similar between the 1930s and 1950s cohorts. About 90% of women leave the parental home by the age of 35, and the mean age of nest-leaving is around 21.5 years old. This picture changes, however, in the 1960s cohort. The level of nest-leaving drops 10 percentage points, and the mean age at nest-leaving rises about one year from the preceding cohorts.

Sample characteristics differ to a large extent across cohorts. This is due to the rapid social and demographic changes in the post-war period, as previously mentioned. One of the goals of this study is to examine how these compositional changes across cohorts can explain the trends of nest-leaving in the post-war period. The recent delay in the timing of nest-leaving might have been brought about entirely by the changes in these socio-demographic situations across cohorts. If this is the case, the nature of the nest-leaving behavior does not change much in spite of the delay or low incidence of nest-leaving in the recent cohorts. We will confirm the effects of compositional changes in our nested models by examining how social, demographic, and economic factors explain cohort differences in nest-leaving behaviors.

As shown in Table 2-a and Table 2-b, the patterns of the transition to adulthood also vary across cohorts. As more young adults pursued higher education in the recent cohorts, marriage became later and less frequent. The labor force attachment of women also increased among the recent cohorts. Since nest-leaving mainly occurs for life course reasons in Japan, these changes in the patterns and timing of transitions to other

life events can significantly affect the timing of nest-leaving. We examine how the effects of changing patterns of transitions to adulthood can explain the cohort trends of the nest-leaving hazard, as well as socio-demographic changes.

Table 2-a: Descriptive statistics: Men

Birth Cohort	1930-39			1940-49			1950-59		
	n	mean	sd	n	mean	sd	n	mean	sd
Nest-leaving	553	0.651	0.477	672	0.741	0.438	657	0.785	0.411
Age at Nest-leaving	360	20.91	4.815	498	20.32	4.533	516	20.71	4.211
Enrollment to High Education	553	0.193	0.395	672	0.232	0.423	657	0.388	0.488
First Employment	553	0.814	0.390	672	0.830	0.376	657	0.729	0.445
First Marriage	553	0.448	0.498	672	0.338	0.473	657	0.268	0.443
N of Siblings	553	4.689	2.368	672	3.440	2.138	657	2.301	1.756
GDP Growth Rates *1	7.241	8.067	4.017	7.701	8.617	2.320	7.367	6.276	2.972
	n	%	n of Event	n	%	n of Event	n	%	n of Event
<i>Heir Status</i>									
Heir	146	26.4	71	260	38.7	158	326	49.6	235
Non-heir	191	34.5	152	252	37.5	221	251	38.2	220
Missing	216	39.1	137	160	23.8	119	80	12.2	61
Total	553	100.0	360	672	100.0	498	657	100.0	516
<i>Death of One Parent by Aged 15</i>									
Yes	73	13.2	44	69	10.3	47	26	4.0	18
No	366	66.2	236	498	74.1	366	592	90.1	467
Missing	114	20.6	80	105	15.6	85	39	5.9	31
Total	553	100.0	360	672	100.0	498	657	100.0	516
<i>Region of Origin</i>									
Rural	302	54.6	193	312	46.4	229	269	40.9	209
Town/Small city	131	23.7	86	206	30.7	153	225	34.3	182
Large city	120	21.7	81	154	22.9	116	163	24.8	125
Total	553	100.0	360	672	100.0	498	657	100.0	516
<i>Father's Education</i>									
High	58	10.5	42	67	10.0	61	81	12.3	70
Low/middle	432	78.1	284	511	76.0	370	521	79.3	399
Unknown	63	11.4	34	94	14.0	67	55	8.4	47
Total	553	100.0	360	672	100.0	498	657	100.0	516
<i>Father's Occupation when R was Aged 15</i>									
Managerial Position	94	17.0	66	115	17.1	98	132	20.1	111
Non-Managerial Full-Time Employee	111	20.1	74	196	29.2	150	285	43.4	222
Agriculture, Forestry, or Fishing Industry	205	37.1	127	207	30.8	149	141	21.5	109
Self-employed	94	17.0	66	105	15.6	66	77	11.7	57
Others	49	8.9	27	49	7.3	35	22	3.4	17
Total	553	100.0	360	672	100.0	498	657	100.0	516

Table 2-a: Descriptive statistics: Men (Continued)

Birth Cohort	1960-70			Total		
	n	mean	sd	n	mean	sd
Nest-leaving	691	0.774	0.418	2.573	0.742	0.438
Age at Nest-leaving	535	21.17	4.091	1.909	20.77	4.392
Enrollment to High Education	691	0.415	0.493	2.573	0.313	0.464
First Employment	691	0.713	0.452	2.573	0.770	0.421
First Marriage	691	0.224	0.417	2.573	0.313	0.464
N of Siblings	691	1.496	1.015	2.573	2.896	2.201
GDP Growth Rates *1	7.679	3.528	0.953	29.988	6.606	3.419
	n	%	n of Event	n	%	n of Event
<i>Heir Status</i>						
Heir	464	67.2	347	1.196	46.5	811
Non-heir	179	25.9	147	873	33.9	740
Missing	48	7.0	41	504	19.6	358
Total	691	100.0	535	2.573	100.0	1.909
<i>Death of One Parent by Aged 15</i>						
Yes	26	3.8	16	194	7.5	125
No	651	94.2	508	2.107	81.9	1.577
Missing	14	2.0	11	272	10.6	207
Total	691	100.0	535	2.573	100.0	1.909
<i>Region of Origin</i>						
Rural	188	27.2	142	1.071	41.6	773
Town/Small city	293	42.4	229	855	33.2	650
Large city	210	30.4	164	647	25.2	486
Total	691	100.0	535	2.573	100.0	1.909
<i>Father's Education</i>						
High	125	18.1	106	331	12.9	279
Low/middle	484	70.0	361	1.948	75.7	1.414
Unknown	82	11.9	68	294	11.4	216
Total	691	100.0	535	2.573	100.0	1.909
<i>Father's Occupation when R was Aged 15</i>						
Managerial Position	186	26.9	142	527	20.5	417
Non-Managerial Full-Time Employee	341	49.4	265	933	36.3	711
Agriculture, Forestry, or Fishing Industry	72	10.4	56	625	24.3	441
Self-employed	59	8.5	47	335	13.0	236
Others	33	4.8	25	153	6.0	104
Total	691	100.0	535	2.573	100.0	1.909

*1: Calculated over person-period exposures.

Table 2-b: Descriptive statistics: Women

Birth Cohort	1930-39			1940-49			1950-59		
	n	mean	Sd	n	mean	sd	n	mean	sd
Nest-leaving	521	0.900	0.300	780	0.897	0.304	684	0.901	0.299
Age at Nest-leaving	469	21.73	3.681	700	21.46	4.081	616	21.40	4.073
Enrollment to High Education	521	0.069	0.254	780	0.153	0.360	684	0.279	0.449
First Employment	521	0.616	0.487	780	0.796	0.403	684	0.772	0.420
First Marriage	521	0.624	0.485	780	0.544	0.498	684	0.488	0.500
N of Siblings	521	4.768	2.286	780	3.550	2.123	684	2.392	1.610
GDP Growth Rates *1	5.350	7.577	4.527	8.096	9.113	1.848	7.134	6.464	2.955
	n	%	n of Event	n	%	n of Event	n	%	n of Event
Heir Status									
Heir	24	4.6	13	70	9.0	50	94	13.7	64
Non-heir	274	52.6	259	526	67.4	483	488	71.4	463
Missing	223	42.8	197	184	23.6	167	102	14.9	89
Total	521	100.0	469	780	100.0	700	684	100.0	616
Death of One Parent by Aged 15									
Yes	70	13.4	56	63	8.1	49	31	4.5	24
No	345	66.2	323	591	75.8	543	609	89.0	551
Missing	106	20.4	90	126	16.2	108	44	6.4	41
Total	521	100.0	469	780	100.0	700	684	100.0	616
Region of Origin									
Rural	298	57.2	279	359	46.0	324	294	43.0	268
Town/Small city	125	24.0	106	249	31.9	223	225	32.9	209
Large city	98	18.8	84	172	22.1	153	165	24.1	139
Total	521	100.0	469	780	100.0	700	684	100.0	616
Father's Education									
High	33	6.3	30	94	12.1	87	84	12.3	78
Low/middle	425	81.6	387	580	74.4	517	532	77.8	479
Unknown	63	12.1	52	106	13.6	96	68	9.9	59
Total	521	100.0	469	780	100.0	700	684	100.0	616
Father's Occupation when R was Aged 15									
Managerial Position	94	18.0	90	159	20.4	142	140	20.5	124
Non-Managerial Full-Time Employee	109	20.9	93	224	28.7	202	279	40.8	251
Agriculture, Forestry, or Fishing									
Industry	214	41.1	198	230	29.5	206	153	22.4	142
Self-employed	73	14.0	65	118	15.1	107	75	11.0	65
Others	31	6.0	23	49	6.3	43	37	5.4	34
Total	521	100.0	469	780	100.0	700	684	100.0	616

Table 2-b: Descriptive statistics: Women (Continued)

Birth Cohort	1960-70			Total		
	n	mean	sd	n	mean	sd
Nest-leaving	739	0.800	0.400	2.724	0.872	0.334
Age at Nest-leaving	591	22.36	3.938	2.376	21.72	3.984
Enrollment to High Education	739	0.421	0.494	2.724	0.241	0.428
First Employment	739	0.825	0.380	2.724	0.764	0.425
First Marriage	739	0.479	0.500	2.724	0.528	0.499
N of Siblings	739	1.604	1.009	2.724	2.964	2.126
GDP Growth Rates *1	9.038	3.560	0.920	29.618	6.503	3.422
	n	%	n of Event	n	%	n of Event
<i>Heir Status</i>						
Heir	171	23.1	127	359	13.2	254
Non-heir	524	70.9	424	1.812	66.5	1.629
Missing	44	6.0	40	553	20.3	493
Total	739	100.0	591	2.724	100.0	2.376
<i>Death of One Parent by Aged 15</i>						
Yes	22	3.0	19	186	6.8	148
No	701	94.9	559	2.246	82.5	1.976
Missing	16	2.2	13	292	10.7	252
Total	739	100.0	591	2.724	100.0	2.376
<i>Region of Origin</i>						
Rural	166	22.5	146	1.117	41.0	1.017
Town/Small city	351	47.5	279	950	34.9	817
Large city	222	30.0	166	657	24.1	542
Total	739	100.0	591	2.724	100.0	2.376
<i>Father's Education</i>						
High	155	21.0	118	366	13.4	313
Low/middle	502	67.9	399	2.039	74.9	1.782
Unknown	82	11.1	74	319	11.7	281
Total	739	100.0	591	2.724	100.0	2.376
<i>Father's Occupation When R was Aged 15</i>						
Managerial Position	189	25.6	149	582	21.4	505
Non-Managerial Full-Time Employee	353	47.8	280	965	35.4	826
Agriculture, Forestry, or Fishing Industry	67	9.1	59	664	24.4	605
Self-employed	101	13.7	81	367	13.5	318
Others	29	3.9	22	146	5.4	122
Total	739	100.0	591	2.724	100.0	2.376

*1: Calculated over person-period exposures.

8.2 Model estimations

The results of nested models from Model 1 to Model 5 are displayed in Table 3 and Table 4 for men and women, respectively. For both men and women, the results of Model 6, which is the interaction between heir status and cohorts, are shown in Table 5. Finally, the interactions of life events and cohorts are estimated in Model 7. The results from Model 7 are displayed in Figure 17. We start to interpret the results of men's nested models.

8.2.1 Nested models of men's leaving home

In Table 3, the results of Model 1 show that only men in the 1930s cohort have significantly lower risks of nest-leaving relative to those of the 1940s cohort, assuming the same age patterns of nest-leaving across cohorts. This pattern is generally the same as the incidence rates of nest-leaving found in Table 2-a. Including covariates on the socio-economic status of respondents' family of origin only slightly improves the model fit at 10% levels in Model 2. None of the new covariates has a meaningful effect on the hazards of nest-leaving in Model 2. As a result, the proportional effects of cohort on the baseline hazard are much the same as those of Model 1. Therefore, the transformations of the socio-economic status of family have little explanatory power for the nest-leaving behaviors of men and their cohort changes.

But by adding covariates on demographic factors in Model 3, we have significantly improved the model fit at well below 1%. Respondents with large numbers of siblings, non-heir sons, and who live in a small town, have higher risks of nest-leaving. These results are consistent with previous studies on Japanese nest-leaving (Fukuda 2003, Sawaguchi and Shimazaki 2004). By controlling for demographic factors, the father's education turned out to be positive and statistically significant at a 1% level. The father's education is presumably positively correlated to the son's education. Therefore, if the opportunity to pursue higher education holds equally among siblings and their heir status, a father's higher level of educational attainment would lead to his son pursuing higher education, and thus improves the chances of leaving the parental home among men. To support this interpretation, we have shown that the effect of a father's educational level becomes weaker once we control for respondents' enrollment in higher education in Model 5.

Furthermore, the risk of nest-leaving becomes significantly higher among the 1950s and 1960s cohorts after controlling for demographic factors. Having similar levels of incidence rates of nest-leaving across the cohorts of the 1940s to 1960s actually means that men in the later cohorts have even higher potentials of leaving the

parental home, taking the disadvantageous demographic situations for nest-leaving into account. The result indicates that the recent delay in leaving home among men is as much due to the compositional changes in demographic contexts. This finding is quite different from the previous studies emphasizing young adults' reluctance to leave the parental home as the cause of delays in nest-leaving among recent male cohorts in Japan (Yamada 1999). In contrast to the later cohorts, the coefficient of the 1930s cohort becomes larger in the negative direction. This also suggests that the nest-leaving of the 1930s cohort was unexpectedly low in the given demographic situation.

In Model 4, the five-year moving averages of GDP growth rates are included in the model as a measure of the macroeconomic factor in a given period. GDP growth rates have, however, no effects on either the risks of leaving home or the model fit. Possible reasons for this may lie in the inverse relationship between university enrollment and labor market conditions. The business cycle positively affects the employment of young adults, while it negatively correlates to enrollment in tertiary education (Ohta 2002). Therefore, no matter how the economy has performed, pre-marital nest-leaving might occur at certain levels. Similarly, a study of marriage reveals that high GDP growth rates hinder men's early marriage, while it facilitates later marriage in post-war Japan (Kato 2004). The complicated associations between macroeconomic situations and the transitions to other life events may offset each effect, and result in no significant effects on the risks of leaving home. The inclusion of a macroeconomic variable, however, weakens the statistical significance of the coefficients of the 1950s and the 1960s cohorts. Therefore, some cohort variations in the hazards of leaving home are captured by the period variations of business cycles.

Table 3: Piecewise linear spline models of nest-leaving hazard: Men

	Model 1	Model 2	Model 3	Model 4	Model 5
	b	b	b	b	b
<i>1. Age Spline</i>					
15-15.5	1.257 ***	1.258 ***	1.275 ***	1.277 ***	2.063 ***
15.5-17	-0.696 ***	-0.696 ***	-0.693 ***	-0.694 ***	-0.855 ***
17-18.5	1.664 ***	1.664 ***	1.679 ***	1.679 ***	1.480 ***
18.5-21	-0.711 ***	-0.709 ***	-0.694 ***	-0.694 ***	-0.472 ***
21-30	-0.007	-0.006	-0.002	-0.002	0.021
30-35	-0.191 ***	-0.190 ***	-0.186 ***	-0.186 ***	0.110 *
<i>2. Birth Cohorts (vs 1940-49)</i>					
1930-39	-0.286 ***	-0.295 ***	-0.431 ***	-0.430 ***	-0.396 ***
1950-59	0.067	0.062	0.127 **	0.129 *	0.065
1960-70	0.020	0.006	0.184 ***	0.189 **	0.162 *

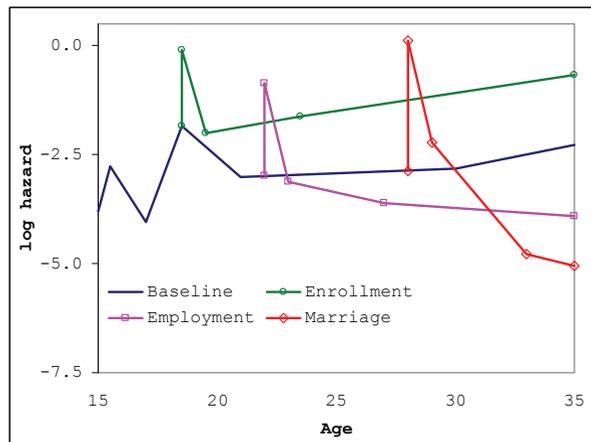
Table 3: Piecewise linear spline models of nest-leaving hazard: Men (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
	b	b	b	b	b
3. Life Event Experiences					
Enrollment to High Education					
Intercept	-	-	-	-	1.738 ***
0-1 year	-	-	-	-	-1.911 ***
1-5 year	-	-	-	-	0.097 **
5 years or more	-	-	-	-	0.079 ***
First Employment					
Intercept	-	-	-	-	2.139 ***
0-1 year	-	-	-	-	-2.272 ***
1-5 year	-	-	-	-	-0.121 ***
5 years or more	-	-	-	-	-0.039 *
First Marriage					
Intercept	-	-	-	-	2.997 ***
0-1 year	-	-	-	-	-2.357 ***
1-5 year	-	-	-	-	-0.640 ***
5 years or more	-	-	-	-	-0.091
4. Demographic Factors					
Heir Status (vs Non-Heir)					
Heir	-	-	-0.425 ***	-0.425 ***	-0.410 ***
Missing	-	-	-0.321 ***	-0.321 ***	-0.323 ***
Sibling Size	-	-	0.071 ***	0.071 ***	0.084 ***
Death of One Parent by Aged 15 (vs No)					
Yes	-	-	-0.026	-0.032	0.037
Missing	-	-	0.173 **	0.173 **	0.143 *
Region of Origin (vs Town or Small City)					
Rural Area	-	-	0.157 ***	0.157 ***	0.169 ***
Large City	-	-	-0.188 ***	-0.186 ***	-0.257 ***
5. Socio-Economic Status of Family of Origin					
Father's Education (vs Low/Middle)					
High	-	0.126	0.234 ***	0.238 ***	0.128 *
Unknown	-	0.051	0.052	0.052	0.107
Father's Occupation When R was Aged 15 (vs Non-Managerial Full-Time Employee)					
Managerial Position	-	0.100	0.111	0.112	0.080
Agriculture, Forestry, or Fishing Industry	-	0.086	-0.112	-0.112	-0.044
Self-employed	-	-0.077	-0.122	-0.122	-0.136 *
Others	-	-0.017	-0.089	-0.087	-0.028
6. Macro Economic Variables					
GDP Growth Rates	-	-	-	0.001	0.001
Constant	-3.210 ***	-3.259 ***	-3.276 ***	-3.285 ***	-3.801 ***
N	2573	2573	2573	2573	2573
Events	1909	1909	1909	1909	1909
ΔChi2	-	11.80 *	155.46 ***	0.02	1619.44 ***
Δd.f.	-	6	7	1	12

Significance: **=10%; ***=5%; ****=1%

Finally, in Model 5, the effects of life event experiences are incorporated as a form of conditional spline into the model. The shapes of conditional splines are graphically displayed in Figure 15 with a baseline hazard spline. As clearly shown in Figure 15, each life event has a strongly positive immediate effect on nest-leaving hazards once they have “kicked in.” These immediate effects of schooling, employment, and marriage have multiplicative effects by a factor of 5.7 ($=\exp(1.738)$), 8.5 ($=\exp(2.139)$), and 20.0 ($=\exp(2.997)$), respectively, on hazards of leaving home at a given age. Therefore, the immediate effect is the strongest in marriage, and is the least prominent in schooling to higher education. For all events, the effects of life events quickly drop within one year of their occurrences. The duration effects of employment and marriage turn out to be negative after one year following their occurrences. The result indicates that men who have not left home after one year of marriage become increasingly likely to remain in the parental home afterwards. It is confirmed that they therefore permanently formed an extended family by having a wife at home. The effect of schooling, however, turns strongly positive one year after its occurrence. Therefore, highly educated men are more likely to leave the parental home even if they did not leave home at the time of schooling.

Figure 15: Overlapping splines of nest-leaving: Men



Inclusion of the life event splines tremendously increases the explanatory power of the model ($\Delta\chi^2=1619.44$, d.f.=12, $p<.001$). The result indicates strong influences of the life event variables on nest-leaving hazards as proximate variables. The conditional splines of life events also partially explain the age effects of leaving home. For example, the baseline hazard at age of 18.5 in Model 5 is actually downsized to a halved level from that of Model 4 ($h(18.5)_{\text{Model 4}} = 0.31$, $h(18.5)_{\text{Model 5}} = 0.16$). While baseline hazards of leaving home are partially affected by the occurrences of these life events, age effects remain relatively strong in nest-leaving among men. This relatively strong age pattern of leaving home suggests that the leaving home process among men is more age-driven than expected from documented reasons for leaving home illustrated in Figure 4.

In spite of the strong effects of life event splines, the effects of demographic factors remained relatively stable. Demographic factors have less effect on the occurrences and timing of the life events, but have independent effects on nest-leaving itself. Of the demographic factors, the effect of being an heir son is one of the strongest among the other covariates. It is a surprising finding that the norm of the traditional stem-family seems to firmly remain in the nest-leaving behavior of the post-war period. The effect of heir status most likely changes, however, by cohort. In Model 6, we will examine the interaction effects of heir status by cohorts.

Life event trajectories also explain some of the differentials in nest-leaving intensities across cohorts. The high nest-leaving intensities of the 1950s cohort disappear in Model 5, most likely due to the relatively high probability of enrollment in higher education within the cohort. Both ends of the cohorts, however, still remain different from the 1940s cohort. In particular, the finding that the 1960s cohort has higher nest-leaving intensities than previous cohorts in Model 4 contradicts the common image of the late leaver in recent cohorts. After controlling for the patterns of transition to adulthood, the 1960s cohort still has a slightly stronger tendency to leave home than other cohorts. The evidence is weak, but high leaving intensities in the latest cohorts suggests that the stability of the pre-marital living arrangements of young men are maintained by high nest-leaving intensities of recent cohorts, despite their disadvantageous demographic conditions.

8.2.2 Nested models of women's leaving home

Next, model estimations from female samples are shown in Table 4. In Model 1, in contrast to men, only the youngest cohort shows a significantly lower risk of nest-leaving compared to other cohorts. This follows the levels of incidence rates of nest-

leaving in Table 2-b, as well. The trend of later and less marriage seems to directly affect the cohort trends of women's nest-leaving.

Inclusion of covariates on the socio-economic status of the family of origin improves the model fit at 1% level in Model 2 for women. The covariates show that women from a family of the primary sector have a higher risk of nest-leaving than women with fathers of non-managerial employees. Also, women for whom the father's education is unknown indicate a higher risk of nest-leaving than women whose fathers have low/middle levels of education. Although the interpretation is speculative, a woman who did not answer the question about her father's education might have a problematic relationship with her father, or be unable to identify her father because of parental divorce or remarriage. Previous studies (Aquilino 1991, Kiernan 1992, Goldscheider and Goldscheider 1998) show that family instability is one of the major factors that facilitate early nest-leaving in western countries.

Table 4: Piecewise linear spline models of nest-leaving hazard: Women

	Model 1	Model 2	Model 3	Model 4	Model 5
	b	b	b	b	b
<i>1. Age Spline</i>					
15-15.5	0.794 *	0.802 *	0.818 *	0.829 *	1.438 ***
15.5-17	-0.672 ***	-0.670 ***	-0.670 ***	-0.676 ***	-0.872 ***
17-18.5	1.261 ***	1.266 ***	1.281 ***	1.278 ***	1.142 ***
18.5-21	-0.137 ***	-0.130 ***	-0.124 ***	-0.121 ***	-0.366 ***
21-30	0.040 ***	0.039 ***	0.052 ***	0.058 ***	0.074 ***
30-35	-0.484 ***	-0.488 ***	-0.485 ***	-0.479 ***	0.054
<i>2. Birth Cohorts (vs 1940-49)</i>					
1930-39	-0.026	-0.072	-0.122 *	-0.092	-0.048
1950-59	0.026	0.063	0.144 ***	0.245 ***	0.241 ***
1960-70	-0.330 ***	-0.255 ***	-0.110 *	0.069	0.139 *
<i>3. Life Event Experiences</i>					
Enrollment to High Education					
intercept	-	-	-	-	2.036 ***
0-1 year	-	-	-	-	-2.499 ***
1-5 year	-	-	-	-	0.198 ***
5 years or more	-	-	-	-	-0.042
First Employment					
intercept	-	-	-	-	1.823 ***
0-1 year	-	-	-	-	-1.847 ***
1-5 year	-	-	-	-	0.087 ***
5 years or more	-	-	-	-	-0.046 **
First Marriage					
intercept	-	-	-	-	3.430 ***
0-1 year	-	-	-	-	-0.985 ***
1-5 year	-	-	-	-	-1.569 ***
5 years or more	-	-	-	-	0.160

Table 4: Piecewise linear spline models of nest-leaving hazard: Women (Continued)

	Model 1	Model 2	Model 3	Model 4	Model 5
	b	b	b	b	b
<i>4. Demographic Factors</i>					
Heir Status (vs Non-Heir)					
Heir	-	-	-0.465 ***	-0.461 ***	-0.435 ***
Missing	-	-	-0.069	-0.067	-0.091 *
Sibling Size	-	-	0.059 ***	0.058 ***	0.070 ***
Death of One Parent by Aged 15 (vs No)					
Yes	-	-	-0.210 **	-0.215 ***	-0.225 ***
Missing	-	-	-0.148 **	-0.154 **	-0.159 ***
Region of Origin (vs Town or Small City)					
Rural Area	-	-	0.277 ***	0.277 ***	0.222 ***
Large City	-	-	-0.253 ***	-0.250 ***	-0.269 ***
<i>5. Socio-Economic Status of Family of Origin</i>					
Father's Education (vs Low/Middle)					
High	-	-0.062	0.060	0.060	-0.020
Unknown	-	0.176 ***	0.194 ***	0.193 ***	0.180 ***
Father's Occupation When R was Aged 15 (vs Non-Manual Full-Time Employee)					
Managerial Position	-	0.067	0.049	0.048	-0.001
Agriculture, Forestry, or Fishing Industry	-	0.355 ***	0.086	0.083	0.009
Self-employed	-	-0.017	-0.064	-0.067	-0.045
Others	-	0.062	-0.003	-0.008	-0.067
<i>6. Macro Economic Variables</i>					
GDP Growth Rates	-	-	-	0.032 ***	0.028 ***
Constant	-3.013 ***	-3.161 ***	-3.314 ***	-3.616 ***	-3.928 ***
N	2724	2724	2724	2724	2724
Events	2376	2376	2376	2376	2376
Δ Chi2	-	54.96 ***	194.42 ***	11.24 ***	3857.56 ***
Δ d.f.	-	6	7	1	12

Significance: **=10%; ***=5%; ****=1%

In Model 3, demographic factors turn out to be strong predictors of nest-leaving for women as well. As among men, such factors as having a larger number of siblings, being a non-heir, and living in a small town facilitate home-leaving among women. Unlike men, however, the death of one parent by age of 15 has a statistically significant negative effect on women's nest-leaving hazards. Women might show more commitment to the family of origin when one of the parents dies, and thus have lower risks of nest-leaving. This finding contradicts Kurosu's (2004) work on leaving home in

two rural villages in 19th century Japan. Note also that the effects of the father's occupation completely disappear in Model 3. Having a father who works in a primary sector should have a strong correlation with factors such as the size of the town of origin.

Once demographic factors are controlled for in Model 3, the nest-leaving intensities of cohorts manifest more distinctively. As shown in the men's models, the log-hazard of the 1930s cohort turned negative and was statistically different from that of the 1940s cohort at the 10% level. By contrast, the log-hazard of nest-leaving in the 1950s cohorts increased substantially. As a result, women in the 1950s cohort were found to have the highest nest-leaving potential, assuming socio-demographic factors remained constant across cohorts. The low hazard of 1960s cohort is also moderated and only slightly lower than that of the 1940s cohort at the 10% level. These changes in cohort intensities of nest-leaving indicate that demographic pressures affect home-leaving among women just as much as among men.

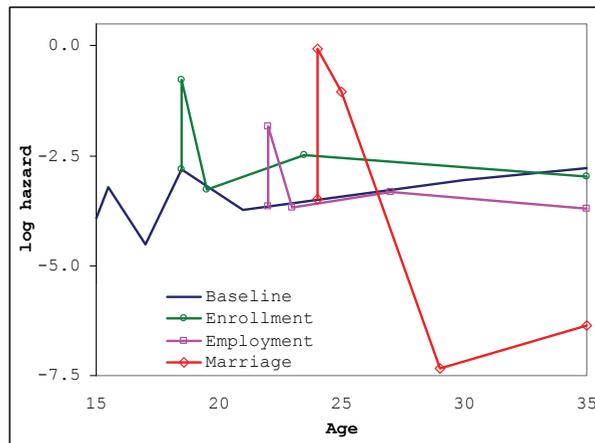
Furthermore, GDP growth rates are newly included into Model 4, and their effect is highly statistically significant. Women tend to leave home when the economy is better. The inclusion of the macroeconomic variable eliminated the relative differences in nest-leaving intensities of the 1930s and the 1960s cohorts, compared to those of the 1940s cohort. The result indicates that the high nest-leaving intensities among women in the 1940s cohort can be in large part explained by demanding labor force conditions in the era of rapid economic growth. Previous studies also show that women marry at younger ages in times of good business cycles in post-war Japan (Kato 2004, Higuchi and Abe 1999). Therefore, the effects of GDP growth rates may partly reflect women's marriage timing in the observation period as well. The 1950s cohorts still, however, display unexplained variations in high hazards of leaving home.

In Model 5, conditional splines of life events are included in the model. The model fit dramatically improves at well below 1% level ($\Delta\chi^2=3857.56$, d.f.=12, $p<.001$). The multiplicative effects of schooling, employment and marriage on nest-leaving hazards in a given age are by a factor of 7.7 ($=\exp(2.036)$), 6.2 ($=\exp(1.823)$), and 30.9 ($=\exp(3.430)$), respectively. The shapes of the conditional splines are shown with the baseline log-hazard of nest-leaving in Figure 16. The immediate effects of life events are the strongest in marriage, as expected. Although the immediate effect of marriage sharply drops within five years, it stays relatively high after one year of marriage. This suggests that women still have a strong tendency to leave home until several months after marriage. However, hazards of leaving home decline so rapidly to the very low levels in the duration of 1-5 years after marriage. The duration effect of marriage becomes positive after five years of marriage, but this repercussion is not statistically significant. Therefore, women who stayed at home after one year of marriage also permanently formed an extended family household by having a husband moving into

her family of origin. But coresidence with a wife's parents within one year of marriage may, unlike coresidence with a husband's parents, be a temporary living arrangement.

The duration effects of both tertiary education and employment turn positive in the duration of 1-5 years after their occurrences. Therefore, acquiring a higher education or entering the labor market slightly increases a chance of home-leaving among women within five years of its occurrence, but generally deters leaving home thereafter. It should also be noted that, unlike among men, the immediate effect of employment is lower than that of schooling in nest-leaving among women. Therefore, among other life events, first employment is the least proximate to the home-leaving of women.

Figure 16: Overlapping splines of nest-leaving: Women



After controlling for effects of life events, the coefficient of the 1960s cohorts becomes moderately positive. The changes in the patterns of transition to adulthood, especially later and less marriage, have a high degree of relevance to the low nest-leaving hazard of the 1960s cohort. The cohort of the 1950s continues to have a high potential for leaving the parental home when all factors are held constant, which may be attributed to their high preference for residential autonomy. Again, these high intensities of leaving home among later cohorts may provide an explanation for the unchanged patterns of the pre-marital living arrangements of young women. Note also that the effects of demographic factors remained relatively unchanged after the inclusion of the life event splines. The same should hold for women as well, as these demographics are closely related to the hazards of nest-leaving, but less so for the occurrences of the life events.

8.2.3 Interaction effects of heir status and birth cohort

In Model 6, interaction terms between birth cohort and heir status are further added to Model 5 for both men and women. Parameter estimates of other covariates are not shown here since they are almost identical to those of Model 5. Instead, Table 5 displays the relative risks of the interaction effects³⁴. In the first three cohorts, heir sons and daughters are about 30% to 50% less likely to leave home than non-heirs in the same cohort. The model indicates, however, that heir sons and heir daughters in the 1960s cohorts are increasingly likely to leave home compared to the preceding cohorts. As a result, for both men and women, the differences of heir and non-heir in nest-leaving hazards are much smaller among the 1960s cohorts, and they are only statistically different at 10% levels.

Table 5: Relative risks of the interaction effects between heir status and birth cohort by sex^o

	Cohort	Heir exp(b)	Non-heir exp(b)	T-test between Heir and Non-heir
Men	1930s	0.34	0.62	***
	1940s	0.53	1	***
	1950s	0.67	1.00	***
	1960s	0.75	0.90	*
Women	1930s	0.44	0.99	***
	1940s	0.65	1	***
	1950s	0.63	1.35	***
	1960s	0.90	1.07	*

Significance: **=10%, ***=5%, ****=1%

^o T-tests are conducted between heir and non-heir in each cohort
Exp(b)s of the reference group are shown as "1" for both sexes

The heir status differences in risks of leaving home reflect the traditional patterns of household formation in a stem-family system (Kurusu 1996a, 1996b, 2004). The results indicate that leaving the parental home was not a common event for heir sons or heir daughters until the 1950s cohorts. They were most likely married and started their family within an extended family that included their parents. It is surprising that these traditional patterns of household formation are still conventionally practiced and observed in those cohorts who grew up in the post-war period. One of the explanations

³⁴ The interaction effects of "heir missing" and birth cohorts are also estimated simultaneously in the models, but not shown here to avoid complications.

for the high prevalence of intergenerational coresidence in Japan is that it served as an alternative strategy for coping with high costs of housing and childrearing (Morgan and Hiroshima 1983). Evidence for this proposition can be found in previous studies, which showed that coresidence with parents is associated with faster parity transitions of married couples (Fukuda 2007). Therefore, extended family living has been fitting well with certain aspects of modern family life in Japan.

However, the heir-based pattern of leaving home changed among the 1960s cohorts. It became much more common for heir sons and heir daughters to leave home at least once in this cohort. The increase in the risks of leaving home among heirs in the 1960s seems to be corresponding to the increase in the nuclear family living arrangements of young married couples (see Figure 2). The high leaving intensities of heir sons and daughters among the recent cohorts may be one explanation for the rise in the share of married couples in nuclear family settings in recent years. This trend is most likely related to the preference for living in an independent household among young married couples (Nishioka 2000). Note, however, that even in the 1960s cohort, the relative risks of home-leaving among heirs are still lower than among non-heirs. For a number of economic reasons, it is probably still rational to some extent for recent cohorts to share a household with older generations. Then if, for space reasons, only one child can stay at home, the tradition of the stem-family provides a justification for the eldest son having priority over other siblings in staying at home. Adherence to tradition could also serve to avoid conflict within siblings. Therefore, leaving home is still not as common for heirs as for non-heirs among the recent cohorts. This finding implies that the traditional stem-family norm is still firmly rooted in contemporary Japanese society, and that the Japanese family system has not yet completely changed from stem-family to conjugal nuclear family, even with regard to home-leaving behaviors.

8.2.4 Interaction effects of life events and birth cohort

Life event variables such as schooling, employment, and marriage are considered as the proximate variables of leaving home in this study. As shown in the previous analyses, these life event variables cause strong upward pressures on the hazards of leaving home. Inclusion of the life event variables also dramatically improves the prediction power of the models. The effects of the life events on nest-leaving hazards are considered to be the product of the occurrences of the life event and the proximity of the life event to leaving home. Because 90% of home-leaving in Japan is for life course reasons such as schooling, employment, and marriage, estimating the proximities between leaving home and these life events is crucial in explaining the timing and

incidences of leaving home. In Model 7, proximate effects of life events are further investigated by sex and cohorts.

Figure 17 displays the estimated proximate effects of life events on nest-leaving hazards with 95% confidence intervals. The effects are estimated as an interaction of the conditional spline of life event and birth cohort. The exponential of an intercept of each conditional spline is interpreted as the proximate effects. They are also interpreted as a multiplicative factor of each event to the hazards of leaving home in a given age. The estimated parameters of Model 7 are shown in Appendix 1-a and Appendix 1-b for men and women, respectively.

The results show that, for men, the proximate effects of schooling increased among the 1950s and 1960s cohorts, while those of employment decreased slightly in the same cohorts. Therefore, schooling to tertiary education is gaining importance relative to employment in predicting the occurrence of premarital home-leaving home in later male cohorts. Note also that the proportion of young adults receiving tertiary education also increased in later cohorts (see Table 2-a). Thus, the determination power of schooling has also been relatively increased among later cohorts by having a larger proportion of cohort members under the influence. This also means that the initial home-leaving becomes less a sign of independence from their parents among younger cohorts than among older cohorts, as being a student generally involves continued financial support from parents. Note, however, employment is still a stronger determinant than schooling in explaining the cohort trends of men's leaving home, because larger proportions of young men experience employment than enrollment in tertiary education, and the proximate effect of employment is still slightly higher than that of schooling.

For women, the proximate effects of schooling fluctuate across cohorts with relatively large standard errors. In the 1930s cohort, the standard error of the intercept is so large that proximity effects are not statistically significant at even 10%. This is because the proportion of women with tertiary education is too small to produce a stable estimate of the proximate effect of schooling among the 1930s female cohort. Despite the slight decline in intercepts in later cohort, the influence of schooling on home-leaving trends should increase in later cohorts, as rapidly increasing proportions of women pursue tertiary education.

The proximate effects of employment show a clear sign of inverted-U shape across female cohorts. The proximity of employment and leaving home is highest among the members of the 1940s and the 1950s cohort, who experienced the rapid economic growth era in 1955-1973 at young adult ages. On the other hand, women in the 1960s cohort are much less likely to leave home at the time of employment. As the proximate effect of schooling is much higher than that of employment among women in the 1960s cohort, schooling to higher education is already a more important event than

employment in predicting the trends of premarital home-leaving in the cohort. As is the case for men, it is true that women's initial home-leaving is, in the latest cohorts, becoming less a sign of independence than in the preceding cohorts, as leaving home increasingly occurs at the time of entering education than at starting employment.

Finally, the proximate effects of marriage are distinctly high in the 1960s cohort for both men and women compared to those of preceding cohorts. The multiplicative factors of marriage increased by factors of up to 33.0 for men and 45.6 for women in the 1960s cohort. Compared to the preceding cohorts, leaving home at the time of marriage is becoming an increasingly common route out of the parental home in this cohort. In addition, the levels of proximate effects are higher than for any other life events. Therefore, the trend towards marriage should strongly affect the final levels and timing of leaving home in each cohort. The recent delay in the age at leaving home should reflect both delays in marriage and a stronger dependence on marriage trends in the home-leaving of recent cohorts. The analyses also show that, for both men and women, the chances of leaving home tend to be more concentrated either at the time of schooling or marriage among recent cohorts. This tendency suggests that the meaning of leaving home has become more diversified in the life courses of recent cohorts in Japan.

Figure 17: Proximate effects of life event experiences on nest-leaving hazards

a. Schooling to tertiary education

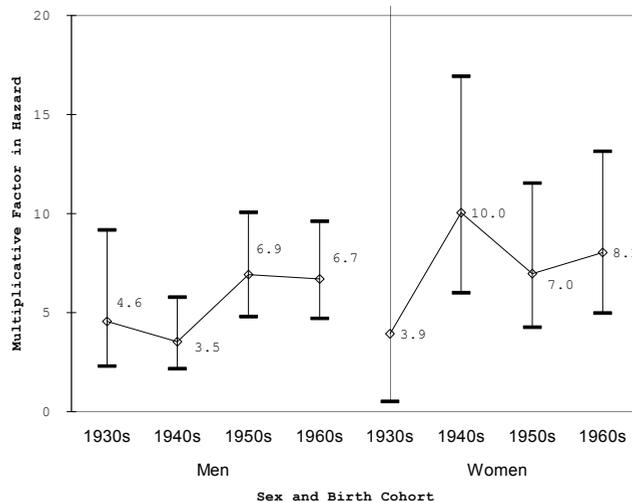
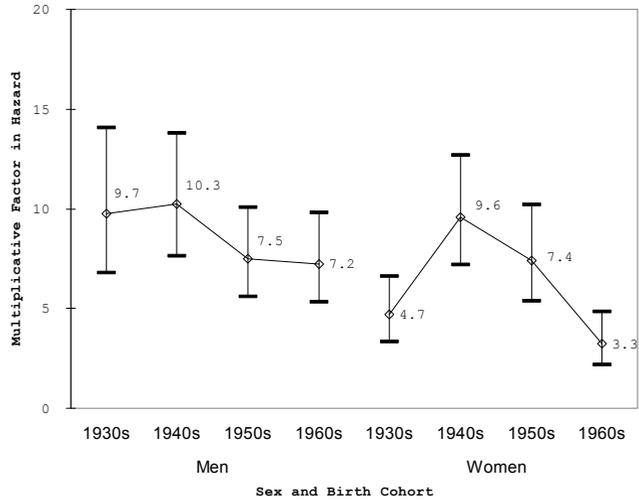
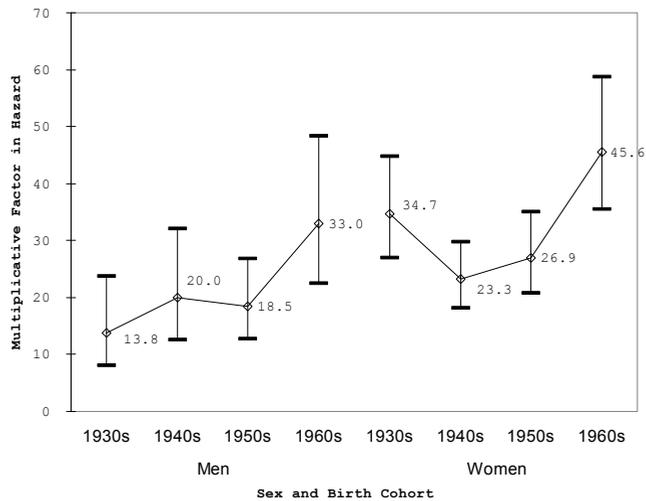


Figure 17: Proximate effects of life event experiences on nest-leaving hazards (Continued)

b. First employment



c. First marriage



9. Summary

This study examined social, economic, and demographic determinants of home-leaving behaviors among young adults in post-war Japan. First, this study closely examined the census data and a national survey on household changes, and clarified trends and particularities in the living arrangements and home-leaving patterns of young adults in post-war Japan. Next, this study investigated determinants of leaving home by using individual-level data of the nationally representative survey of the NFRJ-98. Home-leaving among men and women in the birth cohorts of 1930-1970 were analyzed by event-history analysis. The home-leaving behaviors of 2,573 men and 2,724 women in the period of 1945-1998 were analyzed. The analysis explained the cohort trends of leaving home among both men and women in relationship to the social, demographic, and economic changes occurring simultaneously with the changes in the transition to adulthood. The analyses give an explanation of both changes and stability in young adults' living arrangements in post-war Japan. The summary of the results is as follows.

In the first part of the paper, a close examination of the census data and a national survey on household changes revealed several distinct patterns of living arrangements and home-leaving among young adults in Japan. One of the particularities in the living arrangements of Japanese young adults is that the living arrangements of the never-married have not changed much in the period between 1980 and 2005, while the single adulthood of young adults is increasingly prolonged in recent cohorts (see Figure 1). Among never-married people aged 20-34, around 60% of men and 70% of women live with their parents in Japan. In addition, among those who live apart from their parents, three-quarters of men and two-thirds of women live alone in a single household. Therefore, non-family living arrangements, such as cohabitation, room sharing and group living in college dormitories or military barracks are rather minor forms of living arrangements in Japan.

Second, in contrast to never-married young adults, married young adults have become increasingly likely to form a nuclear household in recent years. This trend is seen as an increase in couples' preferences for privacy over the economic advantages of intergenerational coresidence (Nishioka 2000). As has been shown by several surveys, both the obligations to take care of elderly parents and the expectations of old-age support from children are declining substantially (Ogawa and Retherford 1993, Retherford, Ogawa and Sakamoto 1996, Nishioka 2000). The decline in intergenerational coresidence among newlyweds does not, however, necessarily mean the weakening of family support in Japan. For example, 70% of elderly care was, in 2004, still performed by coresidential family members, in particular by women such as a wife, a daughter, or a daughter-in-law (Ministry of Health, Labor, and Welfare 2005). This is accompanied by the fact that young couples in recent cohorts increasingly

choose to live with their parents, especially with their husband's parents, later in their marriage (Kato 2005). There is also evidence that intergenerational coresidence of parents and married children is being replaced by proximate living in separate households in recent years (Nishioka 2000). Therefore, elderly care in Japan is frequently provided by the elder's children, who live with or close to them. In this sense, leaving home for marriage does not necessarily mean a final farewell of two generations.

Third, there are significant sex differences in the patterns of leaving home. Men leave home before marriage for a job or schooling much more frequently than women (Figure 4). As a result, Japan stands out to be the only country where women leave home later than men (Suzuki 1997, 2001, 2002, 2003). This tendency can be interpreted as illustrating gender differences in opportunity structures in the life courses of young adults. I speculate that men are, under the male bread-winner family norm that prevails in Japan, under greater social pressure than women to pursue higher education and to get a high-status job. Parents also allocate their resources to children's educations and careers according to their expectations. Parents generally encourage their sons more than their daughters to obtain higher socio-economic status via higher education or a better job, followed by the male bread-winner norm. By contrast, parents may even prefer to keep their daughters under their supervision until marriage (Kojima 1990, Kitamura 2001), rather than letting them leave home to pursue education and a career. Nagase (2002) also suspects that, in the 1990s, private companies may have preferred to employ women living with their parents to those living outside the parental home. In fact, the proportions of women who had a full-time job were higher among coresidential women than among non-coresidential women in 1997 (Nagase 2002). For the reasons mentioned above, the baseline hazards of leaving home, enrollment in university education, and the proximity of leaving home and employment, are lower for women than for men. We should also note, however, that the majority of Japanese women may not particularly want residential autonomy before marriage in a given situation. As shown by Iwakami's analysis (1999), having their own income does not affect the living arrangements of never-married women controlling for such factors as education level, occupation and town size. Therefore, living with their parents before marriage seems to be accepted by many Japanese women as a normative behavior even in recent years. Suzuki (2007), however, reports that sex differentials in premarital home-leaving are narrowing in the 1970s cohorts. As sex differentials in progression to university education become smaller (Figure 10), the gender-specific situations relating to education and employment should be slowly changing.

In the second part of the paper, event-history analysis is applied to the NFRJ-98 data to reveal further details of home-leaving behaviors in Japan. The cohort trends in age at leaving home show a U-shaped pattern between the cohorts of 1930-1970 (see

Figure 3). This study examined the determinants of leaving home and attempted to explain the cohort trends of leaving home. First, my analyses show that leaving home occurred late among the 1930s cohort because their transition to adulthood was different from other cohorts, possibly due to the social disorder caused by the defeat in World War II. As shown in descriptive statistics in Table 2-a and Table 2-b, the enrollment in higher education was low in this cohort, and even female employment was not as common as among subsequent cohorts. As a result, the proportions of young adults who stayed at home until marriage were higher than among younger cohorts. The multi-variate analyses show that the delay is not explained by either the socio-economic status of the family or by demographic factors for both men and women. Effects of GDP growth rates indicate, however, that women's home-leaving was to a great extent hindered by unfavorable economic situations until the early 1950s. Moreover, traditional norms of the stem-family are strongest among the 1930s cohort, which is illustrated by the fact that both male and female heirs in this cohort were the least likely to leave home compared to heirs in other cohorts. Non-heir males also had low nest-leaving intensities in the 1930s cohort. It is suspected that some non-heirs had to take over the role of heir due to the death of a male heir in the war.

On the other hand, the delay in leaving home by the recent cohorts is a commonly observed pattern in developed countries (Ravanera, Rajulton, and Burch 1995, Goldscheider and Goldscheider 1994, Mayer and Schwarz 1989, Holdsworth 2000, Billari et al. 2001). First, our analyses show that the recent delay in leaving home is to a large extent explained by the compositional changes in the demographic characteristics of the cohorts. The younger cohorts have smaller numbers of siblings and more likely to live in cities. As a result, their need to leave the parental home tends to be lower than among preceding cohorts at the time of enrollment in higher education or starting employment.

Moreover, norms of the traditional stem-family strongly persist in the home-leaving behaviors of young adults. Oldest sons and oldest daughters without male siblings have lower risks of home-leaving. The interactions of heir status and cohort show that heirs' low intensities of nest-leaving remain strong until the 1950s cohort, but become less significant in the 1960s cohort. By taking heir status into account, the decrease in sibling numbers would affect the nest-leaving of young adults in two distinctive ways: on the one hand, by providing a less-crowded home, and, on the other, by increasing the probability of being an heir among young adults. Although our results imply that the latter effect is losing its power, fertility decline would have strong consequences on the late departure of young adults from the parental home in the stem-family system.

Generally, family characteristics measured by the father's socio-economic status, such as education and occupation, have negligible effects on the risks of leaving home.

Only the higher education of the father tends to facilitate home-leaving among men. Our nested models revealed that the father's education partially affects men's nest-leaving by increasing the son's opportunities to pursue higher education. This effect did not, however, appear for women. Note, however, that the analysis of reason-specific nest-leaving in Japan shows various significant effects of the father's socio-economic status. For example, both the father's higher education and high occupational status are positively correlated to leaving home for schooling for both men and women (Fukuda 2003). Therefore, the socio-economic status of family of origin may be seen to affect the routes out of the home, but their complex effects are offset in the risks of first leaving home.

Surprisingly, GDP growth rates appear to have a strong positive effect on leaving home only for women. Inclusion of GDP growth rates eliminated the high home-leaving intensities in the 1940s female cohort. This implies that premarital home-leaving among women, which is, to some extent, specific to this cohort, can largely be explained by the expansion of employment opportunities in the rapid economic growth era. However, nest-leaving among men is not affected by economic growth, even though men are more likely to leave home for employment than women. One explanation may be that economic growth has complex effects on men's routes out of the parental home. Previous studies show that economic growth rates positively correlate to men's employment and later marriage, while they negatively correlate to men's enrollment in university education and early marriage (Ohta 2002, Kato 2004). Therefore, the effects of economic growth are offset in the analysis of overall occurrences of leaving home. To clarify the effects of macroeconomic contexts on leaving home behaviors, the route-specific analysis of leaving home is ideal. It is, however, important to show that GDP growth rates do not affect the levels and timing of home-leaving of men in Japan in general.

Finally, I examined the effects of life event experiences, such as schooling to tertiary education, first employment, and first marriage, as proximate determinants of leaving home in Japan. These life event variables are included into the model in a form of conditional splines (Lillard and Panis 2003). The conditional splines captured both immediate and duration effects of life event occurrences on the hazard of leaving home. For this flexible feature of conditional splines, inclusion of life event variables dramatically improves the model fit of both sexes. Experience of these life events causes a sharp rise and a dip in the hazards of leaving home. Among all cohorts, marriage has the strongest "kick-in" effects on the risk of leaving home for both sexes. For men and women, the risks of nest-leaving at a given age increase by a factor of 20 and 30, respectively, at the time of marriage. These effects decline sharply, however, within five years of marriage, and are followed by very low overall hazards of leaving home subsequently. Therefore, it is found that young adults who had never left home

after five years of marriage are most likely taking over the family by forming an extended family household. Interactions of marriage splines and birth cohorts revealed that proximate effects of marriage increases substantially in the 1960s cohort for both sexes. This finding is consistent with the recent decline in extended households among newly married couples (Tsuya 1990, Kato 2005, see also Figure 2). As marriage becomes an increasingly common route out of the parental home, recent trends of later and less marriage significantly contribute to the delay in the timing of leaving home in recent cohorts.

With regard to the cohort trends of premarital home-leaving, schooling is becoming more important relative to employment to explain the trends. For men's home-leaving, employment has much stronger proximity effects than schooling among the 1930-1940s cohorts. The proximity effects of schooling, however, increased in later cohorts, and are at similar levels to those of employment in the 1950-1960s cohorts. The increase in proximity effects of schooling occurs together with a sharp rise in enrollment in higher education in younger cohorts. Therefore, the relative importance of schooling is rising, even though employment is still the second-largest factor after marriage in determining the home-leaving intensities of men. For women, schooling and employment have similar proximity effects in the 1930-1950s cohorts. In the 1960s cohort, however, the proximity effect of employment dropped significantly. As a result, the multiplicative factor of schooling, which at 8.1 became much higher than that of employment, which was 3.3 in the 1960s cohort. This difference is large even if one takes into account the differences in the percentages of women enrolled in higher education (47.9%) and employed (82.5%) in the cohort. For women, therefore, schooling is already the second most important factor determining home-leaving intensities.

In conclusion, the delay in leaving home among recent cohorts is largely caused by compositional changes in demographic factors. Both the decline in sibling numbers and the increase in urban residence discourage young adults from leaving home before marriage. The practice of stem-family norms helps to explain the delay to some extent by showing an increasing share among recent cohorts of heirs displaying slightly lower home-leaving intensities than non-heirs. Another major reason for the delay in leaving home is the close linkage between leaving home and marriage in recent cohorts. The results show that leaving home is more strongly linked with marriage in the 1960s cohort for both sexes. Therefore, marriage trends will more strongly determine the final level and timing of home-leaving home in the future.

Despite these findings, this research has several limitations that may be overcome by subsequent research. First, our measure of home-leaving is only the first home-leaving. Previous studies suggest that the leaving home processes in industrialized countries are becoming more prolonged and complex because leaving home becomes a

repeatable event to be experienced multiple times by young adults (Goldscheider and Goldscheider 1994, 1999). In Japan, however, there is almost no information available about how often leaving and returning home are experienced by young adults during the transition to adulthood, how these tendencies change over time, and what the determinants are of returning home and subsequent residential moves³⁵. Moreover, young people leave home for different reasons and, to different household types. Therefore, to understand the meaning and significance of leaving home in individuals' life courses, leaving home needs to be studied as a repeatable event with multi-dimensional measures of timing, reasons, and resulting household structures.

Second, some important variables are omitted in our models due to the limitations of the NFRJ-98 data. For example, although parental divorce and remarriage are known to be crucial factors in determining the timing of leaving home in other countries (Aquilino 1991, Kiernan 1992, Goldscheider and Goldscheider 1998), our results could not include them. As divorce and remarriage are becoming more common in recent years in Japan, the effects of family instability will be more relevant to the trends and implications of leaving home in later cohorts. The mother's work experience is another variable which was regrettably not included in the model. Some evidence shows that the mother's work status affects a young adult's level of comfort at home. Mothers who are housewives tend to provide more household support, such as washing, cleaning, and cooking, to coresidential young adults than working mothers (Shirahase 2001, Raymo and Ono 2004). The study confirms that daughters, particularly those with higher education or high occupational prestige, tend to be more heavily dependent on these forms of assistance from a mother, thus making it difficult for them to leave home or even to marry (Raymo and Ono 2004). Therefore, a mother's work status during a young adult's adolescence may be a unique and potentially important factor explaining the home-leaving intensities of young adults in Japan.

Finally, our analysis could not address regional differences in home-leaving behaviors in post-war Japan. There are strong regional differences in distributions of extended family in Japan. Previous studies (Yamamoto and Itoh 1981, Itoh 1988, 1990, Shimizu 1985, Kojima 1990, Nishioka 2000, Kato 2005) found that, traditionally,

³⁵ An exception is Suzuki (2007), who recently confirmed that returning home is generally increasing in younger cohorts in Japan by using the Fifth National Survey on Household Changes, conducted in 2004 by the NIPSSR. According to his calculations, the probabilities of returning home among ever-left respondents increased from about 35% to 55% for both men and women between the birth cohorts of 1944-49 and 1974-79 (Suzuki 2007). He further analyzes determinants of returning home. Unfortunately, however, due to data limitation, his model could analyze only whether or not young adults who were never-married and living away from parents five years ago were living with their parents at the time of the survey. The results may be different from transition rate models of returning home (DaVanzo and Goldscheider 1990, Goldscheider and Goldscheider 1998) because of inaccurate measures of returning home and severely restricted analytical samples.

extended family is more pronounced in north-eastern Japan, while nuclear family is more common in the south-western part of Japan. As reflected by these differences in household structures, patterns of leaving can also differ by regions. The examination of regional differences in leaving home would be particularly important attempt to confirm and explain the sustainability of historical differences in family systems in contemporary Japan. This, however, would require a large sample survey.

10. Discussions

Although our analysis is limited to the initial departure from the home, our findings also provide a clue to explaining the recent trend in young adults' living arrangements. Once unfavorable demographic situations and the slow transition to marriage are controlled for, nest-leaving intensities in the 1960s cohort are slightly higher than among preceding cohorts. This result suggests that young adults in the 1960s cohorts are actually more frequently opting for leaving the parental home than their predecessors. In fact, young adults in recent cohorts are interested in living apart from their parents. According to Kitamura (2001), about 80% of men and women who were single and lived with their parents at ages 20-39 in 2001 responded that they currently wanted to, or had at some point wanted to, leave the parental home. Those who said they want to leave home now or some point in the future (60% of men and 50% of women) were subsequently asked the reasons why they want to leave home in multiple choices. The main reasons include "it doesn't feel right to be dependent on my parents for so long" (67.4% of "want to leave" men and 59.9% of "want to leave" women), "interested in living alone" (38.0% of "want to leave" men and 48.6% of "want to leave" women) and "want to live freely" (41.1% of "want to leave" men and 44.4% of "want to leave" women). Therefore, more than half of single young adults intend to leave the parental home for the reasons relating to social independence.

Furthermore, young men are under the strong social pressures to leave home in Japan. The *Fiscal Year 2001 National Survey on Lifestyle Preferences* shows that elder people, in particular men, are less favorable to the life style of young adults who live with parents and are dependent on their parents in their daily lives (Cabinet Office 2002). Also among unmarried young adults who live with parents, men tend to show much lower levels of life satisfaction than women in the same situation do (Cabinet Office 2002). Taking these results together, my analysis therefore suggests that, behind the seemingly unchanged living arrangements of young adults, two competing effects might be occurring: one takes the form of demographic trends that encourage young adults to stay at home, and the other is an increase in a preference for residential autonomy among young adults.

The high level of coresidence between young adults and their parents has important implications for family behaviors as well. Value transformations to individualism or non-traditional familism might be hampered by the fact that a majority of young adults live with the parents in Japan. The trends towards individualism and non-traditional family values are highly relevant factors in explaining the prevalence of premarital leaving home and the diversity of living arrangements both in the US and Western European countries (Jong Gierveld et al. 1991, Goldscheider and Goldscheider 1999, Lesthaeghe and Moors 2000). In fact, previous studies further reveal reciprocal relationships between values and living arrangements of young adults. The experience of living with non-family members affected the values and attitudes of family life of women by reinforcing career orientation, reducing the desired number of children, eroding the attitude towards intergenerational coresidence, and causing a decline in gender traditional family values (Waite, Witsberger, and Goldscheider 1986, Axinn and Barber 1997, Goldscheider and Lawton 1998, Moors 2000). These reciprocal relationships between living arrangements and the changes in values among young adults can be seen as a driving force of the SDT in Western countries. Therefore, the slow progress in the diversification of living arrangements among young adults in Japan and Southern European countries might be due to the tradition of parents-adult child coresidence, which protects young adults against the tides of individualization and secularization.

Finally, what was not analyzed in this article or taken as a given situation are institutional settings, such as high housing costs in Japan. A survey shows that financial reasons are a major obstacle for Japanese young adults wishing to leave the parental home (Kitamura 2001). Setting up a new household is actually very expensive in Japan. For example, housing costs in Japan are very high, especially in or near large cities. Establishing a household also involves considerable costs for durable items such as electrical appliances, furniture, and other items because furnished apartments are rarely available. Furthermore, the security deposit, the traditional monetary gift for the landlord and the housing agent fee can together exceed six months' rent. A portion of this money is non-refundable and must be paid in advance. As room sharing is not common and not favored in Japan, young adults would have to cover all the cost by themselves or with support from their parents. If they work for a company with full benefits or serve as a public servant, sometimes housing subsidies or inexpensive dormitories/apartments will be supplied by the employers. However, the terms and conditions of these subsidies vary significantly across companies since these subsidies are provided as a part of the private welfare to the employees. In general, becoming independent would involve considerable expenses and a significant drop in living standards in a given housing situation in Japan. Since marriage is strongly associated with the economic independence of young adults, especially for men, it seems young

couples are finally achieving residential autonomy at the time of marriage. In sum, living with parents may be a rational strategy for young adults wishing to save money for marriage when leaving home is not necessary. As leaving home at marriage is becoming more common among recent cohorts, marriage situations may be becoming more similar to those of Southern European countries, where young couples need a house for their newly married life.

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Appendix 1-a: Piecewise linear spline models of nest-leaving hazard: Interactions of life event experiences and birth cohort, men

1. Age Spline		b		
	15-15.5			2.161 ***
	15.5-17			-0.852 ***
	17-18.5			1.494 ***
	18.5-21			-0.468 ***
	21-30			0.027
	30-35			0.133 **
2. Birth Cohort × Heir Status				
(vs Non-heir in 1940s cohort)				
	1930-39×Heir			-1.017 ***
	1930-39×Non-Heir			-0.471 *** (***)
	1930-39×Heir Missing			-0.696 ***
	1940-49×Heir			-0.626 ***
	1940-49×Heir Missing			-0.421 ***
	1950-59×Heir			-0.489 *** (***)
	1950-59×Non-Heir			-0.079
	1950-59×Heir Missing			-0.661 ***
	1960-70×Heir			-0.475 *** (*)
	1960-70×Non-Heir			-0.285
	1960-70×Heir Missing			-0.223
3. Birth Cohort × Life Event Experience		Schooling	Employment	Marriage
		b	b	b
(1) Life Event×1930-39				
	intercept	1.520 ***	2.277 ***	2.623 ***
	0-1 year	-1.791 ***	-2.534 ***	-3.254 ***
	1-5 year	0.095	-0.155 **	-0.375 *
	5 years and more	0.127 **	0.039	-0.076
(2) Life Event×1940-49				
	intercept	1.259 ***	2.329 ***	2.997 ***
	0-1 year	-1.752 ***	-2.379 ***	-2.141 ***
	1-5 year	0.062	-0.236 ***	-0.629 ***
	5 years and more	0.186 ***	-0.046	-0.193
(3) Life Event×1950-59				
	intercept	1.934 ***	2.017 ***	2.917 ***
	0-1 year	-1.980 ***	-2.087 ***	-1.384 ***
	1-5 year	0.064	-0.143 **	-1.221 ***
	5 years and more	0.048	-0.080 **	-1.221 ***
(4) Life Event×1960-70				
	intercept	1.901 ***	1.978 ***	3.495 ***
	0-1 year	-1.955 ***	-2.201 ***	-2.677 ***
	1-5 year	0.127	0.009	-0.507 **
	5 years and more	-0.025	-0.063	-0.237
Constant				-3.739 ***
N				2573
Events				1909
χ ²				95.9 ***
d.f.				35

Significance: **=10%; ***=5%; ****=1%.

*1: Asterisks in parentheses show significance levels of the differences in βs of heir and non-heir within the same cohort.

*2: The same covariates as model 6 are included in the model but estimates are not shown in the tables.

Appendix 1-b: Piecewise linear spline models of nest-leaving hazard: Interactions of life event experiences and birth cohort, women

		b		
1. Age Spline				
	15-15.5		1.551 ***	
	15.5-17		-0.891 ***	
	17-18.5		1.160 ***	
	18.5-21		-0.366 ***	
	21-30		0.072 ***	
	30-35		0.060	
2. Birth Cohort × Heir Status				
(vs Non-heir in 1940s cohort)				
	1930-39×Heir		-0.849 ***	
	1930-39×Non-Heir		0.022	(***)
	1930-39×Heir Missing		-0.115	
	1940-49×Heir		-0.397 ***	
	1940-49×Heir Missing		-0.057	
	1950-59×Heir		-0.358 **	
	1950-59×Non-Heir		0.400 ***	(***)
	1950-59×Heir Missing		0.166	
	1960-70×Heir		-0.126	(*)
	1960-70×Non-Heir		0.034	
	1960-70×Heir Missing		0.136	
3. Birth Cohort × Life Event Experience				
		Schooling	Employment	Marriage
		b	b	b
(1) Life Event×1930-39				
	intercept	1.368	1.548 ***	3.547 ***
	0-1 year	-0.919	-1.405 ***	-1.176 ***
	1-5 year	-0.073	-0.008	-1.036 ***
	5 years and more	0.160 *	-0.013	-0.057
(2) Life Event×1940-49				
	intercept	2.307 ***	2.258 ***	3.147 ***
	0-1 year	-2.725 ***	-2.422 ***	-0.551 ***
	1-5 year	0.200 *	0.142 ***	-2.259 ***
	5 years and more	-0.095	0.003	0.216
(3) Life Event×1950-59				
	intercept	1.943 ***	2.000 ***	3.293 ***
	0-1 year	-2.625 ***	-2.236 ***	-0.626 ***
	1-5 year	0.339 ***	0.109 **	-2.028 ***
	5 years and more	-0.121 ***	-0.046	0.393 *
(4) Life Event×1960-70				
	intercept	2.086 ***	1.180 ***	3.819 ***
	0-1 year	-2.463 ***	-0.935 ***	-1.407 ***
	1-5 year	0.069	0.075	-1.342 ***
	5 years and more	0.056	-0.142 ***	0.094
Constant				
			-3.988 ***	
N				
			2724	
Events				
			2376	
ΔChi2				
			104.98 ***	
Δd.f.				
			36	

Significance: **=10%; ***=5%; ****=1%.

*1: Asterisks in parentheses show significance levels of the differences in βs of heir and non-heir within the same cohort.

*2: The same covariates as model 6 are included in the model but estimates are not shown in the tables.