KAZUYASU SAKAMOTO AND YUKINOBU KITAMURA

Marriage Behavior from the Perspective of Intergenerational Relationships

Abstract: *This article examines the changes in marriage behavior, such as nonmarriage and marriage postponement, that lie at the heart of the aging population and low fertility problem. Using the Japanese Panel Survey of Consumers, we conducted a factor analysis on the trends toward marriage postponement and nonmarriage evident from the early 1990s to the early 2000s, when the ever-married rate fell significantly. The results revealed the following. First, among unmarried people living with their parents, the receipt of income from their parents lowers marriage probability. However, this was confirmed only for children of the economic bubble generation whose parents were of the prewar or wartime generation. This suggests that the image of singles depicted by the "parasite single hypothesis" was a*

Kazuyasu Sakamoto is a researcher at the Institute for Research on Household Economics (e-mail: sakamoto@kakeiken.or.jp). Yukinobu Kitamura is a professor at Hitotsubashi University Research Unit for Statistical Analysis in Social Sciences, Institute of Economic Research (e-mail: kitamura@ier.hitu.ac.jp).

temporary phenomenon. Second, among individuals in the generation that came of age after the collapse of the bubble economy, those who work long hours and those who did not have a good first job tend to have lower marriage probability. This is because poor economic conditions since the late 1990s caused the labor demand for young people to decline, and for more nonregular employment patterns to be adopted. Third, an examination of the influence of the father-to-potential-husband income ratio on marriage, a key component of the "transfer of dependency model," showed that regardless of the parents' generation, marriage probability was reduced only in cases where the parents' income is ¥5 million or more.

A historical overview of the Japanese family system shows that families were the primary units of production and economic activity under the prewar industrial structure centered around agriculture and self-employment. However, employment structures changed during the postwar high growth period as the base of economic activities shifted from the family to the company (Tanamura 1998: 26). In this environment, gender divisions dictating that "men go to work while women take care of the family" developed, and families were deeply impacted by companies through the growth of the salaryman working class. In Japanese-style companies, a Japanese management system characterized by lifetime employment and seniority-based pay, and social systems such as the tax system and education system, further strengthened gender role divisions within the family. However, this pattern has changed rapidly since the 1990s. That is, labor is shifting to more knowledge-based tasks, and the trends toward the outsourcing and commercialization of housework have made it possible for women to leave their homes and expand their involvement in society and the workplace. These conditions have inevitably made it possible for more diverse lifestyle patterns and male–female relationships to develop. Marriage is moving away from its role as a public social system and is being reshaped by characteristics of freedom and deregulation as a private agreement between individuals. Furthermore, with the purpose of marriage no longer limited to having children and raising families, the arrangements between husbands and wives and the roles they play have become more diversified.

The total Japanese population began to decline in 2006. The total fertility rate dropped to 1.25 in 2005, and there is no short-term recovery in sight. Nonmarriage and marriage postponement have been shown to be the major factors in fertility rate decline. Marriage is publicly regulated by the Japanese Civil Code, but it is also a very private contract that changes as social norms change. In the 1990s, immediately after the collapse of the bubble economy, marriage norms changed at an unprecedented pace. This article attempts to examine the marriage problems that these changes have caused using panel

data from the 1990s, but also looks at these developments within the context of a broader historical perspective.

A great deal of research has been done in the fields of anthropology, ethnology, and history on marriage systems and the way they have changed throughout history.[1] These studies discuss specific marriage systems, their historical transformations, and regional differences, and draw highly thought-provoking conclusions. Pioneering work on marriage problems by mathematicians and economists include the mathematical matching model of Gale and Shapely (1962) and the economic marriage model of Becker (1973, 1974). In Becker's model, if two economic agents meet and determine that they can gain a greater effect or advantage by forming a new partnership than they had before the partnership, they will marry. If they can gain a greater advantage by forming ties with a different agent, then they will not marry. Gale and Shapley (1962) start with a theory about how men and women decide on the best match-ups when they are looking for partners.[2] These studies take great pains to create algorithms to predict the stability and matching efficiency of marriage partnerships, a field that is experiencing considerable growth. In terms of actual marriage problems, theories have been developed regarding matching stability and equilibrium, regardless of how the spouses were matched, whether through a love marriage or *miai* (an arranged introduction, including introductions by relatives and supervisors) marriage, but research has only begun on dynamic relationships that include the dissolution of the match (divorce) and the possibilities for remarriage. Only very general analyses have been conducted in this area thus far.

In a series of studies, Edlund analyzes the relationship between actual marriage patterns and political behaviors regarding income redistribution, and analyzes cultural anthropological marriage patterns by looking at what kind of marriage patterns make the most active human capital investments in children, or cause the most economic growth (Edlund 2006; Edlund and Korn 2002; Edlund and Lagerlof 2004, 2006a, 2006b; Edlund and Pande 2002). Her economic analyses of women's marriage are unique and very different from Becker's model in that they attempt to create equations for actual marriage patterns as problems related to the transfer of assets between generations or between the sexes. For example, she explains the differences between places like the Middle East, India, prewar China, Africa, and Japan, in which *miai* marriages based on the consent of the couple's parents were prevalent, and among Christians, Jews, and Buddhists, who base love marriages on the consent of the bride and groom, by highlighting the difference between the transfer of assets from parent to child, and the transfer of assets from the groom to the bride. She also attempts to consistently explain that the transfer of assets, that is, the bride price paid by the groom to the bride,

or the dowry, paid by the bride to the groom, is determined in accordance with economic status and social custom. While many countries in the world adhere to systems of monogamy, Edlund also discusses the lack of human capital investments in women and problems related to the status of women in countries where polygamy is practiced, and she continues to conduct highly intriguing research projects on such topics.

That said, the studies by Edlund and others also divide marriage patterns into categories, and too few studies have been conducted on the diversity and heterogeneity of patterns within individual countries. They also discuss the transfer of assets through marriage, but little research has yet been done on the increase in divorce, a key topic of interest recently among American researchers, and its economic consequences.[3]

This article is not intended to cover the broad range of topics spanning marriage to labor, childbirth, inheritance, investment in children's education, and divorce. As mentioned earlier, it strives only to statistically clarify recent changes in certain Japanese marriage patterns, that is, the trends toward nonmarriage and marriage postponement. It is important to note that further analyses of this enormous field of research need to be conducted using complex and diverse data sources.

History of Marriage Systems

Let us begin with an overview of the evolution of legal systems related to marriage in Japan.[4]

In the Edo period, before the Meiji Civil Code was adopted, different standards were applied to the warrior class and the commoner class. While warriors had to submit a petition regarding marriage or adoption to the han or bakufu government, commoners were not under any such restrictions. A divorce, likewise, could be accomplished among the warrior class through a negotiation between both families, while among the commoner class, it was achieved through a document known as a *mikudarihan* [lit., "three and a half lines"]. The rule of inheritance among warriors was that an estate could be allocated based on the wishes of an ancestor. Among commoners with a certain amount of assets or a family business, inheritance was accomplished through a will.

After the Meiji Restoration, when a modern constitution was adopted, a civil code that incorporated issues of family law and property law became necessary. After extensive negotiations, the fourth (Family) and fifth (Inheritance) volumes of the Meiji Civil Code were enacted on July 16, 1898, and a legal system governing all aspects of family life, including marriage and divorce, was completed. This law was centered around the *ie* (traditional family) system

and was based on a system of family succession in which the homeowner, who was the head of the household, governed the family members, and the eldest son was given top priority in the allocation of family assets.[5] The basic unit of society was the *ie*. Marriage was not based on the free choice of the individuals, but was a joining of one *ie* with another, the purpose of which was to ensure the continuation of both. The head of the household also held great authority over matters of marriage, and had the right to approve (or reject) all marriages and adoptions. All the property and decision-making rights of a wife were assumed by her husband, and she usually was not endowed with the right to own or manage property, the right of inheritance, or the right of custody.

The Meiji Civil Code strictly followed the practices of the *ie* system of the warrior class, which comprised no more than 2 percent of the population during the Edo period, and thus does not seem to have been consistent with the practices of the general population.[6]

The postwar Civil Code, which was based on the Japanese Constitution enacted May 3, 1947, tentatively revised the discrepancies between the Meiji Civil Code and the new constitution. It was enacted on January 1, 1948. However, while it was expected to reflect a shift from the *ie*-centered system of the Meiji Civil Code to a more individual-centered system in accordance with Article 24 of the Constitution, which declared respect for the individual and established gender equality, there was not enough time to make significant changes. Thus, only the most minimal revisions were made. Nonetheless, there are clear differences between the Meiji Civil Code and the Civil Code of 1948. Under the latter, a marriage between adults does not require the consent of a guardian, and a couple can take either the husband's or the wife's surname. Even a divorce cannot be finalized without going through a democratic process. Husbands and wives came to be treated equally with regard to the right to own and manage property, the right of inheritance, and the right of custody.[7] However, there is now pressure to revise the Civil Code in light of the rapid social liberalization and diversification that has taken place since the 1990s.[8]

Marriage Behavior

This section looks at some statistical data that show how marriage behavior has changed in response to the legal changes discussed above. First, let us look at Figure 1 as evidence that the *ie* system has largely collapsed under the influence of the Civil Code of 1948.

This figure shows the ratio of love marriages and *miai* marriages by year of marriage as indicated in the Basic Survey of Birth Trends conducted by

Figure 1. **Trends in Love Marriages and *Miai* Marriages**

Ratio of love marriages and *miai* marriages

Year of marriage

Love marriages
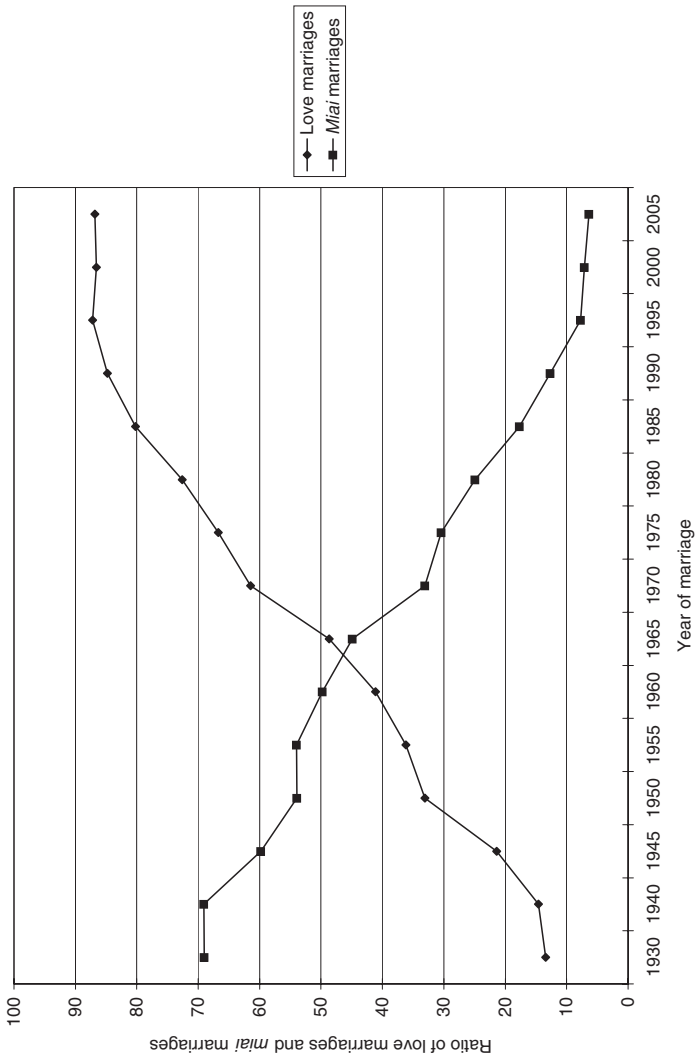
Miai marriages

the National Institute of Population and Social Security Research. It shows that in the 1930s, about 70 percent of marriages were *miai* marriages while just over 10 percent were love marriages. After the war however, this ratio gradually shifted, until the proportions flipped around 1965. In 2005, 90 percent of marriages were love marriages, while *miai* marriages had fallen to 10 percent.[9]

This clearly shows that the prewar notion of marriage as a contract between families has gradually eroded. In addition, the "Sexy Marriage Trend Survey" conducted by Recruit (2005) shows that wedding ceremonies themselves are also changing significantly.[10]

Another important finding is that the use of matchmakers has fallen from 63.9 percent (in 1994) to 1.3 percent (in 2005). In the prewar era, the matchmaker played a very important role as the social guarantor of the couple (Yuzawa 2005: 53). The declining importance of the matchmaker today reveals a new view of marriage as a freely chosen partnership between individuals, and a rapid decline in the notion that a marriage requires some kind of recognition by society or the workplace. The departure from one's parents' house after marriage has led to a forfeiture of the right of inheritance, and also has eliminated the need to perform a major transfer of assets at the time of marriage. As a result, the betrothal gift that represents a transfer of assets from the groom to the bride, and the dowry that represents a transfer from the bride's father to the groom have largely been done away with or the amounts greatly reduced. The ratio of marriages in which a bride price was paid dropped from 48.7 percent (in 1995) to 27.8 percent (in 2005), while more than half of couples have chosen to forgo the tradition of paying a bride price in either cash or gifts.

Figure 2 shows the trends in the ever-married ratio, by age. Since 1990, the ever-married ratio has fallen sharply among women age twenty-five to twenty-nine, men age thirty to thirty-four, and men age thirty-five to thirty-nine. This is viewed as an indicator of marriage postponement. That is, in 2000, among the population age twenty-five to twenty-nine, 30 percent of men and 46 percent of women were married, meaning that the remaining 70 percent of men and 54 percent of women were still single. At the age of thirty to thirty-four, 57 percent of men and 73 percent of women were married, while the remaining 43 percent of men and 27 percent of women were single. The fact that 91 percent of both men and women in these age groups were married in 1980 shows how far the trends toward nonmarriage and marriage postponement have progressed over the past twenty years. Table 1 defines an individual who is unmarried at the age of fifty as never-married, and calculates the never-married rates from 1920 to 2000. According to this table, the never-married rate has increased since 1990, as has the age at first

Figure 2. **Trends in the Ratio of Ever-Married People** (1980–2000)
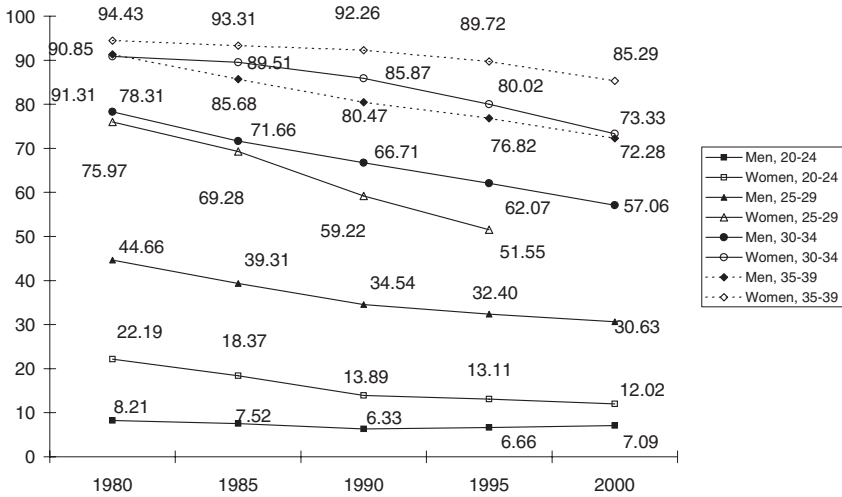
Source: Longitudinal data from the National Census, www.stat.go.jp/data/kokusei/2000/kako/danjo/zuhyou/da04.xls.

marriage. As of 2000, the never-married rate among men was 12.6 percent. Given that this rate was about 1.7 percent up until 1970, this development clearly speaks to significant structural changes that have taken place in the marriage market over the past several decades.

Past trends indicate that single individuals are very likely to coreside with their parents. Table 2 shows the ratio of unmarried people co-residing with their parents, by age, as calculated from the annual Basic Surveys of Birth Trends. The ratio increased among men from the eleventh to the twelfth survey, but then remained level between the twelfth and thirteenth surveys. Among women, the trends vary slightly by age. While the rate of residence among those age eighteen to nineteen has decreased slightly, it has increased among those age thirty to thirty-four. Regardless, however, more than 70 percent of unmarried people coreside with their parents. Table 3 shows the rate of coresidence with parents by employment status.

Among men, about 80 percent of unmarried "part-time workers," "self-employed or family business workers," and "unemployed, homemakers," co-reside their parents, while only 60 percent of unmarried "regular (full-time, permanent) employees " or "students" coreside with their parents. Among women (if students are excluded) there is little difference in coresidence trends between people in different types of employment, but the ratio is higher

Table 1

Ratio of Never-Married Population and Singulate Mean Age at First Marriage (SMAM), by Gender

	Male	Female	Ratio of never-married (%)	SMAM (age)
1920	2.17	25.02	1.80	21.16
1925	1.72	25.09	1.61	21.18
1930	1.68	25.77	1.48	21.83
1935	1.65	26.38	1.44	22.51
1940	1.75	27.19	1.47	23.33
1950	1.46	26.21	1.35	23.60
1955	1.18	27.04	1.46	24.68
1960	1.26	27.44	1.87	24.96
1965	1.50	27.42	2.52	24.82
1970	1.70	27.47	3.33	24.65
1975	2.12	27.65	4.32	24.48
1980	2.60	28.67	4.45	25.11
1985	3.89	29.57	4.32	25.84
1990	5.57	30.35	4.33	26.87
1995	8.99	30.68	5.10	27.69
2000	12.57	30.81	5.82	28.58

Source: "Population Statistics 2005," National Institute of Population and Social Security Research.

among "unemployed, homemakers" and "part-time workers" and lower among "regular employees" and "self-employed or family business workers."[11]

Changes Since the 1990s

The trends in nonmarriage and marriage postponement became really noticeable starting in the 1980s. As is shown in Figure 2, the ever-married rate fell sharply among those age twenty-five to thirty-nine over the twenty years from 1980 to 2000, particularly among women age twenty-five to twenty-nine (down 30.01 points), men age thirty to thirty-four (down 21.25 points), and women age thirty to thirty-four (down 17.52 points).

A well-known hypothesis attempting to explain this trend in nonmarriage and marriage postponement was the "parasite single hypothesis" developed by sociologist Masahiro Yamada (1999). According to this hypothesis, children

Table 2

Ratio of Unmarried People Living with Their Parents by Year of Survey and Age (%)

Age	Eighth survey (1982)	Ninth survey (1987)	Tenth survey (1992)	Eleventh survey (1997)	Twelfth survey (2002)	Thirteenth survey (2005)
Men						
18–19	71.7	75.2	65.6	66.0	59.8	70.1
20–24	68.2	68.5	59.7	66.7	72.4	72.0
25–29	71.5	69.9	63.5	64.3	70.3	69.0
30–34	67.3	71.4	68.0	63.9	72.4	69.9
Total (18–34)	69.6	70.4	62.8	65.5	69.5	70.3
For reference (35–39)	—	—	63.5	64.1	73.4	68.7
Women						
18–19	83.7	80.1	73.2	70.5	71.6	65.1
20–24	84.7	77.6	78.2	73.8	77.0	76.5
25–29	79.4	78.9	80.0	79.4	78.5	81.8
30–34	64.8	70.0	69.2	72.1	76.1	79.3
Total (18–34)	82.0	78.0	76.7	74.5	76.4	76.4
For reference (35–39)	—	—	65.2	69.1	74.4	70.2
18–19						

Source: "Basic Survey of Birth Trends: National Survey of Marriage and Childbirth" (for each year), National Institute of Population and Social Security Research.

Table 3

Ratio of Unmarried People Living with Their Parents by Year of Survey and Employment Status (%)

Age	Eighth survey (1982)	Ninth survey (1987)	Tenth survey (1992)	Eleventh survey (1997)	Twelfth survey (2002)	Thirteenth survey (2005)
Men						
Employment status						
Full-time employee	71.1	69.8	67.4	64.8	72.3	66.9
Self-employed, family business worker	88.7	88.5	85.1	81.8	79.1	81.4
Temporary agency worker	—	—	—	—	67.1	75.3
Part-time worker	64.6	77.9	71.6	75.3	80.1	80.0
Unemployed, homemaker	82.8	87.6	90.8	86.9	85.0	84.6
Student	56.4	63.6	46.5	53.3	50.9	63.9
Total (18–34)	69.6	70.4	62.8	65.5	69.5	70.3
Women						
Employment status						
Full-time employee	81.7	80.4	77.4	78.5	77.9	79.5
Self-employed, family business worker	86.2	78.8	82.5	78.6	73.3	79.6
Temporary agency worker	—	—	—	—	84.6	83.1
Part-time worker	87.2	84.2	85.4	77.1	83.0	87.7
Unemployed, homemaker	88.7	90.3	93.3	86.4	85.2	89.4
Student	78.0	64.9	68.6	58.9	63.9	58.8
Total (18–34)	82.0	78.0	76.7	74.5	76.4	76.4

Source: "Basic Survey of Birth Trends: National Survey of Marriage and Childbirth" (for each year), National Institute of Population and Social Security Research.

who can enjoy a carefree lifestyle by saving the money they would otherwise spend on rent and utilities, and spending it instead on their own entertainment and transportation costs, and who also can rely on their mothers to do their housework have little incentive to become independent of their parents, making them less likely to choose to leave home to get married.

However, in conjunction with the economic recession that spanned the late 1990s to the early 2000s, the demand for young labor declined, nonregular employment patterns increased, and conditions facing unmarried individuals living with their parents changed. Some unmarried individuals were not "parasites," but remained living at home because it was economically impossible to move out on their own. Even if they were able to find a job, young workers found themselves facing heavier workloads under new-hire restrictions (Genda 2001), leaving them little free time to spend with a romantic partner. This made it unlikely that their relationships would ever develop to the point of marriage.

Previous studies of unmarried people have focused on those who are living with their parents. Similarly, this article will focus on the marriage selection behaviors of unmarried people living with their parents.

The following analysis uses thirteen years (1993–2005) of data from the Japanese Panel Survey of Consumers (hereafter, the Panel Survey) conducted by the Institute for Research on Household Economics.

The sample used to actually estimate the marriage selection coefficient is made up of women age twenty-four and older who were unmarried and still living with their parents up to the year prior to the year in which the survey was conducted.[12]

Model

Spousal selection theories in economics incorporate search theory (Mortensen 1988). According to the general search theory used in labor economics, each job seeker has a certain reservation wage. Only if the wage offered by an employer exceeds that wage will the job seeker end their job search and go to work for that employer. This theory is applied to the search for a life partner in the marriage market as shown below (Ermisch 2003).

Here, the probability of receiving a marriage proposal from a member of the opposite sex is α_f (let us suppose that a man is proposing to a woman). The utility that arises from accepting that offer, namely, the woman's compatibility with the suitor, is defined as x.[13]

Thus, the expected discounted lifetime utility of a woman (already married) who has accepted a marriage proposal x is $W_f(x)$.

$$W_f(x) = [x + \delta V_f + (1 - \delta)W_f(x)] / (1 + r) \tag{1}$$

The term δ is the probability that the couple will divorce, V_f is the expected discounted lifetime utility (value when single), and r is the woman's own discount rate. The term δV_f in the numerator of equation (1) is the utility derived by the individual from getting divorced and becoming single again, and $(1-\delta)W_f(x)$ is the utility derived by the individual from staying married (not getting divorced).[14]

Also, the expected discounted lifetime utility of an unmarried (single) woman is calculated as follows:

$$V_f = [b_f + (1 - \alpha_f)V_f + \alpha_f E_f \max\{V_f, W_f(x)\}] / (1 + r) \tag{2}$$

$$R_f = rV_f = b_f + \alpha_f [E_f \max\{V_f, W_f(x)\} - V_f] \tag{3}$$

The b_f in the first term of equation (2) is the utility derived from being single, the $E_f \max\{V_f, W_f(x)\}$ in the third term shows that one selects the larger of either the expected utility of being single (V_f) or the expected utility of getting married and being a wife (W_f). In equation (3), which is a reconfiguration of equation (2), the flow value (R_f) from the marriage partner search is a combination of the flow value of being single and the expected utility of the optimal search strategy (rV_f). If in equation (3), $W_f(x)$ is replaced with $[x + \delta V_f] / (r + \delta)$ and R_f is replaced with rV_f, then:

$$R_f = b_f + \alpha_f [E_f \max\{R_f, x\} - R_f] / (r + \delta) \tag{4}$$

Here, the optimal search strategy is conducted based on the reservation payoff. Only if $x \geq R_f$ will the marriage proposal be accepted. In all other cases it will be rejected. This can be rewritten as:

$$R_f = b_f + \alpha^f / (r + \delta) \,_{Rf}\!\int \infty\, (x - R_f)dF_f(x) \tag{5}$$

The sign conditions of the variables are as follows:

$$\partial R / \partial b_f > 0, \partial R / \partial \alpha_f > 0, \partial R / \partial x > 0, \partial R / \partial x > 0 \tag{6}$$

The probability of a single woman getting married can be expressed as the marriage hazard ratio shown below:[15]

$$\theta_f = \alpha_f [1 - F_f(R_f)] \tag{7}$$

$$\partial \theta / \partial b_f < 0, \partial R / \partial \alpha_f > 0, \partial \theta / \partial x < 0, \partial \theta / \partial x < 0 \tag{8}$$

Hypotheses

Effects of Income Transfers From Parents

Income transfers from one's parents in the form of an allowance or spending money distributions makes it possible for a single individual to live a rich

consumer lifestyle and raises the standard of living (b_f) of the single life. According to the parasite single theory, this makes single people less willing to marry.

However, the issue is not so simple. It is essential to pay attention to the differences in the effects of transfers from parents resulting from differences in the generations of both the parents and children. As was pointed out by Kitamura and Sakamoto (2004), if we carefully examine the generation that is said to produce "parasite singles" or "young adults" as proposed by Miyamoto, Iwakami, and Yamada (1997), we find that they were born in the 1960s, were in their mid-twenties during the bubble period that followed 1985, and were of a generation that never had problems finding a job (the bubble generation). Many of their parents were of the prewar and wartime generation born in 1920 to the early 1940s. This generation had stable employment during the high economic growth period, and many retired during the bubble period with large retirement funds.

By contrast, the generation of people who were in their twenties in 1990 and later experienced the effects of deflation, went through a very rough period for college-graduate job seekers. Their parents were in the baby-boomer generation born between the late 1940s and 1950s, experienced the corporate restructuring and bankruptcies that occurred during the Heisei deflation period of the 1990s, and were unable to attain the level of wages and retirement funds that the prewar and wartime generation enjoyed. A survey conducted by the Cabinet Office showed that unmarried children co-residing with parents in this generation are not wealthy, and do not enjoy very high standards of consumption compared with those who live apart from their parents. The bubble period produced an image of the stylish parasite single, but today almost 80 percent of those who live with their parents do so out of necessity, citing such reasons as "I do not have the confidence to live on my own" and "I have to save enough money to move out" (Cabinet Office 2003: 121).

This article divides parents into the "prewar and wartime generation" (born in 1944 or earlier) and the "postwar generation" (born in 1945 or later), and divides children into the "bubble generation" (born 1959–69) and the "postbubble generation" (born in 1970 or later, see Table 4). These classifications are then used to examine differences based on income transfers from parents, relative income ratios, and the effects of the individual's first job. Previous studies have suggested that income transfers from parents tend to have the largest impact on the probability of marriage selection when the parents are of the prewar or wartime generation and the children are of the bubble generation.

Table 4

Individual's Generation and Parents' Generation (no. of people × year)

	Parents		
	Prewar generation (born through 1944)	Postwar generation (born 1945 or later)	Total
Children			
bubble generation (born 1959–69)	2,424	335	2,759
postbubble generation (born 1970 or later)	49	791	840
Total	2,473	1,126	3,599

Effects of Long Work Hours

Under the revised Labor Standards Law adopted in 1988 (which reduced the standard work week from forty-eight to forty-four hours), labor hours have steadily decreased. The exemption period for small and medium-size businesses ended in 1997, and in the same year new revisions led to the adoption of a forty-hour work week. In addition, the decrease in demand caused by the prolonged recession also led to a decrease in work hours. Genda (2001: 131–38) used data from the Employment Status Surveys from 1987 to 1997 (Ministry of Internal Affairs and Communications Statistics Bureau) to show that there were significant differences in the decrease in labor hours depending on the worker's age. He showed that the ratio of those in the younger age groups (twenties and thirties) working long hours was not declining, that hiring was being constrained by the recession, and thus that the work burden on the younger generation was actually increasing.

The 2002 data also showed that among those working 250 or more days per year, the proportion of those working more than sixty hours per week was higher than in 1987 among those in their twenties and about the same as 1987 among those in their thirties (Figure 3).

The increase in work hours among the younger generation is directly related to a decrease in free time, leaving little time for pursuing hobbies or entertainment, or for developing relationships. The reason that "work-derived marriages" became so popular is that people only had time to meet marriage partners while at work. However, now that the guarantee of lifetime

Figure 3. **Ratio of Those Working More Than 250 Days Per Year Who Work 60 Hours or More Per Week**
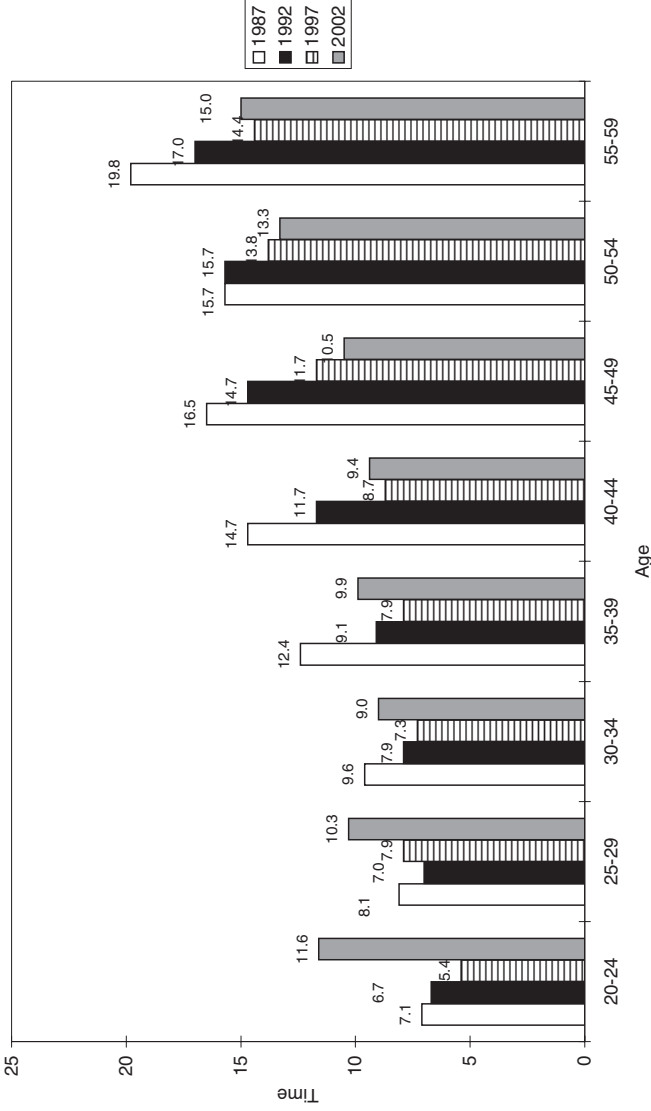
Source: "Employment Status Surveys," Statistics Bureau, Ministry of Internal Affairs and Communications.

employment has been eroded, the sense of belonging to one's company has weakened, companies are expecting their female employees to engage in more substantive work, and couples are having to meet outside the workplace (Iwasawa and Mita 2005). The decrease in free time and the stagnation of work-derived marriages are decreasing the probability of meeting someone of the opposite sex (α_f).[16]

The generational differences in work hours on marriage probability are considerable. Employment had a significant impact on marriage among those in the postbubble generation who were in their twenties and thirties during the late 1990s to 2000s, when their works hours increased.

This article creates a dummy variable representing long work hours to measure the effects of working long hours (individuals who work 250 days or more per year and work sixty hours per week = 1, others = 0) on marriage probability.

Effects of the Relative Income Ratio

As suggested by the Easterlin hypothesis (1966), family formation behavior (marriage, childbearing) is regulated by the father's earning capacity. When individuals are raised (as young people) with a higher economic standard of living (b_f), they will have a higher reservation level in their choice to marry and this will have a negative impact on their marriage and childbearing activities (when they perceive the standard of living when married to a potential spouse to be lower than that of living at home with their parents). This is the basic tenet of the parasite single hypothesis.[17]

Thus, Ogawa (2002) defines marriage for a woman living with her parents "as a transfer of dependency from her father to her husband," and calls this the "transfer of dependency model."

We examined the correlation between the ratio of wages of the father's age group to the wages of the potential husband's age group, and marriage probability by prefecture using the National Census and Basic Statistical Survey of Wage Structures. We found that the age disparity between a woman's father's age group and her potential husband's age group has an effect on marriage probability among women in their twenties, but does not have the same effect among women in their thirties.[18]

Here we used data on married women to estimate the husband's income coefficient (using attributes of the wife as the independent variables, such as her age, educational background and size of her city of residence). Using that equation, we sought the proxy variable for the income of a potential unmarried husband.[19] Here we used information on the income of actually married husbands for the sample that was married during the survey period. Using

this variable, we examined whether the ratio of the "income of a co-resident parent to the (estimated) income of a potential husband" has an effect on marriage probability. Ideally we would have used income information from men who are dating, but we used a proxy variable because the Panel Survey does not contain such information.

Effects of the First Job

This section considers the effects of the first job on marriage probability. Previous studies by Sakai and Higuchi (2005) and Sakamoto (2006) have shown that the first job has a significant effect on marriage. During the prolonged recession of the 1990s, the unemployment rate rose not only among seniors but also among young people. It became more difficult to find work and the number of so-called freeters (freelance part-timers, or those making a living from part-time work) who were unable to find a job after graduating from a university increased. If those who were unable to find stable employment while young, such as freeters, continue to remain unable to make an adequate living, they are less likely to be chosen as marriage partners (Sakai and Higuchi 2005: 31). When choosing a marriage partner, a woman will often pick someone of equal status or of (only slightly) higher status, having few opportunities to meet a man with much higher earning power. In this way, the marriage market is likely to become segmented.[20]

Sakai and Higuchi (2005) conducted a survival analysis related to marriage using the Keio Household Panel Survey, and found that those who have spent time as freeters tend to marry later than regular employees. An analysis conducted by Shirahase (2005) using the National Survey of Social Status and Social Mobility showed that nonmarriage rates in 1995 had risen (since 1985) among both male and female low-income earners (those earning less than ¥1.5 million or ¥1.5–2.5 million).

Here we use four employment categories based on an individual's first job as the independent variable: (1) self-employed or family worker in the agricultural, forestry, or farming industries, (2) regular employment, at a company with 500 or more employees, or a government agency (3) regular employment, at a company with fewer than 500 employees, and (4) nonregular employment (reference group).

Data

This section uses thirteen years (1993–2005) of data from the Panel Survey conducted by the Institute for Research on Household Economics. The Panel Survey respondents examined here are comprised of women twenty-four to

thirty-four years old (when the survey was first launched, Cohort A), as well as by women twenty-four to twenty-seven years old in 1997 (Cohort B), and women twenty-four to twenty-nine years old in 2003 (Cohort C) (see Table 5). This survey is particularly useful because it observes lifestyle changes among people in their twenties and thirties, the prime ages for marriage and childbirth. As mentioned above, the ever-married rate among women in their twenties and thirties over the course of this decade (1990–2000) was 13.25 percent for those age twenty-five to twenty-nine and 12.54 percent for those age thirty to thirty-four, both significantly lower than for other age groups. The Panel Survey is thus an ideal tool for studying the recent phenomenon of marriage postponement.

Calculation Methods

The difference between the methods used to calculate estimates in this article and those used by Sakamoto (2006) lies in the way respondents were selected, based on whether they lived with their parents before marriage. Sakamoto (2006) examined only unmarried individuals who lived with their parents because the rate of unmarried individuals living with their parents, according to the Panel Survey, was so high (80.87 percent). However, to examine the endogeneity of the choice to co-reside with one's parents or to get married, this article uses a pooled sample selection in a two-stage probit model. In the first stage, it examines whether the individual co-resides with his/her parents. In the second, it looks only at those unmarried individuals who co-reside with their parents, and examines whether they choose to marry.

First, in the selection equation (here the co-residence selection coefficient), the probit model is used to estimate the characteristics of a woman who co-resides with her parents before marriage (*CoResi*). We imitate Iwakami (1999) in examining the economic capabilities of the parents with whom the individual resides (*income, assets, ParentEco*) using the following as independent variables: the mother's provision of housekeeping services for the respondent (*HouseKeep*), the respondent's number of siblings, and the size of the city in which the respondent resides.[21]

In the behavior equation (here, the marriage selection coefficient), in which the analysis is limited to the respondents that lived with their parents before marriage, the choice of whether or not to marry (*Marry*) is estimated by applying the probit model to the characteristics of the unmarried period $(t-1)$. The independent variables used for this purpose include the income transfer from one's parents (*Trans*), the individual's first job type (*FirstJob*), long work hours (*Longtime*), and the relative income of the parents and the potential husband (*Relative*), as well as the basic attributes of the individual, including age, income, and educational background (*x*).[22]

Table 5

Basic Statistics

	No. of respondents	Average	Standard deviation	Minimum value	Maximum value
Marriage selection dummy	2,935	0.09813	0.29754	0	1
Parents: postwar generation	2,885	0.20173	0.40136	0	1
Children: post-bubble	2,940	0.48810	0.49994	0	1
Individual's age $(t-1)$	2,940	29.42517	3.95701	24	43
Long work hours dummy	2,940	0.01224	0.11000	0	1
Individual's annual income	2,930	284.04220	150.52030	0	1137.056
Junior high school graduation	2,940	0.01122	0.10537	0	1
[High school graduation]	2,940	0.30408	0.46010	0	1
Vocational school or technical college graduation	2940	0.18503	0.38839	0	1
Junior college or special training college graduation	2940	0.26020	0.43882	0	1
University or graduate school graduation	2940	0.23946	0.42682	0	1
Parent's annual income/potential husband's annual income	2335	1.52196	1.35122	0	16.23161
Movement away from parents dummy $(t-1)$	2939	0.20687	0.40513	0	1
Number of friends $(t-1)$	2,912	21.04533	20.20935	0	349
First job (self-employed or family worker in the agricultural, forestry, or farming industries)	2,940	0.00442	0.06636	0	1

(continued)

2

2

2

Table 5 (*continued*)

	No. of respondents	Average	Standard deviation	Minimum value	Maximum value
First job (regular employment at a company with 500 or more employees or a government agency)	2,940	0.11803	0.32270	0	1
First job (regular employment at a company with fewer than 500 employees)	2,940	0.15374	0.36076	0	1
First job (nonregular employment)	2,940	0.11259	0.31614	0	1
Living with parents dummy ($t-1$)	2,940	0.79422	0.40434	0	1
Living in a large city ($t-1$)	2,940	0.34320	0.47486	0	1
Living in other city ($t-1$)	2,940	0.53878	0.49858	0	1
Living in a town or village ($t-1$)	2,940	0.11735	0.32189	0	1
Parents' income (less than ¥5 million, $t-1$)	2,940	0.37313	0.48372	0	1
Parents' income (¥5 million up to ¥10 million, $t-1$)	2,940	0.23673	0.42515	0	1
Parents' income (¥10 million or more, $t-1$)	2,940	0.10136	0.30186	0	1
Number of siblings	2,940	1.35340	0.77732	0	5
Mother was a full-time homemaker	2,940	0.34898	0.47673	0	1
Home is owned ($t-1$)	2,940	0.87857	0.32668	0	1
Cohort A	2,940	0.51190	0.49994	0	1
Cohort B	2,940	0.30884	0.46210	0	1
Cohort C	2,940	0.17925	0.38363	0	1

2

Table 5 (*continued*)

	No. of respondents	Average	Standard deviation	Minimum value	Maximum value
First job (regular employment at a company with 500 or more employees or a government agency)	2,940	0.11803	0.32270	0	1
First job (regular employment at a company with fewer than 500 employees)	2,940	0.15374	0.36076	0	1
First job (nonregular employment)	2,940	0.11259	0.31614	0	1
Living with parents dummy ($t-1$)	2,940	0.79422	0.40434	0	1
Living in a large city ($t-1$)	2,940	0.34320	0.47486	0	1
Living in other city ($t-1$)	2,940	0.53878	0.49858	0	1
Living in a town or village ($t-1$)	2,940	0.11735	0.32189	0	1
Parents' income (less than ¥5 million, $t-1$)	2,940	0.37313	0.48372	0	1
Parents' income (¥5 million up to ¥10 million, $t-1$)	2,940	0.23673	0.42515	0	1
Parents' income (¥10 million or more, $t-1$)	2,940	0.10136	0.30186	0	1
Number of siblings	2,940	1.35340	0.77732	0	5
Mother was a full-time homemaker	2,940	0.34898	0.47673	0	1
Home is owned ($t-1$)	2,940	0.87857	0.32668	0	1
Cohort A	2,940	0.51190	0.49994	0	1
Cohort B	2,940	0.30884	0.46210	0	1
Cohort C	2,940	0.17925	0.38363	0	1

$$CoResi^*_{t-1} = \gamma + \delta_1 arentEco_{t-1} + \delta_2 HouseKeep_{t-1} + \delta_3 z_{t-1} + u_{2j} \qquad (9)$$

$$\text{Marry}^*_t = \alpha + \beta_1 Trans_{t-1} + \beta_2 FirstJob + \beta_3 Longtime_{t-1} + \beta_4 x_{t-1} + u_{1j} \quad (10)$$

$$u_1 \sim N(0, 1),\ u_2 \sim N(0, 1),\ Corr(u_1, u_2) = \rho \qquad (11)$$

The dependent variables used here are defined as follows:

$CoResi_{t-1} = 1$ if $CoResi^*_{t-1} > 0$
$= 0$ otherwise
$\text{Marry}_t = (1$ if $\text{Marry}^*_t > 0$ and $CoResi^*_{t-1} > 0$
0 if $\text{Marry}^*_t <= 0$ and $CoResi^*_{t-1} > 0$

This article estimates marriage probability using the two-stage process shown above. It also performs estimates using the panel probit model and the parametric survival model (Weibull distribution) by limiting the sample to only unmarried persons co-residing with their parents. Here, we considered performing an analysis using the interaction term for the parents' generation and the independent variables. However, as was pointed out by Ai and Norton (2003), the inclusion of interaction terms in nonlinear models does not yield the marginal effects. Thus, we performed the calculations for each case.[23]

The basic statistics are shown in Table 5, while the results of the calculations are shown in Tables 6 to 9.

Attention must be paid to the respondent omission problem. As was pointed out by Sakamoto (2006), many people who were in the midst of major life events such as getting married or having children either were difficult to track down because they had moved, or declined to participate because they were too busy. A bias may occur if the calculations are performed without making any adjustments for these conditions. Some of the married respondents were omitted from the analysis, potentially creating a sample selection bias toward the responses of unmarried respondents. Thus, response omissions could cause the marriage selection coefficient to be biased downward.[24]

To eliminate the bias caused by the omission of respondents, we made adjustments, using inverse probability weighting (IPW), that make it possible to obtain a nonlinear consistent estimator. To perform an estimate using IPW, we conducted a probit model estimate for each year and estimated the continuous response probability using a continuous response dummy variable (value = 1 if the individual responds to the survey and 0 if they do not) as the dependent variable, and using the following independent variables: the respondent's age, a dummy variable reflecting the size of city (thirteen major cities, other cities = reference, towns and villages), co-residence with parents, educational background (junior high school graduation, high school graduation, vocational school or technical college graduation = reference, junior college or special training college graduation, university or graduate

school graduation), respondent's annual income, desire to marry, regular employment, and sense of debt burden.

Results

Co-residence Selection Coefficient

First, the results of the calculations of the coefficient of the selection to co-reside with one's parents while single show that the number of siblings has a statistically significant negative impact. The fewer siblings, the more likely the respondent was to choose to co-reside with their parents. The effects of the parent's economic status showed that a parental income of less than ¥5 million had a negative impact, while a parental income of ¥10 million or more had a statistically significant positive impact. Thus, the higher the parental income, the more likely the respondent was to choose to co-reside with his/her parents. Also, if the family home was owned by the family, the respondent was more likely to choose to co-reside with the parents. The co-residence probability increases as the parents' wealth increases. Also, since the co-residence probability is higher in families where the mother is a full-time homemaker, the ability of the mother to perform housekeeping services for the respondent apparently has an influence on co-residence selection. The results of calculating the marriage selection coefficient are discussed below.

Marriage Selection Coefficient

The dummy variable reflecting the income transfer from one's parents in the form of an allowance or spending money distributions has a statistically significant negative impact on marriage selection probability across the entire sample. We also confirmed that those who benefit from an income transfer (as opposed to those who do not) have a lower probability of selecting marriage (Table 6). Furthermore, a comparison of the marginal effects of the unweighted (–0.033) and weighted results (–0.045) confirmed that for the entire sample, omitting respondents did, indeed, produce an undervaluation bias. The marginal effect in the panel probit model was also negative, and the hazard ratio in the survival model was less than zero, indicating the negative effect of income transfer on marriage selection probability.

The differences in the effects by generation reveal that the income transfer effect is evident in cases where the parents are of the prewar or wartime generation and their children are of the bubble generation, but not evident in cases where the parents are of the postwar generation and their children are of the postbubble generation (Tables 7 and 8). As stated earlier, as society shifts from the generation

Table 6

Marriage Selection Coefficient (total)

Dependent variable	Sample selection probit		IPW-sample selection probit		Panel probit (random effect)		Parametric survival (Weibull)	
	dy/dx	Robust std. error	dy/dx	Robust std. error	dy/dx	Std. error	Hazard ratio	Robust std. error
Marriage selection dummy								
Parents: postwar generation	0.002	0.108	0.059	0.193**	0.001	0.119	1.350	0.247*
Children: postbubble	−0.020	0.101	−0.039	0.135**	−0.024	0.109	0.735	0.118**
Individual's age ($t-1$)	−0.007	0.013***	−0.007	0.017**	−0.004	0.018	0.101	0.038***
Long work hours dummy	0.001	0.373	−0.031	0.504	0.002	0.450	1.965	1.266
Individual's annual income	−0.000216	0.000317***	−0.000242	0.000419***	−0.000255	0.000387***	0.996864	0.000559***
Junior high school graduation [High school graduation]	−0.022	0.388	−0.031	0.402	−0.029	0.425	0.002	0.003***
Vocational school or technical college graduation	0.047	0.109**	0.044	0.152*	0.056	0.134**	148.553	114.917***
Junior college or special training college graduation	0.028	0.100*	0.008	0.131	0.029	0.120*	132.713	101.864***
University or graduate school graduation	0.014	0.114	0.015	0.151	0.016	0.133	18,136.860	27,328.480***
Parent's annual income/potential husband's annual income	0.007	0.028	0.004	0.034	0.007	0.029	1.063	0.049
Movement away from parents dummy ($t-1$)	−0.033	0.103**	−0.045	0.130**	−0.030	0.112**	0.734	0.135*
Number of friends ($t-1$)	0.000104	0.001752	0.000467	0.002389	0.000094	0.002194	1.003351	0.003003

(continued)

Table 6 (*continued*)

Dependent variable	Sample selection probit		IPW-sample selection probit		Panel probit (random effect)		Parametric survival (Weibull)	
	dy / dx	Robust std. error	dy / dx	Robust std. error	dy / dx	Std. error	Hazard ratio	Robust std. error
First job (self-employed or family worker in the agricultural, forestry, or farming industries)	−0.017	0.519	0.039	0.632	−0.020	0.634	1.071	1.207
First job (regular employment at a company with 500 or more employees or a government agency)	0.091	0.107***	0.113	0.148***	0.109	0.138***	2.435	0.442***
First job (regular employment at a company with fewer than 500 employees)	0.063	0.094***	0.035	0.136*	0.073	0.119**	1.917	0.315***
First job (nonregular employment)								
Constant	0.129	0.456	0.395	0.599	−0.344	0.567	—	—
Dependent variable: Choice to co-reside with parents dummy (*t* − 1)								
Living in a large city (*t* − 1)	−0.003	0.029 ***	−0.002	0.036 ***	—	—	—	—
Living in other city (*t* − 1)								
Living in a town or village (*t* − 1)	0.002	0.039 ***	0.000	0.052 *	—	—	—	—
Parents' income (less than ¥5 million, *t* − 1)	−0.001	0.028 ***	−0.001	0.036 ***	—	—	—	—
Parents' income (¥5 million up to ¥10 million, *t* − 1)								

	(1)	(2)	(3)	(4)	(5)	(6)
Parents' income (¥10 million or more, $t-1$)	0.001	0.042 ***	0.000	0.053 ***	—	—
Number of siblings	−0.002	0.019 ***	−0.001	0.024 ***	—	—
Mother was a full-time homemaker	0.000412	0.027392**	0.000216	0.035258**	—	—
Home is owned ($t-1$)	0.002	0.045 ***	0.001	0.056 ***	—	—
[Cohort A]						
Cohort B	−0.001	0.031 ***	−0.001	0.038 ***	—	—
Cohort C	0.000730	0.035408***	−0.000297	0.055713*	—	—
Constant	1.345	0.070 ***	1.511	0.092 ***	—	—
Number of obs	2,940		2,940		2,359	2,359
Censored obs	605		605			
Uncensored obs	2,335		2335			
Number of groups	736					
Log pseudolikelihood	−2,120.039		−43,178.110		−710.164	−72.235
Wald χ^2	82.09		91.03		73.04	141.88
Prob > χ^2	0.000		0.000		0.000	0.000
Likelihood-ratio test of $\rho = 0 : \chi^2$					2.2	
Prob $\geq = \chi^2$					0.069	

Statistically significant at ***1 percent; ** 5 percent; * 10 percent.
Only the constant is a coefficient, and not dy/dx.

Table 7

Marriage Selection Coefficient (by parents' generation)

Dependent variable	IPW-sample selection probit		Panel probit (random effect)		Parametric survival (Weibull)	
	dy / dx	Robust std. error	dy / dx	Std. error	Hazard ratio	Robust std. error
Parents: prewar or wartime generation						
Marriage selection dummy						
Parents: postwar generation	—	—	—	—	—	—
Children: postbubble	—	—	—	—	—	—
Individual's age (t − 1)	−0.006	0.016***	−0.003	0.017	0.123	0.024***
Long work hours dummy	−0.014	0.502	0.025	0.474	2.154	1.543
Individual's annual income	−0.0003	0.0005***	−0.0003	0.0004***	0.9968	0.001***
Junior high school graduation	0.011	0.402	0.002	0.468	0.005	0.005***
[High school graduation]						
Vocational school or technical college graduation	0.056	0.164**	0.071	0.164**	103.501	47.124***
Junior college or special training college graduation	0.012	0.140	0.030	0.142	82.818	37.031***
University or graduate school graduation	0.027	0.158	0.039	0.157*	8,708.605	7,231.069***
Parent's annual income/potential husband's annual income	0.005	0.036	0.007	0.032	1.072	0.045*
Movement away from parents dummy (t − 1)	−0.046	0.140**	−0.025	0.133	0.672	0.142*
Number of friends (t − 1)	0.001	0.003*	0.0004	0.0024	1.0055	0.003*

First job (self-employed or family worker in the agricultural, forestry, or farming industries)						
First job (regular employment at a company with 500 or more employees or a government agency)	0.118	0.165***	0.114	0.148***	2.849	0.545***
First job (regular employment at a company with fewer than 500 employees)	0.021	0.133	0.070	0.137***	1.848	0.341***
First job (nonregular employment)						
Constant	0.310	0.525	−0.602	0.544		
Number of obs	2,303			1,862		1,862
Censored obs	454					
Uncensored obs	1,849					
Number of groups	483					
Log pseudolikelihood	−36,246.06			−544.227		−59.050
Wald χ^2	35.46			64.05		279.76
Prob > χ^2	0.000			0.000		0.000
Likelihood-ratio test of $\rho = 0 : \chi^2$				2.61		
Prob $\geq \chi^2$				0.053		
Parents: Postwar generation						
Marriage selection dummy	—		—		—	
Parents: postwar generation	—		—		—	
Children: postbubble						
Individual's age ($t - 1$)	0.013	0.058	0.004	0.040	0.336	0.066***
Long work hours dummy	−0.135	0.553***	−0.094	202.000	2.03E−06	0.006
Individual's annual income	0.00003	0.001	−0.0002	0.0007	0.9985	0.001
Junior high school graduation						
[High school graduation]						
Vocational school or technical college graduation	0.014	0.310	0.027	0.213	20.791	12.948***

Table 7 (*continued*)

Dependent variable	IPW-sample selection probit		Panel probit (random effect)		Parametric survival (Weibull)	
	dy / dx	Robust std. error	dy / dx	Std. error	Hazard ratio	Robust std. error
Junior college or special training college graduation	−0.060	0.349	0.018	0.211	20.300	12.822***
University or graduate school graduation	−0.124	0.476*	−0.060	0.272*	103.431	108.891***
Parent's annual income/potential husband's annual income	0.001	0.102	0.009	0.067	1.132	0.160
Movement away from parents dummy ($t-1$)	−0.041	0.261	−0.041	0.198	0.791	0.293
Number of friends ($t-1$)	−0.002	0.006	−0.001	0.005	0.985	0.010
First job (self-employed or family worker in the agricultural, forestry, or farming industries)						
First job (regular employment at a company with 500 or more employees or a government agency)	0.040	0.361	0.060	0.338	2.074	1.130
First job (regular employment at a company with fewer than 500 employees)	0.167	0.289**	0.110	0.201***	2.668	
First job (nonregular employment)						
Constant	−2.545	1.609	−1.701	1.115		
Number of obs	582		497		497	
Censored obs	96					
Uncensored obs	486					
Number of Groups	253					

Log pseudolikelihood	−4,872.918	−158.877	−32.002
Wald χ^2	733.9	20.64	50.42
Prob > χ^2	0.000	0.037	0.000
Likelihood-ratio test of $\rho = 0 : \chi^2$		0.000	
Prob $\geq \chi^2$		1.000	

Statistically significant at ***1 percent; ** 5 percent; * 10 percent.

Only the constant is a coefficient, and not dy / dx. To perform the calculation based on the parents' and children's generation, variables such as "Parents: postwar generation," "Children: post-bubble," "Cohort B" and "Cohort C" were not used in this calculation. The table for the coresidence selection coefficient is omitted. Because there were few respondents whose first job was "self-employed or family worker in the agricultural, forestry, or farming industries," they were omitted from the case-specific estimates. Because there were few individuals whose educational background was "Junior high school graduation," they were omitted from the "Parents: prewar generation" case.

Table 8

Marriage Selection Coefficient (by children's generation)

Dependent variable	IPW-sample selection probit		Panel probit (random effect)		Parametric survival (Weibull)	
	dy / dx	Robust std. error	dy / dx	Std. error	Hazard ratio	Robust std. error
Children: Bubble generation						
Marriage selection dummy						
Parents: postwar generation	—	—	—	—	—	—
Children: postbubble	—	—	—	—	—	—
Individual's age ($t-1$)	−0.008	0.019***	−0.006	0.018***	0.191	0.038***
Long work hours dummy	−0.017	0.533	0.046	0.505	1.595	1.145
Individual's annual income	0.000	0.0005***	0.000	0.0005***	0.996	0.001***
Junior high school graduation	−0.050	0.494	−0.041	0.578	0.013	0.014***
[High school graduation]						
Vocational school or technical college graduation	0.026	0.190	0.065	0.197**	36.044	16.809***
Junior college or special training college graduation	−0.004	0.174	0.037	0.182	33.728	15.673***
University or graduate school graduation	0.020	0.208	0.097	0.206***	1,484.315	1,242.431***
Parent's annual income/potential husband's annual income	0.004	0.040	0.006	0.041	1.067	0.053
Movement away from parents dummy ($t-1$)	−0.041	0.190*	−0.017	0.171	0.814	0.204
Number of friends ($t-1$)	0.000	0.003	0.000	0.003	1.004	0.004

First job (self-employed or family worker in the agricultural, forestry, or farming industries)						
First job (regular employment at a company with 500 or more employees or a government agency)	0.089	0.187***	0.090	0.182***	2.468	0.554***
First job (regular employment at a company with fewer than 500 employees)	0.032	0.186	0.043	0.163*	1.520	0.320**
First job (nonregular employment)						
Constant	0.927	0.6578	0.651	0.596		
Number of obs		1,678		1,378		1,378
Censored obs		301				
Uncensored obs		1,377				
Number of groups		307				
Log pseudolikelihood	−30,148.85		−380.286		−32.213	
Wald χ^2		55.08		77.93		200.67
Prob > χ^2		0.000		0.000		
Likelihood-ratio test of $\rho = 0$: χ^2				5.89		
Prob $\geq \chi^2$				0.008		
Children: Postbubble generation						
Marriage selection dummy						
Parents: postwar generation					—	—
Children: postbubble					—	—
Individual's age ($t - 1$)	0.005	0.025	0.011	0.056*	0.027	0.009***
Long work hours dummy	−0.090	0.201***	−0.067	29,889.8600	0.000	0.001
Individual's annual income	0.000	0.001	0.000	0.001	0.999	0.001
Junior high school graduation	−0.044	0.347	−0.036	0.493	0.000	0.000***
[High school graduation]						
Vocational school or technical college graduation	0.044	0.181	0.035	0.196	2,079.396	1,510.582***

Table 8 (*continued*)

Dependent variable	IPW-sample selection probit		Panel probit (random effect)		Parametric survival (Weibull)	
	dy/dx	Robust std. error	dy/dx	Std. error	Hazard ratio	Robust std. error
Junior college or special training college graduation	0.007	0.149	0.021	0.174	2034.645	1469.368***
University or graduate school graduation	−0.020	0.177	−0.038	0.222*	2.83E+06	3.97E+06***
Parent's annual income/potential husband's annual income	0.001	0.055	0.006	0.046	1.076	0.067
Movement away from parents dummy ($t-1$)	−0.008	0.157	−0.022	0.155	0.704	0.170
Number of friends ($t-1$)	0.000	0.002	0.000	0.004	1.000	0.006
First job (self-employed or family worker in the agricultural, forestry, or farming industries)						
First job (regular employment at a company with 500 or more employees or a government agency)	0.125	0.172***	0.139	0.257***	2.161	0.557***
First job (regular employment at a company with fewer than 500 employees)	0.086	0.157***	0.122	0.222***	2.306	0.511***
First job (nonregular employment)						
Constant	−2.014	0.748***	−3.910	1.655**		
Number of obs	1,529		1,250		1,250	
Censored obs	304					
Uncensored obs	1,225					
Number of Groups			495			

Log pseudolikelihood	−15,270.72	−383.141	−27.100
Wald χ^2	550.97	20.03	229.65
Prob > χ^2	0.000	0.067	0.000
Likelihood-ratio test of $\rho = 0 : \chi^2$		1.75	
Prob $\geq \chi^2$		0.093	

Statistically significant at ***1 percent; ** 5 percent; * 10 percent.

Only the constant is a coefficient, and not dy/dx. To perform the calculation based on the parents' and children's generation, variables such as "Parents: postwar generation," "Children: post-bubble," "Cohort B" and "Cohort C" were not used in this calculation. The table for the coresidence selection coefficient is omitted. Because there were few respondents whose first job was "self-employed or family worker in the agricultural, forestry, or farming industries," they were omitted from the case-specific estimates.

Table 9

Marriage Selection Coefficient (by parents' income)

Dependent variable	IPW-sample selection probit		Panel probit (random effect)		Parametric survival (Weibull)	
	dy / dx	Robust std. error	dy / dx	Std. error	Hazard ratio	Robust std. error
Parents' income is less than ¥5 million						
Marriage selection dummy						
Parents: postwar generation	—	—	—	—	—	—
Children: postbubble	—	—	—	—	—	—
Individual's age (t − 1)	-0.007	0.023***	-0.003	0.020*	0.178	0.046***
Long work hours dummy	0.087	0.584	0.005	0.605	1.046	1.069
Individual's annual income	-0.0001	0.0006	-0.0001	0.0006*	0.9978	0.0009**
Junior high school graduation	0.021	0.391	0.018	0.378	0.010	0.010***
[High school graduation]						
Vocational school or technical college graduation	0.024	0.263	0.025	0.201	46.707	28.677***
Junior college or special training college graduation	-0.007	0.194	0.020	0.181	40.579	24.200***
University or graduate school graduation	-0.021	0.257	0.009	0.219	1,468.869	1,629.669***
Parent's annual income/potential husband's annual income	0.024	0.076***	0.022	0.062***	1.269	0.085***
Movement away from parents dummy (t − 1)	-0.030	0.249	-0.019	0.194	0.638	0.213
Number of friends (t − 1)	-0.0005	0.0073	-0.0012	0.0065*	0.9873	0.0099

First job (self-employed or family worker in the agricultural, forestry, or farming industries)						
First job (regular employment at a company with 500 or more employees or a government agency)	0.159	0.302***	0.138	0.279***	2.995	0.992***
First job (regular employment at a company with fewer than 500 employees)	0.065	0.236**	0.065	0.196**	1.935	0.527**
First job (nonregular employment)						
Constant	0.765	0.725	−0.549	0.670		
Number of obs		1,255		1,004		1,004
Censored obs		254				
Uncensored obs		1,001				
Number of Groups				399		
Log pseudolikelihood		−16,845.19		−251.857		−32.376
Wald χ²		52.55		33.81		123.45
Prob > χ²		0.000		0.001		0.000
Likelihood-ratio test of ρ = 0 : χ²				0.31		
Prob ≥ χ²				0.29		
Parents' income is ¥5 million or greater						
Marriage selection dummy						
Parents: postwar generation	—	—	—	—	—	—

Table 9 (*continued*)

Dependent variable	IPW-sample selection probit		Panel probit (random effect)		Parametric survival (Weibull)	
	dy / dx	Robust std. error	dy / dx	Std. error	Hazard ratio	Robust std. error
Children: postbubble						
Individual's age ($t-1$)	−0.004	0.023	−0.002	0.027	0.315	0.053***
Long work hours dummy	−0.083	0.928***	−0.054	0.011***	6.3E−06	0.008
Individual's annual income	−0.0001	0.0006	−0.0001	0.0006	0.9991	0.0010
Junior high school graduation [High school graduation]						
Vocational school or technical college graduation	0.027	0.241	0.064	0.246*	32.389	20.611***
Junior college or special training college graduation	−0.007	0.205	0.036	0.222	27.196	17.018***
University or graduate school graduation	0.002	0.226	0.012	0.238	274.831	262.784***
Parent's annual income/potential husband's annual income	−0.022	0.078*	−0.011	0.065*	0.849	0.097
Movement away from parents dummy ($t-1$)	−0.043	0.170*	−0.024	0.200	0.705	0.238
Number of friends ($t-1$)	0.000	0.003	0.000	0.003	1.001	0.005
First job (self-employed or family worker in the agricultural, forestry, or farming industries)						
First job (regular employment at a company with 500 or more employees or a government agency)	0.078	0.208	0.070	0.221**	2.496	0.819***
First job (regular employment at a company with fewer than 500 employees)	0.125	0.237*	0.135	0.201***	3.105	0.838***
First job (nonregular employment)						
Constant	0.006	0.753	−0.858	0.800		

Number of obs	1,013	850	850
Censored obs	182		
Uncensored obs	831		
Number of groups	441		
Log pseudolikelihood	−11,714.27	−232.274	−55.458
Wald χ^2	79.66	31.63	89.11
Prob $> \chi^2$	0.000	0.000	0.000
Likelihood-ratio test of $\rho = 0 : \chi^2$		3.27	
Prob $\geq \chi^2$		0.035	

Statistically significant at ***1 percent; ** 5 percent; * 10 percent.

Only the constant is a coefficient, and not dy/dx. To perform the calculation based on the parents' and children's generation, variables such as "Parents: postwar generation," "Children: post-bubble," "Cohort B" and "Cohort C" were not used in this calculation. The table for the coresidence selection coefficient is omitted. Because there were few respondents whose first job was "self-employed or family worker in the agricultural, forestry, or farming industries," they were omitted from the case-specific estimates.Because there were few individuals whose educational background was "Junior high school graduation," they were omitted from the "Parents: prewar generation" case.

of "parasite singles" who were financially supported by their parents and avoided marriage to maintain their carefree lifestyle at home, to a new configuration of postwar generation parents and children of the postbubble generation, we find that unmarried individuals co-residing with their parents today are not avoiding marriage because they are enjoying an affluent single life.

Long Work Hours

Long work hours have a negative effect on marriage selection in cases where the parents are of the prewar generation and children are either of the bubble generation or the postbubble generation. A comparison of the marginal effects between the children's generations, that is, –0.017 for the bubble generation and –0.090 for the postbubble generation, confirms the prediction that the constraining effect of long work hours on marriage selection is particularly evident in the postbubble generation. This is attributed to the increase in work hours since the 1990s.

Relative Income

Next, to examine the "transfer of dependency model," we examined the effects of the ratio of the father's income to the potential husband's income. However, no significant results were found in any of the cases examined. Using the data from married individuals, and hypothesizing that an individual will marry someone of the same or higher educational background as their own, we used attributes related to the wife's educational background as the independent variables and an estimate of the husband's wages as the proxy variable for the unmarried potential husband's wages. However, we did not obtain the same results that were found by Ogawa (2002), who used region-specific macro data.[25]

When we look at the responses not by the generation of the parents and children, but by the income level of the parents, we find a statistically significant positive effect when the parental income is under ¥5 million (marginal effect: 0.024) and a statistically significant negative effect when the parental income is more than ¥5 million (marginal effect: –0.022). This suggests that the higher the parents' income, and thus the higher the relative income ratio (of the father to the potential husband), the more likely it is that the "transfer of dependency model" will explain marriage avoidance.

First Job

Finally, we examined the effects of the first job on marriage selection. The marginal effects of the dummy variables "First job: regular employment at a company with 500 or more employees or a government agency," and "First

job: regular employment at a company with fewer than 500 employees" had a statistically significant positive effect in more cases than "First job: non-regular employment." That is, when the respondent's first job was regular employment (as opposed to a part-time job), they had a higher probability of selecting marriage. This reaffirms the results obtained by Sakai and Higuchi (2005) and Sakamoto (2006). The marginal effect of the "First job: regular employment at a company with 500 or more employees or a government agency" was 0.089 for respondents in the bubble generation and 0.125 for the postbubble generation. As was pointed out by Genda (1997), it is well known that in the Japanese labor market, finding a good job immediately after graduation has a huge impact on the individual's long-term employment prospects. When the first job is nonregular employment, it becomes more difficult for the individual to later obtain a stable position as a regular employee. This significantly decreases one's lifetime earnings and makes it more difficult for an individual to become independent from their parents. In addition, because the individual is only likely to meet other workers engaged in nonregular employment at their workplace (a likely place for meeting a spouse), such that neither partner is earning a stable income, it will be more difficult for them to proceed to the point of marriage.

Instead of looking only at the marriage selection problem based on the attributes of the potential spouses themselves, this section examined the impact of financial transfers from parents and the income ratio of the father to the potential husband on marriage selection. It also clearly confirmed the influence of the parents by categorizing individuals based on the income level of their parents and on the generation of both their parents and themselves.

We confirmed that income transfers from parents tend to reduce marriage selection probability when the parents are of the prewar or wartime generation and their children are of the bubble generation. This result can be viewed as supporting the "parasite single hypothesis," which suggests that singles would prefer to continue living a carefree lifestyle paid for by their parents rather than choose to get married. However, this effect weakened from the late 1990s to the early 2000s. Furthermore, long work hours have been shown to reduce marriage selection probability. This was especially true from the late 1990s to the 2000s. The increase in work hours among young people in the 1990s led to a reduction in free time, and this reduced the opportunities available for finding a marriage partner. The effect of job disparities also had an effect on marriage probability.[26]

Conclusions

Problems related to marriage, childbirth, and divorce have not thus far been treated primarily as economic issues. However, considering that people are

at the center of all economic activities, and that history is written as people make families and give birth to future generations, economists should be paying greater attention to these problems.

Several observations can be made even from the limited analysis presented in this article. First, the relationship between the parents' generation and their children's generation exerts an undeniable impact on marriage selection, but this relationship is not fixed. It depends on the historical experiences of each generation. Second, changes in the employment environment have created conditions that make it very difficult for young people who have not been able to find a good first job and young people who have found a good job but have to work long hours, to get married. Third, there is no strong evidence to suggest that the father-to-potential-spouse income ratio has any impact on marriage selection.

Several issues remain unresolved. First, we examined the marriage selection activities of people in their late twenties and thirties, among whom the ever-married rate has fallen significantly over the past ten years, but we did not address issues of marriage selection due to pregnancy, which has increased in recent years, or marriage selection behaviors among those in their teens and early twenties.

Second, the parents' employment status is also believed to have a significant impact on marriage selection. According to Kitamura and Sakamoto (2004), conditions are expected to change as parents move beyond employable age (sixty-five to seventy). When respondents are in their twenties and their parents are still active, they do not need to contribute assets to their household budget, but once their parents begin to retire, they will have to start to take responsibility for the household finances and to care for their aging parents. As a result, people will begin to look for marriage partners who have the financial wherewithal to take care of their parents, or will have to use some of their time outside of work to care for their families. All of these factors will make it more difficult to choose marriage. Further analysis of this issue is needed.

Third, in recent years, human capital investments in children have had a significant impact on the later earning power of children, and some analyses have been conducted on whether that is impacting the appeal of the marriage market (Aiyagari, Greenwood, and Guner 2000; Edlund and Lagerlof 2004, 2006a, 2006b). However, further studies need to be conducted on the effects of human capital on marriage.[27]

The following supplemental observations are also worth noting. In spite of the fact that restrictions on marriage have been eliminated in recent years and individuals have become able to more freely choose their own marriage partners, the ever-married rate is dropping. This suggests that in spite of de-

regulation, the market mechanisms of marriage are not functioning properly, and resources are not being allocated efficiently. The question is, why?

We contend that there are two ways of looking at this problem. First, perhaps the private contract of marriage has absorbed some of the negative effects of restrictions based on other more public contracts (such as labor contracts). That is, the labor market is divided into two sectors, and due to the excessive work hours of regular employees and the low wages and job instability of nonregular employees, it is not easy for people in either group to marry. This reality obstructs the functions that are supposed to promote free love-based marriages. In international economies and economic policy, the sequence of liberalization and regulatory reform is important. If liberalization is promoted in the wrong sequence, a market that is supposed to have been free becomes distorted because of the ways it is impacted by the restrictions of other markets. This seems to be happening in the Japanese marriage market.

Second, some civil law scholars see the trends in the civil code as the history of the destruction of the *ie* (traditional family) system. They feel that the family is disintegrating and that society is starting to function as a group of loosely connected independent individuals. Under this school of thought, the incentives to get married and create families will decline even if barriers to marriage are removed. Of course, given that more than 80 percent of Japanese people get married and have families, the argument that the family is disappearing seems to be overly alarmist. Nonetheless, it is important that economic policies, particularly those that deal with low fertility rates, be based on a clear vision of what households and families should look like in the future. If they are not, there is a significant risk that inappropriate and ineffective policies will be adopted.

Notes

1. See, for example, Emori (1995, 1998), Gillis (1985), Goody (1983), Houlbrooke (1984), Howard (1904), and Segawa (2006).

2. For more recent work on mathematical approaches to the marriage matching problem, see Gusfield and Irving (1989), Knuth (1997), Mortensen (1988) and Roth Sotomayer (1990). For a more economics-based approach, see Burdett and Coles (1997, 1999).

3. In this field, Alesina and Giuliano (2006) examine the relationship between the increase in divorce and the decrease in fertility, while Peters (1986) analyzes the effects of divorce-related legal systems on marriage behavior.

4. The following arguments reflect those made by Hoshino (1998), Omura (2004), Tanamura (1998), and Mizuno (1998).

5. If the head of the household died without any legitimate sons, an illegitimate son (a son born out of wedlock to the head of household) would receive higher priority in the distribution of assets than a legitimate daughter.

6. Omura (2004: 17) shows that the restrictions imposed by the *ie* system, excluding the estate inheritance system, gave considerable recognition to the freedom of the individual, even under the Meiji Civil Code, insofar as it included the right to designate a residence and the right to consent to marriage.

7. The legal stipulations regarding inheritance are as follows: (1) Children and spouses shall inherit half of the estate. (2) When both a spouse and a direct ascendant are lawful heirs, the spouse shall inherit two-thirds of the state and the direct ascendant shall inherit one-third. (3) When both a spouse and a sibling are lawful heirs, the spouse shall inherit three-quarters of the state and the sibling shall inherit one-quarter. (4) When there are multiple children, direct ascendants, or siblings, they shall each receive an equal portion of the inheritance. General inheritance is governed by these inheritance rules, and distributions based on a will, if they violate these legal inheritance rules, are often contested, such that allocations can be decided based on the judgment of a family court.

8. Today, several problems remain unresolved, such as the system of selecting a couple's surname, the rejection of homosexual marriage, and the problem of recognizing the parent–child relationship of children born to surrogate mothers.

9. This suggests that even couples matched through a dating service or similar institution are categorized as love marriages rather than miai marriages.

10. For more recent information on wedding ceremonies, see Ishii (2005), Okubo, Hataya, and Omiya (2006), and Saito (2006).

11. High rates of co-residence with parents are not unique to Japan. Manacorda and Moretti (2006) showed that 82 percent of young people age eighteen to thirty in Italy live with their parents. The rates are also high in other Mediterranean countries like Portugal (78 percent) and Spain (65 percent), versus 43 percent in the United States, 53 percent in the United Kingdom, and 45 percent in France. Their empirical research led to the conclusion that this is less a reflection of the "parasite single" phenomenon instigated by the children than a sincere desire on the part of parents to have their children nearby.

12. The respondents living in a separate residence from their parents were included in the first stage of the probit model sample selection.

13. Here, $dF_f(x)$ assumes a uniform distribution, and the suitors with a compatibility level between 0 and 1 are evenly distributed $(x) = (x - x_f) / (x_f - x_f)$. The term x_f refers to the lowest level of proposal a woman will accept, while x_f is the higest level.

14. Equation (1) can also be converted into the following: $W_f(x) = [x + \delta V_f](r + \delta)$.

15. An increase in the proposal probability α_f will raise the marriage partner search flow value R_f, but the net utility of α_f on the marriage ends up increasing the marriage selection probability (Ermish 2003: 140).

16. The increase in work hours does more than simply decrease one's free time. The Panel Survey showed that work hours have a significant impact on one's mental state. As work hours increase, more people complain of a "lack of sleep" and "fatigue" (indicated by 39.39 percent of those who work less than twenty hours/week, 40.56 percent of those who work twenty to forty hours/week, 55.09 percent of those who work forty to sixty hours/week, and 86.96 percent of those who work sixty or more hours/week).

17. This also has an impact on the standard utility x and x obtained from the compatibility with a marriage partner and marriage lifestyle.

18. Ogawa (2002) shows that for a woman age twenty to twenty-four, the parents' age group is fifty to fifty-four and her potential husband's age group is twenty-five to twenty-nine. For women age twenty-five to twenty-nine, those age groups are fifty-five to fifty-nine and thirty to thirty-four, respectively, and for women age thirty to thirty-four, they are fifty-five to fifty-nine and thirty to thirty-four, respectively.

19. Junior high school, high school, vocational school or technical college (reference group), junior college or special training college, university or graduate school. Fourteen large cities (Sapporo, Sendai, Chiba, Saitama, the wards of Tokyo, Kawasaki, Yokohama, Nagoya, Kyoto, Osaka, Kobe, Hiroshima, Kita-kyushu, Fukuoka), other cities (reference group), towns and villages.

20. It is highly unlikely that individuals who lack earning power will be able to find partners who have earning power. That is, they will be likely to be able to meets individuals with a low x_f level.

21. A dummy variable reflecting the mother's status as a full-time homemaker is used here. If the respondent's mother has never worked (prior to the respondent's twentieth birthday), 1 is used as the dummy variable. Otherwise, 0 is used.

22. The reader should be aware that in order to make the distinction clearer, in this model we separate the independent variables used in the selection equation from the independent variables used in the behavior equation.

23. Ai and Norton (2003) introduce a method to accurately calculate the marginal effect of the interaction term in simple probit and logit estimates, but they do not provide a method to accurately calculate the marginal effect for the kinds of estimates conducted here.

24. For details, see Sakamoto (2006).

25. These findings may also have resulted from the inappropriate use of a proxy variable as data. If we consider that the seniority-based wage system is still in effect, it renders meaningless the notion of making a marriage decision based on a comparison of the flow income ratios of the father and the potential husband. When using a proxy variable for the future husband's income, it is best not to use an estimate of his current income, but an estimate of his expected future income.

26. These results are based on the results obtained using the IPW-Samole selection probit model. When divided by generation, other models did not reveal statistically significant results for factors other than age, educational background, and first job.

27. Ermisch and Francesconi (2002) showed that because women born in a low income class received only a low level of investment in their human capital, they were highly likely to be poor even as adults, and thus to have less comparative appeal in the marriage market. Women facing such conditions are more likely to become unwed mothers and to be unable to invest in their own children's human capital, thereby repeating the cycle.

References

Ai, C., and E. Norton. 2003. "Interaction Terms in Logit and Probit Models." *Economics Letters* 80: 123–29.

Aiyagari, S.R.; J. Greenwood; and N. Guner. 2000. "On the State of the Union." *Journal of Political Economy* 108: 213–44.

Alesina, Albert, and Paola Giuliano. 2006. "Divorce, Fertility and the Shot Gun Marriage." Harvard University.

Becker, G.S. 1973. "A Theory of Marriage: Part 1." *Journal of Political Economy* 81, no. 4: 813–46.

———. 1974. "A Theory of Marriage: Part 2." *Journal of Political Economy* 82, no. 2: S11–26.

Burdett K., and M.G. Coles. 1997. "Marriage and Class." *Quarterly Journal of Economics* 112: 141–68.

———. 1999. "Long-Term Partnership Formation: Marriage and Employment." *Economic Journal* 109: F307–F334.

Cabinet Office, ed. 2003. *Heisei 15 nendoban kokumin seikatsu hakusho: defure to seikatsu: wakamono fri-ta-no genzai* [FY2003 White Paper on National Life: Deflation and Lifestyles: Young Freelance Part-Time Workers]. Gyosei.

Easterlin, Richard A. 1966. "On the Relation of Economic Factors to Recent and Projected Fertility Changes." *Demography* 3, no. 1: 131–53.

Edlund, Lena. 2006. "Marriage: Past, Present, Future?" Columbia University.

Edlund, Lena, and Evelyn Korn. 2002. "A Theory of Prostitution." *Journal of Political Economy* 110: 181–214.

Edlund, Lena, and Nils-Petter Lagerlof. 2004. "Implications of Marriage Institutions for Redistribution and Growth." Columbia University.

———. 2006a. "Individual vs Parental Consent in Marriage: Implications for Intra-household Resource Allocation and Growth." CEPR Discussion Paper, no. 5474.

———. 2006b. "Individual Versus Parental Consent in Marriage: Implications for Intra-household Resource Allocation and Growth." *American Economic Review* 96, no. 2: 304–7.

Edlund, Lena, and Pohini Pande. 2002. "Why Have Women Become Left-Wing: The Political Gender Gap and the Decline in Marriage." *Quarterly Journal of Economics* 117: 917–61.

Emori, Itsuo. 1995. *Kekkon no kigen to rekishi* [Origins and History of Marriage]. Shakai sozosha.

———. 1998. *Kon'in no minzoku* [Folk Rituals of Marriage]. Yoshikawa Kobunkan.

Ermisch, John. 2003. *An Economic Analysis of the Family*. Princeton: Princeton University Press.

Ermisch, John, and Marco Francesconi. 2002. "Intergenerational Social Mobility and Assortative Mating in Britain." Institute for the Study of Labor Discussion Paper Series, no. 465.

Gale, D., and L.S. Shapley. 1962. "College Admission and the Stability of Marriage." *American Mathematical Monthly* 69: 9–15.

Genda, Yuji. 1997. "Chansu ha ichido" [One Chance]. *Nihon roudou kenkyū zasshi* 449: 2–12.

———. 2001. *Shigoto no naka no aimaina fuan yureru jakunen no genzai* [Today's Youth and Their Struggle in an Environment of Employment Instability]. Tokyo: Chuo koron shinsha.

Gillis, John R. 1985. *For Better, for Worse: British Marriages, 1600 to the Present*. New York: Oxford University Press.

Goody, Jack. 1983. *The Development of the Family and Marriage in Europe*. Cambridge: Cambridge University Press.

Gusfield, Dan, and Robert W. Irving. 1989. *The Stable Marriage Problem*. Cambridge, MA: MIT Press.

Hoshino, Eiichi. 1998. *Minpou no susume* [Advancement of the Civil Code]. Tokyo: Iwanami shinsho.

Houlbrooke, Ralph A. 1984. *The English Family 1450–1700*. London: Longman.

Howard, George E. 1904. *A History of Matrimonial Institutions.* 3 vols. Chicago: University of Chicago Press.

Ishii, Kenji. 2005. *Kekkonshiki shiawase o tsukuru gishiki* [Ceremonies That Create Marriage Ceremony Happiness]. Tokyo: NHK Broadcasting Research Institute.

Iwakami, Mami. 1999. "20dai, 30dai mikonsha no oya to doubekkyo kouzou: dai 11 kai shussei doukou kihon chousa dokushin shousa yori" [Structures of Living with or Separately from Parents Among Unmarried People in Their Twenties and Thirties: Based on the Responses of Single People in the Eleventh Basic Survey of Birth Trends]. *Jinkou mondai kenkyū* 55, no. 4: 1–15.

Iwasawa, Miho, and Fusami Mita. 2005. "Shokuen kekkon no seisui to mikonka no shinten" [Boom and Bust in Work-Derived Marriages and the Marriage Decline in Japan]. *Nihon roudou kenkyū zasshi* no. 535: 16–28.

Kitamura, Yukinobu, and Kazuyasu Sakamoto. 2004. "Yūgana parasaito shinguru ga hen'you" (Changing Parasite Singles) In *Joseitachi no heisei fukyou josei ha dou sentakushi, dou kurashitaka?* [How Did Women Make Decisions and Live During the Heisei Recession?], ed. Yoshio Higuchi and Masami Iwata, 87–115. Tokyo: Nihon keizai shimbunsha.

Knuth, Donald E. 1997. *Stable Marriage and Its Relation to Other Combinatorial Problems*. Providence, RI: American Mathematical Society.

Manacorda, Marco, and Enrico Moretti. 2006. "Why Do Most Italian Youths Live with Their Parents? Intergenerational Transfers and Household Structure." *Journal of the European Economic Association* 4, no. 4: 800–829.

Miyamoto, Michiko; Mami Iwakami; and Masahiro Yamada. 1997. *Mikonka shakai no oyako kankei okane to aijou ni miru kazoku no yukue* [Money and Love in the Parent–Child Relationship in a Society of Postponed Marriage: The Way of the Family]. Tokyo: Yuhikaku sensho.

Mizuno, Noriko. 1998. "Dantai toshite no kazoku" [The Family as a Group]. *Jurist* (January 1 and 15, combined issue), no. 1126: 72–77.

Mortensen, Dale, T. 1988. "Matching: Finding a Partner for Life or Otherwise." *American Journal of Sociology* 94, Supplement: S215–S240.

Ogawa, Hiroshi. 2002. "Teinen seido to kekkon: shoushika taisaku to seigoutekina chingin koyou seido no teian" [The Compulsory Retirement Age System and Marriage: A Proposal for a Wage and Employment System Consistent with Birthrate Decline Measures]. Hitotsubashi University Institute of Economic Research, PIE Discussion Paper, no. 111.

Okubo, Yukio; Keiko Hataya; and Toyo Omiya. 2006. *30dai mikondan* [Unmarried Men in Their Thirties]. Tokyo: Japan Broadcast Publishing seikatsujin shinsho.

Omura, Atsushi. 2004. *Kazokuhou dai 2 ban hoteiban* [Second Revision of the Family Law]. Tokyo: Yuhikaku.

Peters, Elizabeth H. 1986. "Marriage and Divorce: Informational Constraints and Private Contracting." *American Economic Review* 76, no. 3: 437–54.

Recruit. 2005. *Zekushii kekkon torendo chousa* [Sexy Marriage Trend Survey]. Tokyo: Recruit.

Roth, Alvin; A. Malinda; and Oliveira Sotomayer. 1990. *Two-Sided Matching: A Study in Game-Theoretic Modeling and Analysis*. Cambridge: Cambridge University Press.

Saito, Minako. 2006. *Kankon sousai no himitsu* [The Secret of Ceremonies].
    Tokyo: Iwanami shinsho.
Sakai, Tadashi, and Yoshio Higuchi. 2005. "Furi-ta-no sono ato: shūgyou/shotoku/
    kekkon/shussan" [Life After Being a Freeter: Employment, Income, Marriage,
    and Childbirth]. *Nihon roudou kenkyū zasshi*, no. 535: 29–41.
Sakamoto, Kazuyasu. 2006. "Sanpuru datsuraku ni kansuru bunseki: 'shouhi sei-
    katsu ni kansuru paneru chousa' o mochiita datsuraku no kitei youin to suikei
    baiasu no kenshou" [Analysis of Response Omissions: Investigating the Factors
    in Response Omissions and Calculation Biases Using the Japanese Panel Sur-
    vey of Consumers]. *Nihon roudou kenkyū zasshi,* no. 551: 55–70.
Segawa, Kiyoko. 2006. *Kon'in oboegaki* [Memo on Marriage]. Kodansha.
Shirahase, Sawako. 2005. *Shoshi koureis shakai no mienai kakusa jenda-/sedai/
    dansou no yukue* [Invisible Gender, Generational, and Class Differences in an
    Aging Society]. Tokyo: University of Tokyo Press.
Tanamura, Masayuki. 1998. "Danjo no arikata / otoko to onna" [The Way of Gen-
    der: Men and Women]. *Jurist* (January 1 and 15, combined issue), no. 1126:
    20–28.
Yamada, Masahiro. 2004. *Parasaito shakai no yukue* [Path Toward a Parasite Soci-
    ety]. Tokyo: Chikuma shinsho.
Yuzawa, Yasuhiko. 2005. *Meiji no kekkon meiji no rikon* [Meiji Marriage and Meiji
    Divorce]. Tokyo: Kadokawa shoten.