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ABSTRACT

In this paper, I analyze a variety of evidence for Japan and, where available, for the United States on bequest practices, on the importance and nature of bequest motives, on bequest division, on the willingness of individuals to help others, etc., in order to shed light on which model of household behavior applies in the two countries. My results suggest that the selfish life cycle model is the dominant model of household behavior in both countries but that it is far more applicable in Japan than it is in the U.S., that the dynasty model is also more applicable in Japan than it is in the U.S. but that it is not of dominant importance even in Japan, and conversely, that the altruism model is far more applicable in the U.S. than it is in Japan.

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1. Introduction

Together with firms and the government, individuals (households) are one of the three major economic agents in any economy, but there is surprisingly little agreement about which model of household behavior applies in the real world. For example, are individuals selfish, caring only about themselves, or are they altruistic, caring not only about themselves but also about their children, other family members, and perhaps even about complete strangers? Or are individuals primarily concerned about the perpetuation of the family line or the family business?

In this paper, I briefly discuss three theoretical models of household behavior and show that they have very different implications for bequest motives and bequest division. I then present a variety of evidence on bequest practices, on the strength and nature of bequest motives, on bequest division, on the willingness of individuals to help others, etc., for Japan and, where available, for the United States in order to shed light on which model of household behavior applies in the two countries.

The issue of which model of household behavior applies in the real world is an important one because it has ramifications for what impact government policies have on the macroeconomy (e.g., for whether or not Ricardian equivalence holds in the real world) and for the extent to which wealth disparities are passed on from generation to generation.

The organization of this paper is as follows: In section 2, I discuss three theoretical models of household behavior with emphasis on their implications for bequest motives and bequest division; in section 3, I present historical evidence on bequest practices; in section 4, I describe the data sources used in my analysis; in sections 5 through 8, I present and discuss

various data on bequest motives and bequest division; in section 9, I discuss data on individuals' willingness to help others; in section 10, I discuss more formal tests; in section 11, I summarize my findings; and in section 12, I discuss the policy implications of my findings.

2. Theoretical Considerations

There are at least three models of household behavior that are commonly used by economists—(1) the life cycle model, (2) the altruism model, and (3) the dynasty (or lineal) model—and these models have very different implications for bequest motives and bequest division. In this section, I discuss each of these models in turn with particular emphasis on their implications for bequest motives and bequest division (see Laitner (1997) and Masson and Pestieau (1997) for a more detailed survey of this literature).

2.1. The Life Cycle Model

The life cycle model of Modigliani and Brumberg (1954) assumes that individuals are selfish and that they derive utility only from their own consumption. Thus, in a static setting, the utility function of parents will be as follows:

$$U_p = U_p(C_p), \tag{1}$$

where U_p = the utility of parents

C_p = the consumption of parents,

and parents will maximize their utility subject to the following budget constraint:

$$C_p \leq Y_p, \tag{2}$$

where Y_p = the income of parents.

Similarly, in a static setting, the utility function of children will be as follows:

$$U_k = U_k(C_k), \tag{3}$$

where U_k = the utility of children

C_k = the consumption of children,

and children will maximize their utility subject to the following budget constraint:

$$C_k \leq Y_k, \tag{4}$$

where Y_k = the income of children.

In other words, parents and children will behave totally independently of one another.

In this simple form of the life cycle model, individuals will not leave any bequests at all

to their children because they derive no utility from their children's utility. However, at least three types of bequests are consistent with more sophisticated versions of the life cycle model.

(1) Unintended, unplanned or accidental bequests arising from lifespan uncertainty. Uncertainty about one's lifespan can lead even selfish individuals to leave considerable bequests under certain conditions, as shown by Levhari and Mirman (1977) and Davies (1981). If annuity markets are perfect (i.e., actuarially fair annuities are available), individuals without a bequest motive will annuitize their entire wealth and thus will not leave any bequests at all regardless of when they die. However, if actuarially fair annuities are not available and individuals are risk averse and cannot force their children to support them if and when they run out of assets (i.e., negative bequests are ruled out), lifespan uncertainty will cause individuals to save more than they would in a world with no lifespan uncertainty and cause those dying relatively young to leave considerable unintended, unplanned, or accidental bequests.

One variant of this type of bequest is unintended, unplanned, or accidental bequests arising from saving in preparation for uncertain medical and nursing care (long-term care) expenses in the future. If actuarially fair medical and nursing care insurance is not available, individuals will save in preparation for medical and nursing care expenses during old age, and if it turns out that they do not incur such expenses or such expenses are not as high as expected, they will end up leaving considerable unintended, unplanned, or accidental bequests (see Kotlikoff (1989) re saving for medical expenses).

(2) Bequests that are part of an implicit intra-family annuity contract. If actuarially fair annuities are not available on the open market, even selfish individuals may choose to insure

against the risk of an uncertain lifespan by concluding an implicit annuity contract with their children whereby their children agree to support them financially until they die in exchange for receiving a bequest when they die (Kotlikoff and Spivak, 1981).

One variant of this type of bequest is an intra-family “reverse mortgage” whereby the children agree to support their parents financially until they die in exchange for inheriting the family home.

(3) Bequests that are a *quid pro quo* for care during old age (bequests arising from an exchange motive). Even selfish individuals may conclude an agreement with their children whereby their children agree to take care of them during old age in exchange for receiving a bequest when they die, where care encompasses everything from phone calls, visits, and companionship to housework, shopping, transportation, and nursing care. Individuals may choose to conclude such an agreement with their children if such services are not available on the open market, if such services are available on the open market but their prices are inflated, and/or if they prefer receiving such services from their children to receiving them from complete strangers (see Cox (1987)).

One variant of this type of bequest is bequests motivated by the strategic bequest motive of Bernheim, Shleifer, and Summers (1985). In this model, individuals coerce their children into giving them attention (visits, care, etc.) by threatening to disinherit them if they fail to do so.

Note that there is a *quid pro quo* in the case of bequests of types (2) and (3) (financial support during old age in the case of (2) and care during old age in the case of (3)) and that individuals will not leave bequests of types (2) and (3) unless their children provide financial

support and/or care during old age. To put it another way, bequests of type (2) and (3) are ultimately used to finance one's retirement because they are, in effect, delayed compensation for financial support and/or care during old age, and net bequests will not necessarily be positive because gross bequests from parents to children will be largely offset by transfers in the other direction (viz., financial support and/or care during old age that children provide to their parents). Note, moreover, that individuals will leave their entire bequest to the child who provides the financial support and/or care in the case of bequests of types (2) and (3).

2.2. The Altruism Model¹

The altruism model of Barro (1974) and Becker (1974, 1981, 1991) assumes that individuals harbor intergenerational altruism toward their children and that they derive utility not only from their own consumption but also from the utility of their children. Thus, in a static setting, the utility function of parents will be as follows:

$$U_p = U_p(C_p, \psi[U_k(C_k)]), \quad (5)$$

where ψ = a positive monotonic transformation.²

Parents will typically give transfers (*inter vivos* transfers as well as bequests) to their children because they harbor altruism toward them and derive utility from their utility.³ Thus, their budget constraint will be:

$$C_p + T \leq Y_p, \quad (6)$$

where T = transfers from parents to children,

and they will maximize their utility subject to this budget constraint.

If we further assume that children do not harbor intergenerational altruism toward their parents (i.e., that altruism is one-sided), their utility function will be as follows:

$$U_k = U_k(C_k), \quad (7)$$

and children will maximize their utility subject to the following budget constraint:

$$C_k \leq Y_k + T. \quad (8)$$

Barro (1974) and Becker (1974, 1981, 1991) show that, if children take their parents' transfers as given, parents and children will act as if they are maximizing the parents' utility function subject to the combined budget constraint:

$$C_p + C_k \leq Y_p + Y_k = Y^T, \quad (9)$$

where Y^T = total family income.

This model implies that individuals will leave a bequest to their children regardless of whether their children provide financial support to them and/or take care of them during old age, that bequests will be divided among their children, and that bequests will be compensatory (i.e., that individuals will give more to the child or children with less earnings capacity and/or greater consumption needs). Note, however, that even altruistic parents will not necessarily leave a bequest to their children if their children's lifetime incomes are sufficiently greater than their own and/or if their degree of altruism is sufficiently low.

2.3. The Dynasty (or Lineal) Model

The dynasty or lineal model of Chu (1991) assumes that individuals are motivated by a desire to perpetuate the family line and/or the family business and hence that they will behave so as to minimize the probability of lineal or dynastic extinction. Thus, this model implies that individuals will leave a bequest only if their children carry on the family line and/or the family business and that they will leave their entire bequest to the child or children who carry on the family life and/or the family business.

As I have shown, the three models of household behavior discussed above have very different implications concerning bequest motives and bequest division (see the summary in Table 1), and thus, data on bequest motives and bequest division can shed light on which model of household behavior holds in the real world. In section 3, I present historical evidence on bequest practices in Japan, while in sections 5-8, I present contemporary data on bequest motives and

bequest division in Japan and, where available, the U. S. from a number of sources.

3. Historical Evidence on Bequest Practices

In this section, I present historical evidence on bequest practices in Japan. As the excellent surveys of Aoyama et al. (1974) and Ohtake (1996) show, bequest practices in Japan have differed substantially over time, among social classes, and among regions. For example, dividing one's bequest among all of one's children was common among all social classes during the early Tokugawa (Edo) period (1603-1868) but had been replaced by male primogeniture (the practice of leaving everything to the eldest son and having him carry on the family line) by the middle of the Tokugawa period. Strict male primogeniture was observed by the samurai (warrior-bureaucrat) class but not by farmers and townspeople (craftsmen and merchants), even after the middle of the Tokugawa period. For one thing, only inherited assets (land, housing, and farmland) were bequeathed entirely to the eldest son, with other (acquired) assets being divided among all of one's children, and moreover, if the eldest son did not have the ability to farm (in the case of farmers) or to carry on the family business (in the case of townspeople), the second son, third son, or adopted son was designated as the heir.

Furthermore, in some regions, entirely different practices were followed. For example, in southwestern Japan (especially southwestern Kyushu), male ultimogeniture or postremogeniture (*masshi souzoku*), the practice of leaving more to the *youngest* son rather than the eldest son and having the youngest son carry on the family line, was widespread. The youngest son would typically live with the parents until the end and would be rewarded by getting

the largest share of the parents' inheritance (albeit not all of it). More precisely, the parents' assets were divided equally among their sons except that the youngest son received twice the share of the other sons or a bonus called *tokushu zaisan* (special assets).

Another practice also found in southwestern Japan was *inkyō bunke* (post-retirement branch family). Under this practice, when the eldest son got married, the parents and younger children would cede the family home to him and his wife and move into a new home. When the second son got married, the parents and younger children would cede the second family home to him and his wife and move into a new home and so on until only the youngest son and the parents were left. The eldest son would typically carry on the family line, but all of the sons would share equally in the care of the elderly parents, and either the parents' assets were divided equally or a disproportionate share was given to the eldest son.

One practice that was found in the Tohoku region was *ane katoku souzoku* (inheritance by the elder sister), also called *shoseiji souzoku* (inheritance by the first-born child). Under this practice, the eldest child (*not* the eldest son) was designated as the heir, carrying on the family line and inheriting all of the parents' assets. If the eldest child were a girl, she (the eldest son's elder sister) would be designated as the heir, hence the name *ane katoku souzoku*.⁴

The so-called Meiji Civil Code, which was promulgated in 1896-98, made male primogeniture the rule for all social classes and made deviations from this rule illegal. As a result, practices not consistent with male primogeniture such as male ultimogeniture and *ane katoku souzoku* declined rapidly thereafter.

Finally, Japan's civil code was drastically revised in 1947, with the *ie* system being

abolished and the division of bequests being changed from male primogeniture to equal division in principle (i.e., unless the individual leaves a will specifying otherwise).

With which models of household behavior are these practices consistent?⁵ The practice of male primogeniture (male ultimogeniture, *ane katoku souzoku*) is consistent with the dynasty model because the eldest son (youngest son, eldest child) typically carries on the family line or the family business in exchange for receiving the entire bequest (or the largest share thereof), but at the same time, it is also consistent with the selfish life cycle model because it is typically the eldest son (youngest son, eldest child) who lives with, and cares for, the aged parents in exchange for receiving the entire bequest (or the largest share thereof).

Similarly, the practice of designating as the heir the son most capable of carrying on the family farm or the family business is clearly consistent with the dynasty model.

The practices of *inkyō bunke* is consistent with the dynasty model because the eldest son typically carries on the family line in exchange for receiving a disproportionate share of the parents' bequest, but at the same time, it is also consistent with the selfish life cycle model because all sons share equally in the care of their elderly parents and either the parents' assets are divided equally among all of their sons or each son gets at least something.

Finally, the division of parental assets among all of one's children by all social classes during the early Tokugawa period, the division of acquired assets among all of one's children by farmers and townspeople throughout the Tokugawa period, the practices of *masshi souzoku* and *inkyō bunke*, and the postwar civil code are all consistent with the altruism model because they provide for equal division of parental assets or for each child to get at least something.

Thus, prewar bequest practices have elements of all three models of household behavior but are perhaps most consistent with the dynasty model, while the postwar principle of equal division is consistent with the altruism model. However, it should be noted that, even during the postwar period, many individuals have chosen unequal division by leaving a will or by coming to an informal agreement with their children and asking some of their children to “voluntarily” forfeit their inheritance rights (see Noguchi, Uemura, and Kitou (1989)) and that this is consistent with either the selfish life cycle model, altruism model, or dynasty model, depending on what criterion is used to divide the bequest. Unfortunately, therefore, the historical evidence on bequest practices sheds little light on which model of household behavior applies in Japan, and the only inference that can be drawn is that the dynasty model was perhaps the most applicable model (but certainly not the only model) of household behavior from the middle of the Tokugawa period until the Second World War. Fortunately, detailed data are available on actual bequest behavior and attitudes towards bequests in contemporary Japan, and it is to these data that I now turn.

4. Data Sources

In this section, I describe the three data sources used in the subsequent analysis.

(1) The Public Opinion Survey on Saving and Consumption. The first data source I used is the Public Opinion Survey on Saving and Consumption (Chochiku to Shouhi ni kansuru Seron Chousa), which until 1992 was called the Public Opinion Survey on Saving (Chochiku ni kansuru Seron Chousa). This survey has been conducted every year since 1953 by the Central

Council for Financial Information (Kin'yuu Kouhou Chuuou Iinkai), which was originally called the Central Council for Savings Promotion (Chochiku Zoukyou Chuuou Iinkai) and later renamed the Central Council for Savings Information (Chochiku Kouhou Chuuou Iinkai). Note, however, that only the 1989 and 1990 surveys contain questions about bequest motives. This survey (hereafter referred to as the POSSC) surveys 6,000 randomly selected households from throughout Japan and obtains about 4,100 to 4,300 responses. These data are also analyzed by Ohtake and Horioka (1994, forthcoming).

(2) The Survey on the Financial Asset Choice of Households. The second data source I used is the Survey on the Financial Asset Choice of Households (Kakei ni okeru Kin'yuu Shisan Sentaku ni kansuru Chousa), which has been conducted every two years since 1988 by the Institute for Posts and Telecommunications Policy (Yuusei Kenkyuu-sho) of the Ministry of Public Management, Home Affairs, and Posts and Telecommunications (Soumu-shou) (formerly the Ministry of Posts and Telecommunications (Yuusei-shou)) of the Government of Japan. This survey (hereafter referred to as SFACH) surveys 6,000 randomly selected households (5,010 in 2001) from throughout Japan and obtains about 3,500 to 4,000 responses (about 3,100 in 2001).⁶ These data are also analyzed by Horioka et al. (2001). I analyze the data from the 1988, 1990, 1992, 1994, 1996, 1998, and 2001 administrations of this survey.

(3) The Comparative Survey on Savings in Japan and the United States. The third data source I used is the Comparative Survey on Savings in Japan and the United States (Chochiku ni kansuru Nichibei Hikaku Chousa), which was conducted simultaneously in Japan and the U.S. in 1996 by the Institute for Posts and Telecommunications Policy of what was then

called the Ministry of Posts and Telecommunications of the Government of Japan. This survey (hereafter referred to as the Japan-U.S. Survey) surveyed 1,800 households in both Japan and the U.S. using identical questionnaires and obtained 1,243 and 1,508 responses, respectively. These data are also analyzed by Horioka et al. (1998, 2000, 2001).

Note that all of the data pertaining to bequests in data sources (2) and (3) are inclusive of *inter vivos* transfers but that it is not clear whether or not the data in data source (1) is inclusive of *inter vivos* transfers.

5. Evidence on the Strength of Bequest Motives

In this section, I present data pertaining to the strength of people's bequest motives in Japan and the U.S. In subsection 5.1, I present data on the proportion of respondents who have received bequests from their parents in the past, and in subsection 5.2, I present data on the proportion of respondents with plans to leave a bequest to their children.

5.1. Data on the Proportion of Respondents Who Have Received Bequests in the Past

In this subsection, I present data on the proportion of respondents who have received bequests from their parents or parents-in-law in the past for Japan only (no data are available for the U.S.). For the purposes of this analysis, I confine myself to respondents who are 60 years old or older because it is highly likely that all of their parents and parents-in-law are already deceased. According to the SFACH (1990-1996), 34.74% to 40.19% of respondents aged 60 or older have

ever received bequests from their parents or parents-in-law (see Table 2).⁷

5.2. Data on the Proportion of Respondents with Plans to Leave a Bequest

In this subsection, I present data on the proportion of respondents who plan to leave a bequest in Japan and the U.S.⁸ Such data are available in all three of the surveys discussed above, but the wording of the question differs from survey to survey. For example, “Do not plan to make any special efforts to leave a bequest to my/our child or children but will leave behind whatever happens to be left over” is *not* given as one of the choices in the POSS and the 1992 SFACH, whereas it *is* given as one of the choices in the 1994, 1996, 1998, and 2001 SFACH and the Japan-U.S. Survey. Since the proportion of respondents selecting this choice is approximately one-half or more in the surveys in which it is given as one of the choices, the results will be severely biased if it is not given as one of the choices. I have therefore decided to focus on the surveys in which this choice is given as one of the choices, and if one does so, the results for Japan are remarkably consistent, with about one-fourth of respondents planning to make an effort to leave a bequest (see Table 3). By contrast, a full 46% of Americans plan to make an effort to leave a bequest. Thus, the proportion of respondents planning to make an effort to leave a bequest is nearly twice as high in the U.S. as it is in Japan, but it is less than half even in the U.S. Thus, it appears that bequest motives are weak in both the U.S. and Japan but especially weak in the case of Japan.

However, in order to determine which model of household behavior is more applicable in the real world, it is more important to look at the *nature* of people’s bequest motives and on

their attitudes toward bequest division than it is to look at the *strength* of their bequest motives because, as shown in section 2, positive bequests are consistent with all three models of household behavior. Thus, it is to data on the nature of people's bequest motives and on their attitudes toward bequest division to which I turn in the next two sections.

6. Evidence on the Nature of People's Bequest Motives

In this section, I present data on the nature of people's bequest motives in Japan and the U.S. In subsection 6.1, I present data on the bequest motives of respondents' parents, and in subsection 6.2, I present data on the bequest motives of the respondents themselves.

6.1. Data on the Bequest Motives of Respondents' Parents

I look first at data on the bequest motives of the parents of respondents for Japan only (no data are available for the U.S.). The 1990 and 1992 SFACH collect data on whether respondents have received bequests in the past and whether or not those bequests were conditional on taking care of their parents. Thus, there are three categories of respondents—those receiving unconditional bequests, those receiving conditional bequests, and those not receiving any bequests at all. The behavior of the parents of those belonging to the first category is consistent with the altruism model, while the behavior of the parents of those belonging to the second and third categories is consistent with the life cycle model. The results for respondents aged 60 or older are shown in Table 2 (I confined the sample to respondents aged 60 or older because I wanted to focus on those whose parents are likely to have already passed

away), and as this table shows, the largest category is those not receiving bequests at all (59.81% in 1990 and 62.75% in 1992), the second largest category is those receiving conditional bequests (26.66% in 1990 and 18.77% in 1992), and the smallest category is those receiving unconditional bequests (13.54% in 1990 and 18.47% in 1992). Since the two largest categories are both consistent with the life cycle model, the share of respondents' parents whose behavior is consistent with the life cycle model was a full 86.46% in 1990% and 81.53% in 1992, and the proportion of parents whose behavior is consistent with the altruism model was only 13.54% in 1990 and 18.47% in 1992.

6.2. Data on the Bequest Motives of Respondents

I look next at data on the nature of the bequest motives of respondents in Japan and the U.S. One question in the SFACH and the Japan-U.S. Survey asks respondents which of the following six attitudes toward bequests is closest to their own: (1) plan to leave a bequest to my/our child or children no matter what, (2) plan to leave a bequest to my/our child or children only if my/our child or children take care of me/us, (3) plan to leave a bequest to my/our child or children only if my/our child or children take over the family business, (4) do not plan to make any special efforts to leave a bequest to my/our child or children but will leave behind whatever happens to be left over, (5) other, and (6) do not feel it is necessary to leave a bequest to my/our child or children under any circumstances. Unfortunately, choice (3) is not one of the choices given in the case of the 1992 and 1994 SFACH and the Japan-U.S. Survey, choice (4) is not one the choices given in the case of the 1992 SFACH, and choice (5) is not one of the choices given in

the case of the Japan-U.S. Survey. The POSSC also includes a question about the nature of the bequest motives of respondents, but the choices are much more limited: the only choices given are choices (1), (2), and (6) above except that choice (6) is broken down into (6a) do not plan to leave a bequest to my/our child or children because I/we want to enjoy my/our own lives and (6b) do not plan to leave a bequest to my/our child or children because the expectation of receiving a bequest from me/us might cause my/our child or children to lose the will to work. Choices (1) and (6b) are consistent with the altruism model, choices (2), (4), and (6a) are consistent with the life cycle model, choice (3) is consistent with the dynasty model, and it is not clear with which model choice (5) is consistent.

Since the proportion of respondents selecting choice (4) is approximately one-half or more in the surveys in which it is given as one of the choices, the results will be severely biased if it is not given as one of the choices. I have therefore decided to focus on the surveys in which choice (4) is given as one of the choices (the 1994, 1996, 1998, and 2001 SFACH and the Japan-U.S. Survey).

The results are shown in Table 4, and looking first at the results based on the SFACH (1994-2001), “do not plan to make any special efforts to leave a bequest to my/our child or children but will leave behind whatever happens to be left over” and “do not feel it is necessary to leave a bequest to my/our child or children under any circumstances,” both of which are consistent with the life cycle model,⁹ are by far the dominant attitudes toward bequests, with a full 46.06 to 49.75% and 24.16 to 27.33%, respectively, of respondents holding these views. “Plan to leave a bequest to my/our child or children no matter what,” which is consistent with the

altruism model, is in third place, with 17.14 to 19.89% of respondents holding this view. “Plan to leave a bequest to my/our child or children only if my/our child or children take care of me/us,” which is consistent with the life cycle model, and “plan to leave a bequest to my/our child or children only if my/our child or children take over the family business,” which is consistent with the dynasty model, are in distant fourth and fifth place, respectively, with a mere 4.94 to 6.80% and 1.30 to 1.57%, respectively, of respondents holding these views.

Looking next at the proportion of respondents whose views are consistent with each model of household behavior, an overwhelming proportion (77.23 to 81.11%) of respondents hold a view that is consistent with the life cycle model, only 17.14 to 19.89% hold a view that is consistent with the altruism model, and a mere 1.30 to 1.57% hold a view that is consistent with the dynasty model.

Turning to the results from the Japan-U.S. Survey, these results are not strictly comparable to those from the SFACH because the wording of the question about bequest motives is somewhat different with the biggest difference being that the no bequest option is “do not *feel it is necessary* to leave a bequest to my/our child or children under any circumstances” in the SFACH but is “do not *plan* to leave a bequest to my/our child or children under any circumstances” in the Japan-U.S. Survey (*italics added*). Since there are many who leave a bequest even though they do not feel it is necessary to do so, the proportion of respondents choosing the no bequest option is much higher (and the proportion of respondents choosing the option “do not plan to make any special efforts to leave a bequest to my/our child or children but will leave behind whatever happens to be left over” is much lower) in the case of the Japan-U.S.

Survey. Moreover, there are other differences as well—for example, “plan to leave a bequest to my/our child or children only if my/our child or children take over the family business” and “other” are among the choices in the case of the SFACH but not in the case of the Japan-U.S. Survey.

If these differences are taken into account, the results for Japan from the Japan-U.S. Survey are broadly consistent with the results from the SFACH: “do not plan to make any special efforts to leave a bequest to my/our child or children but will leave behind whatever happens to be left over” which is consistent with the life cycle model, is by far the most dominant view, with 69.33% of respondents holding this view, “plan to leave a bequest to my/our child or children no matter what,” which is consistent with the altruism model, is number two, with 19.28% of respondents holding this view, and “plan to leave a bequest to my/our child/children only if my/our child or children take care of me/us” and “do not plan to leave a bequest to my/our child or children under any circumstances,” both of which are consistent with the life cycle model, are a distant third and fourth, respectively, with 6.39% and 5.00%, respectively, of respondents holding these views. (No information is available on the proportion of respondents who “plan to leave a bequest to my/our child or children only if my/our child or children take over the family business.”) Thus, 80.72% of respondents have a bequest motive that is consistent with the life cycle model and 19.28% a bequest motive that is consistent with the altruism model, and these figures are remarkably consistent with the figures from the SFACH.

Looking finally at the U.S. results from the Japan-U.S. Survey, “do not plan to make any special efforts to leave a bequest to my/our child or children but will leave behind whatever

happens to be left over,” which is consistent with the life cycle model, is number one, as in the case of the Japanese results, but the proportion of respondents holding this view is much lower than in the case of the Japanese results (51.13% vs. 69.33%). “Plan to leave a bequest to my/our child or children no matter what,” which is consistent with the altruism model, is number two, as in the case of the Japanese results, but the proportion of respondents holding this view is more than twice as high as in the case of the Japanese results (42.53% vs. 19.28%). Finally, “plan to leave a bequest to my/our child/children only if my/our child or children take care of me/us” and “do not plan to leave a bequest to my/our child or children under any circumstances,” both of which are consistent with the life cycle model, are a distant third and fourth, respectively, as in the case of the Japanese results, but the proportion of respondents holding these views are quite a bit lower than in the case of the Japanese results (3.40% vs. 6.39% and 2.93% vs. 5.00%, respectively).

As a result, the proportion of respondents who have a bequest motive that is consistent with the life cycle model is much lower in the U.S. than in Japan (57.47% vs. 80.72%), whereas the proportion of respondents who have a bequest motive that is consistent with the altruism model is more than twice as high in the U.S. than it is in Japan (42.53% vs. 19.28%).

Thus, the majority of respondents in both countries have bequest motives that are consistent with the life cycle model, but this proportion is much higher in Japan than it is in the U.S. Conversely, the proportion of respondents with a bequest motive that is consistent with the altruism model is more than twice as high in the U.S. as it is in Japan.

7. Evidence on Bequest Division

In this section, I present data on bequest division in Japan and the U.S. In subsection 7.1, I present data on the division of the respondents' parents' and parents-in-law's bequests, and in subsection 7.2, I present data on the respondents' attitudes toward the division of their own bequest.

7.1. Data on the Division of Respondents' Parents' and Parents-in-Law's Bequests

In this subsection, I present data on the division of respondents' parents' and parents-in-law's bequests for Japan only (no data are available for the U.S.). In the 1998 and 2001 SFACH, respondents are asked how their parents' and parents-in-law's bequests were divided with the choices being: (1) divided equally, (2) more or all to the child or children who took care of the parents, (3) more or all to the child or children who took over the family business, (4) more or all to the child or children who had less income, (5) more or all to the eldest son/daughter even though he/she did not take care of the parents, and (6) other. Method (2) is consistent with the life cycle model, methods (3) and (5) with the dynasty model, and method (4) with the altruism model. Method (1) is not, in general, consistent with any model of household behavior, but it is consistent with the altruism model if we assume that the earnings capacity relative to consumption needs of all of one's children are roughly equal.

The results are shown in Table 5, and as can be seen from this table, "divided equally," which is most consistent with the altruism model, is the dominant method of bequest division in three out of four cases (and second in one case), with 28.04 to 37.43% of parents and

parents-in-law dividing their bequests in this way. “More or all to the child or children who took care of the parents,” which is consistent with the life cycle model, is a relatively close second in three out of four cases (and first in one case), with 24.27 to 32.43% of parents and parents-in-law dividing their bequests in this way. The ranking of the other methods of bequest division differs somewhat between years, with “no bequests left” ranking third in 1998, with 13.60 to 14.91% of parents and parents-in-law not leaving a bequest, followed by “more or all to the child or children who took over the family business” in fourth place (6.73 to 9.39%), “more or all to the eldest son/daughter even though the eldest son/daughter did not take care of the parents” in fifth place (4.68 to 5.94%), and “more or all to the child or children who had less income” in sixth place (0.38 to 1.75%). In 2001, “more or all to the child or children who took over the family business” ranked third with 12.20 to 13.85% of parents and parents-in-law dividing their bequests in this way, followed by “more or all to the eldest son/daughter even though the eldest son/daughter did not take care of the parents” in fourth place (9.06 to 10.64%), “no bequests left” in fifth place (2.87 to 8.36%), and “more or all to the child or children who had less income” in sixth place (0.00 to 0.51%).

Looking next at the proportion of respondents whose parents’ and parents-in-law’s method of bequest division is consistent with each model of household behavior, the life cycle model is the dominant model in all cases (but tied for first in one case), with the method of bequest division of 33.45 to 40.04% of parents and parents-in-law being consistent with the life cycle model, followed by the altruism model in second place (28.55 to 39.18%) and the dynasty model in third place (11.40 to 24.49%).

7.2. Data on Respondents' Attitudes toward Bequest Division

In this subsection, I present data on the attitudes of respondents toward the division of their bequests in Japan and the U.S.¹⁰ In the surveys I used in this analysis, respondents are asked if they feel it is necessary to leave a bequest to their child or children and those who feel that it is necessary to leave a bequest to their child or children are asked which of six attitudes toward bequest division is closest to their own: (1) divide equally, (2) give more or all to the child or children who take care of me/us, (3) give more or all to the child or children who take over the family business, (4) give more or all to the child or children who has less income, (5) give more or all to the eldest son/daughter even if he/she does not take care of me/us, and (6) other. (These six attitudes coincide almost exactly with the six methods of bequest division given in the question regarding the division of the parents' and parents-in-law's bequests.)

Note that the wording of the question about attitudes toward bequest division is problematic in the case of the 1994 SFACH. In this year, attitude (5) is worded "give more or all to the eldest son/daughter," and the qualification "even if he/she does not take care of me/us" is omitted. Thus, respondents who want to give more or all to their eldest son/daughter because he/she took care of them would not be sure whether to pick attitude (2) or attitude (5), and for this reason, the proportion of respondents selecting attitude (5) is more than twice as high in 1994 as it is in later years. Since the results for 1994 are neither reliable nor comparable to the results for later years, I will focus primarily on the results for 1996 and later.

The results are shown in Table 6, and looking first at the results from the SFACH, "divide equally," which is most consistent with the altruism model, is the dominant attitude

toward bequest division in all years, with 36.15 to 42.75% of respondents holding this view. “I/we do not feel it is necessary to leave a bequest to my/our child or children under any circumstances” and “give more or all to the child or children who take care of me/us,” both of which are consistent with the life cycle model, are in second and third place, respectively, with 24.16 to 27.33% and 21.12 to 24.10%, respectively, of respondents holding these views. “Give more or all to the eldest son/daughter even if the eldest son/daughter does not take care of me/us” and “give more or all to the child or children who take over the family business,” both of which are consistent with the dynasty model, are in distant fourth and fifth place, respectively, with 3.46 to 6.30% and 2.62 to 3.66%, respectively, of respondents holding these views. Finally, “give more or all to the child or children who has less income,” which is consistent with the altruism model, is in last place with a mere 0.70 to 0.93% of respondents holding this view.

Looking next at the proportion of respondents whose attitude toward bequest division is consistent with each model of household behavior, the attitude toward bequest division of 46.83 to 48.46% of respondents is consistent with the life cycle model, that of 36.89 to 43.45% of respondents is consistent with the altruism model, and that of 6.07 to 9.77% of respondents is consistent with the dynasty model. Thus, the rank order of the various models of household behavior is the same as in the case of the results based on bequest motives, with the life cycle model first, the altruism model second, and the dynasty model third, but the proportion of respondents whose attitude toward bequest division is consistent with the life cycle and dynasty models is much lower and the proportion of households whose attitude toward bequest division is consistent with the altruism model is much higher than in the case of the results based on bequest

motives.

Turning to the results for Japan from the Japan-U.S. Survey, the results are not strictly comparable to those from the SFACH for the reasons given earlier, but if these differences are taken into account, the results are broadly consistent. “Divide equally,” which is most consistent with the altruism model, is again the dominant attitude toward bequest division, with 44.17% of respondents holding this view, but “I/we do not feel it is necessary to leave a bequest to my/our child or children under any circumstances,” which is consistent with the life cycle model, falls from second to fifth place, presumably because of the difference in wording noted earlier, with only 5.00% of respondents holding this view. “Give more or all to the child or children who take care of me/us,” which is also consistent with the life cycle model, rises from third to second place, with 29.21% of respondents holding this view, and “give more or all to the eldest son/daughter even if the eldest son/daughter does not take care of me/us” and “give more or all to the child or children who take over the family business,” both of which are consistent with the dynasty model, rise from fourth to third and fifth to fourth place, respectively, with 7.71% and 5.73%, respectively, of respondents holding these views. Finally, “give more or all to the child or children who has less income,” which is consistent with the altruism model, remains in last place with a mere 1.75% of respondents holding this view. As a result, the altruism model is now the dominant model of household behavior in Japan, with the proportion of respondents whose attitude toward bequest division is consistent with the altruism model increasing to a full 45.92%. By contrast, the life cycle model falls from first place to second place, with the proportion of respondents whose attitude toward bequest division is consistent with the life cycle model falling

to only 34.21%, and the dynasty model remains in third place, with the proportion of respondents whose attitude toward bequest division is consistent with the dynasty model being a mere 13.44%.

Turning finally to the U.S. results from the Japan-U.S. Survey, “divide equally,” which is most consistent with the altruism model, is the dominant attitude toward bequest division, as in the case of the Japanese results, but the proportion of respondents holding this view is nearly twice as high in the U.S. as it is in Japan (84.10% vs. 44.17%).^{11 12} Conversely, the other five attitudes toward bequest division are all of only negligible importance in the U.S.: no more than 3.09% of respondents hold any of these views and the proportion of respondents holding each of these views is lower in the U.S. than it is in Japan, with the gap being especially large in the case of “give more or all to the child or children who take care of me/us” (3.09% vs. 29.21%). As a result, the altruism model is by far the most dominant model of household behavior in the U.S. with 84.51% of respondents having an attitude toward bequest division that is consistent with the altruism model; this proportion is almost twice as high as the corresponding proportion for Japan. Conversely, only 6.02% of U.S. respondents have an attitude toward bequest division that is consistent with the life cycle model (a proportion that is less than one-fifth of the corresponding proportion for Japan), and the proportion of respondents whose attitude toward bequest division is consistent with the dynasty model is also far lower in the U.S. than it is in Japan (2.57% vs. 13.44%).

8. Summary of Findings regarding Bequest Motives and Bequest Division

Finally, I summarize my findings regarding bequest motives and bequest division in Table 7. Looking first at the results for the life cycle model for Japan, the results regarding bequest motives (those of the parents of respondents as well as those of the respondents themselves) suggest that the behavior of 77.23 to 91.53% of individuals is consistent with the life cycle model, while the results regarding bequest division (that of the parents of respondents as well as that of the respondents themselves) suggest that the behavior of 33.45 to 48.46% of individuals is consistent with the life cycle model. Turning to the results for the U.S., the results regarding the bequest motives of respondents suggest that the behavior of 57.47% of individuals is consistent with the life cycle model, while the results regarding attitudes toward bequest division suggest that the behavior of only 6.02% of individuals is consistent with the life cycle model.

Looking next at the results for the altruism model for Japan, the results regarding bequest motives suggest that the behavior of 13.54 to 19.89% of individuals is consistent with the altruism model, while the results regarding the attitudes toward bequest division of respondents suggest that the behavior of 28.55 to 45.92% of individuals is consistent with the altruism model. Turning to the results for the U.S., the results regarding the bequest motives of respondents suggest that the behavior of 42.53% of individuals is consistent with the altruism model, while the results regarding attitudes toward bequest division suggest that the behavior of a full 84.51% of individuals is consistent with the altruism model.

Looking finally at the results for the dynasty model for Japan, the results regarding the

bequest motives of respondents suggest that the behavior of 1.30 to 1.57% of individuals is consistent with the dynasty model, and the results regarding the attitudes toward bequest division of respondents suggest that the behavior of 6.07 to 24.49% of individuals is consistent with the dynasty model. Turning to the results for the U.S., the results regarding attitudes toward bequest division suggest that the behavior of only 2.57% of individuals is consistent with the dynasty model.

Thus, the exact proportions of individuals whose behavior is consistent with each model of household behavior are quite different depending on the criterion used, but the results are broadly consistent in suggesting that the life cycle model is the dominant model of household behavior in Japan and that it is far more applicable in Japan than it is in the U.S., that the dynasty model is also more applicable in Japan than it is in the U.S. but that it is not of dominant importance even in Japan, and conversely, that the altruism model is far more applicable in the U.S. than it is in Japan. The only exception is that the results based on attitudes toward bequest division suggest that the behavior of only a minority of individuals is consistent with the life cycle model, but the proportion of individuals whose behavior is consistent with the life cycle model is likely to be an underestimate because “divide equally” is not, strictly speaking, consistent with the altruism model.

9. Evidence on Respondents’ Willingness to Help Others

The last type of evidence I wish to consider is data on the willingness of respondents to give financial assistance to others for Japan only (no data are available for the U.S.). The 1998

and 2001 SFACH include the following question “Would you be willing to give financial assistance to the following categories of individuals if they were temporarily short of cash? Please assume that the money will never be repaid,” and the categories given are “your own parents,” “your spouse’s parents,” “your children,” “your brothers and sisters,” “friends,” “acquaintances,” “disaster victims,” and “complete strangers” (except that not all choices are given in both years). Assuming that there is no *quid pro quo* for the financial assistance given, those answering “yes” to this question can be regarded as harboring altruistic feelings toward the category of individuals in question, and thus data of this type can be used to test whether the altruism model applies in the real world. In particular, if the parental altruism model described in section 2 applies, respondents should reply that they are willing to give financial assistance to their own children but not to anyone else. If the life cycle model applies, respondents should not be willing to give financial assistance to anyone, and if the dynasty model applies, respondents should be willing to give financial assistance only to the child who carries on the family line and/or the family business. Note, however, that if there is a *quid pro quo* for the financial assistance given (for example, the financial assistance is conditional on the recipient giving financial assistance to the donor if and when the donor faces financial difficulty (a risk-sharing agreement à la Cochrane (1991), Mace (1991), and Townsend (1994)), the willingness to give financial assistance to any and all categories of people is fully consistent with all three models of household behavior including the selfish life cycle model and is not necessarily evidence of altruism.

The results are shown in Table 8, and if we temporarily ignore the possibility of risk

sharing, this table suggests that respondents are most altruistic toward their own children, with 91.59 to 91.86% of respondents being willing to give financial assistance to their own children. Somewhat surprisingly, respondents are almost as altruistic toward their own parents and their spouse's parents as they are toward their own children, with 86.37 to 88.62% of respondents being willing to give financial assistance to their own parents and 84.38 to 84.83% being willing to give financial assistance to their spouse's parents. Respondents are also fairly altruistic toward siblings and disaster victims, with 60.30 to 61.59% of the respondents being willing to give financial assistance to siblings and 49.34% of respondents being willing to give financial assistance to disaster victims. By contrast, respondents are not very altruistic toward friends, acquaintances, and complete strangers, with only 19.43%, 11.24%, and 1.56% of respondents being willing to give financial assistance to friends, acquaintances, and complete strangers, respectively.

These results appear to contradict the earlier results regarding bequest motives and bequest division and suggest that the altruism model applies to a far greater proportion of individuals than suggested by the earlier results. Moreover, the fact that individuals are almost as altruistic toward their own parents as they are toward their own children suggests that a reciprocal (two-sided) altruism model is more applicable than the parental (one-sided) altruism model described in section 2. Furthermore, individuals appear to harbor altruism not only toward their own children and parents but also toward their siblings and disaster victims. The fact that individuals are far more likely to help disaster victims than friends, acquaintances, and complete strangers suggests that they are motivated more by risk sharing (or reciprocal altruism)

considerations than by purely altruistic considerations.¹³ Indeed, their willingness to help family members could also be motivated by risk sharing considerations rather than by pure altruism. Thus, perhaps the results in this section are not as strongly supportive of altruism and not as inconsistent with the earlier results regarding bequest motives and bequest division as it appears at first glance.

10. More Formal Tests

Next, I would like to briefly survey a number of more formal tests of the applicability of various models of household behavior.

10.1. Analyses of the Impact of Parental Bequest Motives and Parental Assets on the Behavior of Children

A number of papers have examined whether there is a link between parental bequest motives or the amount of parental assets and the amount of financial support and/or care parents receive from their children. If parents are altruistic or dynastic, they should leave bequests to their children regardless of whether or not their children provide financial support and/or care to them, and similarly, if children are altruistic, they should provide financial support and/or care to their parents regardless of whether or not they expect to receive bequests or *inter vivos* transfers from their parents and should be more likely to provide financial support and/or care to their parents the less wealthy their parents are. Thus, there should be no correlation between parental bequest motives and the amount of financial support and/or care parents receive from their

children, and there should be a negative correlation between parental assets and the amount of financial support and/or care parents receive from their children. By contrast, if parents are selfish, they will make bequests conditional on receiving financial support and/or care from their children, and similarly, if children are selfish, they will be more likely to provide financial support and/or care to their parents if they expect to receive bequests or *inter vivos* transfers from their parents (especially if such transfers are conditional on providing financial support and/or care to their parents) or if the amount of such transfers is large. Thus, there should be a positive correlation between parental bequest motives and the amount of financial support and/or care parents receive from their children as well as between parental assets (a proxy for the amount of bequests and *inter vivos* transfers) and the amount of financial support and/or care parents receive from their children.

Turning to the empirical findings for Japan, Horioka et al. (1998, 2000, 2001) find that parents with bequest motives are more likely to live with their children and more likely to receive financial support and/or care from their children than are parents without bequest motives. Similarly, Noguchi, Uemura, and Kitou (1989) find that children who live with their parents are much more likely to receive a bequest than those who live apart from their parents (63.3% vs. 20.5%) and that the probability of receiving a bequest increases sharply with the amount of financial support provided (from 29.2% in the case of a small amount of support to 66.7% in the case of a large amount of support).

Komamura (1994) and Ohtake and Horioka (1994, forthcoming) find that the housing assets of parents increase the likelihood of their children living with them, and Ohtake and

Horioka (1994, forthcoming) also find that the financial net worth of parents increases the amount of financial support they receive from their children (given that they receive support).¹⁴ If we regard coresidence as a proxy for care, all of these findings are consistent with the selfish life cycle model and inconsistent with the altruism and dynasty models.

10.2. Analyses of the Impact of Public Pensions on Consumption/Saving

Takayama et al. (1990) is the most careful analysis of the impact of public pensions on the consumption/saving of pre-retirement individuals. If the selfish life cycle model or the dynasty model holds, an increase in public pension benefits will reduce household saving because the two are substitute sources of retirement income, but if the altruism model holds, public pension benefits (or, more precisely, the portion that represents a net transfer from younger generations) will not affect household saving because the reduction in retirement saving caused by an increase in public pension benefits will be precisely offset by the increased saving needed to compensate future generations for bearing the burden of the higher level of the current generation's public pension benefits. Looking at the results, Takayama et al. (1990) find that public pension wealth has a positive and significant impact on the consumption of pre-retirement households, which supports the selfish life cycle model, but that when they break public pension wealth down into the part attributable to the current generation's own public pension contributions and the part that represents a net transfer from younger generations, the results are inconclusive, with the impact of net transfers being estimated to be negative in some cases and positive in others. Thus, the results are somewhat inconclusive results but provide some support

for the selfish life cycle model.¹⁵

10.3. Analyses of the Impact of the Distribution of Resources within Extended Families on Their Consumption Patterns

Hayashi (1995) examines whether the distribution of resources within Japanese extended families affects their consumption patterns using micro data from the 1979 and 1984 National Survey of Family Income and Expenditure (Zenkoku Shouhi Jittai Chousa), which was conducted by what was then called the Statistics Bureau of the Management and Coordination Agency (Soumu-chou Toukei-kyoku) of the Japanese Government. If the altruism model applies, the distribution of resources within extended families should not affect their consumption patterns (the so-called neutrality property), but Hayashi finds that the higher is the parents' share of household income, the greater is the household's expenditure on food items preferred by the parents. This finding suggests that the altruism model does not apply in the case of Japan although Hayashi does not rule out the presence of a less extreme form of altruism between Japanese parents and children.

10.4. Analyses of the Impact of Tax Policy on Consumer Spending

Watanabe, Watanabe, and Watanabe (2001) analyze the impact of tax policy on consumer spending in Japan and find that tax changes (especially permanent changes) have a significant effect on consumer spending and that the null hypothesis that the fraction of Ricardian (altruistic) consumers is zero cannot be rejected.

10.5. Analyses of Inter-cohort Differences in Lifetime Incomes

If individuals are altruistic, lifetime incomes should be equalized across cohorts, but Saito (forthcoming) finds that there are large differences in lifetime incomes across cohorts in both the U.S. and Japan, which leads him to conclude that individuals in neither country are altruistic.

10.6. Summary

The results from at least four of the five types of tests are consistent with the selfish life cycle model and inconsistent with the altruism model, and there is virtually no evidence in favor of the altruism model. Thus, the results of the more formal tests are generally consistent with most of the foregoing survey evidence.

11. Conclusions

What conclusions can be reached from these diverse and sometimes contradictory findings? One thing that can be said for sure is that no model of household behavior has universal applicability in either Japan or the U.S. The various models of household behavior appear to coexist in both countries and perhaps even within the same individual. Nonetheless, it appears that the selfish life cycle model is the most highly applicable model in both Japan and the U.S. but that it applies to a far greater extent in Japan than it does in the U.S., that the dynasty model is also more applicable in Japan than it is in the U.S. but that it is not of dominant importance even in Japan, and conversely, that the altruism model is far more applicable in the U.S. than it is in Japan. Those who believe that the Japanese are more altruistic than other peoples (such as Hayashi

(1986)) appear to be mistaken.

12. Policy Implications

Last but not least, I discuss the policy implications of my findings. As discussed in greater detail by Barro (1974), Weil (1989), Masson and Pestieau (1997), and others, the policy implications of the three models of household behavior analyzed in this paper vary dramatically, with very different implications concerning (1) the effects of fiscal policy and (2) the effects of bequests on intra-family and social inequality. In this section, I discuss each of these in turn.

12.1. The Effects of Fiscal Policy

In the case of the life cycle and dynasty models, a tax cut that is financed by the issuance of long-term government bonds will have a positive impact on current consumption because the current generation will not care about the tax increase the government will have to impose on future generations in order to redeem its bonds.¹⁶ In the case of the altruism model, by contrast, a tax cut that is financed by the issuance of long-term government bonds will have no impact on current consumption because the current generation will save the entire tax cut and use it to increase its bequest to future generations in order to compensate them for the increased tax burden they will have to bear (usually referred to as Ricardian equivalence). Thus, Ricardian equivalence will hold in the case of the altruism model but not in the case of the life cycle and dynasty models.¹⁷

Similarly, the impact on household saving of raising the benefit levels of a

pay-as-you-go public pension system will be very different depending on whether the selfish life cycle model, the altruism model, or the dynasty model applies, as discussed in subsection 10.3 above.

12.2. The Effects of Bequests on Intra-family and Social Inequality

According to the selfish life cycle model, individuals either do not leave bequests, leave only unintended bequests, or leave only bequests that are a *quid pro quo* for financial support and/or care during old age. In the latter case, the value of the bequest will presumably roughly coincide with the value of the financial support and/or care during old age and thus net bequests (gross bequests net of intergenerational transfers in the opposite direction) will be roughly zero. Thus, in the case of the selfish life cycle model, bequests will not exacerbate or perpetuate wealth disparities.

By contrast, in the case of the altruism and dynasty models, bequests will be unrequited and thus even net bequests will be positive. In the case of the altruism model, bequests will equalize the distribution of wealth among siblings because they are compensatory, but at the same time, they will exacerbate and perpetuate social (inter-family) wealth disparities. In the case of the dynasty model, by contrast, bequests will cause the distribution of wealth among siblings to become more unequal because the entire bequest goes to the child who carries on the family line and/or the family business, but they may, at the same time, reduce steady-state social inequality by facilitating the upward mobility of the child who receives the entire bequest (see Chu (1991)).

12.3. Summary

To the extent that the Japanese adhere to the selfish life cycle model, a tax cut that is financed by the issuance of long-term government bonds will have a positive impact on current consumption, an increase in public pension benefits will cause a decline in household saving, and bequests will not cause wealth inequalities to be passed on from generation to generation. However, these implications need to be moderated to the extent that a sizable minority of the Japanese adhere to the altruism model.

References

- Altonji, Joseph G.; Hayashi, Fumio; and Kotlikoff, Laurence J. (1992), "Is the Extended Family Altruistically Linked? Direct Tests Using Micro Data," *American Economic Review*, vol. 82, no. 5 (December), pp. 1177-1198.
- Andreoni, James (1989), "Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence," *Journal of Political Economy*, vol. 97, no. 6 (December), pp. 1447-1458.
- Aoyama, Michio, et al. (1974), *Kouza Kazoku (A Course on the Family)*, vol. 5: *Souzoku to Keishou (Inheritance and Succession)* (Tokyo: Koubundou) (in Japanese).
- Barro, Robert J. (1974), "Are Government Bonds Net Wealth?" *Journal of Political Economy*, vol. 82, no. 6 (November/December), pp. 1095-1117.
- Barthold, Thomas A., and Ito, Takatoshi (1992), "Bequest Taxes and Accumulation of Household Wealth: U.S.-Japan Comparison," in Takatoshi Ito and Anne O. Krueger, eds., *The Political Economy of Tax Reform* (Chicago: University of Chicago Press), pp. 235-290.
- Becker, Gary S. (1974), "A Theory of Social Interactions," *Journal of Political Economy*, vol. 82, no. 6 (November/December), pp. 1063-1093.
- Becker, Gary S. (1981), *A Treatise on the Family* (Cambridge, MA, USA: Harvard University Press).
- Becker, Gary S. (1991), *A Treatise on the Family*, Enlarged Edition (Cambridge, MA, USA: Harvard University Press).

- Bernheim, B. Douglas; Shleifer, Andrei; and Summers, Lawrence H. (1985), "The Strategic Bequest Motive," *Journal of Political Economy*, vol. 93, no. 6 (December), pp. 1045-1076.
- Boskin, Michael J., and Kotlikoff, Laurence J. (1985), "Public Debt and United States Saving: A New Test of the Neutrality Hypothesis," *Carnegie-Rochester Conference Series on Public Policy*, vol. 23 (Autumn), pp. 55-86.
- Browning, Martin, and Lusardi, Annamaria (1996), "Household Saving: Micro Theories and Micro Facts," *Journal of Economic Literature*, vol. 34, no. 4 (December), pp. 1797-1855.
- Campbell, David W. (1997), "Transfer and Life Cycle Wealth in Japan, 1974-1984," *Japanese Economic Review*, vol. 48, no. 4 (December), pp. 410-423.
- Chu, C. Y. Cyrus (1991), "Primogeniture," *Journal of Political Economy*, vol. 99, no. 1 (February), pp. 78-99.
- Cochrane, John H. (1991), "A Simple Test of Consumption Insurance," *Journal of Political Economy*, vol. 99, no. 5 (October), pp. 957-976.
- Cox, Donald (1987), "Motives for Private Income Transfers," *Journal of Political Economy*, vol. 95, no. 3 (June), pp. 508-546.
- Davies, James B. (1981), "Uncertain Lifetime, Consumption, and Dissaving in Retirement," *Journal of Political Economy*, vol. 89, no. 3 (June), pp. 561-577.
- Dekle, Robert (1989), "The Unimportance of Intergenerational Transfers in Japan," *Japan and the World Economy*, vol. 1, no. 4 (November), pp. 403-413.
- Dekle, Robert (1990), "Do the Japanese Elderly Reduce Their Total Wealth? A New Look with Different Data," *Journal of the Japanese and International Economies*, vol. 4, no. 3 (September), pp. 209-317.
- Drazen, Allan (1978), "Government Debt, Human Capital, and Bequests in a Life-Cycle Model," *Journal of Political Economy*, vol. 86, no. 3 (June), pp. 505-516.
- Dunn, Thomas A., and Phillips, John W. (1997), "The Timing and Division of Parental Transfers to Children," *Economics Letters*, vol. 54, no. 2 (February), pp. 135-137.
- Hayashi, Fumio (1986), "Why Is Japan's Saving Rate So Apparently High?" in Stanley Fischer, ed., *NBER Macroeconomics Annual 1986*, vol. 1 (Cambridge: MIT Press), pp. 147-210.
- Hayashi, Fumio (1995), "Is the Japanese Extended Family Altruistically Linked? A Test based on Engel Curves," *Journal of Political Economy*, vol. 103, no. 3 (June), pp. 661-674.

Hayashi, Fumio (1996), "Analysis of Household Saving: Past, Present, and Future," *Japanese Economic Review*, vol. 47, no. 1 (March), pp. 21-33.

Hayashi, Fumio (1998), *Understanding Saving: Evidence from the United States and Japan* (Cambridge, Massachusetts: The MIT Press).

Horioka, Charles Yuji (1993), "Saving in Japan," in Arnold Heertje, ed., *World Savings: An International Survey* (Oxford, England: Blackwell Publishers), pp. 238-278.

Horioka, Charles Yuji; Fujisaki, Hideki; Watanabe, Wako; and Ishibashi, Shohei (1998), "Chochiku Douki/Isan Douki no Nichibei Hikaku" (A U.S.-Japan Comparison of Saving and Bequest Motives), in Charles Yuji Horioka and Koji Hamada, eds., *Nichibei Kakei no Chochiku Koudou* (The Saving Behavior of U.S. and Japanese Households) (Tokyo: Nihon Hyouronsha), pp. 71-111 (in Japanese).

Horioka, Charles Yuji; Fujisaki, Hideki; Watanabe, Wako; and Kouno, Takatsugu (2000), "Are Americans More Altruistic than the Japanese? A U.S.-Japan Comparison of Saving and Bequest Motives," *International Economic Journal*, vol. 14, no. 1 (Spring), pp. 1-31.

Horioka, Charles Yuji; Kasuga, Norihiro; Yamazaki, Katsuyo; and Watanabe, Wako (1996), "Do the Aged Dissave in Japan? Evidence from Micro Data," *Journal of the Japanese and International Economies*, vol. 10, no. 3 (September), pp. 295-311.

Horioka, Charles Yuji, and Okui, Megumi (1999), "A U.S.-Japan Comparison of the Importance and Determinants of Retirement Saving," *Economics Letters*, vol. 65, no. 3 (December), pp. 365-371.

Horioka, Charles Yuji; Yamashita, Kouji; Nishikawa, Masashi; and Iwamoto, Shiho (2001), "On The Importance, Nature, and Impact of Bequest Motives in Japan," Institute of Social and Economic Research, Osaka University, mimeo.

Hurd, Michael D. (1987), "Savings of the Elderly and Desired Bequests," *American Economic Review*, vol. 77, no. 3 (June), pp. 298-312.

Hurd, Michael D. (1990), "Research on the Elderly: Economic Status, Retirement, and Consumption and Saving," *Journal of Economic Literature*, vol. 28, no. 2 (June), pp. 565-637.

Iwamoto, Yasushi (1993), "Does the Dynasty View Help to Explain Japan's High Saving Rate?" mimeo., Kyoto Institute of Economic Research, Kyoto University, Kyoto, Japan.

Kessler, Denis, and Masson, Andre (1989), "Bequest and Wealth Accumulation: Are Some Pieces of the Puzzle Missing?" *Journal of Economic Perspectives*, vol. 3, no. 3 (Summer), pp. 141-152.

- Kimball, Miles S. (1987), "Making Sense of Two-Sided Altruism," *Journal of Monetary Economics*, vol. 20, no. 2 (September), pp. 301-326.
- Komamura, Kouhei (1994). "Koureisha Kakei ni okeru Isan Koudou no Keizai Bunseki (Economic Analysis of Bequest Behavior in Aged Households)," *Kikan Shakai Hoshou Kenkyuu* (The Quarterly of Social Security Research), vol. 30, no. 1 (Summer), pp. 62-74 (in Japanese).
- Kotlikoff, Laurence J. (1988), "Intergenerational Transfers and Savings," *Journal of Economic Perspectives*, vol. 2, no. 2 (Spring), pp. 41-58.
- Kotlikoff, Laurence J. (1989), "Health Expenditures and Precautionary Saving," in Laurence J. Kotlikoff, ed., *What Determines Saving?* (Cambridge, Massachusetts, U.S.A.: The MIT Press), pp. 141-162.
- Kotlikoff, Laurence J., and Spivak, Avia (1981), "The Family as an Incomplete Annuities Market," *Journal of Political Economy*, vol. 89, no. 2 (April), pp. 372-391.
- Kotlikoff, Laurence J., and Summers, Lawrence H. (1981), "The Role of Intergenerational Transfers in Aggregate Capital Accumulation," *Journal of Political Economy*, vol. 89, no. 4 (August), pp. 706-732.
- Laitner, John (1997), "Intergenerational and Interhousehold Economic Links," in Mark R. Rosenzweig and Oded Stark, eds., *Handbook of Population and Family Economics*, vol. 1A (Amsterdam: Elsevier Science B. V.), pp. 189-238.
- Laitner, John, and Ohlsson, Henry (2001), "Bequest Motives: A Comparison of Sweden and the United States," *Journal of Public Economics*, vol. 79, no. 1 (January), pp. 205-236.
- Levhari, David, and Mirman, Leonard J. (1977), "Savings and Consumption with an Uncertain Horizon," *Journal of Political Economy*, vol. 85, no. 2 (April), pp. 265-281.
- Mace, Barbara J. (1991), "Full Insurance in the Presence of Aggregate Uncertainty," *Journal of Political Economy*, vol. 99, no. 5 (October), pp. 928-956.
- Masson, Andre, and Pestieau, Pierre (1997), "Bequest Motives and Models of Inheritance: A Survey of the Literature," in Guido Erreygers and Toon Vandevelde, eds., *Is Inheritance Legitimate? Ethical and Economic Aspects of Wealth Transfers* (Studies in Economic Ethics and Philosophy) (Heidelberg and New York: Springer Verlag), pp. 54-88.
- Matsuura, Katsumi, and Shigeno, Yukiko (2001), "Isan Douki ha Dono Youni Keisei Sareruka (How Are Bequest Motives Formed?)," *Kikan Kakei Keizai Kenkyuu*, no. 49 (Winter), pp. 76-84 (in Japanese).

Menchik, Paul L. (1980), "Primogeniture, Equal Sharing, and the U.S. Distribution of Wealth," *Quarterly Journal of Economics*, vol. 94, no. 2 (March), pp. 299-316.

Modigliani, Franco (1988), "The Role of Intergenerational Transfers and Life Cycle Saving in the Accumulation of Wealth," *Journal of Economic Perspectives*, vol. 2, no. 2 (Spring), pp. 15-40.

Modigliani, Franco, and Brumberg, Richard (1954), "Utility Analysis and the Consumption Function: An Interpretation of Cross-Section Data," in Kenneth K. Kurihara, ed., *Post-Keynesian Economics* (New Brunswick, N.J., USA: Rutgers University Press), pp. 388-436.

Noguchi, Yukio; Uemura, Kyouko; and Kitou, Yumiko (1989), "Souzoku ni yoru Sedai-kan Shisan Iten no Kouzou: Shutoken ni okeru Jittai Chousa Kekka (The Structure of Intergenerational Transfers via Bequests: Results of a Survey in the Tokyo Metropolitan Area), *Kikan Shakai Hoshou Kenkyuu* (The Quarterly of Social Security Research), vol. 25, no. 2 (Autumn), pp. 18-33 (in Japanese).

Ohtake, Fumio (1991), "Bequest Motives of Aged Households in Japan," *Ricerche Economiche*, vol. 45, no. 2-3 (April-September), pp. 283-306.

Ohtake, Fumio (1996), "Isan (Bequests)," in Keimei Kaizuka, Yutaka Kousai, and Ikujiro Nonaka, eds., *Nihon Keizai Jiten* (Japan Economic Encyclopedia) (Tokyo: Nihon Keizai Shinbunsha), pp. 981-994 (in Japanese).

Ohtake, Fumio, and Horioka, Charles Yuji (1994), "Chochiku Douki (Saving Motives)," in Tsuneo Ishikawa, ed., *Nihon no Shotoku to Tomi no Bunpai* (The Distribution of Income and Wealth in Japan) (Tokyo: The University of Tokyo Press), pp. 211-244 (in Japanese).

Ohtake, Fumio, and Horioka, Charles Yuji (forthcoming), "Saving Motives in Japan," in Tsuneo Ishikawa, ed., *The Distribution of Income and Wealth in Japan* (Oxford, England: Oxford University Press).

Saito, Makoto (forthcoming), "An Empirical Investigation of Intergenerational Consumption Distribution: A Comparison among Japan, the U.S., and the U.K.," in Seiritsu Ogura, Toshiaki Tachibanaki, and David Wise, eds., *Aging Issues in the United States and Japan* (Chicago: University of Chicago Press).

Shimono, Keiko (1991), *Shisan Kakusa no Keizai Bunseki* (Economic Analysis of Wealth Inequality) (Nagoya: Nagoya University Press) (in Japanese).

Shimono, Keiko; Otsuki, Hideaki; and Ishikawa, Miho (1999), "Estimating the Size and Distribution of Bequests in Japan," mimeo, Institute of Economic Research, Nagoya City University, Nagoya, Japan.

Takayama, Noriyuki, and Arita, Fumiko (1996), *Chochiku to Shisan Keisei* (Saving and Asset Accumulation) (Tokyo: Iwanami Shoten) (in Japanese).

Takayama, Noriyuki; Aso, Yoshifumi; Miyaji, Toshiyuki; and Kamitani, Yoshitaka (1996), "Kakei Shisan no Chikuseki to Isan/Souzoku no Jittai" (The Reality of the Accumulation of Household Assets and Bequests/Inheritances), in Noriyuki Takayama, Charles Yuji Horioka, and Kiyoshi Ohta, eds., *Koureika Shakai no Chochiku to Isan/Souzoku* (Saving and Bequests/Inheritances in an Aging Society) (Tokyo: Nihon Hyouronsha), pp. 134-173 (in Japanese).

Takayama, Noriyuki; Funaoka, Fumio; Ohtake, Fumio; Arita, Fumiko; Ueno, Hiroshi; and Kubo, Katsuyuki (1990), "Kakei no Chochiku to Shuurou tou ni kansuru Keizai Bunseki: Kouteki Nenkin to no Kankei ni Shouten wo Atete (Economic Analysis of Household Saving, Employment, Etc.: With Emphasis on the Impact of Public Pensions)," *Keizai Bunseki*, no. 121 (November), pp. 1-159 (in Japanese).

Townsend, Robert M. (1994), "Risk and Insurance in Village India," *Econometrica*, vol. 62, no. 3 (May), pp. 539-591.

Wakabayashi, Midori (2001), "Retirement Saving in Japan: With Emphasis on the Impact of Social Security and Retirement Payments," *Journal of the Japanese and International Economies*, vol. 15, no. 2 (June), pp. 131-159.

Watanabe, Katsunori; Watanabe, Takayuki; and Watanabe, Tsutomu (2001), "Tax Policy and Consumer Spending: Evidence from Japanese Fiscal Experiments," *Journal of International Economics*, vol. 53, no. 2 (April), pp. 261-281.

Weil, Philippe (1989), "Overlapping Families of Infinitely-Lived Agents," *Journal of Public Economies*, vol. 38, no. 2 (March), pp. 183-198.

Wilhelm, Mark O. (1996), "Bequest Behavior and the Effect of Heirs' Earnings: Testing the Altruistic Model of Bequests," *American Economic Review*, vol. 86, no. 4 (September), pp. 874-892.

Yaari, Menahem E. (1964), "On the Consumer's Lifetime Allocation Process," *International Economic Review*, vol. 5, no. 3 (September), pp. 304-317.

Yaari, Menahem E. (1965), "Uncertain Lifetime, Life Insurance, and the Theory of the Consumer," *Review of Economic Studies*, vol. 32, no. 2 (April), 137-150.

Yagi, Tadashi, and Maki, Hirohisa (1994), "Cost of Care and Bequests," in Toshiaki Tachibanaki, ed., *Savings and Bequests* (Ann Arbor: University of Michigan Press), pp. 39-62.

Table 1: Summary of the Three Models of Household Behavior

Model	Assumption	Bequest Motives	Bequest Division
Life Cycle Model	Individuals are selfish	Leave no bequest, leave only unintended bequests, or leave bequest only if children provide financial support and/or care during old age	Leave all to the child who provides financial support or care during old age
Altruism Model	Individuals harbor inter-generational altruism toward their children	Leave unconditional bequest (or no bequest)	Divide one's bequest among one's children and, in particular, leave more to the child who has less earning power or greater needs
Dynasty (or Lineal) Model	Individuals care about the perpetuation of the family line or the family business	Leave bequest only if children carry on the family line or the family business	Leave all to the child who carries on the family line or the family business

Table 2: The Strength and Nature of the Respondents' Parents' Bequest Motive

Year	(1) Received Bequest	(2) Uncondi- tional	(3) Conditional on Care	(4) Didn't Receive Bequest	Life Cycle Model (3)+(4)	Altruism Model (2)	Number of Observations
1990	40.19	13.54	26.66	59.81	86.46	13.54	622
1992	37.25	18.47	18.77	62.75	81.53	18.47	698
1994	34.74	-	-	65.26	-	-	898
1996	39.61	-	-	60.39	-	-	982

Source: SFACH

Table 3: The Strength of the Respondents' Bequest Motive

Survey, Year, and Country	Intended Bequests	Unintended Bequests	Intended or Unintended Bequests	No Bequests	Other	Number of Observations
Public Opinion Survey on Saving						
1989	52.75	-	52.75	33.70	13.56	4146
1990	54.22	-	54.22	32.61	13.17	3379
Survey on the Financial Asset Choice of Households						
1992	51.98	-	51.98	40.79	7.23	3788
1994	23.94	49.75	73.69	24.55	1.75	3763
1996	25.78	47.49	73.27	24.16	2.56	3588
1998	26.19	47.31	73.50	24.92	1.58	3158
2001	24.12	46.06	70.18	27.33	2.49	3055
Comparative Survey of Savings in Japan and the United States (1996)						
Japan	25.67	69.33	95.00	5.00	-	1001
U.S.	45.94	51.13	97.07	2.93	-	1058

Source: Table 4

Intended Bequests: (1)+(2)+(3)

Unintended Bequests: (4)

No Bequests: (6)

Other: (5)

Table 4: The Nature of the Respondents' Bequest Motive

Survey, Year, and Country	(1)	(2)	(3)	(4)	(5)	(6)	(6a)	(6b)	Life Cycle Model (2)+(4)+(6a)	Altruism Model (1)+(6b)	Dynasty Model (3)	Number of Observations
Public Opinion Survey on Saving												
1989	32.61	20.14	-	-	13.56	33.69	23.61	10.08	91.00	42.69	-	4146
1990	34.98	19.24	-	-	13.17	32.61	23.14	9.47	88.16	44.45	-	3379
Survey on the Financial Asset Choice of Households												
1992	27.61	24.37	-	-	7.23	40.79	-	-	65.15	27.61	-	3788
1994	17.14	6.80	-	49.75	1.75	24.55	-	-	81.11	17.14	-	3763
1996	18.09	6.16	1.53	47.49	2.56	24.16	-	-	77.81	18.09	1.53	3588
1998	19.89	5.00	1.30	47.31	1.58	24.92	-	-	77.23	19.89	1.30	3158
2001	17.61	4.94	1.57	46.06	2.49	27.33	-	-	78.33	17.61	1.57	3055
Comparative Survey of Savings in Japan and the United States (1996)												
Japan	19.28	6.39	-	69.33	-	5.00	-	-	80.72	19.28	-	1001
U.S.	42.53	3.40	-	51.13	-	2.93	-	-	57.47	42.53	-	1058

(1) Plan to leave a bequest to my/our child or children no matter what

(2) Plan to leave a bequest to my/our child for children only if my/our child or children take care of me/us

(3) Plan to leave a bequest to my/our child or children only if my/our child or children take over the family business

(4) Do not plan to make any special efforts to leave a bequest to my/our child or children but will leave behind whatever happens to be left over

(5) Other

(6) Do not feel it is necessary to leave a bequest to my/our child or children under any circumstances

(6a) Do not plan to leave a bequest to my/our child or children because I/we want to enjoy my/our own lives

(6b) Do not plan to leave a bequest to my/our child or children because the expectation of receiving a bequest might cause him/her/them to lose the will to work

Note: In cases in which a breakdown of (6) is not available, everyone selecting (6) was assumed to be of type (6a).

Table 5: The Division of the Respondents' Parents' Bequest

Year and Category	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Life Cycle Model (2)+(7)	Altruism Model (1)+(4)	Dynasty Model (3)+(5)	Number of Observations
1998											
Head's parents	34.29	26.44	9.39	0.38	5.94	9.96	13.60	40.04	34.67	15.33	522
Spouse's parents	37.43	24.27	6.73	1.75	4.68	10.23	14.91	39.18	39.18	11.40	342
2001											
Head's parents	28.04	32.43	13.85	0.51	10.64	11.66	2.87	35.30	28.55	24.49	592
Spouse's parents	29.62	25.09	12.20	0.00	9.06	15.68	8.36	33.45	29.62	21.25	287

- (1) Divided equally
- (2) More or all to the child or children who took care of the parents
- (3) More or all to the child or children who took over the family business
- (4) More or all to the child or children who had less income
- (5) More or all to the eldest son/daughter even though he/she did not take care of the parents
- (6) Other
- (7) No bequests left

Source: SFACH

Table 6: The Respondents' Attitude toward Bequest Division

Survey, Year, and Country	(1)	(2)	(3)	(4)	(5)	(6)	(7)	Life Cycle Model (2)+(7)	Altruism Model (1)+(4)	Dynasty Model (3)+(5)	Number of Observations
Survey on the Financial Asset Choice of Households											
1994	34.00	18.95	3.14	1.26	13.27	4.83	24.55	43.50	35.25	16.41	3763
1996	38.21	24.10	3.66	0.93	5.02	3.92	24.16	48.26	39.14	8.68	3588
1998	42.75	21.91	2.62	0.70	3.46	3.64	24.92	46.83	43.45	6.07	3158
2001	36.15	21.12	3.47	0.74	6.30	4.88	27.33	48.46	36.89	9.77	3055
Comparative Survey of Savings in Japan and the United States (1996)											
Japan	44.17	29.21	5.73	1.75	7.71	6.43	5.00	34.21	45.92	13.44	1001
U.S.	84.10	3.09	0.41	0.41	2.16	6.90	2.93	6.02	84.51	2.57	1058

- (1) Divide equally
- (2) Give more or all to the child or children who take care of me/us
- (3) Give more or all to the child or children who take over the family business
- (4) Give more or all to the child or children who has less income
- (5) Give more or all to the eldest son/daughter even if he/she does not take care of me/us
- (6) Other
- (7) Do not feel it is necessary to leave a bequest to my/our child or children under any circumstances.

Table 7: The Applicability of Various Models of Household Behavior

Criterion	Year and Country	Life Cycle Model	Altruism Model	Dynasty Model
Parents' bequest motive	1990	86.46	13.54	-
	1992	91.53	18.47	-
Respondents' bequest motive	1994	81.11	17.14	-
	1996	77.81	18.09	1.53
	1998	77.23	19.89	1.30
	2001	78.33	17.61	1.57
	Japan	80.72	19.28	-
	U.S.	57.47	42.53	-
Division of respondents' parents' bequest	1998	40.04	34.67	15.33
	2001	35.30	28.55	24.49
Division of respondents' spouse's parents' bequest	1998	39.18	39.18	11.40
	2001	33.45	29.62	21.25
Respondents' attitude toward bequest division	1996	48.26	39.14	8.68
	1998	46.83	43.45	6.07
	2001	48.46	36.89	9.77
	Japan	34.21	45.92	13.44
	U.S.	6.02	84.51	2.57

Source: Tables 2-6

Table 8: Willingness to Help Others

Category	Year	
	1998	2001
Respondent's parents	88.62	86.37
Respondent's spouse's parents	84.83	84.38
Respondent's children	91.59	91.86
Respondent's siblings	61.59	60.30
Friends	-	19.43
Acquaintances	11.24	-
Disaster victims	-	49.34
Strangers	1.56	-
Number of observations	3754	3111

Source: SFACH

Note: These proportions show the ratio of the number of respondents willing to help each category of individual to the number of respondents have at least one individual in that category.

Footnotes

¹ This model is often referred to as the “dynasty model,” but I use this term to refer to a different model (see (3) below).

² Another formulation is to assume that parents derive utility from the amount of the bequest itself, but I will not discuss this formulation in detail because I find it to be a bit ad hoc. This model is sometimes referred to as the “joy of giving,” “bequest *per se*,” “bequest as consumption,” or “warm glow” model. See Yaari (1964, 1965) and Andreoni (1989).

³ Transfers from parents to children include education- and marriage-related expenses, assistance with housing purchase, etc.

⁴ One other practice—*sentei souzoku* (selective inheritance), whereby the parents or siblings selected the heir from among a number of candidates—was relatively rare and hence will not be discussed here.

⁵ Note that individual households may have been highly constrained in their bequest behavior by the legal and social norms that prevailed at the time and place where they lived but that those legal and social norms were developed by the Japanese themselves and hence were presumably influenced by their inherent nature (i.e., by whether they are selfish, altruistic, or dynastic). I am indebted to Colin McKenzie and Ken Yamada for this point.

⁶ A supplementary sample of 500 aged households was surveyed in 1988-1996 but is not included in the tabulations.

⁷ The proportion of respondents who received bequests from their parents may be so low partly because the prewar custom of male primogeniture is still relatively prevalent in Japan, as a result of which younger siblings often do not receive bequests, and because living standards were so low at the time the parents of those currently 60 and older were in the prime, as a result of which they could not afford to leave a bequest to their children, but these factors do not explain why the proportion of respondents planning to leave bequests is so low (see subsection 4.2).

⁸ To be perfectly correct, the sample should be confined to those with one or more living children in the analysis in this subsection and in subsection 6.2 inasmuch as those with no living children do not have the option of leaving a bequest to their children. I confine the sample in this way in Horioka et al. (1998, 2000, and 2001), but the results are not significantly affected.

⁹ As noted above, this motive is consistent with the altruism model if the reason for not leaving a bequest is so that the expectation of receiving a bequest will not cause one’s child or children to lose the will to work, but because a breakdown by reason is not available, I have assumed that everyone selecting this motive is selfishly motivated.

¹⁰ To be perfectly correct, the sample should be confined to those with two or more living children in the analysis in this subsection inasmuch as one needs to decide how to divide one’s bequest among one’s children only if one has two or more living children. I confine the sample in this way in Horioka et al. (1998, 2000, 2001), but the results are not significantly affected.

¹¹ The U.S. figure is remarkably consistent with Wilhelm’s (1996) finding that 88% of the decedents in his sample divided their estates exactly equally or “approximately equally” and is also consistent with Dunn and Phillips’s (1997) finding that 90% of the respondents named all of their children as beneficiaries in their wills (i.e., planned to leave at least something to every child).

¹² It could be that the lower incidence of equal division in Japan is due in part to the fact that the share of real estate (an indivisible asset) in household portfolios is much higher in Japan than it is in the U.S. I am indebted to Masashi Nishikawa for this point.

¹³ However, in order to make this argument more convincing, I need to explain why individuals do not free ride. I am indebted to Kiminori Matsuyama for this point.

¹⁴ See also Ohtake (1991).

¹⁵ See also Horioka and Okui (1999) and Wakabayashi (2001).

¹⁶ In the case of the dynasty model, the current generation will care about the child who carries on the family line or the family business but will not care about any of its other children (see Weil (1989)).

¹⁷ Note, however, that Ricardian equivalence will not hold if intergenerational transfers are in the form of human capital (such as investment in education) (see Drazen (1978)) and that it will not necessarily hold if altruism is two-sided (see Kimball (1987)).