

The Impact of Intergenerational Transfers on Wealth Inequality in Japan and the United States¹

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Abstract

Our paper sheds light on the implications of intergenerational transfers for wealth inequality by examining whether or not individuals who receive intergenerational transfers from their parents are more likely to leave bequests to their children than those who do not using micro data for Japan and the United States. The estimation results show that the receipt of intergenerational transfers from parents and/or parents-in-law increases the likelihood of individuals leaving bequests to their children in both Japan and the United States, which in turn is likely to contribute to the persistence or widening of wealth disparities. However, such a tendency is found to be stronger among less better-off households in both countries, and this may help alleviate the disequalizing effect of intergenerational transfers on the distribution of wealth, at least to some extent.

JEL codes: D10, D31, D64, E21, I24

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1. Introduction

It is widely recognized that household wealth is distributed less equally than income or consumption expenditure (Davies and Shorrocks 2000). Among the Organisation for Economic Co-operation and Development (OECD) member countries, it is estimated that the wealthiest 10% of households hold, on average, about half of total wealth, the next 50% hold almost all of the other half, and the least wealthy 40% hold little over 3%, whereas their share of total household income is about 20% (OECD 2015).³ Wealth inequality has attracted increased attention recently as the latest studies show that wealth inequality has been rising over the past few decades (e.g., Piketty [2014] and Saez and Zucman [2016]). Saez and Zucman (2016), for example, show that, in the case of the United States (US), wealth concentration fell from 1929 to 1978 but has been increasing since then: the top 0.1% wealth share rose from 7% in 1978 to 22% in 2012, a level almost as high as in 1929.

Household wealth arises primarily from life-cycle saving or from transfers from others, including bequests and *inter vivos* transfers from one's parents (hereafter referred to collectively as intergenerational transfers). One of the most disputed topics in this area is the relative importance of intergenerational transfers vis-à-vis life-cycle saving as determinants of the level and distribution of wealth.⁴ According to the life-cycle hypothesis, individuals save (accumulate wealth) during their working years to finance consumption after retirement and dissave during old age (Modigliani and Brumberg 1954). However, because of uncertain lifetimes and precautionary saving for unforeseen income or health shocks, the dissaving rate among retirees is found to be lower than suggested by the life-cycle hypothesis, and as a result, a positive amount of wealth is left unconsumed

³ These calculations are based on data for 18 OECD member countries for which comparable data are available (OECD 2015).

⁴ For example, Kotlikoff and Summers (1981) estimate that private transfers of wealth across generations account for about 80% of current wealth, while Modigliani (1988) claims that at least 80% of total wealth is due to life-cycle accumulation. The significant discrepancy between these two estimates arises largely from whether household expenditure on durable goods is treated as consumption or saving, whether the accrued interest on transfers is attributed to life-cycle accumulation or inherited wealth, and whether parental support for dependent children over the age of 18 is treated as consumption or as a form of bequest (Modigliani 1988).

and passed onto the next generation as inheritance (Davies [1981] and Yaari [1965]).

In addition to these unintended or accidental transfers, some individuals save in order to leave bequests to the next generation. Indeed, it has been pointed out that the extreme upper tail of the wealth distribution cannot be explained by the life-cycle hypothesis alone, which suggests the importance of a bequest motive in the wealth accumulation process (e.g., Atkinson [1971] and Oulton [1976]). After reviewing the existing work on the relative importance of intergenerational transfers, Davies and Shorrocks (2000) conclude that a reasonable estimate of their contribution to aggregate wealth is about 35%–45%. More recently, Piketty (2011) points out that the importance of inheritance has been on the rise in France since the 1950s, with an acceleration of this trend during the past 30 years. Intergenerational transfers are thus likely to play an important role in determining the wealth accumulation process. However, whether such transfers enhance or reduce wealth inequality remains unresolved as different conclusions are reached by different studies, even though it is an important question for policy makers when designing policies for tackling inequality.

The main objective of this paper is to contribute to a better understanding of the role of intergenerational transfers in shaping the distribution of wealth. While there are various ways to examine the implications of intergenerational transfers for wealth inequality, this paper looks specifically at whether or not individuals who receive bequests and/or *inter vivos* transfers from their parents are more likely to pass their wealth onto their children than those who do not receive such transfers. If we observe similarities in bequest behavior between parents and children, wealth disparities are likely to be passed on from generation to generation. This would, in turn, contribute to the persistence or widening of wealth disparities, which might be a greater concern than the extent of wealth inequality at a given point in time.

Unfortunately, empirical evidence on the patterns of bequest behavior across generations remains scarce, presumably due to data limitations. This paper therefore attempts to fill this gap in the literature by analyzing the intergenerational correlation of bequest

propensities using micro data for Japan and the US. As recent estimates show that wealth inequality is much greater in the US (Gini coefficient for wealth of 0.801) than in Japan (0.547) (Davies et al. 2011), it would be interesting to see whether we observe any differences in the intergenerational correlation of bequest propensities between these two countries.⁵

The data used in this paper come from the Preference Parameters Study of Osaka University, a nationally representative survey conducted concurrently in four countries, namely China, India, Japan, and the US, over the 2003–13 period (though for shorter periods for some countries). Given that these data contain detailed information on respondents' bequest receipts as well as their bequest plans, they are well-suited for examining the intergenerational correlation of bequest propensities, and this paper makes an original contribution by being one of the first papers to do so.

The key hypotheses that this paper tests are as follows: (i) individuals who receive intergenerational transfers tend to come from better-off families, (ii) individuals who receive intergenerational transfers are more likely to leave their wealth to their own children, and (iii) the tendency for bequest behavior to be similar between parents and children is stronger among better-off households. If these hypotheses hold, we can argue that intergenerational transfers are likely to contribute to the persistence or widening of wealth disparities over time.

The remainder of the paper is organized as follows. Section 2 reviews the literature on the impact of intergenerational transfers on wealth inequality. Section 3 discusses the data, the econometric methodology, and the variables used in the estimations. Section 4 presents the estimation results. Section 5 summarizes the key findings and discusses some policy implications.

⁵ The US and Japan are at opposite extremes with respect to wealth inequality, with the US having the highest wealth Gini coefficient with the exception of Switzerland and Japan having the lowest wealth Gini coefficient of any country for which data are available, according to Davies et al. (2011).

2. Literature Review

Existing studies have not yet reached a consensus about whether intergenerational transfers have an equalizing or disequalizing effect on the distribution of wealth, and thus this issue remains unresolved. One approach to assessing the impact of intergenerational transfers on wealth inequality is to simulate the transmission of inequality via bequests. For example, based on a one-period intragenerational model that incorporates bequest motives, Davies (1982) finds a disequalizing effect of bequests on current wealth, especially in the upper tail of the distribution, largely because of the high income elasticity of bequests.

Similar findings are obtained by De Nardi (2004) based on a general equilibrium, overlapping-generations model where parents and children are linked by bequests, both voluntary and accidental, and by the transmission of earnings ability. She finds that voluntary bequests can explain the concentration of wealth whereas accidental bequests alone cannot and that adding the transmission of earnings ability from parents to children generates an even more concentrated wealth distribution. She also finds that saving for precautionary purposes as well as that for retirement are the primary cause of wealth accumulation at the lower tail of the distribution, while saving for bequests significantly affects the shape of the upper tail (De Nardi 2004).

While voluntary bequests are not taken into account in their overlapping generations model with lifespan uncertainty, Gokhale et al. (2001) find that unintended bequests also exacerbate wealth inequality in the presence of social security, which disproportionately disinherits the lifetime poor. Their simulation results suggest that the key determinants of wealth inequality, aside from social security, include inequality in lifetime earnings (skill differences), assortative mating based on skills, and the degree of time preference.

On the other hand, based on their overlapping generations model, Bossmann, Kleiber, and Wälde (2007) show analytically that intergenerational transfers per se diminish the inequality of wealth when it is measured using the coefficient of variation. The main

reason for the equalizing effect of intergenerational transfers is that such transfers raise private saving and thus average wealth holdings and that this effect is large enough to compensate for the increase in the variance of wealth caused by intergenerational transfers.

As for empirical evidence based on survey data, intergenerational transfers are commonly found to make the distribution of wealth more equal. Based on Swedish household survey data, Klevmarcken (2004) finds that bequests decrease wealth inequality, mainly because parents tend to split their wealth equally among their children, because wealth is transferred from wealthy parents to less wealthy children, and because even though less wealthy people receive smaller bequests, they mean relatively more to them. However, Klevmarcken (2004) also points out that the very accumulation of wealth for the purpose of leaving bequests is likely to increase wealth inequality—i.e., the bequest motive increases inequality while actual transfers to children decrease it.

Using data on the US, Wolff (2002) also finds that wealth transfers are greater for poorer households than for richer ones as a *proportion* of their current wealth holdings—i.e., “a small gift to the poor means more than a large gift to the rich” (Wolff 2002: 263). Yet, Wolff (2002) argues that the equalizing effect of intergenerational transfers does not imply from a behavioral point of view that such transfers lead to less wealth inequality since the poor are prone to spend their (meager) inheritances while the rich are likely to save them. Similarly, Karagiannaki (2015) finds for the United Kingdom that, under a relative notion of inequality, intergenerational transfers reduce the degree of wealth dispersion because they are relatively more important to less wealthy households. Nevertheless, intergenerational transfers are highly unequal, and their size tends to be greater for those with higher non-inherited wealth, which in turn results in widening absolute gaps in the wealth distribution (Karagiannaki 2015).

Using population-wide register data on inheritances and wealth in Sweden, Elinder, Erixson, and Waldenström (2016) also find that inheritances reduce relative inequality but increase the absolute dispersion of wealth. Such a discrepancy between relative and

absolute effects arises because, while wealthier individuals inherit larger amounts, less wealthy individuals receive much larger inheritances relative to their pre-inheritance wealth. In addition to this direct effect of inheritances, Elinder, Erixson, and Waldenström (2016) examine the behavior-adjusted effect of inheritances, which captures the behavioral change of heirs in response to the receipt of inheritances. They find that less wealthy heirs tend to consume a larger share of their inherited wealth than wealthier heirs and that these behavioral adjustments, in turn, dilute the equalizing impact of inheritances.

As for previous work on Japan, Horioka (2009) finds that bequests are likely to ameliorate wealth disparities, partly because, among other things, wealthier individuals tend to receive less bequests than less wealthy individuals.⁶ This is based on the negative correlation found between bequests received and the life cycle wealth of the recipients. However, given that the analysis is based on a sample of those aged 20-59 and does not control for age, it is not clear whether the negative correlation would still be observed if we took into account the age of the household head and whether his/her parents and/or parents-in-law are already deceased. By contrast, Hamaaki, Hori, and Murata (2014) use age-adjusted labor earnings and life cycle wealth and find that intergenerational transfers tend to be larger the higher the household's income and life cycle wealth, underscoring the possibility that intergenerational transfers tend to exacerbate wealth inequality across households. However, they note that the observed correlation between bequests received and life cycle wealth is relatively limited, probably because households that expect larger bequests tend to offset such wealth transfers by consuming more of their own assets (Hamaaki, Hori, and Murata 2014).

On the other hand, if the rich are more likely than the poor to save their inheritances instead of spending them, as found by Wolff (2002) and Elinder, Erixson, and Waldenström (2016), we may observe a higher correlation between the bequest propensities of parents and children among wealthy households than among less wealthy

⁶ Horioka (2009) claims in his paper that wealthier individuals tend to “leave” less bequests than less wealthy individuals, but given that he is looking at the correlation between the amount of bequests that individuals receive and the level of their life-cycle wealth, we believe that what he meant to say is that wealthier individuals tend to “receive” less bequests.

households. While there are a number of studies that examine the degree of correlation between the level of parents' wealth and that of children's wealth (i.e., intergenerational wealth mobility) (e.g., Charles and Hurst 2003), there has been limited work examining the intergenerational correlation of bequest propensities. The few exceptions include Cox and Stark (2005), Niimi (2016), and Horioka (2016).

Cox and Stark (2005) find a positive and significant effect of the receipt of inheritances on intended bequest behavior based on data for the US, even after controlling for a host of factors commonly taken into account in studies of bequest behavior. Niimi (2016) examines the behavioral response of households to a reduction in the basic deduction of the inheritance tax in Japan. She finds that households that have received or expect to receive bequests and/or *inter vivos* transfers from their parents are more likely to reallocate the newly taxable amount of wealth to *inter vivos* transfers to avoid an increase in their children's tax bill in comparison with those not receiving such transfers. This suggests that households who receive bequests from their parents may regard the bequests as the wealth of their family and feel obliged to pass them on to their children. Finally, Horioka (2016) finds, using the same data source as the one used in this paper, that those who received or expect to receive intergenerational transfers from their parents and/or parents-in-law are more likely to leave bequests to their own children than those who did not receive or do not expect to receive such transfers from their parents and/or parents-in-law in Japan, the US, and China (but not in India) and that the gap in bequest propensities between the two groups is largest in Japan. However, he simply compares averages and does not conduct an econometric analysis.

This paper aims to extend the literature by conducting a comparative analysis of the intergenerational correlation of bequest propensities in Japan and the US. It would be interesting to see whether we observe any differences in the intergenerational correlation of bequest propensities between these two countries with very different levels of wealth inequality (wealth inequality is much greater in the US than in Japan, as noted earlier). Moreover, this paper will assess whether the intergenerational correlation of bequest propensities differs at different points of the wealth distribution. It will therefore

specifically test the following three hypotheses: (i) individuals who receive intergenerational transfers tend to come from better-off families, (ii) individuals who receive intergenerational transfers are more likely to leave their wealth to their own children, and (iii) the tendency for bequest behavior to be similar between parents and children is stronger among better-off households. If these three hypotheses hold, we can argue that intergenerational transfers are likely to contribute to the persistence or widening of wealth disparities across households.

Due to the absence of information on the amounts of the intergenerational transfers that respondents have received from their parents and/or parents-in-law in our data source, it was not possible to estimate the magnitude of the contribution of intergenerational transfers to wealth inequality in this paper. This paper focuses instead on analyzing the intergenerational correlation of bequest propensities. Nonetheless, the findings from such an analysis can still contribute to enhancing our understanding of the role of intergenerational transfers in shaping the distribution of wealth by providing a directional indication of the possible impact of intergenerational transfers on wealth inequality.

3. Data and Methodology

3.1 Data

Our empirical analysis uses data from the Preference Parameters Study of Osaka University, which was conducted in Japan and the US by the 21st Century Center of Excellence Program, “Behavioral Macrodynamics Based on Surveys and Experiments,” and the Global Center of Excellence Project, “Human Behavior and Socioeconomic Dynamics,” of Osaka University. This survey was undertaken with the aim of examining whether the assumptions of conventional economics that people are rational and maximize utility are valid.

The Japanese survey was conducted annually during the 2003–13 period using a randomly selected nationally representative sample of individuals aged 20–69. The

survey has a panel component, although fresh observations were added in 2004, 2006, and 2009 to overcome the problem of attrition.

The US survey was conducted annually during the 2005–13 period using an almost identical survey instrument as the one used for the Japanese survey. The US sample was selected to be representative of individuals aged 18 and above in the continental US (i.e., all states except for Alaska and Hawaii). While fresh observations were added in 2007, 2008, 2009, and 2013, the US survey also has a panel component.

It would have been ideal to conduct a panel data analysis to take into account individual fixed effects, but unfortunately, questions regarding the receipt of bequests as well as bequest plans were not included in every wave, and the wording of some of the key questions differs between waves. The empirical analysis in this paper is thus undertaken using data only from the 2010 wave. The 2010 wave was selected largely because it has a relatively large sample size for both Japan and the US and because it contains all of the key information needed for the present analysis.

In the case of the 2010 wave, 5,386 respondents and 6,003 respondents completed the questionnaire in Japan and the US, respectively.⁷ After excluding observations without any children and with missing information on the variables used in our analysis, we were left with 2,712 and 1,732 observations for Japan and the US, respectively.

In addition to basic information on respondents and their households such as household composition, consumption, income, wealth, and other socioeconomic characteristics, this survey contains information on respondents' actual and expected receipt of bequests and *inter vivos* transfers from their parents and parents-in-law as well as their bequest plans. The survey also contains unique information including the educational attainment of respondents' parents, the relative standard of living of respondents' families when

⁷ While 7,046 respondents completed the questionnaire in the US, this sample includes 1,043 observations that were accidentally answered by unintended household members and their inclusion in the estimation sample was not recommended.

respondents were 15 years old, and respondents' preference parameters such as their degree of time preference, risk aversion, and altruism. By exploiting this rich dataset, it is possible to test the key hypotheses outlined above.

3.2 Methodology

To test the hypotheses outlined at the end of Section 2, we will conduct two regression analyses. The first analysis examines whether individuals who receive intergenerational transfers tend to come from better-off families. In other words, we investigate whether having wealthier parents increases the likelihood of receiving intergenerational transfers. In doing so, we take into account the possibility that parents may not only provide bequests and/or *inter vivos* transfers to their children but that they may also invest in the education (human capital) of their children, as the previous literature suggests (e.g., Becker and Tomes [1986] and Nordblom and Ohlsson [2011]). We therefore estimate a seemingly unrelated bivariate probit model that accounts for correlation between the two kinds of transfers, namely education and bequests and/or *inter vivos* transfers.

The second analysis examines whether the receipt of intergenerational transfers increases an individual's likelihood of leaving bequests to his/her own children.⁸ It also investigates whether such a correlation is greater among better-off households. Toward this end, we estimate a probit model for the probability of leaving bequests to one's children, regress it on, among others, the receipt of intergenerational transfers, and interact this variable with the wealth variables.

⁸ Due to the absence of information on the educational attainment of respondents' children, we could only investigate respondents' bequest behavior in this part of the analysis, leaving an analysis of their investment in the human capital of their own children as a topic for future research.

3.3 Empirical Specification

(1) Determinants of the Receipt of Intergenerational Transfers

Dependent variables: The dependent variables of the bivariate probit model are (i) a dummy variable that equals one if respondents obtained a university or higher degree and zero otherwise, and (ii) a dummy variable that equals one if respondents received or expect to receive bequests and/or *inter vivos* transfers from their own parents and zero otherwise. The former is a proxy for parents' investment in respondents' education while the latter is an indicator of financial/property transfers from parents to respondents.⁹ As for the latter variable, this variable is constructed based on the respondent's responses to the questions on (i) whether the respondent has received any bequest and/or gifts from his/her parents in the past, (ii) whether the respondent has received any bequest and/or gifts from his/her parents-in-law in the past, (iii) whether the respondent expects to receive any bequest and/or gifts from his/her parents in the future, (iv) whether the respondent expects to any bequest and/or gifts from his/her parents-in-law in the future. As a result, it was unfortunately not possible to distinguish between bequests and *inter vivos* transfers (gifts) in this analysis.¹⁰

Explanatory variables: Given that we do not have information on the income or wealth

⁹ Since no information was available in our data source on the extent to which parents provide financial support to their children for university costs, we were forced to assume that respondents who are university graduates have received at least some financial support from their parents for this purpose. According to the National Transfer Accounts data collected by the Center for the Economics and Demography of Aging, University of California at Berkeley, about 94% of the private consumption of those aged 18-21 is financed by private transfers (predominantly from parents) in the case of Japan, whereas the corresponding figure for the US is about 58% (based on data from <http://www.ntaccounts.org/web/nta/show/Country%20Summaries>, accessed on March 13, 2017). These figures suggest that there is a substantial difference between Japan and the US in the extent to which parents provide financial support to their university-age children, but the proportion of the private consumption of university-age children that is financed by their parents is more than 50% in both countries. Thus, our assumption that parents provide at least some financial support to their children for university costs in both countries appears to be justified.

¹⁰ We tried using as a dependent variable a dummy variable that equals one only if respondents actually received bequests and/or *inter vivos* transfers or only if respondents expect to receive bequests and/or *inter vivos* transfers. However, distinguishing between the actual and expected receipts of intergenerational transfers did not change the estimation results in a significant way except that the coefficient estimates of the age dummy variables change somewhat.

level of respondents' parents, we use parents' educational attainment as one of two proxies therefor. We include variables that indicate the number of years of schooling of respondents' fathers and mothers. We would expect that the more highly educated parents are, the more likely their children are to have a university or higher degree and the more likely their children are to receive bequests and/or *inter vivos* transfers. The former could imply that wealthier (more highly educated) parents are more likely to invest in the human capital of their children, but it could also simply reflect the transmission of abilities from parents to children. Unfortunately, we cannot distinguish between these two possibilities in the present analysis due to data limitations.

As another proxy for how prosperous respondents' parents are/were, we also include a variable that indicates the relative standard of living of respondents' families when they were 15 years old.¹¹ Respondents were asked to indicate their relative standard of living during their childhood on a scale of 0–10, with 10 being “wealthiest” and 0 being “poorest.” We treat this variable as being cardinal. Unlike in the case of the educational attainment of parents, the possible correlation of the relative standard of living of respondents' families with respondents' educational attainment is less likely to be affected by the transmission of abilities from parents to children and hence it is likely to be a cleaner measure of parental affluence.

We also control for the number of siblings respondents have. The survey we use collects information on both the number of siblings respondents had when they were 15 years old and the number of siblings respondents currently have. To reflect as closely as possible the number of children that respondents' parents had when they made/make decisions with respect to the education of their children as well as the provision of bequests to their children, we use the former measure in the education equation and the latter measure in the bequest equation in the bivariate probit model.¹² If parents have a larger number of

¹¹ We obtained information on the relative standard of living of respondents' families when they were 15 years old from the 2009 wave of the Preference Parameters Study as such information was not available in the 2010 wave.

¹² We obtained information on the number of siblings that respondents had when they were 15 years old from the 2009 wave of the Preference Parameters Study as such information was not available in the 2010

children, their resources are likely to be stretched to a greater extent, and the amount of resources available per child is likely to be smaller. We would therefore expect these variables to lower the probability of respondents having a university or higher degree and that of respondents receiving bequests and/or *inter vivos* transfers, respectively. Additionally, we include a variable that indicates whether respondents are the eldest child in the family. We would expect being the eldest child to increase one's probability of attaining a university education and that of receiving or expecting to receive bequests and/or *inter vivos* transfers, especially in the case of Japan where the eldest child (especially the eldest son) was traditionally expected to carry on the family line in exchange for receiving most or all of the parents' wealth.

In addition to the aforementioned variables, we also include variables that reflect the age, gender, marital status, and (in the case of the US sample) race of respondents as well as regional dummies.

(2) Determinants of Bequest Intentions

Dependent variable: The dependent variable of the probit model is a dummy variable that equals one if respondents intend to leave bequests to their own children and zero otherwise. The Preference Parameters Study asked respondents about their views toward leaving bequests to their children. The dependent variable takes a value of one if respondents plan to leave bequests no matter what, if they plan to leave bequests under certain conditions (e.g., if their children provide care or financial assistance during old age or carry on the family business), or if they do not plan to make special efforts to leave bequests but plan to leave whatever is left over.¹³ In other words, this variable takes a value of one if respondents are likely to leave bequests to their children, regardless of the motive for leaving bequests and regardless of the strength of the bequest motive.¹⁴

wave.

¹³ Assuming that respondents are risk-averse and engage in precautionary saving arising from lifespan uncertainty and unforeseen income or health shocks, they are likely to leave a positive amount of bequests if they intend to leave whatever wealth is left over to their children.

¹⁴ It should, however, be noted that some previous studies note the possibility that people's intended bequest behavior may be more altruistic than their actual bequest behavior (e.g., Hamaaki, Hori, and Murata,

Explanatory variables: Our main variable of interest is whether or not respondents have received or expect to receive intergenerational transfers from their own parents and/or parents-in-law. We would expect the receipt of intergenerational transfers to increase the probability of respondents' leaving bequests to their own children. To see whether such an effect is greater among wealthier households, we include variables that indicate the wealth level of respondents' households and interact them with a dummy variable for the actual or expected receipt of intergenerational transfers. Our wealth variables are expressed as quintiles of net worth, defined as the total amount of financial and non-financial assets net of liabilities. To account for age differences in wealth accumulation, the quintiles are defined separately for five age groups.¹⁵

We use a variable that indicates the average number of years of schooling of respondents and their spouses (the number of years of schooling of respondents in the case of unmarried respondents) as a proxy for the permanent income of respondents' households. We would expect better-off (more highly educated) respondents and their spouses to be more likely to leave bequests to their own children.

To control for the unobserved time-invariant characteristics of respondents, we construct variables that can serve as proxies for their degree of altruism toward their children, time preference, and risk preference using the best available data in our data source. Our measure of the degree of altruism toward one's children is constructed using responses to a hypothetical question asking respondents to indicate how much of their family income they would be willing to give to their children until the situation got better if their children (who do not live with them) had only one-third of respondents' per capita family income. As for the degree of time preference, it is constructed using responses to a question about whether or not respondents generally prefer getting their work done before having a good

2016; Horioka, 2008). Since we use respondents' intended bequest behavior as the dependent variable in this analysis, our inferences concerning the contribution of intergenerational transfers to wealth inequality should be considered as a lower bound.

¹⁵ The age groups used were (i) less than 35, (ii) 35–44, (iii) 45–54, (iv) 55–64, and (v) 65 years old or above, and the age of the respondent or (if the respondent is married) the average age of the respondent and his or her spouse was used.

time. Our measure of the degree of risk preference is constructed using responses to a question asking respondents to rate their behavioral pattern on a scale of 0–10 with 10 being completely in agreement with the thinking “nothing ventured, nothing gained” and 0 being completely in agreement with the thinking “a wise man never courts danger.” We regard this variable as a proxy for the degree of risk preference and treat it as cardinal.

In the case of empirical studies based on cross-sectional data, the problem of endogeneity arising from unobserved heterogeneity can be an issue. This study is no exception, but we cannot undertake a panel data analysis due to data limitations, as explained above. Instead, this problem will be addressed by including these proxy variables that reflect respondents’ preference parameters so that at least some of the heterogeneity can be controlled for.

Other explanatory variables include the number of children respondents have, the age, gender, marital status, (in the case of the US sample) race of respondents, and regional dummies.

4. Estimation Results

4.1 Descriptive Statistics

Table 1 provides the summary statistics for the dependent and explanatory variables included in the estimations for Japan and the US. In the case of Japan, about 26% and 54% of respondents have a university or higher degree and have received or expect to receive bequests and/or *inter vivos* transfers from their parents, respectively. Both percentages are higher in the US (about 40% and 63%, respectively) than in Japan, and the differences are statistically significant at the 1% level.¹⁶ As expected, we observe a positive correlation between the incidence of these two kinds of transfers (education and financial/property transfers), but the magnitude is relatively small (about 0.17 [$p = 0.000$])

¹⁶ However, the US-Japan gap in the proportion of respondents with a university or higher degree may exaggerate the US-Japan gap in the proportion of respondents receiving intergenerational transfers from their parents in the form of investment in human capital given the conventional wisdom that parents are less likely to contribute to their children’s university education expenses in the US than in Japan.

for both Japan and the US. As far as bequest behavior is concerned, the percentage of respondents who plan to leave bequests to their children is about 78% in Japan, which is again smaller than in the US (about 87%), and again this difference is statistically significant at the 1% level. Judging from these statistics, the incidence of all types of intergenerational transfers appears to be higher in the US than in Japan.

The average age of respondents is slightly more than 50 years old, just over half of them are female, and the majority are married in both Japan and the US. As for preference parameters, both Japanese and American respondents express a similar degree of altruism toward their children: respondents would provide, on average, up to about 12% and 11% of their family income to their children, respectively, if their children's income was about one-third of their own per capita family income. Americans appear to have a lower rate of time preference (place more emphasis on their well-being in the future than today) than the Japanese. On the other hand, the Japanese are found to be more risk averse than Americans.

Table 1: Summary Statistics

	Japan		United States	
	Mean	S.D.	Mean	S.D.
Dependent Variables				
Have a university or higher degree	0.26		0.40	
Received or expect to receive bequests	0.54		0.63	
Intend to leave bequests to children	0.78		0.87	
Explanatory Variables				
Respondents' characteristics				
Age group				
Less than 35	0.07		0.11	
35–44	0.23		0.22	
45–54	0.26		0.30	
55–64	0.28		0.21	
65+	0.16		0.15	
Sex				
Male	0.47		0.46	
Female	0.53		0.54	
Marital status				
Married	0.92		0.88	
Divorced	0.04		0.04	
Widowed	0.04		0.04	
Never married	0.01		0.04	
Race				

	Japan		United States	
	Mean	S.D.	Mean	S.D.
White			0.85	
Black			0.09	
Other			0.06	
Preference parameters				
Altruism toward children	11.53	7.95	10.89	8.16
Low time preference	0.47		0.70	
Risk lover	4.08	1.94	5.37	2.38
Family background				
Fathers' education (years of schooling)	11.05	2.43	12.55	2.65
Mothers' education (years of schooling)	10.65	1.75	12.49	2.16
Living standard at the age of 15	4.71	1.85	4.32	1.97
Number of siblings (current)	1.97	1.34	2.62	2.06
Number of siblings (at the age of 15)	2.16	1.54	2.82	2.11
Eldest child	0.41		0.26	
Respondents' household characteristics				
Number of children	2.14	0.75	2.50	1.30
Average years of schooling of respondent and (if married) spouse	13.14	1.86	14.58	2.02
Actual or expected receipt of bequests from parents and/or parents-in-law	0.65		0.71	
Wealth quintiles				
1st quintile	0.21		0.21	
2nd quintile	0.22		0.20	
3rd quintile	0.19		0.21	
4th quintile	0.19		0.19	
5th quintile	0.19		0.20	
Number of observations	2,721		1,732	

S.D. = standard deviation.

Source: Authors' calculations based on data from the 2010 Preference Parameters Study.

Similar patterns are observed in both countries with respect to respondents' family backgrounds although the number of years of schooling of respondents' parents and the number of siblings are both slightly larger in the US sample than in the Japanese one. The share of respondents' who are the eldest child is thus greater in Japan than in the US. As for respondents' household characteristics, the average number of children is about two for both samples, whereas the average number of years of schooling of respondents and (if they are married) their spouses is again slightly larger among Americans than among the Japanese. The percentage of respondents who have received or expect to receive intergenerational transfers from their parents and/or parents-in-law is also greater for the US sample (about 71%) than for the Japanese one (about 65%), and the difference is statistically significant at the 1% level. This provides further corroboration of our earlier finding that bequest motives are stronger in the US than in Japan.

We find a positive correlation between the actual or expected receipt of intergenerational transfers from parents and/or parents-in-law and the intention of leaving a bequest to one's own children for both countries, but the magnitude is again found to be relatively small (about 0.20 [$p = 0.000$]) for both Japan and the US. It is interesting to note that the correlation between the receipt of intergenerational transfers from parents and from parents-in-law is much lower among the Japanese (about 0.14 [$p = 0.000$]) than among Americans (about 0.39 [$p = 0.000$]). This could be an indication of a greater tendency toward assortative mating in the US than in Japan, or it could reflect differences in social norms, with the Japanese being more likely to leave bequests to sons than to daughters, as we will show later in Table 4.

Table 2: Incidence of Intergenerational Transfers by Parents' Living Standards

	% of Respondents with a University Degree or Higher		% of Respondents Who Received or Expect to Receive Bequests	
	Japan	United States	Japan	United States
Parents' educational attainment				
Junior high school or lower	14.48	21.09	46.79	53.06
High school	28.24	31.45	58.70	58.41
Junior college	44.44	38.21	59.26	68.29
University or higher	56.70	71.50	60.06	73.61
Relative living standard				
Relatively poor	16.39	34.48	40.00	51.47
Average	27.71	42.49	55.88	68.30
Relatively rich	35.98	44.34	66.89	72.85
Full sample	26.09	39.90	53.51	62.93
Number of observations	2,721	1,732	2,721	1,732

Note: Parents' educational attainment refers to that of the respondent's father or mother, whichever is higher. Source: Authors' calculations based on data from the 2010 Preference Parameters Study.

To investigate whether respondents who receive intergenerational transfers from their parents tend to come from better-off households (Hypothesis 1), Table 2 shows the percentage of respondents with a university or higher degree and the percentage of those who have received or expect to receive bequests and/or *inter vivos* transfers from their parents, broken down by the educational attainment of their parents and the relative

standard of living of respondents' families when respondents were 15 years old, both of which can be regarded as proxies for the income or wealth level of respondents' parents. Note that educational attainment here refers to that of the respondent's father or mother, whichever is higher. The figures in Table 2 reveal that respondents' likelihood of obtaining a university or higher degree as well as their likelihood of receiving bequests and/or *inter vivos* transfers from their parents increase monotonically with the level of their parents' educational attainment and with their families' relative standard of living in both Japan and the US.

Table 3: Incidence of Intergenerational Transfers by Respondents' Living Standards

	% of Respondents Who Received or Expect to Receive Bequests		% of Respondents Intending to Leave Bequests	
	Japan	United States	Japan	United States
Educational attainment				
Junior high school or lower	37.50	50.00	66.45	61.11
High school	58.64	60.36	72.77	77.93
Junior college	70.50	64.34	79.90	84.28
University or higher	75.19	78.06	83.56	92.57
Wealth quintile				
1st quintile	52.32	60.00	57.46	72.50
2nd quintile	59.43	63.91	71.21	81.36
3rd quintile	64.24	72.53	84.68	91.48
4th quintile	73.07	76.07	86.34	94.79
5th quintile	80.57	81.10	91.51	97.67
Full sample	65.45	70.61	77.55	87.41
Number of observations	2,721	1,732	2,721	1,732

Note: Educational attainment refers to that of the respondent or his/her spouse, whichever is higher.
Source: Authors' calculations based on data from the 2010 Preference Parameters Study.

Similarly, Table 3 shows the percentage of respondents who have received or expect to receive intergenerational transfers from their parents and/or parents-in-law and the percentage of those who intend to leave bequests to their own children, broken down by the educational attainment and wealth quintiles of respondents' households for both Japan and the US. Note that educational attainment in this case refers to that of the respondent or his/her spouse, whichever is higher. The figures in Table 3 suggest that better-off individuals are not only more likely to receive intergenerational transfers from their

parents and/or parents-in-law but also more likely to leave bequests to their own children in both Japan and the US.

The trends identified in Tables 2 and 3 indicate the possibility that intergenerational transfers have a disequalizing effect on the distribution of wealth. To investigate this possibility more rigorously, we resort to regression analysis.

4.2 Regression Results

4.2.1 The Determinants of the Receipt of Intergenerational Transfers

We begin with the estimation of a seemingly unrelated bivariate probit model for whether respondents have a university degree or higher and for whether respondents have received or expect to receive bequests and/or *inter vivos* transfers from their parents. The results for both Japan and the US are reported in terms of average marginal effects in Table 4.

The correlations between the residuals of the two regressions are positive and significant for both Japan and the US, which supports a bivariate probit estimation rather than a separate probit estimation for each type of transfer. The positive correlations between residuals suggest that parents who have invested in the human capital of their children are more likely to leave bequests to their children. The signs and statistical significance of the coefficient estimates are broadly similar between these two types of transfers in both Japan and the US, suggesting that the factors influencing parents' decisions regarding investment in their children's education and bequests are relatively similar.

As far as the impact of age is concerned, the coefficients of the age dummies are sometimes significant, but there are no clear patterns in either Japan or the US.¹⁷ Women

¹⁷ This might be due to the fact that we use a dependent variable that equals one if the respondent has received or expects to receive bequests and/or *inter vivos* transfers from his/her parents. If we use a dependent variable that equals one if the respondent has already received intergenerational transfers (see footnote 10), we observe a positive correlation between the age of the respondent and the probability of having received such transfers. By contrast, if we use a dependent variable that equals one if the respondent expects to receive intergenerational transfers, we instead observe a negative correlation between the age of

are less likely to have attained a university education in both countries. Women are also less likely to have received or expect to receive bequests and/or *inter vivos* transfers from their parents in the case of Japan whereas such a tendency is not observed in the US. These results are in contrast to the findings of Nordblom and Ohlsson (2011), who find that women are more likely than men to have a university education as well as to receive *inter vivos* transfers in the case of Sweden. Such differences, particularly in parents' investment in children's education, may reflect the fact that gender equality is greater in Sweden than in Japan or the US, as shown, for example, by the gender inequality index of the United Nations Development Programme (UNDP) (UNDP 2015).

Table 4: Regression Results for Bivariate Probit Model (Average Marginal Effects)

	Japan		United States	
	Education	Bequests	Education	Bequests
Respondents' characteristics				
Age group (Less than 35)				
35–44	–0.002 [0.118]	0.014 [0.107]	0.325*** [0.121]	–0.045 [0.116]
45–54	0.245** [0.118]	0.231** [0.108]	0.302** [0.118]	0.143 [0.113]
55–64	0.167 [0.123]	0.297*** [0.110]	0.548*** [0.126]	0.321*** [0.122]
65+	0.063 [0.143]	–0.050 [0.121]	0.651*** [0.136]	0.201 [0.131]
Sex				
Female	–1.076*** [0.062]	–0.433*** [0.051]	–0.228*** [0.065]	–0.006 [0.064]
Race				
(White)				
Black			–0.151 [0.122]	–0.450*** [0.113]
Others			0.107 [0.143]	–0.145 [0.137]
Family background				
Fathers' years of schooling	0.140*** [0.015]	0.014 [0.014]	0.131*** [0.016]	0.047*** [0.016]
Mothers' years of schooling	0.101*** [0.022]	0.041*** [0.020]	0.097*** [0.018]	0.017 [0.019]
Living standard at the age of 15	0.082*** [0.017]	0.117*** [0.015]	–0.008 [0.018]	0.103*** [0.017]
Number of siblings (current)		–0.166*** [0.022]		–0.088*** [0.017]
Number of siblings (at the age of 15)	–0.111*** [0.026]		–0.077*** [0.018]	

the respondent and the probability of expecting to receive such transfers.

	Japan		United States	
	Education	Bequests	Education	Bequests
Eldest child	-0.022 [0.063]	0.089 [0.055]	0.076 [0.077]	-0.034 [0.077]
ρ	0.140*** [0.037]		0.177*** [0.042]	
Log likelihood	-2,394.99		-2,059.49	
χ^2 (38) for Japan, χ^2 (38) for the United States	791.61		402.88	
Number of observations	2,721		1,732	

Notes: The dependent variable for the Education equation is a dummy variable that equals one if the respondent obtained a university or higher degree and zero otherwise. The dependent variable for the Bequests equation is a dummy variable that equals one if respondents received or expect to receive bequests and/or *inter vivos* transfers from their own parents and zero otherwise. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels. Standard errors are shown in parentheses. Regional dummies are included in all regressions.

Source: Authors' estimation based on data from the 2010 Preference Parameters Study.

We included racial dummy variables in the estimation model for the US to examine racial differences. We find that black respondents are less likely to have received or expect to receive bequests and/or *inter vivos* transfers from their parents than their white counterparts. This is consistent with the findings of the previous literature. Menchik and Jianakoplos (1997), for example, find that white households are more likely to receive inheritances than black households, which helps to explain why the average difference in wealth between black and white households is larger than the average difference in income.

As for the effects of family background, we find, as expected, that the more highly educated a respondent's father is, the more likely the respondent is to obtain a university degree or higher and the more likely he/she is to receive or expect to receive bequests and/or *inter vivos* transfers from his/her parents in both Japan and the US, although the impact of the father's educational attainment on the probability of the respondent's receiving bequests and/or *inter vivos* transfers from his/her parents is not statistically significant in the case of Japan. Similar results are obtained for the impact of the educational attainment of respondents' mothers except that it is not statistically significant for the probability of respondents' receiving bequests and/or *inter vivos* transfers in the case of the US. In addition, the relative standard of living of respondents' families when they were 15 years old is also positively correlated with the incidence of both types of

transfers, except that the effect is not statistically significant in the case of the probability of respondents' receiving a university education in the US. As for the number of siblings, it is negatively correlated with the incidence of both types of transfers in both Japan and the US, as expected.

The results presented in Table 4 thus suggest that wealthier parents are more likely to invest in the human capital of their children and more likely to leave bequests and/or *inter vivos* transfers to their children. This supports our first hypothesis that respondents who receive intergenerational transfers tend to come from better-off families. Moreover, our findings concerning the effects of parental education, the relative standard of living during childhood, and the number of siblings are consistent with the findings of previous studies (e.g., Laitner and Ohlsson [2001], Menchik and Jianakoplos [1997], and Nordblom and Ohlsson [2011]).

4.2.2 The Determinants of Bequest Intentions

We now turn to the second analysis, where the determinants of respondents' intentions of leaving bequests to their own children are investigated. Table 5 reports the estimation results of the probit model in terms of average marginal effects for both Japan and the US.

Table 5: Regression Results for Probit Model (Average Marginal Effects)

	Japan		United States	
	Marginal effects	S.E.	Marginal effects	S.E.
Respondents' characteristics				
Age group				
(Less than 35)				
35–44	–0.012	[0.032]	0.018	[0.028]
45–54	–0.038	[0.032]	0.002	[0.028]
55–64	0.017	[0.032]	0.030	[0.029]
65+	0.085***	[0.033]	0.079***	[0.029]
Sex				
Female	–0.027*	[0.015]	–0.005	[0.015]
Marital status				
(Married)				
Divorced	–0.074*	[0.043]	–0.084**	[0.043]
Widowed	0.079**	[0.034]	0.006	[0.039]

	Japan		United States	
	Marginal effects	S.E.	Marginal effects	S.E.
Never married	-0.331***	[0.123]	-0.125***	[0.048]
Race				
(White)				
Black			0.039*	[0.021]
Other			0.032	[0.027]
Preference parameters				
Altruism toward children	0.005***	[0.001]	0.003***	[0.001]
Low time preference	0.010	[0.015]	0.014	[0.016]
Risk lover	0.014***	[0.004]	0.001	[0.003]
Respondents' household characteristics				
Number of children	-0.023*	[0.010]	-0.010*	[0.005]
Average years of schooling of respondent and (if married) spouse	0.018***	[0.004]	0.012***	[0.004]
Actual or expected receipt of bequests from parents and/or parents-in-law	0.112***	[0.017]	0.091***	[0.018]
Wealth quintiles				
(1st quintile)				
2nd quintile	0.092***	[0.026]	0.082***	[0.029]
3rd quintile	0.203***	[0.025]	0.157***	[0.027]
4th quintile	0.214***	[0.026]	0.188***	[0.026]
5th quintile	0.249***	[0.026]	0.208***	[0.026]
Actual or expected bequests*wealth				
Bequests*2nd quintile	-0.078	[0.054]	-0.053	[0.066]
Bequests*3rd quintile	-0.157***	[0.052]	-0.068	[0.062]
Bequests*4th quintile	-0.151***	[0.054]	-0.169***	[0.056]
Bequests*5th quintile	-0.129**	[0.054]	-0.152***	[0.055]
Pseudo R ²	0.151		0.181	
Log likelihood	-1,230.46		-536.62	
χ^2 (31) for Japan, χ^2 (32) for US	437.52		237.72	
Number of observations	2,721		1,732	

S.E. = standard error.

Notes: The dependent variable is a dummy variable that equals one if respondents intend to leave bequests to their own children and zero otherwise. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels. Regional dummies are included in all regressions.

Source: Authors' estimation based on data from the 2010 Preference Parameters Study.

We find that those who are aged 65 or above are more likely to leave bequests to their children in both Japan and the US than those aged less than 35 years old. Women are less likely to leave bequests to their children in Japan. Being divorced or never married reduces the probability of leaving bequests, while being widowed increases it in both countries, although the statistical significance of these effects varies between the two countries. The positive effect of being widowed on the probability of leaving bequests to one's children might be due to the fact that those who are married (i.e., those whose spouses are still alive) consider leaving bequests to their spouses first, as a result of which

widowed people are more likely to leave bequests to their children than married respondents. As expected, those who are more altruistic toward their children are more likely to leave bequests to them in both Japan and the US, suggesting that bequests are, at least partly, altruistically motivated in both countries.

As for the effects of the characteristics of respondents' households, the number of children is negatively associated with the probability of leaving bequests. In addition, the more highly educated respondents and their spouses are, the more likely they are to leave bequests to their own children. These findings are consistent with the findings of the first analysis, where we found that people are more likely to receive intergenerational transfers if they have relatively highly educated parents or if they have fewer siblings.

What about the impact of receiving intergenerational transfers from parents or parents-in-law on respondents' bequest behavior (i.e., the intergenerational correlation of bequest propensities)? As expected, the estimation results show a positive effect: the receipt of intergenerational transfers from parents or parents-in-law increases the probability of respondents' leaving bequests to their own children by 11 percentage points and 9 percentage points in Japan and the US, respectively. In other words, if respondents have received or expect to receive intergenerational transfers from their parents and/or parents-in-law, they are more likely to leave bequests to their own children, confirming our second hypothesis.

We also wanted to examine whether the intergenerational correlation of bequest propensities is greater among wealthier households. We therefore included interaction terms between the wealth quintile dummies and the dummy variable for the actual or expected receipt of intergenerational transfers from parents and/or parents-in-law. The negative marginal effects of these interaction terms suggest that the tendency for bequest behavior to be similar between parents and children is, in fact, strongest in the least wealthy quintile. In other words, the difference in the probability of respondents' leaving bequests to their children between those receiving and not receiving intergenerational transfers is smaller for higher wealth quintiles than for the lowest wealth quintile both in

Japan and the US. Moreover, the absolute magnitudes of the (negative) marginal effects of the interaction terms are generally larger the higher the wealth quintile, suggesting that the intergenerational correlation of bequest propensities decreases with wealth, in both countries. These results thus reject our third hypothesis that the tendency for bequest behavior to be similar between parents and children is stronger for better-off households.

Our finding of a higher intergenerational correlation of bequest propensities among less wealthy households might reflect the fact that the poor cannot afford to leave bequests to their own children unless they receive intergenerational transfers from their parents and/or parents-in-law. By contrast, relatively wealthy people are capable of accumulating sufficient wealth to leave to their children regardless of whether or not they receive intergenerational transfers from their parents or parents-in-law.

Looking finally at the impact of wealth, because we include interaction terms between the wealth quantile dummies and a dummy variable for the actual or expected receipt of intergenerational transfers from parents and/or parents-in-law, the marginal effects of the wealth quintile dummies measure the impact of wealth in the case of those not receiving intergenerational transfers from parents and/or parents-in-law. The marginal effects of the wealth quintile dummies indicate that, in the case of such respondents, wealthier individuals are more likely to leave bequests to their children, as expected. For example, moving from the lowest to the highest wealth quintile increases the probability of respondents' leaving bequests to their children by 25 percentage points and 21 percentage points in Japan and the US, respectively, and these differences are statistically significant.

The impact of wealth in the case of those having received or expecting to receive intergenerational transfers from parents and/or parents-in-law can be calculated as the sum of the marginal effects of the wealth quintile dummies and the marginal effects of the interaction terms. Because the marginal effects of the interaction terms are always negative in both Japan and the US, the impact of wealth is smaller in the case of those having received or expecting to receive intergenerational transfers from parents and/or parents-in-law than in the case of those not receiving such transfers. Nevertheless, the

marginal effect of wealth is positive even in the case of the latter group in both countries. For example, moving from the lowest to the highest wealth quintile increases the probability of respondents' leaving bequests to their children by 12 percentage points and 6 percentage points in Japan and the US, respectively (an impact that is less than half that in the case of those not receiving intergenerational transfers from parents and/or parents-in-law).

The fact that wealthier individuals are more likely to leave bequests whether or not they received or expect to receive intergenerational transfers from their parents and/or parents-in-law provides further support for our first hypothesis that people who receive intergenerational transfers tend to come from better-off families (i.e., better-off families are more likely to leave bequests to their children).

4.2.3 Robustness Checks

When we examined the role of the receipt of intergenerational transfers in determining the recipient's own bequest plans in the second analysis above, we did not distinguish between the actual receipt and the expected receipt of intergenerational transfers. To investigate whether distinguishing between the two makes any difference to our findings, we repeat our earlier exercise restricting the sample to those who do not have any living parents or parents-in-law and using the actual receipt of intergenerational transfers as one of the explanatory variables. Table 6 shows selected results.¹⁸

As far as the effect of the receipt of bequests or *inter vivos* transfers from parents and/or parents-in-law on the probability of the respondent's intending to leave bequests is concerned, we still observe a positive and significant effect for both Japan and the US. However, the magnitude of this positive effect is found to be smaller in the case of the actual receipt of intergenerational transfers than the effect reported in Table 5 where we do not distinguish between the actual and expected receipt of intergenerational transfers.

¹⁸ The full regression results are available upon request from the authors.

This suggests that the effect of the actual receipt of intergenerational transfers on recipients' behavior is slightly smaller than the effect of the expected receipt thereof. One possible explanation for this difference is that people may end up spending some of their own wealth or bequests they receive from their parents or parents-in-law for their own consumption once they actually receive such bequests. Nevertheless, our earlier conclusion that people who receive intergenerational transfers are more likely to leave bequests to their own children is still supported even when we use the actual receipt of intergenerational transfers as the explanatory variable.

**Table 6: Regression Results for Probit Model (Average Marginal Effects)
(Actual Receipt of Intergenerational Transfers)**

	Japan	United States
Actual receipt of bequests from parents and/or parents-in-law	0.067** [0.033]	0.047** [0.021]
Wealth quintiles		
(1st quintile)		
2nd quintile	0.258*** [0.060]	0.135*** [0.042]
3rd quintile	0.289*** [0.061]	0.200*** [0.039]
4th quintile	0.316*** [0.060]	0.204*** [0.041]
5th quintile	0.316*** [0.062]	0.244*** [0.037]
Receipt of bequests*wealth		
Bequests*2nd quintile	-0.072 [0.117]	-0.155* [0.088]
Bequests*3rd quintile	-0.192 [0.118]	-0.132* [0.079]
Bequests*4th quintile	-0.208* [0.115]	-0.168** [0.078]
Bequests*5th quintile	-0.225** [0.112]	-0.159** [0.071]
Pseudo R ²	0.243	0.196
Log likelihood	-170.72	-227.75
χ^2 (27) for Japan, χ^2 (28) for US	109.42	110.79
Number of observations	495	815

S.E. = standard error.

Notes: The dependent variable is a dummy variable that equals one if respondents intend to leave bequests to their own children and zero otherwise. ***, **, * denote statistical significance at the 1%, 5%, and 10% levels. Regional dummies are included in all regressions. The sample is confined to those with no living parents or parents-in-law.

Source: Authors' estimation based on data from the 2010 Preference Parameters Study.

4.2.4 Summary and Discussion

To summarize, this paper looked specifically at whether individuals who receive bequests and/or *inter vivos* transfers from their parents are more likely to leave bequests to their children than those who do not receive such transfers as a way of examining the role of intergenerational transfers in shaping the distribution of wealth. Our estimation results indeed suggest that the receipt of intergenerational transfers enhances the likelihood of leaving a bequest to one's own children.

On the other hand, the negative marginal effects of the interaction terms between the receipt of intergenerational transfers and wealth quintiles suggest that the intergenerational correlation of bequest propensities is greater among relatively less well-off households. According to the estimation results, the poor are more likely to mimic their parents' bequest behavior than the rich, and receiving intergenerational transfers from their parents and/or parents-in-law increases the poor's likelihood of leaving bequests to their children by more than in the case of the rich. Such a tendency may help attenuate the disqualifying effect of intergenerational transfers on the distribution of wealth, at least to some extent. These findings seem to be consistent with the findings of previous empirical work based on household survey data that intergenerational transfers help reduce relative inequality even though they might widen absolute inequality (e.g., Elinder, Erixson, and Waldenström [2016] and Karagiannaki [2015]).

Nevertheless, our findings also show that those who receive intergenerational transfers from their parents tend to come from better-off families and that wealthier individuals are more likely to leave bequests to their children than less wealthy ones. These findings seem to underscore the possibility that intergenerational transfers contribute to the passing on of wealth disparities from generation to generation.

We were interested in comparing the cases of Japan and the US in this paper because of the large difference in wealth inequality between Japan and the US, with the latter showing a much larger dispersion of household wealth, as noted earlier. It is therefore

somewhat surprising that the Japanese and Americans seem to exhibit similar bequest patterns in terms of the intergenerational correlation of bequest propensities. We thus need to resort to other factors to explain the greater inequality of wealth in the US than in Japan.

One possible explanation is that the incidence of intergenerational transfers is greater in the US than in Japan, as our data suggest. We found that the proportion of respondents receiving intergenerational transfers as well as the proportion of respondents intending to leave bequests were both larger among Americans than among the Japanese. Hence, it could be that wealth inequality is higher in the US than in Japan, even though the intergenerational correlation of bequest propensities is comparable in the two countries, because the propensity to bequeath itself is higher in the US than in Japan.

Another possibility is that the strength and nature of bequest motives differs between Japan and the US, as pointed out by Horioka (2014). Our data show that only about 24% of Japanese respondents plan to leave bequests no matter what or under certain conditions, whereas 54% of US respondents plan to do so. By contrast, 49% of Japanese respondents do not plan to make special efforts to leave bequests but plan to leave whatever is left over to their children, whereas this proportion is only 31% in the US. In other words, accidental or involuntary bequests might be more common than voluntary bequests in Japan. This may partly explain why wealth inequality is lower in Japan than it is in the US because, as De Nardi (2004) finds based on a general equilibrium, overlapping-generations model, accidental or involuntary bequests are less likely to contribute to the concentration of wealth than voluntary bequests.

Yet another possibility is that the magnitude of bequests is greater in the US than in Japan. The survey we used for our analysis unfortunately does not collect data on the dollar (or yen) value of bequests, but Horioka (2014) surveys the relevant literature and concludes that the magnitude of bequests appears to be greater in the US than in Japan. If this is indeed the case, this is another possible explanation of the greater inequality of wealth in the US.

Furthermore, the fact that the burden of bequest (inheritance or estate) taxes is higher in Japan than it is in the US may also help explain the greater inequality of wealth in the US than in Japan. Since 1 January 2015, the minimum taxable bequest in Japan has been ¥30 million (\$300,000, assuming an exchange rate of ¥100 = \$1) plus ¥6 million (\$60,000) times the number of statutory heirs. Thus, if there are three statutory heirs (for example, the decedent's spouse and two children), the minimum taxable bequest would be ¥48 million (\$480,000). By contrast, the minimum taxable bequest in the US as of 2016 is \$5.45 million, or more than 10 times the Japanese figure. As a result, the proportion of decedents liable for bequest taxes is more than 4% in Japan but only 0.2% in the US.¹⁹

Moreover, the tax rate of the bequest tax is also much higher in Japan (a maximum rate of 55% in Japan versus 40% in the US), and “will substitutes” (bequest tax loopholes), such as irrevocable living trusts, are less readily available in Japan than in the US (see Hamaaki, Hori, and Murata [2016] for more details). The most comprehensive measure of the relative importance of bequest taxes is the ratio of estate, inheritance, and gift tax to gross domestic product, and as Niimi (2016) shows, this percentage is about twice as high in Japan as it is in the US (0.36% in Japan versus 0.15% in the US in 2014). Hence, by any measure, the burden of bequest taxes is much heavier in Japan than it is in the US. This could be one reason why we observe greater wealth inequality in the US than in Japan and may also help explain why the bequest motive of the Japanese generally tends to be weaker than that of Americans.

5. Conclusions

This paper has made an attempt to examine the implications of intergenerational transfers for wealth inequality in Japan and the US. More specifically, it has investigated whether individuals who receive intergenerational transfers from their parents are more likely to leave bequests to their children than those who do not receive such transfers using micro

¹⁹ The proportions of decedents liable for bequest taxes in each country are taken from the Ministry of Finance, Government of Japan (https://www.mof.go.jp/tax_policy/summary/property/137.htm, accessed 4 April 2016) for Japan and from the Joint Committee on Taxation, Congress of the United States (<https://www.jct.gov/publications.html?func=startdown&id=4>, accessed 17 July 2016) for the US.

data for Japan and the US. We found that the receipt of intergenerational transfers increases the probability of respondents' leaving bequests to their own children in both countries. The observed similarity in bequest behavior between parents and children suggests the possibility that wealth disparities are passed on from generation to generation, contributing to the persistence or widening of wealth disparities, in both countries.

If the tendency for bequest behavior to be similar between parents and children is stronger among better-off households, this would exacerbate the situation even further. However, we found that this tendency was, in fact, stronger among less better-off households in both countries. In other words, receiving intergenerational transfers from their parents and/or parents-in-law increases the poor's likelihood of leaving bequests to their children by more than in the case of the rich.

On the other hand, the estimation results show that, in both Japan and the US, the wealthier respondents' parents are, the more likely respondents are to have received a university education (i.e., the more likely parents are to have invested in their children's human capital) and the more likely respondents are to have received or expect to receive intergenerational transfers from their parents. We also found that wealthier respondents are more likely to leave bequests to their own children. These results imply that intergenerational transfers are likely to contribute to the persistence or widening of wealth disparities from generation to generation.

However, our analysis is not without its caveats. Due to data limitations, we were able to look only at the probability of receiving and leaving intergenerational transfers and were not able to look at the amounts of such transfers in the present study, as noted earlier. To fully examine the implications of intergenerational transfers for wealth inequality, further analysis taking account of the amount of wealth transfers is required. Moreover, as in the case of many other household surveys, very wealthy households may be underrepresented in the survey used for this paper. A more detailed analysis focusing on the upper tail of the wealth distribution may help us to better understand the role of intergenerational transfers in shaping the distribution of wealth.

Nevertheless, this paper is one of the first to examine the intergenerational correlation of bequest propensities and to show, at least qualitatively, that intergenerational transfers are likely to contribute to the persistence or widening of wealth disparities both in Japan and the US. The paper, though, also shows that the tendency of bequest behavior to be similar between parents and children is stronger among less better-off households in both countries, which may help alleviate the disequalizing effect of intergenerational transfers on the distribution of wealth, at least to some extent.

Turning finally to the policy implications of the empirical analysis conducted in this paper, our finding that wealth inequality is likely to be passed on from generation to generation both in Japan and the US suggests the need to raise bequest tax rates, lower the amount of the minimum taxable bequest, and/or close bequest tax loopholes to alleviate the extent to which wealth disparities are passed on from generation to generation. Moreover, the fact that wealth is more unequally distributed in the US than in Japan suggests that the need for such policies may be greater in the US than in Japan.²⁰

²⁰ However, it should be borne in mind that bequest taxes may have undesirable side effects, such as weakening the saving incentives of parents.

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