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## **The “Will” to Save in China**

Ting Yin

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GCOE Secretariat  
Graduate School of Economics  
*OSAKA UNIVERSITY*

1-7 Machikaneyama, Toyonaka, Osaka, 560-0043, Japan

# The “Will” to Save in China

Ting Yin\*

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**Abstract:** In this paper, I discuss the actual conditions and determinants of the saving behavior and wealth holdings of the aged in China, with emphasis on the impact of bequest motives thereon, using micro data from the 2009 “Survey of Living Preferences and Satisfaction” (urban households) and the 2010 “Survey of Living Preferences and Satisfaction” (rural households), which were conducted in February 2009 and January 2010, respectively, as part of the Global Center of Excellence (GCOE) Program on “Behavioral Macro-dynamics based on Surveys and Experiments” of the Graduate School of Economics and the Institute of Social and Economic Research of Osaka University. I found that bequest motives are strong in China, with more than 87 percent of respondents in urban areas, more than 75 percent in rural areas, and more than 85 percent in the country as a whole having a bequest motive, that these bequests are motivated primarily by altruism, that there is little evidence that aged households in China dissave (decumulate their wealth), and that altruistic and selfish bequest motives, especially the latter, increase the saving (or reduce the dissaving) of aged households.

**Keywords:** Bequest motives; saving behavior; wealth accumulation; life-cycle model; altruism model

*Journal of Economic Literature* classification numbers: D12, D91, E21

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\*Correspondence to: Ting Yin, Institute of Social and Economic Research, Osaka University, 6-1, Mihogaoka, Ibaraki 567-0047, JAPAN.

E-mail: [yintingjp2001@yahoo.co.jp](mailto:yintingjp2001@yahoo.co.jp)

## **1. Introduction**

As is well-known, China's household saving rate is high by international standards. There are many motives for which households save, but broadly speaking we can classify them into life-cycle motives and bequest motives. In this paper, I discuss the actual conditions and determinants of the saving behavior and wealth holdings of the aged in China, with emphasis on the impact of bequest motives thereon, using micro data from the 2009 "Survey of Living Preferences and Satisfaction" (urban households) and the 2010 "Survey of Living Preferences and Satisfaction" (rural households), which were conducted in February 2009 and January 2010, respectively, as part of the Global Center of Excellence (GCOE) Program on "Behavioral Macro-dynamics based on Surveys and Experiments" of the Graduate School of Economics and the Institute of Social and Economic Research of Osaka University. In so doing, I try to shed light on which model of household behavior (the selfish life cycle model, the altruism model, or the dynasty model) applies in China.

The issue of which model of household behavior applies in the real world is an important and timely one that has important implications. It is of interest to economists because it sheds light on which model of household behavior applies in the real world, and it is of interest to policymakers because it determines whether household saving rates will decline as the population ages, whether expansionary fiscal policies such as tax cuts are effective in stimulating consumption, whether government redistributive policies such as pay-as-you-go social security system have real effects on the macro economy, and whether wealth disparities are passed on from generation to

generation.

There have been many previous studies of the saving behavior of the aged in Japan and the United States (see Hurd (1990), Horioka (2010), and Kan and Horioka (2010) for useful surveys of the previous literature). For example, Horioka (2010) shows that Japanese retired aged dissave and that even the working aged dissave, at least at advanced ages, and points out that since 2000 there has been a sharp increase in the dissaving of the retired aged due to reductions in social security benefits, increases in consumption expenditures, and increases in taxes and social insurance premiums, which is consistent with the life-cycle model and suggests that this model is highly applicable in the case of Japan.

There have been fewer previous studies of the impact of bequest motives on the saving behavior of the aged. For example, Dekle (1990) analyzes previously unanalyzed cross sectional data with direct information on total wealth and other characteristics and using the number of living children as a proxy for the strength of the bequest motive finds that the Japanese aged households are not decumulating their wealth but that the independent aged households with a bequest motive have higher wealth than those without a bequest motive. Ohtake and Horioka (1994) analyze micro data from a Japanese government survey and using the presence of living children as a proxy for the strength of the bequest motive find that the aged households in Japan are decumulating their assets and that the speed of decumulation of housing assets of the retired aged households with a bequest motive is slower than that of those without a bequest motive by 3 to 4 percentage points. Alessie, Lusardi, and Kapteyn (1995) analyze panel data

for the Netherlands and find using information on whether or not the respondent has thought about leaving a bequest that there is little evidence of decumulation until advanced ages and that the aged households with a bequest motive have significantly higher wealth than those without a bequest motive. Horioka, et al. (2002) analyze micro data from a household survey conducted by the former Institute of Posts and Telecommunications Policy of the Ministry of Internal Affairs and Communications and find that aged households in Japan are dissaving and that whether or not the respondent intends to leave a bequest and the planned amount of the bequest both have a positive and significant impact on their rate of accumulation. By contrast, Hurd (1987) analyzes micro data from the Retirement History Survey, and using the presence of living children as a proxy for the strength of the bequest motives finds that aged households in the United States are dissaving but that bequest motives do not have a significant impact on saving. He speculates that this is because households with living children prefer spending money on their children's consumption and education to leaving an inheritance to their children or because the bequest motive variable functions as a proxy for wealth.

Thus, the evidence is somewhat mixed, but most previous studies find that the aged households are decumulating their wealth, and all authors except Hurd (1987) find that bequest motives have a positive and significant impact on saving.

This paper is organized as follows: in Section 2, I discuss three theoretical models of household behavior with emphasis on their implications for bequest motives and household saving behavior; in Section 3, I describe the data sources used in my

analysis; in Section 4, I define the variables used in my analysis; in Section 5, I describe the estimation model; in Section 6, I present descriptive statistics on the variables used in the analysis with emphasis on the saving behavior of the aged and bequest motives; in Section 7, I present my estimation results; and in Section 8, I summarize my findings and discuss the policy implications of my findings.

To preview my findings, bequest motives are strong in China, with more than 87 percent of respondents in urban areas, more than 75 percent in rural areas, and more than 85 percent in the country as a whole having a bequest motive, and these bequests are motivated primarily by altruism. Moreover, I found that there is little evidence that aged households in China dissave (decumulate their wealth) but that altruistic and selfish bequest motives, especially the latter, increase the saving (or reduce the dissaving) of aged households.

## **2. Theoretical Models of Household Behavior and Their Implications for Bequest Motives and for Household Saving Behavior**

In this section, I briefly describe three theoretical models of household behavior and the implications of these models for bequest motives and for household saving behavior.

### **a. Implications for Bequest Motives**

In this subsection, we discuss the implications of each theoretical model of household behavior for bequest motives.

(1) The selfish life-cycle model: This model assumes that parents are selfish and do not

care about their children. Thus, if this model is valid, parents will not leave any bequests at all to their children or will leave bequests only if their children provide something in return such as co-residence, care, and/or financial support during old age. One version of this model is the “strategic bequest motive” of Bernheim, Shleifer, and Summers (1985). According to this theory, both parents and children are selfish and the strategic bequest motive is regarded as payment for the in-kind services provided by their children. Another version of this model is proposed by Kotlikoff and Spivak (1981), who assume that parents make an implicit annuity contract with their children in order to cope with uncertainty concerning the timing of their death. Since both the strategic bequest motive and the bequest as implicit annuity contract motive are based on the selfish life-cycle model, they are called the bequest as exchange motive.

- (2) The altruism model: This model assumes that parents harbor intergenerational altruism toward their children. Thus, if this model is valid, parents will leave a bequest to their children regardless of whether or not their children provide something in return. Becker (1974, 1981, 1991) and Stark (1995) provide the best exposition of this model.
- (3) The dynasty model: This model assume that parents wish to perpetuate their family line or family business, and thus if this model is valid, parents will leave a bequest to their children only if their children carry on the family line or the family business (see Chu (1991)). Thus, in this model, bequests are a *quid pro quo* for taking over the family line or the family business.

As we have seen, the various theoretical models of household behavior have very different implications for bequest motives.

#### b. Implications for Household Saving Behavior

I now discuss the implications of each theoretical model of household behavior for household saving behavior using age-wealth profiles and age-saving profiles. Figure 1 shows the age-wealth profiles implied by each of the three theoretical models, while Figure 2 shows the age-saving profiles implied by each of the three theoretical models. The vertical axis of Figure 1 is the stock of household net worth and the vertical axis of Figure 2 is the flow of household saving (change in net worth), while the horizontal axis of both figures is the age of the household head.  $R$  is the household's retirement age, and  $L$  is the household head's age at death or his or her lifespan.

- (1) The selfish life-cycle model with no bequests: Individuals who adhere to the selfish life-cycle model with no bequests should save until retirement in order to accumulate enough to finance living expenses during retirement, should finance their living expenses during retirement using their own savings only, and should leave no bequests to their children. Thus, their age-wealth profile should be OAL in Figure 1, and their age-saving profile should be FHJM in Figure 2, saving a positive amount until retirement and decumulating (dissaving) after retirement so that their wealth is precisely exhausted at death.



(2) The selfish life-cycle model with bequests: Individuals who adhere to the selfish life-cycle model with bequests should save until retirement in order to save up enough to finance living expenses during retirement, as in the case of the previous model, but they should finance their living expenses during retirement using only financial (or in-kind) assistance from their children and should leave a bequest to their children at death as a *quid pro quo* for this assistance. Thus, their age-wealth profile should be OACL in Figure 1, and their age-saving profile should be FHIKN in Figure 2. Thus, their wealth accumulation (saving) behavior until retirement will be identical to the life-cycle model without bequests, but their wealth accumulation (saving) behavior after retirement will very different, with no decumulation of assets (no dissaving) until death because their living expenses during retirement are financed by financial (and in-kind) assistance from their children but a sudden decumulation of all of their wealth at the time of death in order to leave a bequest to their children.

(3) The altruism model: Individuals who adhere to the altruism model should save more before retirement because they need to save not only to finance their living expenses during retirement but also because they want to leave an unrequited bequest to their children. Thus, the age-wealth profile of those adhering to the altruism model should be OBD in Figure 1, and their age-saving profile should be EGJMN in Figure 2. Those adhering to the altruism model should save more than those adhering to a selfish life-cycle model with or without bequests until retirement (as shown by the steeper slope of the age-wealth profile in Figure 1 and the higher level of the age-saving profile in Figure 2), but after retirement, those adhering to the

altruism model should decumulate (dissave) at the same rate as those adhering to the selfish life-cycle model with no bequests, as shown by the identical slopes of the age-wealth profiles in Figure 1 and the identical heights of the age-saving profiles in Figure 2. The difference is that those adhering to the altruism model should leave a positive bequest, as a result of which their age-wealth profile does not fall to zero and their age-saving profile becomes sharply negative at the time of death.

- (4) The dynasty model: The case of the dynasty model is virtually identical to the case of the altruism model because children do not provide financial (or in-kind) assistance to parents during retirement and because parents leave a bequest, with the only difference being that there is a *quid pro quo* for the bequest in the case of the dynasty model (namely, taking over the family life or the family business) but not in the case of the altruism model.

Turning finally to the implications of the three theoretical models of household behavior for the wealth holdings of retirees, wealth holdings should be lowest for retirees adhering to the selfish life-cycle model with no bequest motive and higher for the other three models. As drawn in Figure 1, household wealth is highest for retirees adhering to the altruism and dynasty models during the early retirement years and highest for retirees adhering to the selfish life-cycle model with bequests in the later retirement years. Thus, we can ascertain which theoretical model of household behavior applies in China by looking at bequest motives and at the impact of bequest motives on the household saving behavior of retirees.

### 3. Data Sources

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

a. “Survey of Living Preferences and Satisfaction” (urban households)

The “Survey of Living Preferences and Satisfaction” (urban households) (hereafter referred to as the “Urban Survey”) was conducted in January 2009 as part of the Global Center of Excellence (GCOE) Program on “Behavioral Macro-dynamics based on Surveys and Experiments” of the Graduate School of Economics and the Institute of Social and Economic Research of Osaka University. 1380 respondents aged 20 to 69 living in six major cities (Shanghai, Beijing, Chengdu, Guangzhou, Shenyang, and Wuhan) of China were selected at random and interviewed face-to-face.

b. “Survey of Living Preferences and Satisfaction” (rural households)

The “Survey of Living Preferences and Satisfaction” (rural areas) (hereafter referred to as the “Rural Survey”) was conducted in January 2010 and used a questionnaire similar to the “Urban Survey.” 1000 respondents aged 20 to 69 living in twelve rural areas of China (Zhuzhou, Xiangtan, and Hengyang of Hunan province, Xiaogan, Jingzhou, and Huanggang of Hubei province, Nanchong, Yibin, and Dazhou of Sichuan province and Jingzhou, Fushun and Liaoyang of Liaoning province) were selected at random and interviewed face-to-face.

Both surveys collected a variety of detailed information on respondents such as their bequest motives, age, sex, marital status, occupation, educational attainment, number of children, and income. Thus, they are well-suited for conducting the analysis in this

paper.

I used the sample of single (widowed or divorced) males and married couples who have at least one child, whose (male) household head is 60 years old or older and retired, and for whom all of the necessary information is available in the case of the Urban Survey and the same sample in the case of the Rural Survey except that households with retired as well as working (male) household heads were included in the sample since most rural household heads continue working even after the age of 60.

c. “Main Indicators of Real Estate in 35 Large and Medium-sized Cities” (2008)

Data on the sales price of condominiums per square meter by city in China were taken from this data source. These data are included in Chapter 5 of the 2009 edition of the *Statistics Yearbook of China* (National Bureau of Statistics of China (2009)).

#### **4. Variable Definitions**

In this section, I define the dependent and explanatory variables used in my analysis.

The dependent variables I use are as follows:

LnNW (the log of net worth)

LnFINA (the log of net financial assets)

LnFIXA (the log of net housing assets)

The Urban and Rural Surveys collect detailed information on the composition of respondents' financial assets and housing assets. Respondents were asked:

- ① How much is the present appraised value of all housing and other real estate that the entire household owns? (If you are a student, please answer about the housing and other real estate that your parents' entire household owns.)
- ② How much is the outstanding balance of financial assets (saving, stocks, insurance, etc.) of your entire household?
- ③ Do you currently have any liabilities or debts? Liabilities or debts include housing loans.
  - (i) No liabilities or debts
  - (ii) Have liabilities or debts (continue to ④)
- ④ What is the current balance of your housing loans?
- ⑤ What is the current balance of your liabilities or debts other than housing loans?

NW (net worth) was defined as the sum of the current balance of fixed assets and financial assets net of liabilities and was calculated as  $① + ② - ④ - ⑤$ .

FINA (net financial assets) was defined as the current balance of financial assets net of non-housing loans and was calculated as  $② - ④$ .

FIXA (net fixed assets) was defined as the current balance of fixed assets net of housing

loans and was calculated as ①－③.

The explanatory variables I used are as follows:

BEQUEST (bequest motive dummy)

In both the Urban and Rural Surveys, respondents were asked how they feel about leaving an inheritance to their children. The options given were as follows:

1. I plan to leave an inheritance to my child(ren) no matter what.
2. I plan to leave an inheritance to my child(ren) if they provide care (including nursing care) during old age.
3. I plan to leave an inheritance to my child(ren) only if they provide financial assistance during old age.
4. I plan to leave an inheritance to my child(ren) only if they carry on the family business.
5. I do not plan to make special efforts to leave an inheritance to my child(ren) but will leave whatever is left over.
6. I do not plan to leave an inheritance to my child(ren) under any circumstances because doing so may reduce their will to work.
7. I do not plan to leave an inheritance to my child(ren) under any circumstances because I want to use my wealth myself.
8. I want to leave an inheritance to my child(ren) but I won't because I don't have

the financial capacity to do so.

BEQUEST (five bequest motive dummies)

I used the following five dummy variable pertaining to bequest motives: ABEQUEST, a dummy variable that equals one if parents plan to leave an inheritance to their child(ren) no matter what and zero otherwise, SBEQUEST1, a dummy variable that equals one if parents plan to leave an inheritance to their child(ren) if they provide care (including nursing care) during old age and zero otherwise, SBEQUEST2, a dummy variable that equals one if parents plan to leave an inheritance to their child(ren) only if they provide financial assistance during old age and zero otherwise, DBEQUEST, a dummy variable that equals one if parents plan to leave an inheritance to their child(ren) only if they carry on the family business and zero otherwise, UBEQUEST, a dummy variable that equals one if parents do not plan to make special efforts to leave an inheritance to their child(ren) but will leave whatever is left over and zero otherwise. The default category is those not planning to leave a bequest at all (options 6, 7, and 8). (I will sometimes refer to the first four motives collectively as “intended bequest motives” and the fifth motive as an “unintended bequest motive.”)

HAGE (the age of the male household head)

BEQUEST\*HAGE (the cross-product of the five bequest dummies and HAGE)

INCOME (parental income)

INCOME is the annual income of the respondent and his or her spouse (if any) in units of million yuan.

ADIFF (the age difference between husband and wife)

ADIFF is calculated by subtracting the wife's age from the husband's age. If the male household head is unmarried, ADIFF is set equal to zero.

MARRY (a dummy for the male household head's marital status)

MARRY is a dummy variable that equals one if the male household head is married and living with his spouse and zero otherwise.

HEDU (the male household head's educational attainment)

In the Urban Survey, HEDU is defined as the number of years of schooling received by the male household head. It was set equal to three if the male household head did not receive a primary education or dropped out of primary school, to six if his final educational attainment was graduation from primary school, to nine if he graduated from junior high school, to 10.5 if he received some high school education but did not graduate, to twelve if he graduated from high school, to thirteen if he received some junior college education without obtaining a degree, to fourteen if he graduated from a junior college with an associate's degree or received some education at a four-year college without obtaining a bachelor's degree, to sixteen if he graduated from a



four-year college with a bachelor's degree, to 17.5 if he did some post-graduate study without obtaining a master's degree, to eighteen if he received a master's degree, to 19.5 if he did some doctoral studies without obtaining a doctoral degree, and to twenty-one if he received a doctoral degree. Respondents who chose "I don't know" were dropped from the sample.

Since respondents were given different options in the question about educational attainment in the rural survey, HEDU was set equal to zero if the male household head is illiterate, to three if he did not receive a primary education or dropped out of primary school, to six if his final educational attainment was graduation from primary school, to nine if he graduated from junior high school, to twelve if he graduated from high school, to fourteen if he received some education at a four-year college without obtaining a bachelor's degree, to sixteen if he graduated from a four-year college with a bachelor's degree, and to eighteen if he received a master's degree or a doctoral degree. Respondents who chose "I don't know" were dropped from the sample.

WORK (a dummy variable for the employment status of the male household head)

In both the Urban and Rural Surveys, respondents were asked which of the following choices corresponds to their occupation and their spouse's occupation:

1. Clerical worker (general, business-related, etc.)
2. Sales worker (retail shop owner, sales clerk, sales representative, etc.)
3. Managerial worker (government or company worker with the rank of section chief or

higher, member of the board of directors, etc.)

4. Professional or technical worker (teacher, doctor, engineer, writer, etc.)
5. Service worker (hairdresser, waiter, waitress, taxi driver, security guard, etc.)
6. Blue-collar worker (carpenter, repairperson, factory worker, etc.)
7. Agriculture, forestry, and fisheries
8. Housewife or househusband
9. Student
10. Retired (excluding housewife and househusband)
11. Unemployed (excluding for housewife and househusband)
12. Other

WORK is a dummy variable that equals one if the respondent chose options 1 to 7 and zero if the respondent chose options 8 to 11. Respondents who chose options 12 were dropped from the sample. However, this variable was not included when the urban sample was used because I confined the sample to households in which the male household head is retired.

RR (housing price index)

RR is a housing price index calculated as the average sales price of condominiums per square meter in each city divided by the average income of households with a male household head aged 60 years old or older in that city. However, this variable was not

included when using the rural sample or the full sample because data on the sale price of condominiums per square meter are not available in the case of rural areas.

RURAL (rural dummy)

RURAL is a dummy variable that equals one if the respondent is a rural household and zero otherwise (i.e., if the respondent is an urban household). This variable was included only when the full sample was used.

## 5. Estimation Model

In this section, I describe the estimation model used in my analysis. I use the following estimation model:

$$\ln(\text{NW}) = a + b(\text{BEQUEST}) + c(\text{HAGE}) + d(\text{BEQUEST} * \text{HAGE}) + e(\text{ADIFF}) \\ + f(\text{INCOME}) + g * X$$

(X: other explanatory variables)

Regarding the impact of the five bequest dummies, we showed in section 3 that retirees with some kind of bequest motive will hold more wealth than retirees not planning to leave a bequest, with retirees planning to leave a bequest for altruistic or dynastic reasons (ABEQUEST and DBEQUEST, respectively) holding the most wealth in the early retirement years and retirees planning to leave a bequest for selfish reasons (SBEQUEST1 and SBEQUEST2) holding the most wealth in the later retirement years.

However, since retirees planning to leave bequests for altruistic reasons will leave a bequest no matter what whereas retirees planning to leave a bequest for dynastic and selfish reasons will not leave a bequest unless their children fulfill their end of the bargain, the wealth holdings of retirees planning to leave a bequest for dynastic or selfish reasons will tend to be lower than that of retirees planning to leave bequests for altruistic reasons. Finally, retirees who do not plan to make special efforts to leave an inheritance to their child(ren) and who plan to leave whatever is left over (UBEQUEST) would be expected to hold less wealth than retirees with a stronger bequest motive for obvious reasons.

Regarding the impact of parental income (INCOME), if parents' own income is higher, they should be able to accumulate more wealth. Thus, the impact of parental income should be positive.

Regarding the impact of the age of the male household head (AGEH), the life-cycle model predicts that the aged households will decumulate their wealth after retirement so the impact of age should be negative.

Regarding the impact of the cross-product of BEQUEST and AGEH, the coefficient of this variable shows how much faster or slower aged households who have a bequest motive accumulate or decumulate assets than aged households who do not have a bequest motive. Since we would expect aged households with a bequest motive to accumulate assets more rapidly or decumulate assets less rapidly than the aged households without a bequest motive, we would expect the impact of the cross-product

of BEQUEST and AGEH to be positive.

Regarding the impact of the age difference between husband and wife (ADIFF), its impact on wealth should be positive because the couple's retirement span will be longer and the couple will require more wealth to finance living expenses during retirement, the larger is the age difference between husband and wife.

Regarding the impact of housing prices (RR), when housing prices are higher relative to household income, a house of a given size will cost more and thus (assuming the demand for housing is relatively price-inelastic) aged households would be expected to hold more housing assets. Thus, the impact of housing prices should be positive.

Regarding the impact of the rural dummy (RURAL), aged households who live in rural areas would presumably hold less wealth for living expenses during old age because most of them continue working even in old age and because consumer prices are much lower in rural areas. Thus, the impact of the rural dummy should be negative.

## **6. Descriptive Statistics**

In this section, I present descriptive statistics on the variables used in the analysis with emphasis on saving behavior and bequest motives.

### **a. Descriptive Statistics for Dependent and Explanatory Variables**

Table 1 shows descriptive statistics for all variables used in the analysis for urban, rural,

and all households, and as can be seen from this table, the proportion of aged households that plan to leave an inheritance to their children no matter what (an altruistic bequest motive) is 33.3 percent in urban areas, 30.7 percent in rural areas, and 32.5 percent in the country as a whole. The proportion of aged households that plan to leave an inheritance to their children if they provide care (including nursing care) during old age (a selfish or exchange-type bequest motive) is 11.8 percent in urban areas, 7.9 percent in rural areas, and 10.6 percent in the country as a whole. The proportion of aged households that plan to leave an inheritance to their children only if they provide financial assistance during old age (another selfish or exchange-type bequest motive) is 3.3 percent in urban areas, 5.3 percent in rural areas, and 3.9 percent in the country as a whole. Thus, aged households who have one or the other selfish or exchange-type bequest motive is 15.1 percent in urban areas, 13.2 percent in rural areas, and 14.5 percent in the country as a whole. The proportion of aged households that plan to leave an inheritance to their children only if they carry on the family business (a dynastic bequest motive) is 6.9 percent in urban areas, 5.3 percent in rural areas, and 6.4 percent in the country as a whole. The proportion of aged households that do not plan to make special efforts to leave an inheritance to their children but will leave whatever is left over is 32.1 percent in urban areas, 31.6 percent in rural areas, and 31.9 percent in the country as whole. Thus, the proportion of aged households with a bequest motive is 87.4 percent in urban areas, 75.5 percent in rural areas, and 85.3 percent in the country as a whole. It seems that the Chinese aged have a strong bequest motive and that bequest motives are somewhat stronger in rural areas than in urban areas.

b. Data on Wealth Holdings by Bequest Motive

Table 2 presents data on average holdings of net worth, net financial assets, and net fixed assets of aged households by bequest motive for urban, rural, and all households. In urban areas and in the country as a whole, aged households with some kind of intended bequest motive (the first four motives) have much higher holdings of all types of assets than households with an unintended bequest motive (motive 5) and households not planning to leave an inheritance at all (motive 6). For example, aged households that plan to leave an inheritance to their children only if they provide financial assistance during old age (a selfish or exchange-type bequest motive) have the highest net worth and net fixed assets and the second highest net financial assets of any bequest motive (the fourth highest net financial assets of any bequest motive in the case of urban households). Aged households that plan to leave an inheritance to their children no matter what (an altruistic bequest motive) have the highest net financial assets and the second highest net worth and net fixed assets of any bequest motive. Aged households that plan to leave an inheritance to their children only if they provide care (including nursing care) during old age (another selfish or exchange-type bequest motive) have the third highest net worth, net financial assets, and net fixed assets (with the only exception being that they have they have the second highest net financial assets in the case of urban households), and those who plan to leave an inheritance to their children only if they carry on the family business (a dynastic bequest motive) have the fourth highest net worth, net financial assets, and net fixed assets (with the only being that they have the third highest net financial assets in the case of urban households).

In rural areas, the patterns are less clear (perhaps because the sample size is too small), with aged households with an unintended bequest motive having higher net worth and

net fixed assets than aged households with an intended bequest motive, but households with an altruistic bequest motive have the highest net financial assets, the second highest net worth, and the third highest net fixed assets, and households with a dynastic bequest motive have the second highest net worth and the fourth highest net worth and net fixed assets of any bequest motive.

In general, it appears that households with a bequest motive (especially an intended bequest motive) have much higher holdings of all types of assets than households with no bequest motive, especially in urban areas, which suggests that bequest motives have the expected impact on saving behavior. However, I need to perform a regression analysis in order to ascertain whether or not this conclusion holds up even after controlling for other factors.

#### c. Data on Wealth Holdings by Age and Retirement Status

Finally, Table 3 shows average holdings of each asset type by five-year age group and retirement status for urban, rural, and all households. As we discussed in section 2, we would expect wealth to increase with age until retirement age if households plan to finance their living expenses during retirement using their own savings, but there is no clear trend in asset holdings by age until age 59, perhaps because the increase in wealth is obscured by the cohort effect in conjunction with very high rates of income growth, as a result of which lifetime income decreases sharply with age. We can, however, observe a fairly substantial increase in holdings of all asset types in all samples from the 20-24 age group to the 25-29 or 30-34 age group (in one case until the 35-39 age



group).

Turning to trends after age 60 (the mandatory retirement age for salaried workers in China), there is a clear decline in holdings of all asset types from the 55-59 age group to the 60-64 age group in the case of the urban and rural samples and an even sharper decline if we compare all households in the 55-59 age group to retirees in the 60-64 age group in the case of the urban sample. However, trends are less clear in the case of the nation-wide sample, with net financial assets and net fixed assets showing a decline from the 55-59 age group to the 60-64 age group, as expected (except that net fixed assets show an increase if all households in the 55-59 age group are compared to retired households in the 60-64 age group), but with net worth showing an increase, contrary to expectation.

Moreover, there is a slight increase in holdings of all asset types in all samples from the 60-64 age group to the 65-and-over age group, contrary to expectation, whether we look at all households or retired households except in the case of net financial assets in the sample of all rural households and in the nation-wide sample of retired households.

Thus, age-wealth profiles show a mixed picture, with some evidence in favor of the life-cycle model and some evidence against it. A definitive verdict must await the results of my regression analysis, which controls for the impact of other variables. It is to such an analysis that I turn in the next section.

## **7. Estimation Results concerning the Determinants of the Saving Behavior of Aged Households**

In this section, I present the estimation results of my regression analysis of the determinants of the saving behavior of the aged. Tables 4-6 show the estimation results for urban households, rural households and all households, respectively.

Model 1 of Tables 4-6 shows the estimation results with bequest motive dummies in isolation, model 2 shows the estimation results with the cross-products of the bequest motive dummies and the age of the male household head only, and model 3 shows the estimation results including both the bequest motive dummies in isolation and the cross-products of the bequest motive dummies and the age of the male household head. I discuss the estimation results of the models with both the bequest motive dummies in isolation and the cross-product terms first, then the models with only the bequest motive dummies in isolation, and lastly the models with only the cross-product terms.

### **a. Estimation Results for Urban Households (Table 4)**

#### **(1) Estimation Results based on Net Worth**

Turning first to the estimation results based on net worth and looking first at the estimation results for model (3), which contains the age of the male household head as well as the cross-products of the bequest motive dummies and the age of the male household head, the coefficients of most of the bequest dummies entered in isolation are

not significant, indicating that the level of net worth of aged households with most bequest motives is not significantly different from that of aged households without a bequest motive. The only bequest motive dummy whose coefficient is significant is one of the two selfish bequest dummies (SBEQUEST2). Its coefficient is negative and significant, which indicates that the level of net worth of aged households planning to leave a bequest only if their children provide financial assistance is significantly lower than that of those without a bequest motive, as expected.

Since both HAGE, the age of the male household head, and the cross-products of HAGE and the bequest motive dummies are included in the regression equation, the coefficient of the age of the male household head measures the annual rate of accumulation or decumulation of the net worth of aged households without a bequest motive. The coefficient of HAGE is negative but not significant, suggesting that aged households without a bequest motive do not accumulate or decumulate their net worth.

The coefficient of the cross-products of HAGE and the bequest motive dummies indicates by how much the annual rate of accumulation of the net worth of aged households with a bequest motive exceeds that of aged households without a bequest motive. Most of the coefficients of these cross-product terms are not significant, indicating that the annual rate of accumulation of the net worth of aged households with a bequest motive does not significantly differ from that of aged households without a bequest motive. The only cross-product term whose coefficient is significant is SBA2. Its coefficient is positive and significant, which indicates that the annual rate of

accumulation of the net worth of aged households planning to leave a bequest only if their children provide financial assistance is significantly higher than that of those without a bequest motive, as expected. Moreover, since the annual rate of accumulation of households with a bequest motive can be computed as the sum of the coefficient of HAGE in isolation and the coefficient of the cross-product of HAGE and the bequest motive dummy and since the coefficient of HAGE in isolation is insignificant, the aforementioned result suggests that aged households with a selfish bequest motive relating to financial assistance continue accumulating net worth even after retirement.

Turning next to the estimation results for model (1), which contains only the bequest motive dummies in isolation, the coefficients of three out of the five bequest motive dummies (the altruistic bequest motive dummy (ABEQUEST) and the two selfish bequest motive dummies (SBEQUEST1 and SBEQUEST2)) are positive and significant, indicating that the level of net worth of aged households with an altruistic bequest motive or a selfish bequest motive is significantly higher than that of those without a bequest motive. However, differences among the three coefficients are not statistically significant.

Turning next to the estimation results for model (2), which contains only the cross-products of the bequest motive dummies and the age of the male household head, the coefficient of HAGE, the age of the male household head, is positive but insignificant, suggesting that aged households without a bequest motive do not

accumulate or decumulate net worth.

Three out of the five coefficients of the cross-products of HAGE and the bequest motive dummies (ABA, SBA1 and SBA2) are significant, indicating that the annual rate of accumulation of the net worth of aged households with an altruistic or selfish bequest motive is significantly higher than that of aged households without a bequest motive, as expected. Moreover, since the annual rate of accumulation of households with a bequest motive can be computed as the sum of the coefficient of HAGE in isolation and the coefficient of the cross-product of HAGE and the bequest motive dummy and since the coefficient of HAGE in isolation is insignificant, the aforementioned result suggests that aged households with an altruistic or selfish bequest motive continue accumulating net worth even after retirement.

Turning to the coefficients of the other explanatory variables, the coefficient of parental income is positive and significant in all three models, and since parental income can be regarded as a proxy for lifetime income, this result suggests that aged households with higher lifetime incomes have higher net worth than aged households with lower lifetime incomes. The coefficient of the male household head's educational attainment is positive and significant in all three models, suggesting that aged households with higher educational attainments have higher net worth than those with lower educational attainments. Finally, the coefficients of the housing price index, the marital status dummy, and the age difference between husband and wife are not significant.

## (2) Estimation Results based on Net Financial Assets

Turning next to the estimation results based on net financial assets and looking first at the estimation results for model (3), the coefficients of most of the bequest dummies entered in isolation are not significant, indicating that the level of net financial assets of aged households with most bequest motives is not significantly different from that of aged households without a bequest motive. The only bequest motive dummies whose coefficients are significant are the two selfish bequest dummies (SBEQUEST1 and SBEQUEST2). Their coefficients are negative and significant, which indicates that the level of net worth of aged households planning to leave a bequest only if their children provide care or financial assistance is significantly lower than that of those without a bequest motive, contrary to expectation.

The coefficient of HAGE, the age of the male household head, is negative but not significant, suggesting that aged households without a bequest motive do not accumulate or decumulate their net financial assets.

Two out of the five coefficients of the cross-products of HAGE and the bequest motive dummies (SBA1 and SBA2) are positive and significant, indicating that the annual rate of accumulation of the net financial assets of aged households planning to leave a bequest only if their children provide care or financial assistance is significantly higher than that of those without a bequest motive, as expected. Moreover, since the annual rate of accumulation of households with a bequest motive can be computed as the sum of the coefficient of HAGE in isolation and the coefficient of the cross-product of

HAGE and the bequest motive dummy and since the coefficient of HAGE in isolation is insignificant, the aforementioned result suggests that aged households with a selfish bequest motive continue accumulating net worth even after retirement.

Turning next to model (1), the coefficients of the altruistic bequest motive dummy (ABEQUEST), one of the two selfish bequest motive dummies (SBEQUEST1), and the dynastic bequest motive dummy (DBEQUEST) are positive and significant, indicating that the level of net worth of aged households with an altruistic, selfish, or dynastic motive is significantly higher than that of aged households without a bequest motive, as expected.

The coefficient of HAGE, the age of the male household head, is positive but insignificant, suggesting that aged households do not accumulate or decumulate net worth.

Turning next to the estimation results for model (2), the coefficient of HAGE, the age of the male household head, is positive but insignificant, suggesting that aged households without a bequest motive do not accumulate or decumulate net worth.

The coefficients of three out of the five cross-products of HAGE and the bequest motive dummies (ABA, SBA2 and DBA) are positive and significant, indicating that the annual rate of accumulation of net financial assets of aged households planning to leave a

bequest to their children no matter what or only if their children provide financial assistance or carry on the family business is significantly higher than that of aged households without a bequest motive, as expected. Moreover, since the annual rate of accumulation of households with a bequest motive can be computed as the sum of the coefficient of HAGE in isolation and the coefficient of the cross-product of HAGE and the bequest motive dummy and since the coefficient of HAGE in isolation is insignificant, the aforementioned result suggests that aged households with an altruistic, selfish, or dynastic bequest motive continue accumulating net worth even after retirement.

Turning to the coefficients of the other explanatory variables, the coefficient of the male household head's educational attainment is positive and significant in all three models, meaning that aged households with a higher educational attainment hold more net financial assets than aged households a lower educational attainment. The coefficients of parental income, the housing price index, the marital status dummy, and the age difference between husband and wife are not significant.

### (3) Estimation Results based on Net Fixed Assets

Turning finally to the estimation results based on net fixed assets and looking first at the estimation results for model (3), none of the coefficients of the bequest dummies entered in isolation are significant, indicating that the level of net worth of aged households with a bequest motive is not significantly different from that of aged households without a bequest motive.



The coefficient of HAGE, the age of the male household head, is positive but not significant, suggesting that aged households without a bequest motive do not accumulate or decumulate net fixed assets, and the coefficients of the cross-product terms of HAGE and the bequest motive dummies are not significant either, indicating that the annual rate of accumulation of the net fixed assets of aged households with a bequest motive does not differ significantly from that of aged households without a bequest motive.

Turning next to the estimation results for model (1), the coefficients of three out of the five bequest motive dummies (ABEQUEST, SBEQUEST1, and SBEQUEST2) are positive and significant when entered in isolation, indicating that the level of net fixed assets of aged households with an altruistic or selfish bequest motive are significantly higher than that of aged households without a bequest motive. However, differences among the three coefficients are not statistically significant.

The coefficient of HAGE, the age of the male household head, is positive but insignificant, suggesting that aged households continue accumulating net fixed assets even after retirement, contrary to expectation.

Turning next to the estimation results for model (2), the coefficient of HAGE, the age of the male household head, is positive and significant, suggesting that aged households without a bequest motive continue accumulating net fixed assets even after retirement,

contrary to expectation.

The coefficients of three out of the five cross-products of HAGE and the bequest motive dummies (ABA, SBA1 and SBA2) are positive and significant, indicating that the annual rate of accumulation of the net worth of aged households planning to leave a bequest to their children no matter what or only if their children provide care and/or financial assistance is significantly higher than that of aged households without a bequest motive, as expected. However, differences among the three coefficients are not statistically significant. Since the annual rate of accumulation of households with a bequest motive can be computed as the sum of the coefficient of HAGE in isolation and the coefficient of the cross-product of HAGE and the bequest motive dummy and since the coefficient of HAGE is positive and significant, our results imply that aged households with an altruistic or selfish bequest motive continue accumulating net worth even after retirement.

Turning to the coefficients of the other explanatory variables, the coefficients of parental income and the male household head's educational attainment are positive and significant in all three models, as in the case of net worth. Moreover, the coefficient of the housing price index is also positive and significant in all three models, which implies that aged households that live in an area with high housing prices accumulate their net fixed assets more rapidly than aged households that live in an area with low housing prices. The coefficients of the marital status dummy and the age difference between husband and wife are not significant.

## b. Estimation Results for Rural Households (Table 5)

### (1) Estimation Results based on Net Worth and Net Fixed Assets

Turning next to the estimation results for rural households and looking first at the estimation results based on net worth and net fixed assets, none of the coefficients of the bequest motive dummies entered in isolation, HAGE (the age of the male household head), and the cross-products of HAGE and the bequest motive dummies are significant in any of the three models, indicating that the level of net worth and net fixed assets of aged households with bequest motives is not significantly different from that of those without a bequest motive, that aged households without a bequest motive do not accumulate or decumulate their net worth or net fixed assets, and that the annual rate of accumulation of the net worth or net fixed assets of aged households with a bequest motive does not differ significantly from that of aged households without a bequest motive.

### (2) Estimation Results based on Net Financial Assets

Turning next to the estimation results based on net financial assets and looking first at the estimation results for model (3), the results are clearest in this case. The coefficients of three out of the five bequest motive dummies (SBEQUEST1, SBEQUEST2, and UBEQUEST) are negative and significant, indicating that the level of net financial assets of aged households planning to leave a bequest only if their children provide care or financial assistance and of aged households not planning to make special efforts to leave an inheritance to their children but planning to leave

whatever is left over is significantly lower than that of those without a bequest motive, contrary to expectation.

The coefficient of HAGE, the age of the male household head, is negative and significant, indicating that aged households decumulate their net financial assets after retirement, as expected.

The coefficients of three out of the five cross-products of HAGE and the bequest motive dummies (SBA1, SBA2 and UBA) are positive and significant, indicating that the annual rate of accumulation of the net financial assets of aged households planning to leave a bequest only if their children provide care and/or financial assistance or not planning to make special efforts to leave an inheritance to their children but planning to leave whatever is left over is significantly higher than that of those without a bequest motive, as expected. However, differences among the three coefficients are not statistically significant. Since the annual rate of accumulation of households with a bequest motive can be computed as the sum of the coefficient of HAGE in isolation and the coefficient of the cross-product of HAGE and the bequest motive dummy and since the coefficient of HAGE in isolation is negative and significant and smaller in absolute magnitude than the coefficients of SBA1 and SBA2 and almost identical in absolute magnitude to the coefficient of UBA, the aforementioned results suggest that aged households with a selfish bequest motive continue accumulating net financial assets after retirement and that aged households with an unexpected bequest motive neither accumulate nor decumulate net financial assets even after retirement.

Turning to the coefficients of the other explanatory variables, the coefficient of parental income is positive and significant and the coefficient of the age difference between husband and wife is negative and significant in the case of all three dependent variables and all three models. The latter result is contrary to expectation because a larger age difference means a longer retirement period and hence should increase rather than decreasing wealth holdings. Finally, the coefficient of the dummy variable for the employment status of the male household head is negative and significant in the case of net worth and net fixed assets, implying that the net worth and net fixed assets of aged households who are still working is lower than those of aged households who are not working. The coefficients of the male household head's educational attainment and the marital status dummy are not significant in the case of any of the three dependent variables and any of the three models.

c. Estimation Results for the Pooled Sample (Table 6)

Turning finally to the estimation results for the pooled sample of urban and rural households, the results are very similar to the estimation results for urban households only and thus I will discuss only the differences relative to the results for urban households.

(1) Estimation Results based on Net Worth

Looking first at the estimation results based on net worth, the estimation results for model (3) are very similar to the estimation results for urban households only while the

estimation results for models (1) and (2) are somewhat different, with the coefficients of ABEQUEST, SBEQUEST1 and SBEQUEST2 being positive and significant in the case of urban households only and the coefficients of ABEQUEST and DBEQUEST being positive and significant in the case of the pooled sample in model (1) and the coefficients of ABA, SBA1, and SBA2 being positive and significant in the case of urban households only and the coefficients of ABA, DBA, and UBA being significant in the case of the pooled sample in model (2).

#### (2) Estimation Results based on Net Financial Assets

Turning to the estimation results based on net financial assets, the estimation results are very similar to those for urban households, with the only difference being that, in the case of model (2), the coefficients of ABA, SBA2, and DBA are positive and significant in the case of urban households but that the coefficients of ABA, SBA1, SBA2, and DBA are positive and significant in the case of the pooled sample.

#### (3) Estimation Results based on Net Fixed Assets

Turning finally to the estimation results based on net financial assets, the estimation results are generally similar to those for urban households, with the only differences being that, in the case of model (1), the coefficients of ABEQUEST, SBEQUEST1, SBEQUEST2, and HAGE are positive and significant in the case of urban households but that only the coefficients of ABEQUEST and UBEQUEST are positive and significant in the case of the pooled sample, and similarly, that in the case of model (2), the coefficients of ABA, SBA1, SBA2, and HAGE are positive and significant in the

case of urban households but that only the coefficients of ABA and UBA are positive and significant in the case of the pooled sample. The only other major difference is that the coefficient of ADIFF is insignificant in the case of urban households but negative and significant (contrary to expectation) in the case of the pooled sample, presumably because most rural households continue working even in old age and because consumer prices are much lower in rural areas. The coefficients of the other explanatory variables are very similar to those for urban households.

## **8. Conclusion and Policy Implications**

In this paper, I discussed the actual conditions and determinants of the saving behavior and wealth holdings of the aged in China, with emphasis on the impact of bequest motives thereon, using micro data from the 2009 “Survey of Living Preferences and Satisfaction” (urban households) and the 2010 “Survey of Living Preferences and Satisfaction” (rural households), which were conducted in February 2009 and January 2010, respectively, as part of the Global Center of Excellence (GCOE) Program on “Behavioral Macro-dynamics based on Surveys and Experiments” of the Graduate School of Economics and the Institute of Social and Economic Research of Osaka University. More specifically, I used three subsamples of older respondents (defined as those who are aged 60 or old)—retired households living in urban areas, aged households living in rural areas, and the pooled sample of both—to analyze the impact of bequest motives and other factors on the saving behavior of aged households.

My main findings are as follows: Bequest motives are strong in China, with more than 87 percent of respondents in urban areas, more than 75 percent in rural areas, and more

than 85 percent in the country as a whole having a bequest motive, and these bequests are motivated primarily by altruism. Moreover, I found that there is little evidence that aged households in China dissave (decumulate their wealth) but that altruistic and selfish bequest motives, especially the latter, increase the saving (or reduce the dissaving) of aged households.

Turning to the policy implications of my findings, my finding that bequests are motivated more by altruistic motives than by selfish or exchange-related motives in China implies that expansionary fiscal policies such as tax cuts financed by the issuance of government bonds will not be very effective in stimulating consumption because individuals will care about the tax burden that will have to be imposed on future generations to retire those bonds and that government redistributive policies such as pay-as-you-go social security systems will not necessarily be very effective because they will be offset by transfers in the other direction (from parents to children).

Secondly, this finding also implies that bequests will not necessarily be offset by transfers in the other direction (from children to parents), meaning that there is a danger that wealth disparities will be passed on from generation to generation and therefore that it may be desirable to introduce estate taxes.

Thirdly, my finding that aged households in China do not dissave (decumulate their assets) very much, in large part due to the presence of bequest motives, implies that the household saving rate will not necessarily decline even though China's population is



projected to age very rapidly due it large part to the one-child policy.

Turning finally to directions for future research, I have already analyzed the impact of bequest motives on parent-child co-residence in China (see Yin (2010)), but in the future, I plan to analyze the impact of bequest motives on other economic decisions such as the labor supply and retirement decisions of parents and children's decisions concerning providing care and financial assistance to their parents.

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Table 1: Descriptive Statistics for Dependent Variable and Explanatory Variables

Sample	Variable	Mean	Standard deviation	Minimum	Maximum
Urban households					
	lnNW	12.846	0.780	8.517	14.557
	NW	475423.600	314209.000	5000	2100000
	lnFINA	10.752	1.001	8.517	13.305
	FINA	63655.280	90416.990	0	600000
	lnFIXA	12.766	0.627	10.597	14.509
	FIXA	411768.300	279753.600	0	2000000
	ABEQUEST	0.333	0.472	0	1
	SBEQUEST1	0.118	0.323	0	1
	SBEQUEST2	0.033	0.178	0	1
	DBEQUEST	0.069	0.254	0	1
	UBEQUEST	0.321	0.468	0	1
	ABA	21.252	30.172	0	74
	SBA1	7.740	21.253	0	74
	SBA2	2.207	12.079	0	73
	DBA	4.411	16.240	0	69
	UBA	20.756	30.296	0	73
	INCOME	0.042	0.067	0	0.9
	ADIFF	6.817	15.201	-7	70
	AGEH	64.533	3.466	60	78
	EDUH	8.884	2.514	3	16
	MARRY	0.939	0.240	0	1
	RR	0.189	0.078	0.107	0.324
Rural households					
	lnNW	10.826	1.140	6.908	12.713
	NW	79752.630	72407.400	-21900	332000
	lnFINA	9.019	1.262	4.605	11.408
	FINA	7450.000	13763.100	-29900	90000
	lnFIXA	10.681	1.173	6.908	12.676
	FIXA	72302.630	68792.800	1000	320000
	ABEQUEST	0.307	0.463	0	1
	SBEQUEST1	0.079	0.271	0	1
	SBEQUEST2	0.053	0.224	0	1
	DBEQUEST	0.053	0.224	0	1
	UBEQUEST	0.316	0.467	0	1
	ABA	19.588	29.619	0	71
	SBA1	5.184	17.851	0	77
	SBA2	3.281	13.985	0	64
	DBA	3.228	13.758	0	63
	UBA	20.132	29.813	0	70
	INCOME	0.012	0.007	0	0.034
	ADIFF	3.088	3.393	-2	15
	AGEH	63.904	3.321	60	77
	EDUH	4.421	3.071	0	12
	MARRY	0.912	0.284	0	1
	WORK	0.851	0.358	0	1
All households					
	lnNW	12.210	1.306	6.908	14.557
	NW	350127.800	320933.100	-21900	2100000
	lnFINA	10.333	1.301	4.605	13.305
	FINA	45856.940	79525.500	-29900	600000
	lnFIXA	12.095	1.288	6.908	14.509
	FIXA	304270.800	282674.900	0	2000000
	ABEQUEST	0.325	0.469	0	1
	SBEQUEST1	0.106	0.308	0	1
	SBEQUEST2	0.039	0.194	0	1
	DBEQUEST	0.064	0.245	0	1
	UBEQUEST	0.319	0.467	0	1
	ABA	20.725	29.966	0	74
	SBA1	6.931	20.248	0	77
	SBA2	2.547	12.703	0	73
	DBA	4.036	15.488	0	69
	UBA	20.558	30.104	0	73
	INCOME	0.032	0.057	0	0.9
	ADIFF	5.636	12.819	-7	70
	AGEH	64.333	3.429	60	78
	EDUH	7.471	3.406	0	16
	MARRY	0.931	0.255	0	1
	DRURAL	0.317	0.466	0	1

Note: INCOME is in units of 10,000,000 yuan.

Data Source: The data were taken from the China surveys of the "Survey of Living Preferences and Satisfaction," which was conducted as part of the 21st Century Center of Excellence (COE) Program of Osaka University (<http://www2.econ.osaka-u.ac.jp/coe/>).

Table 2: Bequest Motives and Aged Households' Assets Holding (Urban Sample)

Bequest Motive	Net Worth	Net Financial Assets	Net Fixed Assets
1. I plan to leave an inheritance to my child(ren) no matter what (ABEQUEST)	567,573.20 (82)	101,719.50 (82)	465,853.70 (82)
2. I plan to leave an inheritance to my child(ren) if they provide care (including nursing care) during old age (SBEQUEST1)	512,172.40 (29)	54,586.21 (29)	457,586.20 (29)
3. I plan to leave an inheritance to my child(ren) only if they provide financial assistance during old age(SBEQUEST2)	721,250.00 (8)	56,250.00 (8)	665,000.00 (8)
4. I plan to leave an inheritance to my child(ren) only if they carry on the family business (DBEQUEST)	466,823.50 (17)	52,705.88 (17)	414,117.60 (17)
5. I do not plan to make special efforts to leave an inheritance to my child(ren) but will leave whatever is left over (UBEQUEST)	401,407.60 (79)	39,445.57 (79)	361,962.00 (79)
6. I do not plan to leave an inheritance (NOBEQUEST)	327,193.50 (31)	41,064.52 (31)	286,129.00 (31)
Total	475,423.60 (246)	63,655.28 (246)	411,768.30 (246)

Bequest Motives and Aged Households' Assets Holding (Rural Sample)

Bequest Motive	Net Worth	Net Financial Assets	Net Fixed Assets
1. I plan to leave an inheritance to my child(ren) no matter what (ABEQUEST)	74,922.860 (35)	9,951.429 (35)	64,971.430 (35)
2. I plan to leave an inheritance to my child(ren) if they provide care (including nursing care) during old age (SBEQUEST1)	50,444.440 (9)	3,444.444 (9)	47,000.000 (9)
3. I plan to leave an inheritance to my child(ren) only if they provide financial assistance during old age(SBEQUEST2)	59,833.330 (6)	7,666.667 (6)	52,166.670 (6)
4. I plan to leave an inheritance to my child(ren) only if they carry on the family business (DBEQUEST)	65,166.670 (6)	9,500.000 (6)	55,666.670 (6)
5. I do not plan to make special efforts to leave an inheritance to my child(ren) but will leave whatever is left over (UBEQUEST)	104,108.300 (36)	8,136.111 (36)	95,972.220 (36)
6. I do not plan to leave an inheritance (NOBEQUEST)	68,981.820 (22)	3,368.182 (22)	65,613.640 (22)
Total	79,752.630 (114)	7,450.000 (114)	72,302.630 (114)

Bequest Motives and Aged Households' Assets Holding (Pooled Sample)

Bequest Motive	Net Worth	Net Financial Assets	Net Fixed Assets
1. I plan to leave an inheritance to my child(ren) no matter what (ABEQUEST)	420,199.10 (117)	74,267.52 (117)	345,931.60 (117)
2. I plan to leave an inheritance to my child(ren) if they provide care (including nursing care) during old age (SBEQUEST1)	402,815.80 (38)	42,473.68 (38)	360,342.10 (38)
3. I plan to leave an inheritance to my child(ren) only if they provide financial assistance during old age(SBEQUEST2)	437,785.70 (14)	35,428.57 (14)	402,357.10 (14)
4. I plan to leave an inheritance to my child(ren) only if they carry on the family business (DBEQUEST)	362,043.50 (23)	41,434.78 (23)	320,608.70 (23)
5. I do not plan to make special efforts to leave an inheritance to my child(ren) but will leave whatever is left over (UBEQUEST)	308,340.00 (115)	29,644.35 (115)	278,695.70 (115)
6. I do not plan to leave an inheritance (NOBEQUEST)	220,011.30 (53)	25,416.98 (53)	194,594.30 (53)
Total	350,127.80 (360)	45,856.94 (360)	304,270.80 (360)

Note: The figures in parentheses show the number of observations, and the figures without parentheses show the mean of three kinds of assets.

Table 3: Assets Holding by Age (Urban Sample)

Age Group	Net Worth	Net Financial Assets	Net Fixed Assets
20-24	452,732.4 (71)	62,521.13 (71)	390,211.3 (71)
25-29	559,841.5 (82)	121,243.90 (82)	438,597.6 (82)
30-34	576,990.3 (103)	95,922.33 (103)	481,068.0 (103)
35-39	565,722.2 (135)	81,529.63 (135)	484,676.5 (136)
40-44	508,811.6 (138)	82,257.14 (140)	431,428.6 (140)
45-49	541,321.4 (140)	67,163.12 (141)	473,678.6 (140)
50-54	525,856.5 (154)	105,694.20 (154)	420,162.3 (154)
55-59	555,727.3 (132)	87,858.21 (134)	483,204.6 (132)
60-64	491,496.1 (155)	66,821.79 (156)	424,243.2 (155)
65-	520,905.5 (254)	70,917.97 (256)	451,386.7 (256)
Total	529,827.2 (1364)	82,275.95 (1372)	449,709.1 (1369)
60-64 (Retired)	467,313.0 (138)	66,660.87 (138)	400,652.2 (138)
65- (Retired)	485,787.0 (108)	59,814.81 (108)	425,972.2 (108)
Total (Retired)	475,423.6 (246)	63,655.28 (246)	411,768.3 (246)

Assets Holding by Age (Rural Sample)

Age Group	Net Worth	Net Financial Assets	Net Fixed Assets
20-24	100,781.80 (66)	17,903.030 (66)	82,878.79 (66)
25-29	127,231.00 (100)	18,681.000 (100)	108,550.00 (100)
30-34	118,207.20 (97)	12,702.060 (97)	105,505.20 (97)
35-39	105,722.10 (131)	12,622.900 (131)	93,099.24 (131)
40-44	103,168.80 (138)	11,183.330 (138)	91,985.51 (138)
45-49	109,657.60 (99)	9,920.202 (99)	99,737.37 (99)
50-54	100,186.20 (87)	13,473.560 (87)	86,712.64 (87)
55-59	109,509.20 (109)	13,059.630 (109)	96,449.54 (109)
60-64	81,693.85 (65)	9,909.231 (65)	71,784.62 (65)
65-	85,850.93 (108)	7,512.963 (108)	78,337.96 (108)
Total	105,018.50 (1000)	12,512.000 (1000)	92,506.50 (1000)

Assets Holding by Age (Pooled Sample)

Age Group	Net Worth	Net Financial Assets	Net Fixed Assets
20-24	283,179.6 (137)	41,026.28 (137)	242,153.3 (137)
25-29	322,143.4 (182)	64,890.66 (182)	257,252.7 (182)
30-34	354,480.5 (200)	55,560.50 (200)	298,920.0 (200)
35-39	339,180.8 (266)	47,594.36 (266)	292,554.3 (267)
40-44	305,990.2 (276)	46,975.90 (278)	262,928.1 (278)
45-49	362,515.1 (239)	43,550.42 (240)	318,782.4 (239)
50-54	372,191.3 (241)	72,402.90 (241)	299,788.4 (241)
55-59	353,910.8 (241)	54,306.58 (243)	308,282.2 (241)
60-64	370,418.2 (220)	50,082.81 (221)	320,107.7 (220)
65-	391,110.2 (362)	52,105.49 (364)	340,701.9 (364)
Total	350,128.1 (2364)	52,864.50 (2372)	298,927.1 (2369)
60-64 (Retired)	448,919.2 (146)	63,782.19 (146)	385,137.0 (146)
65- (Retired)	460,538.5 (117)	55,743.59 (117)	404,794.9 (117)
Total (Retired)	454,088.2 (263)	60,206.08 (263)	393,882.1 (264)

Note: The figures in parentheses show the number of observations, and the figures without parentheses show the mean of three kinds of assets.



Table 4: Determinants of Aged Households' Saving of Urban Households

VARIABLES	(1) lnNW	(2) lnNW	(3) lnNW	(1) lnFINA	(2) lnFINA	(3) lnFINA	(1) lnFIXA	(2) lnFIXA	(3) lnFIXA
ABEQUEST	0.627*** (0.212)		-2.256 (2.797)	0.668** (0.266)		1.116 (3.955)	0.418*** (0.130)		1.199 (1.841)
SBEQUEST1	0.466* (0.244)		-0.291 (3.717)	0.283 (0.294)		-8.816** (4.467)	0.324** (0.164)		-0.469 (2.731)
SBEQUEST2	0.709** (0.308)		-9.111** (4.308)	0.953*** (0.319)		-10.410** (4.250)	0.525** (0.231)		-4.570 (4.250)
DBEQUEST	0.364 (0.253)		-0.575 (3.984)	0.570* (0.315)		-2.538 (5.685)	0.192 (0.201)		2.264 (3.554)
UBEQUEST	0.305 (0.218)		-2.136 (2.542)	0.123 (0.262)		-4.112 (4.009)	0.154 (0.136)		1.658 (1.883)
HAGE	0.019 (0.016)	0.013 (0.017)	-0.013 (0.037)	0.015 (0.022)	0.008 (0.022)	-0.034 (0.055)	0.023** (0.011)	0.019* (0.012)	0.031 (0.024)
ABA		0.010*** (0.003)	0.045 (0.044)		0.010** (0.004)	-0.007 (0.061)		0.006*** (0.002)	-0.012 (0.029)
SBA1		0.007* (0.004)	0.012 (0.059)		0.005 (0.004)	0.140** (0.068)		0.005* (0.003)	0.012 (0.043)
SBA2		0.011** (0.005)	0.146** (0.066)		0.015*** (0.005)	0.167** (0.065)		0.008** (0.003)	0.075 (0.064)
DBA		0.006 (0.004)	0.014 (0.062)		0.009* (0.005)	0.048 (0.089)		0.003 (0.003)	-0.032 (0.054)
UBA		0.005 (0.003)	0.038 (0.041)		0.002 (0.004)	0.066 (0.061)		0.002 (0.002)	-0.023 (0.029)
INCOME	1.495** (0.705)	1.484** (0.704)	1.498** (0.705)	0.449 (1.512)	0.435 (1.521)	0.509 (1.515)	1.391** (0.555)	1.386** (0.555)	1.336** (0.567)
ADIFF	-0.003 (0.016)	-0.003 (0.016)	-0.002 (0.017)	-0.015 (0.018)	-0.014 (0.018)	-0.006 (0.019)	-0.014 (0.014)	-0.013 (0.014)	-0.012 (0.014)
HEDU	0.047*** (0.017)	0.047*** (0.017)	0.047*** (0.018)	0.060** (0.025)	0.060** (0.025)	0.056** (0.024)	0.039*** (0.015)	0.039*** (0.015)	0.037** (0.015)
MARRY	-0.133 (1.022)	-0.102 (1.026)	-0.071 (1.083)	-1.078 (1.184)	-1.024 (1.180)	-0.568 (1.234)	-0.755 (0.885)	-0.741 (0.885)	-0.671 (0.907)
RR	0.937 (0.584)	0.931 (0.584)	0.869 (0.588)	-1.064 (0.848)	-1.090 (0.852)	-1.234 (0.842)	1.539*** (0.565)	1.533*** (0.564)	1.462** (0.566)
Constant	10.674*** (1.063)	11.051*** (1.019)	12.727*** (2.046)	10.192*** (1.658)	10.553*** (1.614)	12.852*** (3.383)	11.102*** (0.967)	11.351*** (0.940)	10.539*** (1.462)
Observations	246	246	246	204	204	204	240	240	240
R-squared	0.141	0.143	0.154	0.121	0.120	0.156	0.171	0.172	0.182
F-stat	3.936	4.041	3.535	3.044	3.168	4.619	4.365	4.372	3.285

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 5: Determinants of Aged Households' Saving of Rural Households

VARIABLES	(1) lnNW	(2) lnNW	(3) lnNW	(1) lnFINA	(2) lnFINA	(3) lnFINA	(1) lnFIXA	(2) lnFIXA	(3) lnFIXA
ABEQUEST	-0.024 (0.314)		-1.506 (6.431)	0.894 (0.697)		-11.493 (11.529)	-0.183 (0.317)		-2.880 (6.525)
SBEQUEST1	-0.004 (0.440)		-6.158 (6.193)	0.824 (0.924)		-28.615* (16.868)	-0.119 (0.504)		-6.386 (6.045)
SBEQUEST2	-0.489 (0.821)		25.713 (30.158)	0.974 (0.777)		-40.811*** (9.771)	-0.467 (0.786)		24.291 (29.178)
DBEQUEST	0.267 (0.301)		10.492 (8.522)	0.480 (0.775)		3.994 (28.464)	0.232 (0.316)		0.121 (12.745)
UBEQUEST	0.339 (0.294)		-4.476 (5.535)	0.593 (0.652)		-16.366* (9.007)	0.320 (0.291)		-4.421 (5.552)
HAGE	-0.026 (0.030)	-0.028 (0.030)	-0.071 (0.081)	-0.062 (0.047)	-0.072 (0.049)	-0.263* (0.149)	-0.013 (0.031)	-0.013 (0.031)	-0.066 (0.080)
ABA		-0.000 (0.005)	0.023 (0.102)		0.014 (0.011)	0.191 (0.183)	-0.003 (0.005)		0.042 (0.103)
SBA1		0.000 (0.007)	0.094 (0.096)		0.013 (0.014)	0.462* (0.269)	-0.001 (0.008)		0.096 (0.093)
SBA2		-0.008 (0.013)	-0.422 (0.494)		0.016 (0.012)	0.669*** (0.158)	-0.008 (0.013)		-0.399 (0.478)
DBA		0.004 (0.005)	-0.169 (0.137)		0.007 (0.012)	-0.073 (0.461)	0.004 (0.005)		-0.001 (0.206)
UBA		0.005 (0.005)	0.075 (0.087)		0.010 (0.010)	0.262* (0.143)	0.005 (0.005)		0.074 (0.087)
INCOME	44.997*** (16.982)	45.227*** (16.915)	48.158*** (16.463)	55.654** (23.363)	55.327** (23.467)	53.803** (24.528)	35.931** (17.359)	36.226** (17.306)	37.916** (17.025)
ADIFF	-0.073** (0.030)	-0.074** (0.030)	-0.075** (0.031)	-0.137* (0.081)	-0.139* (0.080)	-0.156* (0.088)	-0.067** (0.032)	-0.067** (0.032)	-0.070** (0.033)
HEDU	-0.026 (0.035)	-0.026 (0.035)	-0.029 (0.035)	0.049 (0.039)	0.050 (0.039)	0.061 (0.041)	-0.025 (0.037)	-0.025 (0.037)	-0.026 (0.037)
MARRY	-0.219 (0.299)	-0.215 (0.298)	-0.222 (0.298)	-0.082 (0.537)	-0.079 (0.533)	0.050 (0.514)	-0.238 (0.296)	-0.235 (0.295)	-0.234 (0.298)
WORK	-0.530** (0.260)	-0.524** (0.259)	-0.469* (0.259)	0.076 (0.360)	0.075 (0.360)	0.187 (0.371)	-0.655** (0.273)	-0.647** (0.272)	-0.610** (0.277)
Constant	12.856*** (2.038)	12.957*** (2.042)	15.680*** (5.332)	11.722*** (3.147)	12.339*** (3.258)	24.600** (9.666)	12.151*** (2.107)	12.153*** (2.109)	15.508*** (5.247)
Observations	113	113	113	65	65	65	114	114	114
R-squared	0.233	0.235	0.265	0.319	0.321	0.373	0.211	0.211	0.235
F-stat	3.565	3.590	3.129	2.360	2.374	23.62	3.019	3.051	2.159

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

Table 6: Determinants of Aged Households' Saving of All Households

VARIABLES	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
	lnNW	lnNW	lnNW	lnFINA	lnFINA	lnFINA	lnFIXA	lnFIXA	lnFIXA
ABEQUEST	0.452** (0.175)		-1.139 (2.801)	0.735*** (0.253)		0.486 (3.587)	0.271* (0.153)		0.956 (2.400)
SBEQUEST1	0.298 (0.200)		-1.148 (3.345)	0.419 (0.270)		-9.494** (3.833)	0.192 (0.185)		-0.697 (3.121)
SBEQUEST2	0.383 (0.382)		-8.138* (4.907)	1.031*** (0.307)		-7.109** (3.607)	0.282 (0.362)		-5.379 (4.781)
DBEQUEST	0.353* (0.200)		-0.057 (3.429)	0.601** (0.297)		-5.708 (4.845)	0.227 (0.184)		1.756 (3.104)
UBEQUEST	0.361** (0.169)		-1.916 (2.614)	0.300 (0.244)		-4.750 (3.318)	0.274* (0.147)		0.986 (2.274)
HAGE	0.006 (0.014)	0.001 (0.014)	-0.022 (0.034)	-0.010 (0.018)	-0.018 (0.018)	-0.066 (0.045)	0.010 (0.013)	0.007 (0.013)	0.011 (0.027)
ABA		0.007** (0.003)	0.025 (0.044)		0.011*** (0.004)	0.003 (0.056)		0.004* (0.002)	-0.011 (0.038)
SBA1		0.005 (0.003)	0.022 (0.052)		0.007* (0.004)	0.153*** (0.058)		0.003 (0.003)	0.014 (0.048)
SBA2		0.006 (0.006)	0.130* (0.073)		0.016*** (0.005)	0.124** (0.054)		0.005 (0.005)	0.086 (0.071)
DBA		0.005* (0.003)	0.006 (0.054)		0.010** (0.005)	0.099 (0.076)		0.003 (0.003)	-0.024 (0.048)
UBA		0.006** (0.003)	0.035 (0.041)		0.005 (0.004)	0.078 (0.051)		0.004* (0.002)	-0.011 (0.035)
INCOME	1.557* (0.931)	1.555* (0.930)	1.582* (0.929)	0.695 (1.694)	0.688 (1.702)	0.783 (1.690)	1.344* (0.746)	1.347* (0.745)	1.322* (0.756)
ADIFF	-0.009 (0.006)	-0.009 (0.006)	-0.008 (0.006)	-0.003 (0.008)	-0.003 (0.008)	-0.001 (0.008)	-0.011* (0.006)	-0.011* (0.006)	-0.010* (0.006)
HEDU	0.038** (0.017)	0.038** (0.017)	0.035** (0.018)	0.067*** (0.021)	0.066*** (0.021)	0.065*** (0.021)	0.031* (0.017)	0.031* (0.017)	0.027 (0.017)
MARRY	-0.361 (0.317)	-0.362 (0.318)	-0.354 (0.318)	-0.203 (0.403)	-0.203 (0.401)	-0.142 (0.389)	-0.435 (0.314)	-0.436 (0.314)	-0.430 (0.317)
DRURAL	-1.819*** (0.143)	-1.820*** (0.143)	-1.805*** (0.145)	-1.437*** (0.210)	-1.438*** (0.209)	-1.368*** (0.214)	-1.938*** (0.134)	-1.938*** (0.134)	-1.935*** (0.137)
Constant	12.107*** (0.942)	12.440*** (0.936)	13.958*** (2.169)	10.520*** (1.296)	11.021*** (1.287)	14.070*** (2.948)	12.030*** (0.884)	12.259*** (0.869)	11.993*** (1.780)
Observations	359	359	359	269	269	269	354	354	354
R-squared	0.546	0.546	0.551	0.395	0.395	0.415	0.594	0.594	0.597
F-stat	31.19	31.41	23.64	13.84	13.93	16.41	32.73	32.78	23.03

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1