dren while households with children have some altruistic motive. I classify the following two types of household as the altruistic group: (1) households that have dependent children and (2) households that have no dependent children, but whose stage in life is after "3. Birth of first child." On the other hand, households that have no dependent children and whose stage in life is "1. Single" or "2. Getting married" are classified as no-child household.[34] [35]

Before the split-sample estimation, let me consider the criteria in more detail using a cross tabulation of Table 9.[36] First, I can point out that the small number of the households having strong bequest motive supports LCH. Secondly, I can list the four groups ("Strong bequest motive," "Weak bequest motive," "With children" and "No children") in order of the degree of altruistic bequest motive. Since the group of "No children" is dominated by households with the weak bequest motive, this group is expected to be more consistent with LCH than the one of the weak bequest motive, which includes a certain number of households in the group of "With children." Similarly, the group of "Strong bequest motive" is supposed to be less consistent with LCH than the one of "With children." As a result, the most altruistic group can be "No children," and next comes "Weak bequest motive." The third group is "With children," and finally "Strong bequest motive" comes.[37] Finally, I discuss the points to keep in mind when interpreting results of "With children" and "No children." Since three quarters of the households in the group of "With children" do not want to leave assets to their children, I may have a result that those households are corroborated with LCH as well as the group of "No children." Ideally, I would focus the difference of the coefficient of net pension benefits between these two groups in order to consider the difference of consistency with LCH that is related to the presence of children.[38]

Moreover, I examine whether the above-mentioned criteria are appropriate for the purpose of the sample division in this paper. For example, if households with children have a lower ability to accumulate assets due to their educational expenditure, the offset through household asset accumulation can be observed regardless of the strength of the altruistic bequest motive. Tables 10 and 11 provide descriptive statistics of the amount

[34]Dependent children in RADAR are defined as those whose annual income is less than 1 million yen and whose living expenses are fully supported by the respondent or his/her spouse.

[35]The RADAR asks at which stage in life each household is. A life is divided into the following ten stages: (1) Single, (2) Getting married, (3) Birth of first child, (4) Entry of first child into elementary school, (5) Entry of first child into junior high school, (6) Entry of first child into high school, (7) Entry of first child into college, (8) First child entering employment or getting married, (9) Youngest child entering employment or getting married, and (10) Birth of grandchild.

[36]In performing a cross-tabulation analysis, I use only the households that give an answer to both questions about the desire to leave assets and the presence of children. Since I exclude the households that reply either one of the two questions, the number of households is smaller than those of the estimations below.

[37]I cannot confine the sample households to the upper left cell ("With children" and "Strong bequest motive") or the lower right cell ("No children" and "Weak bequest motive") in Table 9 because sample size becomes too small.

[38]If I use the DID method, the difference between the household groups could be identified. This is an issue in the future.

of savings, and each table does not show a significant difference in the amount of savings between the two groups.[39] Hence, the sample divisions based on the above-mentioned criteria might be appropriate for this paper and are likely not to produce a false conclusion.

6.2 Results of split-sample analysis

This section discusses the results of split-sample estimations. First, samples are divided on the basis of the strength of their desire to leave assets. Table 12 reports the results of this estimation, and it reports significantly negative coefficients of net pension benefits only for less altruistic households.[40] On the other hand, no coefficient of net pension benefits is significantly negative for altruistic households. Overall, the findings in Table 12 reveal that the saving behavior of less altruistic households is more consistent with LCH than that of altruistic ones.

Second, I divide households based on whether they have children or not. Table 13 provides estimation results using this criterion. The contrast between the groups of "No children" and "With children" is apparent. In columns (B) and (D), the coefficients of net pension benefits for the group of "No children" are estimated to be significantly negative for two older age groups although those magnitudes are too large in absolute value compared to the theoretical prediction. Those large coefficients may be partly due to a lack of sample households, which can make the estimation result unstable. In columns (E) to (H), several coefficients of net pension benefits are also significantly negative for the group of "No children," contrary to those of "With children."[41] The differentials in the coefficient between those two groups may express the degree of substitutability that is derived from the presence of children. Judging from Table 13, less altruistic households behave more consistently with LCH than altruistic ones. Furthermore, as expected in the previous subsection, the estimate of β_i is the largest for "No children" among the four groups. Thus, Tables 12 and 13 suggest that the negative estimates of β_i in Tables 7 and 8 is attributable to the response of households to the pension reform.

7 Conclusion

Japanese literature has not arrived yet at a clear consensus on whether LCH or ABMH seems more plausible, while a number of studies on western countries confirm the validity of LCH. The latter literature contains studies in which estimations of the asset demand

[39]The question "How much do you save money from the income during the past one year?" provides the amounts of savings shown in Tables 10 and 11. Because this question has more missing values than the others, the number of observations is smaller than in other tables.

[40]The total number of observations in Table 12 is slightly smaller than those in Tables 6 and 7. This is due to missing values in the following question: "Do you want to leave financial assets to your children?" The observations in Table 13 also have decreased because of missing values of the stage in life and dependent children.

[41]Table 13 shows that several coefficients of net pension benefits are significantly positive for the 30s. Moreover, Tables 7, 8 and 12 also report positive (but insignificant) coefficients for them; however, the reason for this result have yet to be determined.

equation are performed to compute the degree of substitutability between net pension benefits and household assets. This paper also tries to estimate substitutability by exploiting the exogenous reduction in pension benefits caused by the 1999 pension reform in Japan. This exogenous variation allows identification of substitutability separately from an inherent positive correlation between pension and private wealth. The substitution effect is found mainly for middle-aged households, and its value is corroborated by theoretical predictions. In addition, this paper tests whether the magnitude and significance of substitutability differ between altruistic and less altruistic households in a manner that is consistent with LCH. If LCH is more reasonable for less altruistic households, it can be ascertained that the estimates in this paper capture the substantial effect of the pension reform. Consequently, this test indicates that the substitution effect is more significant for less altruistic households. Thus, the estimates of substitutability are probably given by the increase of household assets in response to the 1999 pension reform.

However, this paper has several limitations. First, it ignores life insurance due to a lack of information despite a feature of Japanese saving behavior being a higher participation rate in life insurance. This exclusion might bias the estimation results favorably towards LCH (as discussed in Section 4.4). Second, this paper does not consider the potential change in retirement age that can be induced by a reduction in pension benefits. If most households reacted to the reduction by extending their retirement age, it is natural to consider the substitution effect obtained in this paper as being overestimated. Finally, although this paper regards only LCH and ABMH as possible hypotheses of household saving behavior, other possibility might exist. For example, a combination of them might be the true hypothesis. Further research is required to resolve these issues.

Appendix A. Method of calculating the amount of housing loans for residential land

This section describes the procedures for calculating the amount of housing loans for residential land separately from that for residences. Because the 2000 RADAR provides the present value of total housing loans in 2000, I have to calculate the amount only for 1996. The procedure consists of two steps: (1) calculating the present value of total housing loans, and (2) dividing this present value into housing loans for residential land and for residences. The amount of annual payments and the remaining payment period are available from the 1996 RADAR; therefore, the present value of total housing loans can be calculated by summing the present values of annual payments for each year. To get the present values, this paper uses the discount rate of the pension investment yield (4%) postulated in the 1994 fiscal recalculation. Next, the amount of housing loans is computed for residential land separately from that for residences. The total amount of housing loans is split into these two parts by multiplying the average ratio (in the real economy) of housing loans for residential land to that of total housing loans. This ratio comes from the Survey of Private Residential Construction Funds (conducted by Housing Bureau, Ministry of Construction), which provides the total amount of housing loans

and the amount of housing loans for land purchases for purchasers of own house and land. Consequently, the average ratio of housing loans for land purchases in South Kanto (Tokyo, Saitama, Chiba, and Kanagawa) for the period from 1986 to 2000 is calculated to be 0.339. Appendix tables A-1 and A-2 report estimates of the amount of housing loans for residential land in 1996 and 2000, respectively. Because the magnitude and age pattern of these two tables are similar, the projection of the present value of total housing loans for 1996 probably performs well.

Appendix B. Method of calculating the amount of net pension benefits

B.1 Calculating the amount of pension benefits

The amount of pension benefits is calculated according to the following 10 steps, which virtually replicate the actual calculation procedure for pension benefits.

1. Annual household income (other than bonus) and annual bonus
Before-tax annual household income in RADAR is divided into two components: (1) annual household income excluding bonus and (2) annual bonus, using the ratio of annual bonus and special cash earnings to the sum of contractual cash earnings $\times 12$ and annual bonus and special cash earnings, which are given by the Basic Survey on Wage Structure.

2. Stream of annual household income
Next, the streams of annual household income (other than bonus) for individual households during the period from entering the job market to mandatory retirement (at 60 years old) are calculated. First, multiplying annual household income of the data collection year (1996 or 2000) by a nominal wage profile yields the streams of nominal household income from entering the job market to the data collection year. The nominal wage profiles, calculated on the basis of the Basic Survey on Wage Structure, are prepared for each household head's age (25 to 59 years), educational background (junior high graduate, high school graduate, junior college graduate, college graduate), and company size of household head (more than 1000 employees, between 200 and 999 employees, between 50 and 199 employees, between 10 to 49 employees). Secondly, to obtain the income streams from the data collection year to retirement the annual household income of the data collection year is multiplied by the expected rate of increase in nominal wage. This expected rate is 4.0% per annum and 2.5% per annum for 1996 and 2000, respectively, both of which are postulated in the fiscal recalculation in 1994 and 1999.

3. Monthly standard remuneration
Dividing the annual household income of each year (obtained in step 2) by 12 yields monthly household income. Then, this monthly income is converted into monthly standard remuneration following the grade table of standard remuneration. When converting

future monthly income, the grade table used is that updated by multiplying the grade table of data collection year by the expected increase rate of nominal wage.

4. Average monthly standard remuneration

The average monthly standard remuneration is eventually obtained by averaging the revaluated monthly standard remuneration. I can convert the monthly standard remuneration (obtained in step 3) into the revaluated monthly standard remuneration using reassessment rates. The reassessment rate adjusts the past increase in real wages (i.e. productivity growth). In the calculation, the observed rates are applied for household heads retiring by 2004. Meanwhile, for household heads retiring after 2005, values updated by expected increase rates of real wage are used. This expected rate is 2.0% per annum for the 1996-year sample and 1.0% per annum for the 2000-year sample, which are postulated in fiscal recalculations.

5. Annual standard bonus and the annual bonus

Next, the streams of annual standard bonus and annual bonus are calculated. The annual standard bonus is used for calculating the earnings-related component for the period after the introducing the total remuneration system. On the other hand, the annual bonus is employed for calculating the amount of special premiums on bonuses, which was introduced in the 1994 fiscal recalculation.

One can calculate the stream of annual bonus, in a similar way to step 2, using the annual bonus amount of the data collection year obtained in step 1. Because a bonus up to 1.5 million yen for each payment is regarded as the standard bonus under the total remuneration system, a bonus up to 3 million yen is considered to be the annual standard bonus, assuming that a bonus is paid two times a year.

6. Benefits of old-age basic pension before age 65 (*Teigaku Bubun*)

The following steps (from 6 to 8) now calculate the pension benefits using the components obtained so far. Step 6 explains the procedure for computing the benefits of the old-age basic pension before 65 years of age. The first-year benefits are represented as a product of unit price, total number of enrollment months, and accumulated inflation rate up to the first entitlement year. Unit prices are the actual values in 1996 and 2000. This paper also assumes that all household heads participated in the employees' pension for 444 months (37 years), which is the upper limit of the enrollment period determined by law (for people born after April 2, 1934). Further, the accumulated inflation rate is calculated using actual price indexation rates before the data collection year and the expected inflation rates after that (2.0% and 1.5% per annum for 1996 and 2000, respectively). The expected rates are derived from the postulated values of the fiscal recalculations in 1994 and 1999. Finally, the pension benefits for each year are computed by multiplying the first-year benefits with the inflation rate.

7. Benefits of old-age basic pension after age 65 (*Kiso Nenkin*)

Step 7 describes the calculation of benefits provided by the old-age basic pension after

65 years of age. The first-year benefits are represented as a product of 780000 (804200 for 2000 data), price indexation rate for 1996 or 2000, and accumulated inflation rate from the next year of 1996 or 2000 to the first entitlement. Here, the price indexation rates of 1996 and 2000 are 1.007 and 0, respectively.[42] The accumulated inflation rate is calculated on the basis of expected inflation rates, as in step 6. Also, the assumption of full-term participation in the pension system is the same as in step 6. The benefits of each year are obtained by multiplying the first-year benefits by the inflation rate.

8. Benefits of earnings-related component

Step 8 illustrates how to obtain the benefits of the earnings-related component. The benefits are calculated to be a product of average monthly standard remuneration, multiplying number, total number of enrollment months, and accumulated inflation rate up to the time of entitlement. The multiplying numbers for 1996 and 2000 data come from fiscal recalculations in 1994 and 1999, respectively. Because this number was reduced by five percent in the 1999 pension reform as noted in Section 3, these two years have different values. The number of enrollment months and inflation rate are the same as those used in step 6. Also, because the 1999 pension reform raised the starting age for receiving the earnings-related component from 60 years old, the age for the first entitlement differs between 1996 and 2000.

For the 1996 year sample, the annual benefits after the first entitlement are computed by multiplying the first-year benefits of the earnings-related component by the expected appreciation rate of average monthly standard remuneration (i.e. 4.0%), which was postulated in the 1994 fiscal recalculation.[43] On the other hand, for the 2000 year sample, the annual benefits are computed by multiplying the first-year benefits by the expected appreciation rate of disposable income (i.e. 2.3%, which was postulated in the 1999 fiscal recalculation) to obtain the benefits until 64 years old, thereafter multiplying only by the price indexation rate.

Finally, I explain the calculation of benefits for households that have an insured period ranging from before to after the introduction of the total remuneration system. For these, the benefits are the sum of the before- and after-period benefits. The before-period benefits are computed following the above-mentioned formula in this step. The after-period benefits are computed using the average standard remuneration, which is (monthly standard remuneration and annual standard bonus)/ number of enrollment months.

9. Expected values of benefits

The expected values of benefits can be obtained by multiplying the benefits at each age

[42]The zero value for 2000 is due to a moratorium on price indexation, which resulted from price decreases (-0.3%) in 1999.

[43]It might be more appropriate to use the expected appreciation rate of disposable income rather than that of average monthly standard remuneration because the sliding pay scale of disposable income has been applied since the 1994 pension reform. However, the expected appreciation rate of disposable income was not disclosed in the 1994 pension reform. Hence, the expected appreciation rate of average monthly standard remuneration is used here instead. Because the differential between these two values is very small, this substitution hardly affects the results.

by individual survival rate after 60 years conditional on living at the data collection year. The survival rate comes from the Abridged life tables for Japan, compiled by the Ministry of Health, Labor and Welfare. This calculation gives the expected values of benefits from first entitlement to 100 years old.

10. Discounted present values of expected benefits
Discounting the expected benefits for each age provides the discounted present values of pension benefits. The discount rates are 4.0% and 5.5% for the calculations of 1996 and 2000, respectively, which were assumed in the 1994 and 1999 fiscal recalculations. Then, these discounted present values are summed.

B.2 Calculating amount of insurance premiums

The amount of insurance premiums is calculated according to the following three steps.

1. Expected values of insurance premiums for 1996 data
In this step, the amount of insurance premiums collected separately from standard remuneration and bonuses is calculated. The annual amount of premiums from standard remuneration is computed by multiplying the standard remuneration in each year (monthly standard remuneration×12) by the employee's premium rate. Here, the actual values of the employee's premium rate as for the period until 1996 are used, and the expected premium rates, postulated in the 1994 fiscal recalculation, for the subsequent period are used. On the other hand, the special premiums levied on bonuses are calculated by multiplying bonuses by the special premium rate of 0.5%. Finally, the expected insurance premiums at each age are computed using the Abridged life tables, as in step 9 of the previous subsection.

2. Expected values of insurance premiums for 2000 data
For 2000 data, the insurance premiums are calculated separately for the periods before and after the introduction of the total remuneration system because the procedure for calculating the premium differs between these periods. For the before-introduction period, the calculation is the same as that described in step 1 of this subsection. Meanwhile, for the after-introduction period, the premiums are computed by multiplying the total amount of standard remuneration and bonuses in each year by the premium rates newly determined with the introduction of the total remuneration system. The actual premium rates are used for the calculation of the period until 2000, and the expected rates, postulated in the 1999 fiscal recalculation, are calculated for the period after 2000. Lastly, the expected premiums are computed using the life table.

3. Discounted present values of insurance premiums
The insurance premiums can be divided into two components: (1) insurance premiums that were already paid until the data collection year, and (2) insurance premiums that would be paid after the data collection year. To obtain the discounted present value of

premiums, the former component is multiplied by past investment yields of the reserve fund of employees' pension. On the other hand, the latter is discounted at the rate of the expected pension investment yields assumed in the 1994 and 1999 fiscal recalculations.

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Table 1. The change in motivation for saving and thoughts on retirement

	What is a motivation for saving?	Are you concerned about retirement?		Reasons for anxiety about retirement
Year	For living expenses after retirement	Not concerned	Concerned	Inadequacy of pension and insurance provisions
1992	48.2	33.6	63.7	55.5
1993	50.1	35.6	62.0	59.5
1994	51.6	28.2	69.9	59.1
1995	52.9	27.2	71.6	56.9
1996	53.9	27.8	71.3	59.0
1997	53.2	20.4	78.8	63.1
1998	55.3	14.3	85.5	67.1
1999	56.7	15.8	84.1	66.9
2000	55.9	15.0	84.7	68.1
2001	58.6	15.3	84.3	66.5
2002	56.9	12.6	86.6	66.7
2003	60.4	11.3	87.9	72.2
2004	57.4	13.4	86.1	N.A.
2005	58.7	13.8	84.4	N.A.
2006	56.6	12.9	86.2	N.A.
2007	60.9	12.0	86.9	N.A.

Note: All figures are expressed in percentage. The figures are from the Survey of Household Finances for 2007, conducted by the Central Council for Financial Services Information. The respondents of this table are the households whose number of persons are more than one and whose head is aged less than 60 years old.

Table 2. A comparison of RADAR and other nationwide surveys

	RADAR	FSS	JFIES	NSFIE	POSHSC
		1996			
Before-tax annual income	79.0	75.5	69.5	69.2	59.3
Annual saving	15.0	11.0	10.8	–	9.0
		2000			
Before-tax annual income	70.6	72.1	67.3	64.9	55.7
Annual saving	17.0	–	10.7	–	7.9

Note: All figures are measured in hundred thousand yen. The annual income of POSHSC is after-tax annual income.

Table 3. Descriptive statistics

Year	1996		2000	
Variable	Mean	S. D.	Mean	S. D.
Head's age	42.0	9.5	42.3	9.3
Real disposable income	69.7	28.6	70.0	27.0
Married	0.850	0.358	0.871	0.335
Part-timer	0.301	0.459	0.287	0.453
Education dummy				
Junior high school	0.045	0.208	0.038	0.191
High school	0.374	0.484	0.301	0.459
Short college	0.088	0.283	0.100	0.301
College or above	0.493	0.500	0.560	0.497
Firm size dummy (Number of employees)				
10-49	0.161	0.368	0.169	0.375
50-199	0.181	0.385	0.171	0.377
200-999	0.212	0.409	0.252	0.434
1000-4999	0.203	0.403	0.202	0.402
over 5000	0.243	0.429	0.206	0.404
House status				
Detached house	0.516	0.500	0.547	0.498
Cluster housing	0.101	0.302	0.143	0.350
Dwelling with shop	0.010	0.102	0.012	0.108
Repaying loan on deed	0.156	0.363	0.139	0.347
Repaying housing loan	0.351	0.478	0.396	0.489
Plan a housing loan	0.362	0.481	0.285	0.452
Expect a retirement allowance	0.753	0.431	0.696	0.460
Private life annuity	0.155	0.362	0.109	0.312
Number of observations	1057		846	

Note: Real disposable income is measured in hundred thousand yen, and this variable is deflated by Consumer Price Index for Ku-area of Tokyo (General, excluding imputed rent).

Table 4-1. The quartiles of financial assets

Year		1996					
		Gross financial assets			Net financial assets		
Age group	Obs	Median	1st quartile	3rd quartile	Median	1st quartile	3rd quartile
25-29	128	13.0	5.0	33.5	12.5	2.0	33.0
30-34	152	31.5	13.0	69.5	29.5	9.0	68.5
35-39	150	49.0	18.0	88.0	48.0	14.0	88.0
40-44	161	55.0	26.0	108.0	55.0	23.0	108.0
45-49	196	60.0	21.0	137.0	59.5	17.0	132.5
50-54	152	73.0	31.0	162.5	69.5	28.5	162.5
55-59	118	111.5	55.0	191.0	110.0	53.0	185.0
All	1057	51.0	17.0	108.0	49.0	15.0	106.0

Year		2000					
		Gross financial assets			Net financial assets		
Age group	Obs	Median	1st quartile	3rd quartile	Median	1st quartile	3rd quartile
25-29	81	14.9	6.0	31.8	14.9	5.0	31.8
30-34	120	27.9	11.9	54.2	26.4	9.0	48.3
35-39	142	36.8	15.9	87.6	36.8	14.9	87.6
40-44	145	46.8	15.9	77.6	45.8	15.9	77.6
45-49	139	59.7	26.9	129.4	59.7	19.9	125.4
50-54	121	65.7	28.9	137.3	63.7	24.9	124.4
55-59	98	91.1	54.7	176.1	90.6	46.8	176.1
All	846	45.8	15.9	94.5	42.8	14.9	91.6

Note: All figures (except for Obs) are measured in hundred thousand yen, and they are deflated by Consumer Price Index for Ku-area of Tokyo (General, excluding imputed rent). Net financial assets are obtained by subtracting loan on deed from gross financial assets.

Table 4-2. The quartiles of real assets

Year			1996					
			Gross real assets			Net real assets		
Age group	Obs	Ownership rate	Median	1st quartile	3rd quartile	Median	1st quartile	3rd quartile
25-29	128	3.9%	100.0	20.0	300.0	32.2	20.0	300.0
30-34	152	20.4%	300.0	150.0	400.0	300.0	150.0	400.0
35-39	150	36.7%	300.0	240.0	500.0	284.7	182.2	460.5
40-44	161	54.0%	300.0	200.0	500.0	300.0	117.1	421.7
45-49	196	55.6%	300.0	200.0	600.0	294.9	154.7	500.0
50-54	152	67.1%	360.0	200.0	500.0	350.0	200.0	500.0
55-59	118	78.8%	450.0	250.0	800.0	439.7	222.6	800.0
All	1057	45.6%	335.0	200.0	500.0	300.0	182.8	500.0

Year			2000					
			Gross real assets			Net real assets		
Age group	Obs	Ownership rate	Median	1st quartile	3rd quartile	Median	1st quartile	3rd quartile
25-29	80	7.5%	298.5	139.3	447.8	298.5	69.7	447.8
30-34	110	16.4%	199.0	199.0	348.3	153.1	102.0	263.1
35-39	125	29.6%	278.6	199.0	398.1	199.0	139.3	386.2
40-44	129	51.9%	268.7	199.0	348.3	199.0	130.7	298.5
45-49	120	59.2%	298.5	199.0	457.8	248.8	129.0	399.7
50-54	111	68.5%	298.5	199.0	437.9	281.7	164.4	414.1
55-59	88	80.7%	348.3	199.0	497.6	298.5	192.3	490.8
All	763	45.3%	298.5	199.0	418.0	234.9	147.7	398.1

Note: The quartiles are calculated using the households that own real assets. All figures (except for Obs) are measured in hundred thousand yen, and they are deflated by Consumer Price Index for Ku-area of Tokyo (General, excluding imputed rent). Net real assets are obtained by subtracting housing loan for residential land from gross real assets. The households that have a larger amount of annual payment than annual income are excluded from the sample. In addition, 83 households that have "apartment, condominium, or building" and "live in their own condominium" are also excluded from the observations in 2000.

Table 5. The ownership rate of detached houses

Year	1996		2000		Welch test
Age group	Obs	Mean	Obs	Mean	p-value
25–29	128	34.4%	80	45.0%	0.066 *
30–34	152	26.3%	110	33.6%	0.103
35–39	150	32.7%	125	34.4%	0.382
40–44	161	54.7%	129	68.2%	0.009 ***
45–49	196	59.2%	120	73.3%	0.004 ***
50–54	152	77.6%	111	87.4%	0.018 **
55–59	118	76.3%	88	84.1%	0.080 *
All	1057	51.6%	763	60.7%	0.000 ***

Note: Null hypothesis in the Welch test is that ownership rates in 1996 and 2000 are equivalent. Alternative hypothesis is that ownership rate in 2000 is larger than that in 1996. The asterisks indicate statistical significance at the 1 % (*), 5 % (**), and 10 % (***) significance levels.

Table 6. The discounted present values of net pension benefits

Year		1996							
		Net pension benefits (NPB)				NPB/Disposable income			
Age group	Obs	Mean	S. D.	Min	Max	Mean	S. D.	Min	Max
25–29	128	20.4	8.0	1.6	37.1	0.547	0.241	0.027	1.255
30–34	152	22.8	9.7	−3.6	37.7	0.467	0.229	−0.069	1.235
35–39	150	27.6	11.1	−13.0	67.6	0.453	0.250	−0.247	1.807
40–44	161	38.2	10.6	3.2	61.0	0.548	0.237	0.040	2.075
45–49	196	58.6	12.3	34.6	88.0	0.788	0.259	0.230	1.950
50–54	152	102.6	21.9	68.4	162.3	1.369	0.502	0.585	3.924
55–59	118	185.6	33.0	119.3	266.3	2.433	0.777	0.963	4.725
All	1057	61.8	53.9	−13.0	266.3	0.896	0.730	−0.247	4.725

Year		2000							
		Net pension benefits (NPB)				NPB/Disposable income			
Age group	Obs	Mean	S. D.	Min	Max	Mean	S. D.	Min	Max
25–29	81	−22.7	16.4	−64.4	5.7	−0.506	0.276	−0.989	0.213
30–34	120	−33.0	17.1	−64.3	1.2	−0.586	0.227	−0.902	0.044
35–39	142	−34.0	16.7	−63.3	12.7	−0.479	0.189	−0.817	0.386
40–44	145	−2.8	18.8	−45.9	43.0	0.020	0.368	−0.460	2.391
45–49	139	43.9	19.9	3.2	71.0	0.652	0.416	0.027	2.252
50–54	121	84.7	17.4	59.5	133.4	1.036	0.415	0.412	3.195
55–59	98	152.6	26.0	98.3	208.7	2.071	0.892	0.839	5.192
All	846	24.0	65.0	−64.4	208.7	0.287	0.969	−0.989	5.192

Note: All figures (except for Obs) are measured in hundred thousand yen, and they are deflated by Consumer Price Index for Ku-area of Tokyo (General, excluding imputed rent).

Table 7. Estimation results of asset demand function

Dependent variable	Gross total assets/DI (A)			Net total assets/DI (B)		
	Coef.	Std. Err.		Coef.	Std. Err.	
(NPB/DI)*(Age30-39)	0.155	0.378		0.137	0.377	
(NPB/DI)*(Age40-49)	-0.488	0.325		-0.724	0.319	**
(NPB/DI)*(Age50-59)	-0.099	0.177		-0.473	0.175	***
Age35-39	0.244	0.447		0.102	0.441	
Age40-44	0.008	0.647		-0.162	0.642	
Age45-49	0.374	0.719		0.118	0.713	
Age50-54	0.153	0.845		0.182	0.835	
Age55-59	1.080	0.937		1.365	0.927	
Cohort3 (1962-1966)	-0.099	0.494		-0.069	0.491	
Cohort4 (1957-1961)	-0.028	0.841		0.132	0.837	
Cohort5 (1952-1956)	0.495	0.916		0.910	0.911	
Cohort6 (1947-1951)	0.531	0.988		1.166	0.980	
Cohort7 (1942-1946)	1.199	1.039		2.017	1.030	**
Cohort8 (1937-1941)	1.919	1.114	*	2.785	1.103	**
Married	0.402	0.238	*	0.325	0.235	
Part-timer	-0.324	0.137	**	-0.377	0.135	***
Detached house	1.784	0.170	***	1.411	0.167	***
Cluster housing	0.675	0.258	***	0.907	0.252	***
Dwelling with shop	0.737	0.570		0.197	0.573	
Repaying loan on deed	-0.607	0.173	***	-0.939	0.171	***
Repaying housing loan	1.299	0.154	***	0.672	0.152	***
Plan a housing loan	0.325	0.139	**	0.412	0.137	***
Expect a retirement allowance	-0.086	0.145		-0.028	0.143	
Private life annuity	0.300	0.174	*	0.361	0.172	**
Constant	0.417	0.387		0.404	0.384	
Obs.	1612			1601		
Pseudo R^2.	0.17			0.14		

Note: The asterisks indicate statistical significance at the 1 % (*), 5 % (**), and 10 % (***) significance levels. The amount of gross total assets is a total amount of real and financial assets. The amount of net total assets is obtained by deducting the amount of housing loan for residential land from the total amount of real and financial assets. DI denotes disposable income. The estimations use only the households whose head age is over 30 years old.

Table 8. Estimation results of asset demand function of financial assets

Dependent variable	Gross total assets/DI			Net total assets/DI		
	(A)			(B)		
	Coef.	Std. Err.		Coef.	Std. Err.	
(NPB/DI)*(Age25-29)	0.153	0.149		0.154	0.177	
(NPB/DI)*(Age30-39)	0.149	0.123		0.153	0.145	
(NPB/DI)*(Age40-49)	-0.262	0.107	**	-0.226	0.125	*
(NPB/DI)*(Age50-59)	0.009	0.060		-0.032	0.070	
Age30-34	0.318	0.143	**	0.339	0.170	**
Age35-39	0.387	0.242		0.462	0.285	
Age40-44	0.473	0.297		0.516	0.349	
Age45-49	0.539	0.313	*	0.539	0.369	
Age50-54	0.496	0.345		0.502	0.406	
Age55-59	0.772	0.371	**	0.910	0.436	**
Cohort2 (1967-1971)	-0.056	0.190		-0.116	0.228	
Cohort3 (1962-1966)	-0.129	0.252		-0.220	0.300	
Cohort4 (1957-1961)	-0.102	0.336		-0.237	0.398	
Cohort5 (1952-1956)	0.032	0.357		-0.040	0.423	
Cohort6 (1947-1951)	0.125	0.377		0.108	0.445	
Cohort7 (1942-1946)	0.174	0.391		0.141	0.462	
Cohort8 (1937-1941)	0.076	0.413		-0.009	0.487	
Married	0.088	0.068		0.045	0.080	
Part-timer	-0.098	0.045	**	-0.098	0.052	*
Detached house	0.113	0.052	**	0.077	0.062	
Cluster housing	0.161	0.074	**	0.132	0.087	
Dwelling with shop	0.244	0.181		0.277	0.211	
Repaying loan on deed	-0.385	0.054	***	-0.633	0.063	***
Repaying housing loan	-0.363	0.050	***	-0.309	0.059	***
Plan a housing loan	0.183	0.043	***	0.185	0.051	***
Expect a retirement allowance	0.018	0.045		0.084	0.052	
Private life annuity	0.112	0.056	**	0.112	0.065	*
Constant	0.354	0.140	**	0.389	0.166	**
Obs.	1903			1903		
Pseudo R^2.	0.08			0.10		

Note: The asterisks indicate statistical significance at the 1 % (*), 5 % (**), and 10 % (***) significance levels. The amount of gross total assets is a total amount of real and financial assets. The amount of net total assets is obtained by deducting the amount of housing loan for residential land from the total amount of real and financial assets. DI denotes disposable income.

Table 9. Cross tabulation of two criteria for the degree of altruistic bequest motive

	With children	No children
Strong bequest motive	309	59
Weak bequest motive	924	284

Note: The cross-tabulation uses only the households that give an answer to both questions about the desire to leave assets and the presence of children. Also, the households whose head is aged 25 or over is used.