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Volume Title: Aging in the United States and Japan: Economic Trends

Volume Author/Editor: Yukio Noguchi and David A. Wise, eds.

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-59018-6

Volume URL: <http://www.nber.org/books/nogu94-1>

Conference Date: September 8-9, 1989

Publication Date: January 1994

Chapter Title: Household Asset- and Wealthholdings in Japan

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Chapter URL: <http://www.nber.org/chapters/c8043>

Chapter pages in book: (p. 85 - 108)

## Household Asset- and Wealthholdings in Japan

Noriyuki Takayama

For most nations, data on household asset- and wealthholdings are not available, and Japan is no exception. The most recent comprehensive data on Japanese household assets are reported in the Economic Planning Agency's 1970 National Wealth Survey. Since then, the Family Savings Survey has reported only household monetary assets each year, and data on household real assets are not available. Some macro data on household net worth are available, however, from the Annual Report on National Accounts series.

In 1986 and 1987, stock and land values rose sharply, and their total capital gains came to exceed GNP.<sup>1</sup> This increased people's interest in stock variables considerably. A debate over the effects of wealth on consumption ensued, and some voiced concerns over the growth of asset differentials.

In Japan, the debate over equity has centered mainly on the distribution of income. If the relation between income and wealth is not parallel, the current debate would be severely undermined. Specifically, Japan's Social Security system will be in crisis in the near future. Intergenerational transfer programs in Japan need to be reformed. In redesigning these programs, it is fundamental to have relevant information not only on income and consumption but also on the wealthholdings of different cohorts.

What assets does each household in Japan have today? How big is the asset differential? How does the Japanese level of assetholdings or wealth inequality compare with that of other countries? If the amounts of household assethold-

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This paper is largely based on the work of the Economic Planning Agency research project on the economics of Social Security, directed by Noriyuki Takayama. The author is grateful to Michael Hurd, Laurence J. Kotlikoff, and Edward Lazear for their valuable comments.

1. In 1986 and 1987, respectively, GNP stood at ¥331 and ¥345 trillion, capital gains on land at ¥245 and ¥371 trillion, and capital gains on stock shares at ¥121 and ¥106 trillion.

ings are estimated, it may be possible to give answers to such fundamental questions. It may also be possible to present concrete figures for the above-mentioned debate over the effects of wealth or the expanding asset differential. Such estimation is also essential to an examination of the life-cycle hypothesis of consumption and to a detailed understanding of intergenerational transfers.

In this paper, I estimate household asset- and wealthholdings. The data come mainly from the National Survey of Family Income and Expenditure (NSFIE). The discussion is organized as follows. The next section explains my procedures for estimating assesthholdings, while the estimated results for 1984 are outlined in sections 4.2–4.4. In section 4.5, longitudinal changes in assesthholdings are discussed. Section 4.6 takes up the housing and living arrangements of the elderly. The final section gives concluding remarks.

#### **4.1 Estimation Procedures for Household Asset- and Wealthholdings**

In this paper, only real and monetary assets are considered. Although human capital is a household asset, it is not discussed here.<sup>2</sup> Only residential land, housing structures, rental property, and consumer durables are considered real assets. Precious metals, drawings, and antiques are not included among real assets.

Monetary assets include demand deposits, time deposits, life insurance, bonds, trusts, investment trusts, stock shares, in-company deposits, etc. Premiums on life and damage insurance of the nonsaving type and golf club membership certificates are not included. Net monetary assets are calculated by subtracting liabilities from total monetary assets. Net worth is obtained by adding real assets to net monetary assets.

For monetary assets and liabilities, the figures recorded (as of the end of November) in the NSFIE are used directly. However, real assesthholdings are not recorded in the NSFIE. Thus, it is necessary to estimate each of the four asset components stated above independently. Each estimation procedure is described below.

##### **4.1.1 Equity in the Residential Site for Owner-Occupied Housing**

Households may have land for owner-occupied housing, land for a shop or workshop, land for rent, land for cultivation, or mountain and forest land. In this paper, only residential land for owner-occupied housing and/or for rent is examined. *Real rental assets* includes both the rental housing site and the physical building. The assets referred to as *land assets* in this paper are the sites for

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2. Takayama et al. (1990) estimate household asset- and wealthholdings, including human assets, and describe their structure. It may be interesting that couples in their early 60s participating in the KNH (Kosei-Nenkin-Hoken, a Social Security system for employees in the private sector in Japan) had gross Social Security wealth around ¥44 million (in median value) in 1984.

owner-occupied housing. Land assets are estimated by multiplying land area by land price.

The size of residential land is unfortunately not reported in the NSFIE. Figures on the floor space of owner-occupied housing, however, can be obtained directly from the NSFIE. It is thus necessary to estimate separately the floor/area ratio (i.e., total floor space divided by site size). The floor/area ratio is estimated as follows.

First, the average floor/area ratio is obtained, using micro data from the Current Survey of Construction with separate figures by construction date, prefecture (cities, rural counties, ten major cities), type of building (exclusively residential or residence and shop), construction material (wood, fireproof wood, block, ferroconcrete, etc.), and number of floors.

Next, I estimated the parameters of the floor/area ratio function using micro data in the Housing Survey and used these parameters to correct the average floor/area ratio obtained above. These corrections cover only *residential wooden houses* (including hereinafter fireproof wooden houses) owing to the limitations of the data (see Takayama et al. 1989; and Takayama 1992).

The Land Price Survey assembled by the Land Management Agency is used to obtain land prices. I checked the distribution of the officially announced prices of *residential land* by cities and rural counties of each prefecture and adopted the median price as of 1 January of the following year. Data on rural counties, however, are scant. Some rural surveys also select land prices that are high compared with nearby cities. In such cases, the first decile or the first quartile of neighboring urban land prices is used.

#### 4.1.2 Value of Housing Structures Net Depreciation

The value of housing structures used for owner-occupied housing is obtained by estimating reconstruction costs in 1984 as total floor space times the inflated average construction cost per square meter, minus depreciation. In so doing, the cost figures reported in the Current Survey of Construction, which are broken down by construction dates, by prefectures (urban, rural counties, ten major cities), and by housing materials, are used as the average construction costs. The construction deflator is derived from the fixed capital formation matrix in the 1980 Industrial Input-Output Table (compiled by the Management and Coordination Agency, Tokyo, in 1984) and from the wage and wholesale price indices.

In estimating the depreciation of housing structures, I assume the service life to be twenty-four years for wooden houses, twenty-two years for wooden houses with fireproofing, sixty years for ferroconcrete houses, and forty-five years for block houses, assumptions based on the *Ministry Ordinance on Service Lives of Depreciable Assets* issued by the Ministry of Finance, Tokyo, in 1984. In this paper, therefore, the value of housing structures is depreciated at a constant rate of 9.2, 9.9, 8, and 5.5 percent per year according to the respective service life.

#### 4.1.3 Rental Property

The NSFIE includes data on housing and land rent as sources of income. Multiplying this coefficient by the reciprocal of the annual rate of return on rental housing property yields the estimated value of rental property. The rate of return on rental housing property was estimated for private rental houses and apartments for each prefecture from the 1983 Housing Survey. The value of land and housing assets for private rental houses and apartments is estimated in the same manner as that for owner-occupied homes.

#### 4.1.4 Value of Consumer Durables

The NSFIE reports the quantity of each major consumer durable held and the quantity purchased during the survey year. For each item, the quantity held is multiplied by the unit purchase price in 1984, and the depreciation is subtracted. The mean price reported in the NSFIE is used. In the few cases in which the prices of consumer durables are not explicitly reported in the survey, I estimated them, using the Machinery Survey and the Miscellaneous Goods Survey (both compiled annually by the Ministry of International Trade and Industry and published by Tsusho-Sangyo-Chosa-Kai, Tokyo) and other industry-specific statistics (see Takayama et al. 1989; and Takayama 1992).

In order to estimate the amount of depreciation of consumer durables accurately, it is necessary to know when each item was purchased. But the year of purchase of those items bought prior to 1984 is not given in the 1984 survey. The number of years since purchase is assumed to be half the service life for all items.

### 4.2 Estimates of 1984 Household Asset- and Wealthholdings

Table 4.1 shows my estimates of 1984 household assesthholdings. Multimember households, including farm households, are covered in the estimation. Figures for single-member households are not estimated.

The estimated mean household net worth is ¥28 million, and the median is ¥20 million.<sup>3</sup> Overall, the net worth/income ratio is 5.0 in 1984. In this estimation, those households with zero holdings of respective assets are included. As a whole, real assets account for 85 percent of net worth, and landholdings (¥15.41 million on the average) account for an especially large proportion at 56 percent. On the other hand, monetary assets amount to ¥6.76 million gross and ¥4.09 million net (mean values in both cases).

It is estimated that the amount of household assesthholdings in Japan is at an extremely high level, in international comparisons. U.S. Department of Commerce, Bureau of the Census (1986), is useful for reference. According to the Census Bureau's report, the mean net worth of U.S. households is \$101,900

3. At the end of 1984, ¥1 million was worth about U.S.\$4,000.

**Table 4.1** Estimates of Household Assets- and Wealthholdings (all households)

Asset Category	Holdings per Household (¥10,000)	
	Mean	Median
1. Residential land	1,541	1,151
2. Home buildings	307	146
3. Rental property	323	0
4. Consumer durables	199	187
5. 1 + 2 + 3 + 4	2,371	1,783
6. Monetary assets (gross)	676	414
7. Liabilities	268	15
8. Monetary assets (net)	409	265
9. Net worth (= 5 + 8)	2,779	1,972

*Source:* The 1984 NSFIE and others.

*Note:* Multimember households (including farm households).

and the median \$50,100 in 1984 (married-couple households). Only vehicles are included in consumer durables in the U.S. data, and the value of furniture and jewelry is not covered in net worth. Homeowner households account for 77 percent of the total number of households in the United States, while the mean equity in the home is \$53,200 dollars and the median \$42,600.

As for the estimated value of assets by each household category, the following can be observed:

1. The mean value of land assets held by homeowners (accounting for 74 percent of the total households) is ¥20 million, the median is ¥16 million, and the mode is in the ¥10–¥15 million range. The value of land accounts on average for nearly 60 percent of net worth. The mean gross monetary assets held by this group are ¥7.70 million, with a median value of ¥4.80 million, considerably higher than the values for home renters. Homeowners also have, on average, liabilities of ¥3 million, a figure considerably larger than the ¥770,000 in liabilities held by home renters. In home-renter households, real assets naturally account for a small part of net worth (only 40 percent on average).

2. By age group, the homeownership rate generally increases as the household head gets older (30 percent or less for those in their late 20s, 66 percent for those in their late 30s, roughly 80 percent for those 45 years old or so, and 90 percent for those 55 years or older). Consequently, average landholdings (including those households with zero holdings) get larger with age. But landholdings get larger with age even if we exclude households with zero holdings. This is true because older household heads acquired their land earlier; therefore, the size of their holding is somewhat larger (see table 4.2). In addition, older people have enjoyed capital gains. Land assesthholdings as a whole account for 50–60 percent of net worth, and this proportion does not vary much by age group. From age 40 to age 60, however, this proportion decreases a little, and

**Table 4.2** Residential Land Space of Owner-Occupied Housing by Age (unit:  $m^2$ )

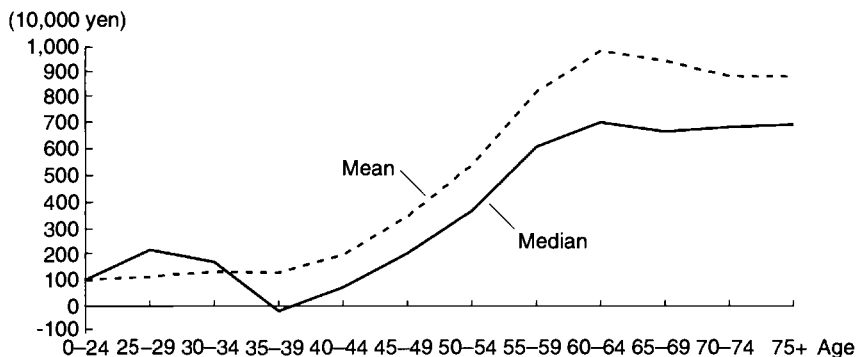
Age	Mean	Median
<24	187	163
25-29	187	161
30-34	218	186
35-39	222	183
40-44	238	198
45-49	247	208
50-54	283	240
55-59	320	260
60-64	344	275
56-59	364	269
70-74	336	265
75+	314	258
All	271	218

Source: The 1984 NSFIE and others.

instead the proportion of monetary asseholdings increases. Gross monetary asseholdings tend in general to increase with age, reaching a peak at 60 years of age. Incidentally, the monetary asseholdings of those households with household heads between 60 and 65 have a mean of ¥11 million, a median of ¥7.10 million, and a mode of ¥2 million. In net terms, after deducting liabilities, monetary asseholdings are in general very poor (not reaching ¥2 million even on average), especially in younger households. Many households are capable of increasing net monetary assets only after reaching age 45 (fig. 4.1). The net worth of households between 60 and 65 has a mean of ¥44 million, a median of ¥32 million, and a mode of ¥21 million.

3. The asseholdings of households living in the Keihin metropolitan zone (the greater Tokyo area, which accounts for 25 percent of total households) are larger than those of households living in the rural regions (regions other than the three metropolitan zones, which account for 54 percent of the total number of households). The only exception is the stockholdings of consumer durables, including cars. The median ratios of the asseholdings of the two groups are 1.6 for land, 1.3 for monetary assets (in gross terms), and 1.3 for net worth when the asseholdings of rural households are set at 1. Homeownership rates are 69 percent in the Keihin metropolitan zone and 78 percent in the rural regions. If only homeowner households are compared, the mean difference in land asseholdings between the two groups is roughly on the order of two.

4. When workers' households (accounting for 63 percent of all households) and nonworkers' households (excluding jobless households) are compared, the latter group exceeds the former in the holding of every asset item. The ratios of the two groups' holdings, in terms of median value, are 1.7 for land, 1.2 for housing (buildings only), 1.5 for total real assets, 1.3 for monetary assets (in



**Fig. 4.1 Monetary assesthholdings (in net terms)**

Source: The 1984 NSFIE

gross terms), and 1.7 for net worth (when the assesthholdings of workers' households are assumed to be 1). Such differences in asset ownership may be thought of as due mainly to differences in average age (42 years old for workers' households, 51 years old for nonworkers' households) and in the homeownership rate (67 percent for workers' households, 87 percent for nonworkers' households). The net worth of nonworkers' households has a mean of ¥40 million and a median of ¥27 million.

5. By income group, those households with higher incomes generally have more assets in both mean and median values.

### 4.3 Distribution of Household Asset- and Wealthholdings

Lorenz curves by each asset item are shown in figs. 4.2, 4.3, and 4.4. Multimember households, including farm households, are covered.

The value of the Gini coefficient is the index used to measure the degree of inequality.<sup>4</sup> The Gini coefficient of household net worth was 0.52 in 1984.<sup>5</sup> This figure is highly dependent on the Gini coefficient of real asset distribution, as real assets (especially land) account for a large proportion of net worth. The Gini coefficient is decomposed by asset component,<sup>6</sup> and the Gini coefficient

4. Consider a society  $S$  of  $n$  households. Let the amount of assesthholdings of household  $i$  be  $A_i$ . Then the asset distribution is given by vector  $A = (A_1, A_2, \dots, A_n)$ . Provided that  $A_1 \leq A_2 \leq \dots \leq A_n$ , the Gini coefficient of asset distribution is given by

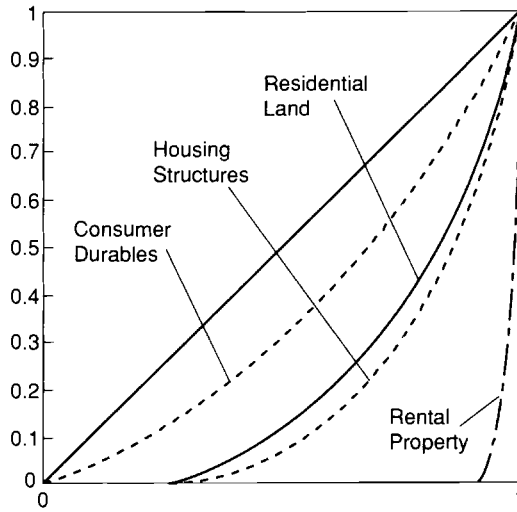
$$(i) \quad G = 2 \sum_i (n+1-i)(\mu - A_i) / (\mu n^2),$$

where  $\mu$  is the mean value of assesthholdings. The Gini coefficient is a normalized weighted sum of the gaps in assesthholdings of every household in  $S$ , the weight being equal to the ranking of assesthholdings from the top. The Gini coefficient is equivalent to two times the area enclosed by the Lorenz curve and the forty-five-degree line. For details, see Takayama (1979).

5. The figures for the Gini coefficient in this paper are more or less *underestimated* since mean and median values are used instead of direct observations of real assesthholdings.

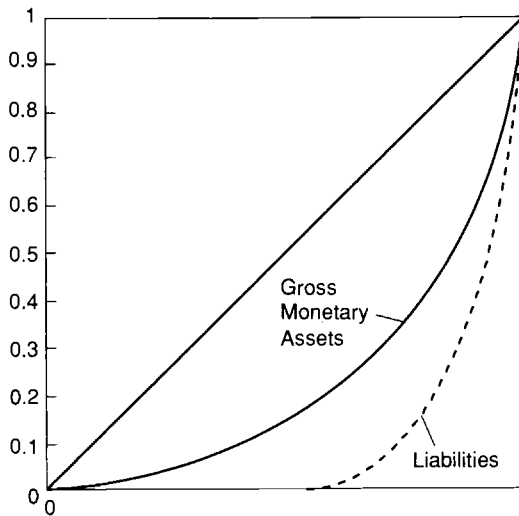
6. The method used to decompose the Gini coefficient for net worth ( $G$ ) by the Gini coefficients for the asset components is given by Rao (1969):





**Fig. 4.2 Lorenz curves of real assets**

Source: The 1984 NSFIE and others



**Fig. 4.3 Lorenz curves of monetary assets**

Source: The 1984 NSFIE and others

(ii)

$$G = \sum w_j \times \tilde{G}_j$$

where  $w_j$  indicates the ratio of the aggregate amount of the  $j$ th asset component to the total sum.  $\tilde{G}_j$  is called the *pseudo-Gini coefficient* and is calculated by rearranging the distribution of asset component  $j$  into the order of net worth and then formally applying eq. (i).

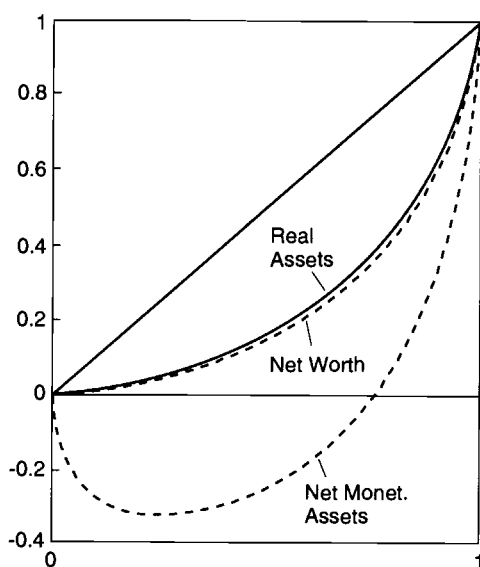
cient for total real assets could explain 82 percent of the overall Gini coefficient.

The Gini coefficient for the distribution of total real assets is 0.5. The Gini coefficient for land is 0.55, whereas that for housing (buildings only) is 0.62. The Gini coefficient for rental property is rather high at 0.97 since households with those assets account for a very small proportion of total households (8.8 percent). Consumer durables are owned by all households, on the other hand, and the distribution is rather even (the Gini coefficient is 0.27).

The Gini coefficient for the distribution of monetary assestholdings, in gross terms, is 0.54. This figure is almost the same as the Gini coefficient for land distribution. On the other hand, those households with positive liabilities account for 57 percent of total households, and the Gini coefficient for liabilities is relatively high at 0.78. Many households incur liabilities when they purchase their own home. Younger families with relatively small assestholdings use consumer loans extensively. Consequently, the pseudo-Gini coefficient for monetary assets in net terms exceeds 1. This is because some households (22.5 percent of all households) own negative monetary assets.

I have also calculated the Gini coefficient for wealth distribution for each household group. Some central points are as follows.

For homeowner households, the Gini coefficient for land distribution is 0.40, and the Gini coefficient for net worth remains at 0.42. The asset distribution of home-renter households is determined mainly by the distribution of



**Fig. 4.4 Lorenz curves of net worth**

Source: The 1984 NSFIE and others

gross monetary assets. The Gini coefficient of net worth is 0.53 within this household group.

By age group, the Gini coefficient for net worth within the age group gets smaller up to the 50–55 age group. For those over 55, however, this Gini coefficient hardly changes. This is in all likelihood related to the homeownership rate, which increases with age.

When the land distribution among households living in the Keihin metropolitan zone is compared with that among households living in rural regions, the former shows a somewhat higher degree of inequality (the Gini coefficients being 0.57 and 0.50, respectively). As a result, the former group shows a higher level of inequality in the distribution of net worth as well.

When we compare workers' and nonworkers' households, the former group shows a higher degree of inequality in land distribution, but there is hardly any difference between the two groups in the inequality of net worth or total real assets. This is in part due to the relatively large proportion (19 percent) of aggregate net worth constituted by rental properties in nonworkers' households (the rental property ownership rate is 16 percent).

As for the distribution of net worth by income group, higher income groups generally have smaller Gini coefficients, at least for income groups between ¥2 and ¥10 million. The Gini coefficient of net worth is 0.41 for the ¥8–¥10 million income group.

Income and wealth distributions do not necessarily overlap. As is clear from table 4.3, there are wide gaps in asset holdings even among those households belonging to the same income group. Flow and stock do not necessarily run parallel. Income and wealth are different, and an argument based on only one of the two is incomplete.<sup>7</sup> Wealth is generally more widely dispersed than income. Consumption expenditures, however, are less widely dispersed than income (see fig. 4.5).<sup>8</sup> And comparing the wealth distribution in Japan with wealth distributions in Europe and the United States, we can say without exaggeration that, in 1984, inequality in Japan was comparatively low.<sup>9</sup>

Variance analysis is one means of understanding the factors governing wealth inequality. In this paper I shall calculate the coefficient of variation (the square of the coefficient of variation divided by 2; call it  $T$ ) as an index of inequality (see Toyoda 1980). This index can also be decomposed by constituent groups:

$$T = T_b + \sum_k w_k \times T_w(k),$$

7. This is a true statement when income is defined on an actual cash income basis. If the service flow of real assets is included in income, the statement is expected to change.

8. The 1984 Gini coefficients are 0.52 for net worth, 0.30 for annual income, and 0.26 for consumption expenditures.

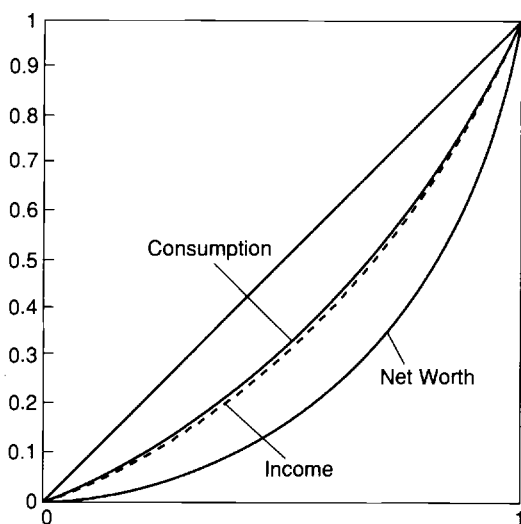
9. According to Wolff (1987) and Atkinson and Harrison (1978), the Gini coefficient for net worth was 0.72 in the United States in 1983 and 0.78 in Great Britain in 1972. The wealth share of the top 5 percent was 49 percent in the United States in 1983 and 55 percent in Great Britain in 1972. On the other hand, the share in Japan was only 25 percent in 1984. It must be borne in mind, however, that the NSFIE is not necessarily the most suitable data source for examining the top wealthholders in Japan.

**Table 4.3** Distribution of Net Worth by Annual Income (%)

	Annual Income (million yen)						Total
	< 1.99	2.0–3.99	4.0–5.99	6.0–7.99	8.0–9.99	10.0+	
Household distribution	5.1	27.8	33.5	18.1	8.5	7.0	100.0
Homeownership rate	64.9	61.5	72.3	85.2	90.3	92.7	74.2
Net worth (million yen):							
< 4.99	32.6	31.3	16.7	7.0	3.4	2.2	17.7
5.0–9.99	13.2	13.2	14.7	8.5	4.5	1.8	11.3
10.0–19.99	24.9	22.5	24.6	21.8	16.0	7.5	21.6
20.0–29.99	14.2	15.3	19.1	23.7	21.0	12.3	18.3
30.0–49.99	11.1	12.0	16.8	23.7	29.4	26.0	18.1
50.0–99.99	3.7	4.9	6.7	12.4	19.9	29.9	9.8
100.0–199.99	.2	.7	1.3	2.5	4.8	14.2	2.5
200.0+	.0	.1	.1	.3	1.0	6.2	.6
Gini coefficient	.53	.53	.47	.42	.41	.47	.52

Source: The 1984 NSFIE and others.

Note: The distribution of net worth is given by % in the column.

**Fig. 4.5** Lorenz curves of income, consumption, and net worth

Source: The 1984 NSFIE and others

where  $T_b$  represents the between-group coefficient of variation. The number  $T_w(k)$  the within-group coefficient of variation. The number  $w_k$  is a weight that is equal to the aggregate wealth share of each population multiplied by the average ratio of net worth (the denominator being the average net worth of the total population).

Table 4.4 presents a  $T$  decomposition of the wealth distribution in 1984.

**Table 4.4** Factors Governing Wealth Inequality

Household Category	Household Distribution (%)	Share in Aggregate Net Worth (%)	Net Worth (¥10,000)		$T_w$	$T_b$
			Mean	Median		
Total	100.0	100.0	2,779	1,972	.923	
Homeowner	74.2	95.0	3,558	2,613	.656	
Homerenter	25.8	5.0	536	396	1.256	.113
Age:						
< 24	.7	.2	651	249	1.400	
25-29	4.7	1.5	865	410	.890	
30-34	11.9	6.0	1,405	803	.704	
35-39	16.2	11.4	1,953	1,392	.771	
40-44	15.4	13.5	2,429	1,888	.642	
45-49	13.4	13.9	2,878	2,172	.643	.077
50-54	12.0	14.1	3,255	2,449	.587	
55-59	10.4	15.1	4,042	2,923	.701	
60-64	6.7	10.6	4,416	3,223	.592	
65-69	4.5	7.5	4,617	3,256	1.513	
70-74	2.6	4.0	4,289	3,204	.528	
75+	1.5	2.4	4,438	3,076	.558	
Keihin metropolitan	24.5	32.3	3,665	2,434	.933	
Chukyo/Keihanshin metropolitan	21.6	23.1	2,968	2,157	1.189	.021
Rural	53.9	44.6	2,301	1,813	.574	
Worker	63.2	48.9	2,152	1,617	.611	
Nonworker	30.9	44.7	4,017	2,707	.953	.047
Jobless	5.9	6.4	3,015	2,485	.424	
Annual income (million yen):						
< 1.99	5.1	2.9	1,557	1,142	.580	
2.0-3.99	27.8	17.7	1,774	1,227	.659	
4.0-5.99	33.5	27.1	2,251	1,762	.488	
6.0-7.99	18.1	20.3	3,116	2,497	.424	.147
8.0-9.99	8.5	12.8	4,197	3,261	.392	
10.0+	7.0	19.2	7,604	5,016	.788	

Source: The 1984 NSFIE and others.

Note: Multimember households (including farm households).

Homeownership, age, region, income, and workers'/nonworkers' households are taken up as inequality factors. Simple comparisons of the estimated figures may be misleading since the number of groups used in each classification is different for different factors. Let us begin with factors that can be broken down into two or three groups. First, homeownership affects the wealth differential considerably. While homeowner households account for 74 percent of total households, their aggregate net worth accounts for 95 percent of total net worth. The average net worth of homeowner households is 6.6 times that of home-renter households. Second, the regional differential in the 1984 data is

not very large. Twenty-five percent of all households live in the Keihin metropolitan zone. The aggregate net worth owned by those households amounts to ¥262 trillion, or 32 percent of the total. If we divide households into six income groups, we find that income differences may explain 16 percent of the wealth difference.

It should be noted, however, that wealth differentials *within* subpopulations are far larger than those *between* subpopulations. Further analysis is necessary to understand the determinants of wealth inequality fully.

#### 4.4 Distribution of Net Worth by Asset Component

Table 4.5 shows the distribution of net worth by asset component in 1984 for multimember households, including farm households, grouped by asseholdings. Ownership rates and average amounts of each component of asseholdings get larger as net worth increases. Almost all households own consumer durables and monetary assets, however. The most important determinant of the size of asseholdings is whether a household is homeowner or -renter.

For the group with less than ¥10 million in assets, the homeownership rate is extremely low, at 22 percent. For those households with a net worth of ¥10 million or more, the homeownership rate is close to 90 percent; for those with more than ¥20 million, the rate is almost 100 percent.

The modal value of net worth is around ¥17 million. The typical distribution of net worth is such that land accounts for 60 percent, housing structures for 20 percent, consumer durables for 13 percent, and net monetary assets for 7 percent. On the other hand, the asseholdings of the so-called middle-middle class may be shown by the median value. These holdings amount to about ¥20 million in 1984 (fig. 4.6). Land accounts for 60 percent of median net worth, housing structures for 20 percent, monetary assets for 10 percent, and consumer durables for 10 percent.<sup>10</sup>

Average net worth is about ¥28 million, which corresponds roughly to the sixty-seventh percentile. Its distribution is as follows: equity in the home accounts for almost two-thirds, monetary assets for 15 percent (close to 25 percent in gross terms, but liabilities amount to about 10 percent of total net worth), rental property for 10 percent or so, and consumer durables for 7 percent. To move up from the "middle-middle" class, it generally seems necessary to increase monetary assets and/or to acquire rental properties.

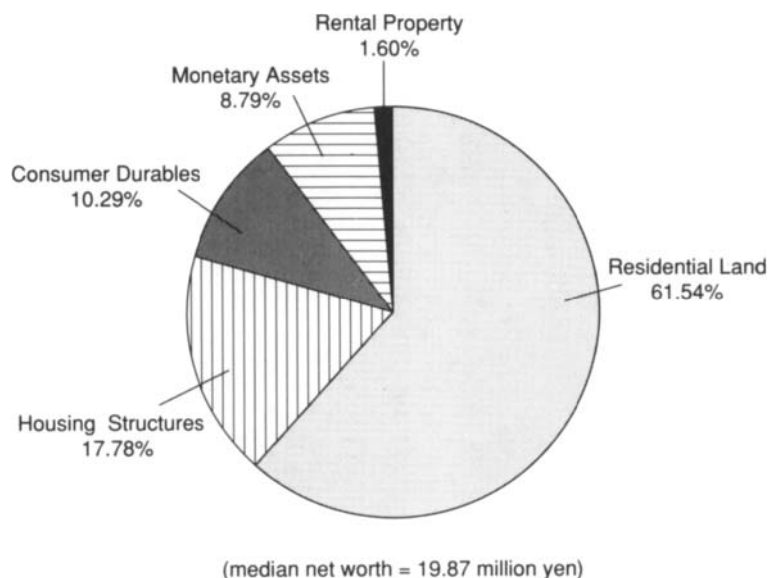
Those households having a net worth of ¥100 million or more account for only 3 percent of the total in 1984. They generally have a considerable amount of rental property (the ownership rate is a little less than 70 percent). They have, on average, at least ¥65 million in rental property, which in many cases

10. The median is defined here as the mean value of asseholdings ranked above 45 percent and below 55 percent in the data divided into 100 percentiles.

**Table 4.5**                      **Distribution of Net Worth**

Asset Category	Net Worth (million yen)								Total	Median
	< 4.9	5-9.9	10-19.9	20-29.9	30-49.9	50-99.9	100-199.9	200+		
Distribution of households (% in the row)	18	11	22	18	18	10	2.5	.6	100.0	9.3
Distribution of net worth (% in the column):										
1. Residential land	32.7	38.3	58.7	61.6	61.9	58.5	45.2	30.8	55.5	61.6
2. Home buildings	22.3	19.7	20.3	15.3	11.3	7.4	4.6	2.1	11.0	17.8
3. Rental property	1.7	1.0	1.1	1.9	3.2	11.1	31.3	57.8	11.6	1.6
4. Consumer durables	68.0	22.5	12.5	8.6	6.1	3.8	2.1	1.0	7.2	10.3
5. Real assets (= 1 + 2 + 3 + 4)	124.7	81.4	92.6	87.3	82.6	80.8	83.2	91.6	85.3	91.2
6. Monetary assets (gross)	90.1	55.3	29.4	23.6	23.4	22.5	18.9	10.9	24.3	23.7
7. Liabilities	114.8	36.7	22.0	10.9	6.0	3.3	2.1	2.5	9.6	15.0
8. Monetary assets (net)	-24.7	18.6	7.4	12.7	17.4	19.2	16.8	8.4	14.7	8.8
9. Net worth (= 5 + 8)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Source:* The 1984 NSFIE and others.



**Fig. 4.6 Distribution of net worth**

*Source:* The 1984 NSFIE and others

exceeds the equity in their own home. This group has, on average, ¥25 million or so in monetary assets (in net terms).

Table 4.6 presents the distribution of new worth by age group. The aged households have a mean net worth of around ¥45 million, much larger than that for younger households. It is questionable, however, whether the elderly decumulate their assets; table 4.6 is classified by the age of the householder. The ownership rate of rental property increases with age, and about 15 percent of those in their early 60s own it.

Overall, the distribution of net worth in elderly households is such that housing equity accounts for nearly 60 percent, rental property for 14–18 percent, and gross monetary assets for 20 percent.

## 4.5 Longitudinal Changes in Asseholdings

### 4.5.1 Longitudinal Changes

How much has each household increased its wealthholdings in recent years? Here, the 1979 and 1984 estimates are compared. For reference purposes, the 1987 estimates are also examined. The 1987 figures are based on the 1984 NSFIE; only land and share prices are replaced by 1987 data. I used the official land prices in the Land Price Survey as of 1 January 1988 for land prices. The mean price/earnings ratio from the end of November 1984 to the end of



**Table 4.6**                      **Distribution of Net Worth by Age (1984)**

Asset Category	Age												Total
	< 24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75+	
Mean net worth (10,000 yen)	651	865	1,405	1,953	2,429	2,878	3,255	4,042	4,416	4,617	4,289	4,438	2,779
Median net worth (10,000 yen)	245	415	878	1,439	1,908	2,148	2,407	2,810	3,069	3,094	2,980	2,991	1,987
Distribution of net worth (% in the column):													
1. Residential land	43.4	46.1	56.3	59.0	60.1	57.0	55.0	52.4	52.9	52.3	53.7	54.6	55.5
2. Home buildings	15.9	17.7	17.4	16.7	14.5	12.2	10.2	8.1	6.9	5.5	5.6	5.3	11.0
3. Rental property	4.0	2.3	3.8	7.6	9.0	11.6	11.8	13.9	13.8	18.3	16.8	17.4	11.6
4. Consumer durables	22.0	20.1	13.0	10.0	8.2	7.4	6.8	5.6	4.5	3.7	3.6	3.1	7.2
5. = 1 + 2 + 3 + 4	85.3	86.3	90.6	93.3	91.9	88.2	83.8	80.0	78.0	79.8	79.7	80.4	85.3

December 1987 is used to increase shareholdings uniformly by a factor of 2.0101.

In the 1979 NSFIE, farm households are not included. For an intertemporal comparison, therefore, farm households are excluded from the 1984/1987 figures in the following analysis.

Table 4.7 summarizes the longitudinal changes in assetholdings of multi-member households. In the five years from 1979 to 1984, the aggregate amounts of household net worth grew from ¥406 to ¥718 trillion, increasing 1.8 times. During the same period, aggregate net worth increased by ¥312 trillion, which is equivalent to 2.0 times aggregate disposable income (¥156 trillion) in 1984. Capital gains from land between 1984 and 1987 were ¥252 trillion. Adding ¥14 trillion of capital gains from stock shares, household net worth, including only land and shares, increased by ¥266 trillion over the past three years. This amount is equivalent to 1.7 times the level of 1984 disposable income.

#### 4.5.2 Expansion of Wealth Differentials

How much has the wealth differential expanded in Japan recently? Table 4.7 shows the figures for Gini coefficient. According to the table, the Gini coefficient for net worth increased from 0.51 in 1979 to 0.53 in 1984 and 0.60 in 1987. This expansion of the wealth differential is confirmed by the Lorenz curves drawn in figs. 4.7 and 4.8.

The influence of the Gini coefficient for landholdings on the Gini coefficient for net worth has increased. This is because landholdings as a fraction of aggregate net worth have increased from 41 percent in 1979 to 54 percent in 1984 and 65 percent in 1987. Consequently, the Gini coefficient for landholdings alone explains 72 percent of the Gini coefficient for net worth in 1987. The distribution of landholdings is thus of particular interest. The Gini coefficient for landholdings decreased from 0.59 to 0.57 from 1979 to 1984. Inequality as measured by the coefficient of variation ( $T$ ) changed from 0.79 to 0.81. It is known that Lorenz curves cross each other when two different inequality indexes show opposite movements.

The homeownership rate of multimember households, excluding farm households, increased from 68.3 percent in 1979 to 72.8 percent in 1984. The reduction in the Gini coefficient reflected this increase in the homeownership rate. Meanwhile, the distribution of land among homeowners grew more uneven during the same period. This increased disparity was reflected in the movements of the coefficient of variation.

From 1984 to 1987, the inequality of landholdings expanded rapidly. In terms of the Gini coefficient, inequality jumped to 0.68 from 0.57. The median value of landholdings changed little during the same period. This means that those households ranked high in terms of landholdings further expanded the gap between themselves and those ranked in the middle or lower. The share of aggregate landholdings in the hands of the top 1 percent increased from 8.1 to

**Table 4.7** Longitudinal Changes in Household Asset and Wealthholdings

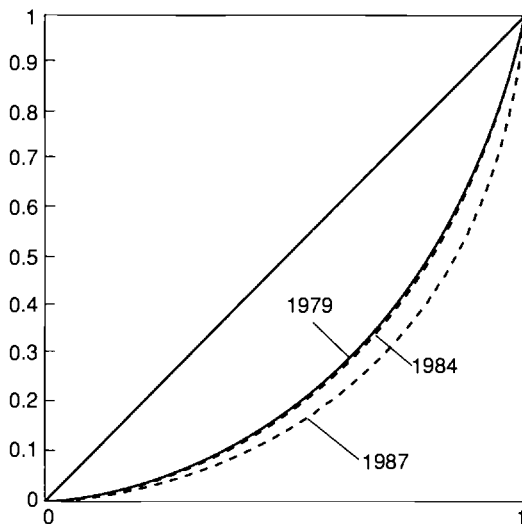
Asset Category	Aggregate Sum of Asset Holdings (trillion yen)	Net Worth (10,000 yen)		Gini Coefficient
		Mean	Median	
1979				
1. Residential land	168	706	514	.590
2. Home buildings	53	220	80	.673
3. Rental property	72	303	0	.911
4. Consumer durables	36	150	139	.268
5. = 1 + 2 + 3 + 4	329	1,379	1,033	.535
6. Monetary assets (gross)	118	496	306	.524
7. Liabilities	41	170	4	.812
8. Monetary assets (net)	78	326	220	1.027
9. Net worth (= 5 + 8)	406	1,705	1,216	.513
1984				
1. Residential land	391	1,456	1,081	.566
2. Home buildings	82	306	143	.626
3. Rental property	83	309	0	.967
4. Consumer durables	53	196	185	.266
5. = 1 + 2 + 3 + 4	608	2,268	1,715	.537
6. Monetary assets (gross)	183	682	415	.537
7. Liabilities	73	273	15	.773
8. Monetary assets (net)	109	408	264	1.168
9. Net worth (= 5 + 8)	718	2,676	1,878	.526
1987 (reference)				
1. Residential land	643	2,397	1,211	.675
5. = 1 + 2 + 3 + 4	861	3,209	1,866	.621
6. Monetary assets (gross)	197	736	424	.558
8. Monetary assets (net)	124	463	272	1.118
9. Net worth (= 5 + 8)	985	3,671	2,082	.597

*Source:* The NSFIE and others.

*Note:* Multimember households (excluding farm households). The number of households estimated is 23.82 million in 1979 and 26.82 million in 1984 (1987).

16.4 percent. The share of the top 5 percent (10, 20 percent) increased from 27 percent (36.8, 55.7 percent) to 37.7 percent (51.9, 68.7 percent).

Whereas those households (including farm households, but excluding single-member households) with ¥100 million or more of landholdings numbered only 153,000 in the whole country in 1984, they had reached 1.15 million (5.3 percent of the total) by 1987. Those households with ¥50 million (¥30 million) or more of land assets increased from 1.24 million (96 million) in 1984 to 26 million (6.24 million), and their fraction of the total number of households reached 15 percent (30 percent). The modal value of landholdings per homeowner household was ¥10–¥15 million in both 1984 and 1987. The median increased little, growing from less than ¥16 million to about ¥18 million. However, the mean value increased rapidly from ¥21 million to ¥33 mil-



**Fig. 4.7 Changes in Lorenz curves (net worth)**

*Source:* The 1984 NSFIE and others

lion over the same three years.<sup>11</sup> This skyrocketing of land prices occurred only in the metropolitan zone surrounding Tokyo.

Those households residing in Tokyo or in the three prefectures surrounding Tokyo (Kanagawa, Saitama, and Chiba) account for 23 percent of the total number of households in Japan. The aggregate residential land area held by the households residing in that same area is less than 15 percent of the national sum, but their share of the aggregate value of landholdings rapidly increased from 34 percent in 1984 to 54 percent in 1987. Land prices in Tokyo and the three prefectures overall increased by 2.5 times over this period, and homeowner households in these regions earned capital gains of about ¥230 trillion from residential land. This is a concrete example of the so-called Tokyo-centrism.<sup>12</sup>

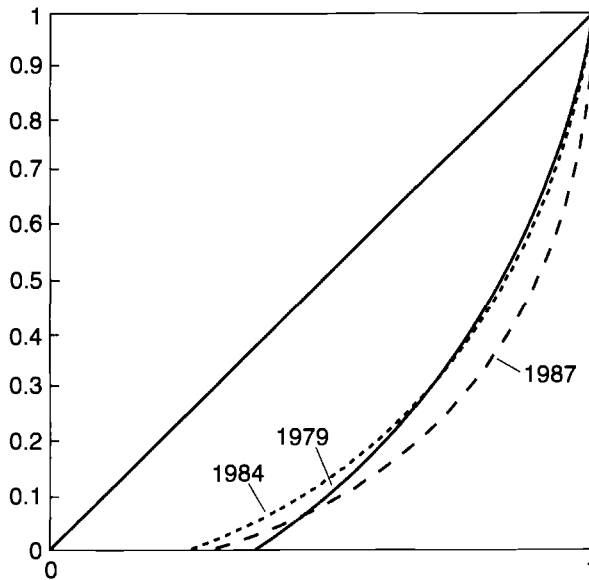
The recent wave of skyrocketing land prices swept through the metropolitan zone surrounding Tokyo but did not expand to other regions until 1987.<sup>13</sup> Land price inflation has further distorted asset distribution and simultaneously expanded the regional gap between the metropolitan zone and the rest of the country considerably. This has been one of the reasons for the current situation known as “urban dissatisfaction and rural anxiety.”

One aspect of urban dissatisfaction relates to the feelings of employed

11. At the end of 1987, ¥1 million was worth approximately U.S.\$7,700 and, in the spring of 1988, nearly U.S.\$8,000.

12. Tachibanaki (1989) argues the same point.

13. From 1988 to 1989, that wave expanded to the other two metropolitan zones (Osaka-Kyoto and Nagoya). According to the 1989 NSFIE, the Gini coefficient for home equity was 0.666.



**Fig. 4.8 Changes in Lorenz curves (residential land)**

Source: The 1984 NSFIE and others

people under 40 living in the metropolitan zone. A good number are from rural areas. If they cannot depend on their parents for land, they must buy their home with their own earnings. Roughly speaking, they cannot afford more than ¥40 million for their own home, but, with this amount, it is almost impossible to buy residential land in the suburbs of Tokyo. Many of them failed to “get aboard,” and this contributes to their frustration.<sup>14</sup>

Average landholdings per homeowner household in Tokyo exceeded ¥100 million to reach ¥130 million in 1987. Even the median amounted to ¥91 million, far larger than in the other prefectures. The median residential site of homeowner households in Tokyo is 113 square meters. This is the smallest, together with that in Osaka, and is only half the national median.

#### 4.6 Housing and Living Arrangements of the Elderly

Roughly 90 percent of the elderly in multimember households are homeowners in Japan. It should be noted, however, that the households are classified by the age of the householder; thus, the elderly persons who reside in households that have a younger householder are not included in the elderly group.

The majority of the elderly in single-member households are homeowners, too, although their homeownership rate is not as high; it was around 65 percent

14. *Urban serfs* is the new name given by *Business Week* (9 August 1988) to the employed people in the Tokyo metropolitan zone who do not own their homes. It should be noted that children can expect private transfers, including home equity, from their parents through gifts or bequests.

in 1984 (see Takayama and Arita 1987). It may be safe to say that the share of homeowners with housing liabilities falls sharply with age.

Table 4.8 presents the living arrangements of the elderly in Japan. It shows that a majority of the elderly are living with their sons or daughters. About 60 percent of the population aged 65 and older were living with their children in 1990. Their numbers are showing a gradual increase, from 7.4 million in 1980 to 7.8 million in 1985 and 8.6 million in 1990. The percentage of the elderly population living with their children, however, decreased rapidly during the same period, and, in the near future, the elderly living with their children will become a minority in Japan. Increasingly, there has been a trend for the elderly to live alone as singles or couples, although the percentage who do so was still 37 percent in 1990.<sup>15</sup>

Table 4.9 gives the headship status of the elderly in Japan in 1986. *Headship* refers to the principal income recipient of the household in the Basic Survey of Japanese Living Conditions. It indicates that, overall, 44 percent of the elderly are living as household heads and 17 percent as spouses of household heads. Specifically, 30 percent of the elderly living with their married sons or daughters are heads or spouses of heads, and nearly 70 percent of those living with their unmarried children are living as heads or spouses of heads. Consequently, the majority of the elderly are now living with their children, but they are not always secondary individuals.

Table 4.10 exhibits the number of the elderly living with their children, classified by the annual income of the elderly person on an individual basis. It indicates that the decision to live with the children depends on income. The higher the annual income of the elderly, the less likely they are to live with their children.<sup>16</sup> It is interesting to study the elderly who live with their children and what determines the various living arrangements of the elderly. An intensive study in this field using micro data remains for the future.

#### 4.7 Concluding Remarks

The Japanese are now living longer. At present, one out of every two males and two out of every three females have a life expectancy of over eighty years.

Previously, Japan's elderly population was regarded as uniformly poor and dependent on welfare. Today, however, the living conditions of the elderly are changing. Although the number of the elderly blessed with high incomes and considerable assets is still small, it is steadily growing. Home equity is the major asset of most elderly households. They are "home rich but cash poor." There is a need to liquidate their home assets by using equity conversion

15. Table 4.8 excludes the elderly in the institutionalized population, who amounted to 202,000, or 1.6 percent of the population aged 65 and older, in 1985.

16. It might be interesting to consider the children's income as another determinant of the living arrangement.

**Table 4.8 Living Arrangements of the Elderly (65 and older)**

	1980	1985	1990
Total number (millions)	10.7	12.1	14.5
Single (%)	8.5	9.3	11.2
Couple (%)	19.6	23.0	25.7
Living with:			
Married children (%)	52.5	47.9	41.9
Unmarried children (%)	16.5	16.7	17.8
Living with relatives other than children (%)	2.8	2.8	3.3
Others (%)	.2	.2	.2
Total (%)	100.0	100.0	100.0

Source: Basic Survey of Japanese Living Conditions (Ministry of Health and Welfare).

**Table 4.9 Headship Status of the Elderly (65 and older)**

	Elderly (1,000) (1)	Household Head (1,000) (2)	His/Her Spouse (1,000) (3)	(2)/(1) (%)	(3)/(1) (%)
Total	12,626	5,529	2,132	43.8	16.9
Single	1,281	1,281	...	100.0	...
Couple	2,784	1,717	1,066	61.7	38.3
Living with:					
Married children	5,897	1,218	624	20.7	10.6
Unmarried children	2,219	1,122	390	50.6	17.6
Living with relatives other than children	409	176	50	43.0	12.2
Others	37	14	1	37.8	2.7

Source: 1986 Basic Survey of Japanese Living Conditions (Ministry of Health and Welfare).

schemes such as reverse annuity mortgages. The elderly are better off than the young or middle aged in terms of assets held. Owing to the recent rise in the value of land, the difference in assetholdings has widened between generations. In the current situation, even young people who work all their lives will never be able to buy their own homes in the suburbs of Tokyo if they cannot depend on their parents for land. Thus, there seems to be a dispersion occurring in the former goal of equity in the distribution of income.

In the past, the elderly could be said to be riding on the top of "a portable shrine." From now on, they will be required to play a different role. The elderly can no longer just be the recipients of Social Security and social services. They will also have to start contributing to Social Security within their means. The increased wealth/income ratio will require changes in the present tax balance

**Table 4.10** Number of the Elderly Living with Their Children by Income Class (65 and older)

Annual Income (million yen)	Number of the Aged Having Their Children (1,000)	Living with Their Children (1,000)	Living Separately but in the Same Residential Site as Their Children (1,000)	(2)/(1) (%)	(3)/(1) (%)
	(1)	(2)	(3)		
0	2,000	1,764	40	88.2	2.0
0.1–0.3	2,605	2,103	54	80.7	2.1
0.4–1.1	2,288	1,451	65	63.4	2.8
1.2–1.7	1,103	650	51	58.9	4.6
1.8–2.3	741	433	43	58.4	5.8
2.4–3.5	736	413	38	56.1	5.2
3.6–4.9	312	177	26	56.7	8.3
5.0–9.9	261	132	22	50.6	8.4
10.0+	101	54	4	53.5	3.9
Total	10,147	7,177	344	70.7	3.4

Source: 1986 Basic Survey of Japanese Living Conditions (Ministry of Health and Welfare).

Note: Annual income is that of the elderly on an individual basis.

of income, wealth, and consumption, with lower taxes on income and higher taxes on wealth and consumption.<sup>17</sup>

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17. Takayama and Kitamura (1994) show changes in wealthholdings in Japanese households from 1979 to 1989, using the micro data from the 1979, 1984, and 1989 NSFIEs, clarifying how much the three factors flow savings, capital gains, and intergenerational transfers contributed to the wealth increase during these years.



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