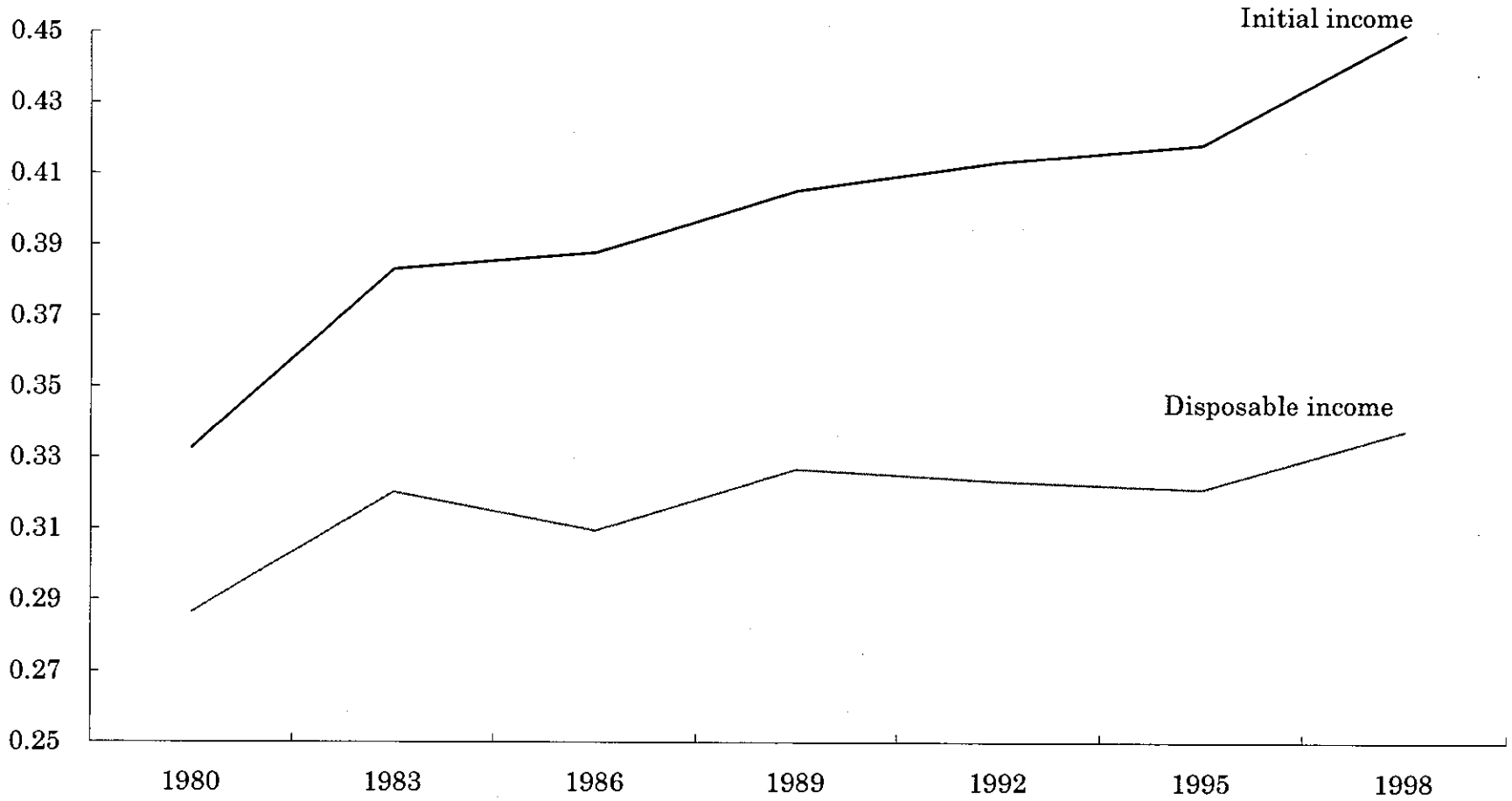
Figure 1 Gini coefficients: 1980-1998



Note: Figures are on an equivalized income basis.

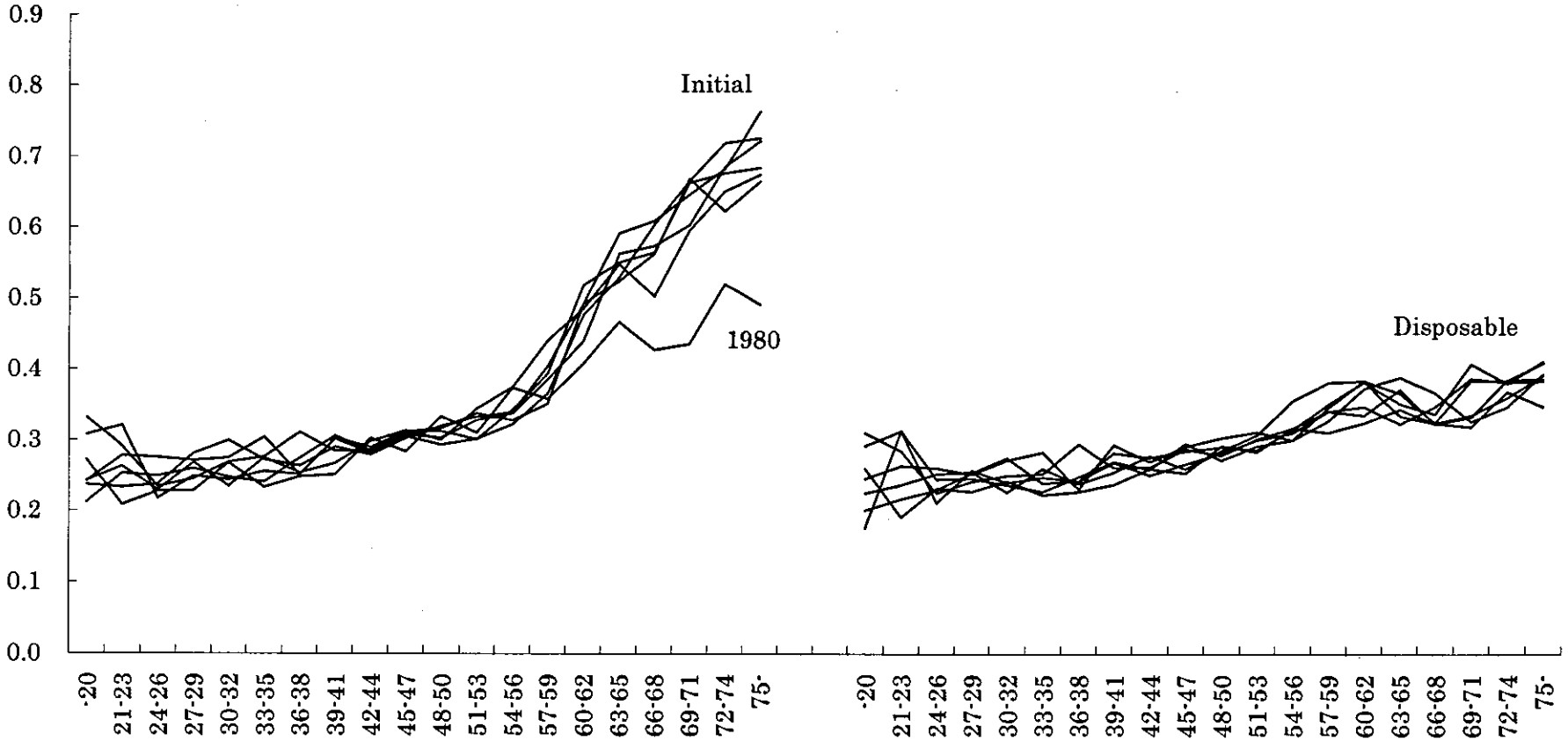
Table 2 Income inequality: LIS member countries and Japan

Levels in the latest survey year (around 2000)				Absolute change at an annual rate (from the early 1980s to around 2000)			
Gini coefficient		Atkinson index (ε=0.5)		Gini coefficient		Atkinson index (ε=0.5)	
Mexico	0.491	Mexico	0.196	Czech R.	0.01300	Czech R.	0.00450
Russia	0.434	Russia	0.156	Slovenia	0.00857	Russia	0.00350
U.S.	0.368	U.S.	0.115	Russia	0.00513	Slovenia	0.00314
Estonia	0.361	Estonia	0.108	U.K.	0.00323	Mexico	0.00206
Israel	0.346	U.K.	0.099	Finland	0.00292	**Japan**	**0.00166**
U.K.	0.345	Israel	0.098	Sweden	0.00289	Israel	0.00153
Japan	**0.337**	**Japan**	**0.098**	**Japan**	**0.00283**	U.S.	0.00150
Italy	0.333	Italy	0.093	Mexico	0.00269	U.K.	0.00138
Ireland	0.325	Switzerland	0.093	Israel	0.00253	Finland	0.00123
Switzerland	0.307	Ireland	0.086	U.S.	0.00236	Sweden	0.00116
Spain	0.303	Canada	0.078	Italy	0.00193	Italy	0.00114
Canada	0.302	Spain	0.076	Belgium	0.00192	Poland	0.00100
Taiwan	0.296	Hungary	0.073	Poland	0.00169	Norway	0.00093
Hungary	0.295	Poland	0.073	Luxembourg	0.00153	Belgium	0.00092
Poland	0.293	Taiwan	0.072	Taiwan	0.00153	Taiwan	0.00074
France	0.288	France	0.069	Hungary	0.00150	Switzerland	0.00070
Romania	0.277	Romania	0.065	Norway	0.00129	Luxembourg	0.00060
Austria	0.266	Austria	0.060	Germany	0.00105	Canada	0.00053
Germany	0.264	Germany	0.059	Canada	0.00095	Hungary	0.00050
Luxembourg	0.260	Norway	0.059	Estonia	0.00018	Germany	0.00047
Czech R.	0.259	Czech R.	0.056	France	0.00000	Estonia	0.00005
Sweden	0.252	Sweden	0.056	Romania	0.00000	Romania	0.00000
Norway	0.251	Netherlands	0.055	Switzerland	-0.00020	France	-0.00015
Belgium	0.250	Luxembourg	0.054	Ireland	-0.00033	Netherlands	-0.00019
Slovenia	0.249	Belgium	0.053	Netherlands	-0.00075	Austria	-0.00038
Netherlands	0.248	Finland	0.053	Austria	-0.00094	Ireland	-0.00067
Finland	0.247	Slovenia	0.053	Spain	-0.00150	Spain	-0.00070
Denmark	0.236	Denmark	0.052	Denmark	-0.00360	Denmark	-0.00120

Source: Data except for Japan are caluculated from the data released by the Luxembourg Income Study (http://www.lisproject.org/keyfigures/ineqtable.htm). The figures for Japan are the author's calculations based on Table 1.

Note: The base and latest survey years for comparisons are shown in the Appendix.

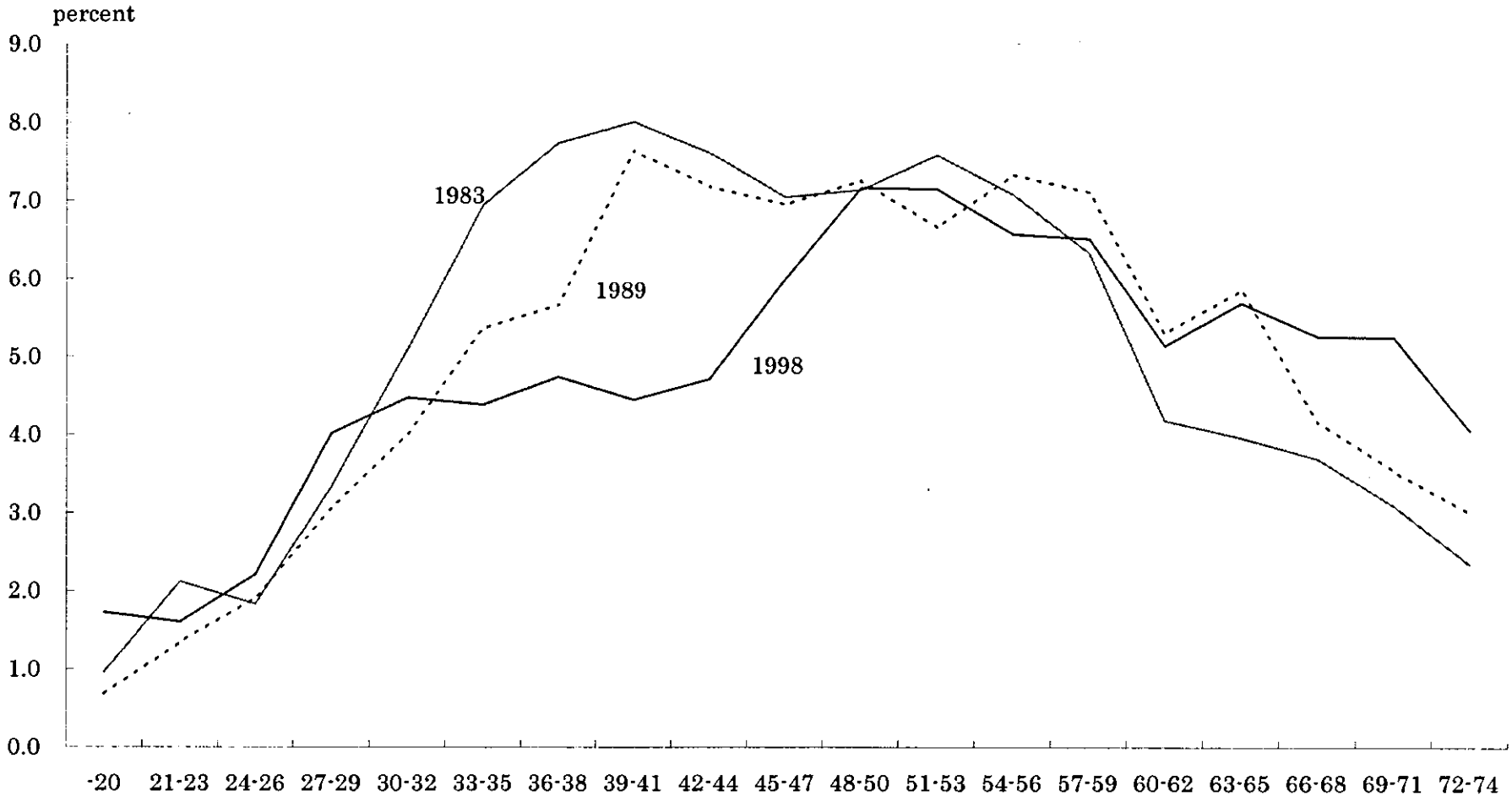
Figure 2 Age pattern of the Gini coefficinents: 1980-1998



Sourcse: The author's calculations.

Note: The Gini coefficinents in seven survey years are plotted. Figures are on an equivalized income basis.

Figure 3 Population shares by age group



Source: The author's calculations.

Table 3 Decomposition of changes in income inequality: 1983-1998

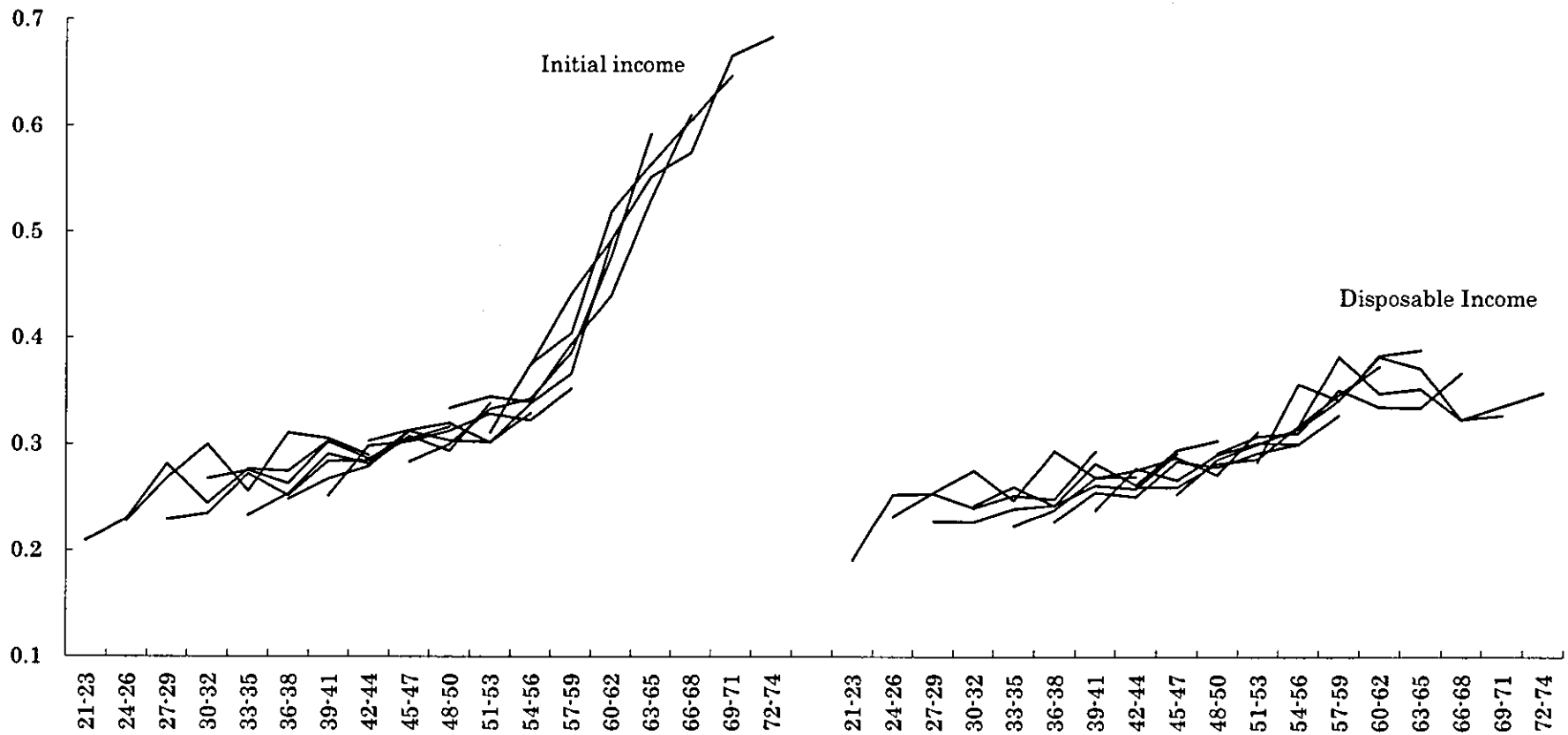
Index		1983→1998 Actual Changes in Income	Within-Age Effects	Between-Age Effects	Demographic Effects
MLD	Initial income	0.287	0.0706	0.0555	0.1611
			(24.6)	(19.3)	(56.1)
	Disposable income	0.028	0.0059	0.0062	0.0161
			(21.0)	(21.9)	(57.0)
LV	Initial income	1.269	0.1228	0.4489	0.6972
			(9.7)	(35.4)	(54.9)
	Disposable income	0.085	0.0334	0.0167	0.0346
			(39.5)	(19.7)	(40.8)

Index		1983→1989 Actual Changes in Income	Within-Age Effects	Between-Age Effects	Demographic Effects
MLD	Initial income	0.106	0.0292	0.0041	0.0724
			(27.7)	(3.8)	(68.5)
	Disposable income	0.015	0.0049	0.0008	0.0093
			(32.4)	(5.5)	(62.1)
LV	Initial income	0.499	0.1016	0.0987	0.2985
			(20.4)	(19.8)	(59.8)
	Disposable income	0.062	0.0330	0.0130	0.0159
			(53.3)	(20.9)	(25.7)

Index		1989→1998 Actual Changes in Income	Within-Age Effects	Between-Age Effects	Demographic Effects
MLD	Initial income	0.182	0.0387	0.0490	0.0938
			(21.3)	(27.0)	(51.7)
	Disposable income	0.013	-0.0003	0.0046	0.0090
			(-2.3)	(34.5)	(67.8)
LV	Initial income	0.770	0.0033	0.3631	0.4037
			(0.4)	(47.2)	(52.4)
	Disposable income	0.023	-0.0037	0.0004	0.0261
			(-26.4)	(1.8)	(114.6)

Source: The author's calculations.
Note: The numbers in the parentheses denote the contribution rates (%).

Figure 4 Gini coefficient by cohort and age



Source: The author's calculations.

Note: The age curve of the younger cohort starts and ends at the younger ages: the youngest cohort, born in 1957-59, starts at age 21-23 (in 1980) and ends at age 39-41 (in 1998), while the oldest cohort, born in 1924-26, starts at age 54-56 (in 1980) and ends at 72-74 (in 1998).

Table 4 Cohort and age effects on income inequality: Equations (1) and (2)

		Equation (1)				Equation (2)					
		cohort	age	adj-R^2	S.E.	cohort	age	dum	dum*age	adj-R^2	S.E.
Initial income	Gini	0.0023	0.0261 **	0.748	0.057	-0.0007	0.0116 **	-0.4493 **	0.0408 **	0.962	0.022
		(0.65)	(8.45)			(-0.52)	(8.10)	(-6.15)	(8.49)		
	Atkinson (ε=0.5)	0.0048	0.0420 **	0.698	0.101	-0.0007	0.0152 **	-0.7444 **	0.0699 **	0.969	0.032
		(0.75)	(7.62)			(-0.36)	(7.43)	(-7.14)	(10.20)		
	Atkinson (ε=1)	0.0029	0.0214 **	0.655	0.056	-0.0004	0.0066 **	-0.6310 **	0.0525 **	0.972	0.016
		(0.82)	(7.03)			(-0.42)	(6.66)	(-12.41)	(15.70)		
	MLD	0.0117	0.0752 **	0.610	0.212	-0.0012	0.0185 **	-2.6876 **	0.2183 **	0.982	0.046
		(0.87)	(6.50)			(-0.43)	(6.44)	(-18.26)	(22.56)		
	LV	0.0329	0.2426 **	0.670	0.628	-0.0051	0.0622 **	-5.7085 **	0.5147 **	0.972	0.182
		(0.78)	(6.64)			(-0.44)	(5.43)	(-9.74)	(13.36)		
Disposable income	Gini	0.0012	0.0107 **	0.768	0.021	0.0016	0.0109 **	0.2945 **	-0.0188 **	0.818	0.019
		(0.92)	(9.13)			(1.33)	(9.12)	(4.81)	-4.67		
	Atkinson (ε=0.5)	0.0013	0.0059 **	0.714	0.012	0.0015 *	0.0059 **	0.1702 **	-0.0108 **	0.775	0.011
		(1.65)	(8.63)			(2.14)	(8.53)	(4.79)	(-4.63)		
	Atkinson (ε=1)	0.0028 *	0.0113 **	0.762	0.021	0.0033 **	0.0120 **	0.2821 **	-0.0185 **	0.810	0.018
		(2.19)	(10.01)			(2.82)	(10.41)	(4.78)	(-4.76)		
	MLD	0.0032 *	0.0131 **	0.750	0.025	0.0037 **	0.0139 **	0.3413 **	-0.0222 **	0.801	0.022
		(2.04)	(9.65)			(2.63)	(9.92)	(4.77)	(-4.73)		
	LV	0.0102 **	0.0303 **	0.772	0.050	0.0116 **	0.0349 **	0.5908 **	-0.0413 **	0.818	0.045
		(3.21)	(11.06)			(4.08)	(12.37)	(4.10)	(-4.35)		

Source: The author's estimation.
Note: * and ** denotes significance at the five and one percent levels, respectively. Constant terms are not reported.

Table 5 Cohort and age effects on inequality of disposable income: Equation (3)

Ineqaulity measures		Gini	Atkinson (ε=0.5)	Atkinson (ε=1)	MLD	LV
Cohort effects (relative to the cohort born in 1924-26):						
Cohort born in: 1927-29	c_2	0.002	0.003	0.011	0.068	0.014
1930-32	c_3	-0.002	-0.001	0.011	0.090 *	0.014
1933-35	c_4	0.005	0.018 *	0.027 *	0.156 **	0.035 *
1936-38	c_5	-0.001	0.001	0.021	0.154 **	0.027
1939-41	c_6	-0.001	0.002	0.027 *	0.175 **	0.033 *
1942-44	c_7	0.001	0.004	0.036 **	0.244 **	0.045 **
1945-47	c_8	0.014	0.013	0.049 **	0.262 **	0.059 **
1948-50	c_9	0.027 *	0.018	0.064 **	0.330 **	0.078 **
1951-53	c_{10}	0.014	0.013	0.054 **	0.309 **	0.066 **
1954-56	c_{11}	0.038 **	0.024 *	0.076 **	0.358 **	0.090 **
1957-59	c_{12}	0.037 *	0.025 *	0.079 **	0.381 **	0.094 **
Age effects (relative to age 21-23):						
Age: 24-26	a_2	0.057 *	0.022	0.039	0.080	0.043
27-29	a_3	0.062 **	0.025	0.049 *	0.125	0.054
30-32	a_4	0.066 **	0.030	0.056 *	0.133	0.061 *
33-35	a_5	0.070 **	0.032	0.066 **	0.191 *	0.073 *
36-38	a_6	0.081 **	0.039 *	0.074 **	0.188 *	0.082 **
39-41	a_7	0.101 **	0.048 **	0.095 **	0.266 **	0.107 **
42-44	a_8	0.105 **	0.049 **	0.106 **	0.323 **	0.119 **
45-47	a_9	0.122 **	0.058 **	0.128 **	0.412 **	0.145 **
48-50	a_{10}	0.134 **	0.073 **	0.139 **	0.449 **	0.158 **
51-53	a_{11}	0.149 **	0.070 **	0.156 **	0.498 **	0.178 **
54-56	a_{12}	0.169 **	0.083 **	0.184 **	0.606 **	0.212 **
57-59	a_{13}	0.200 **	0.101 **	0.220 **	0.713 **	0.256 **
60-62	a_{14}	0.225 **	0.115 **	0.242 **	0.755 **	0.285 **
63-65	a_{15}	0.229 **	0.117 **	0.250 **	0.788 **	0.295 **
66-68	a_{16}	0.197 **	0.100 **	0.221 **	0.752 **	0.259 **
69-71	a_{17}	0.202 **	0.104 **	0.237 **	0.852 **	0.279 **
72-74	a_{18}	0.216 **	0.113 **	0.249 **	0.845 **	0.293 **
adj-R^2		0.874	0.751	0.849	0.778	0.845
S.E.		0.017	0.014	0.020	0.075	0.024

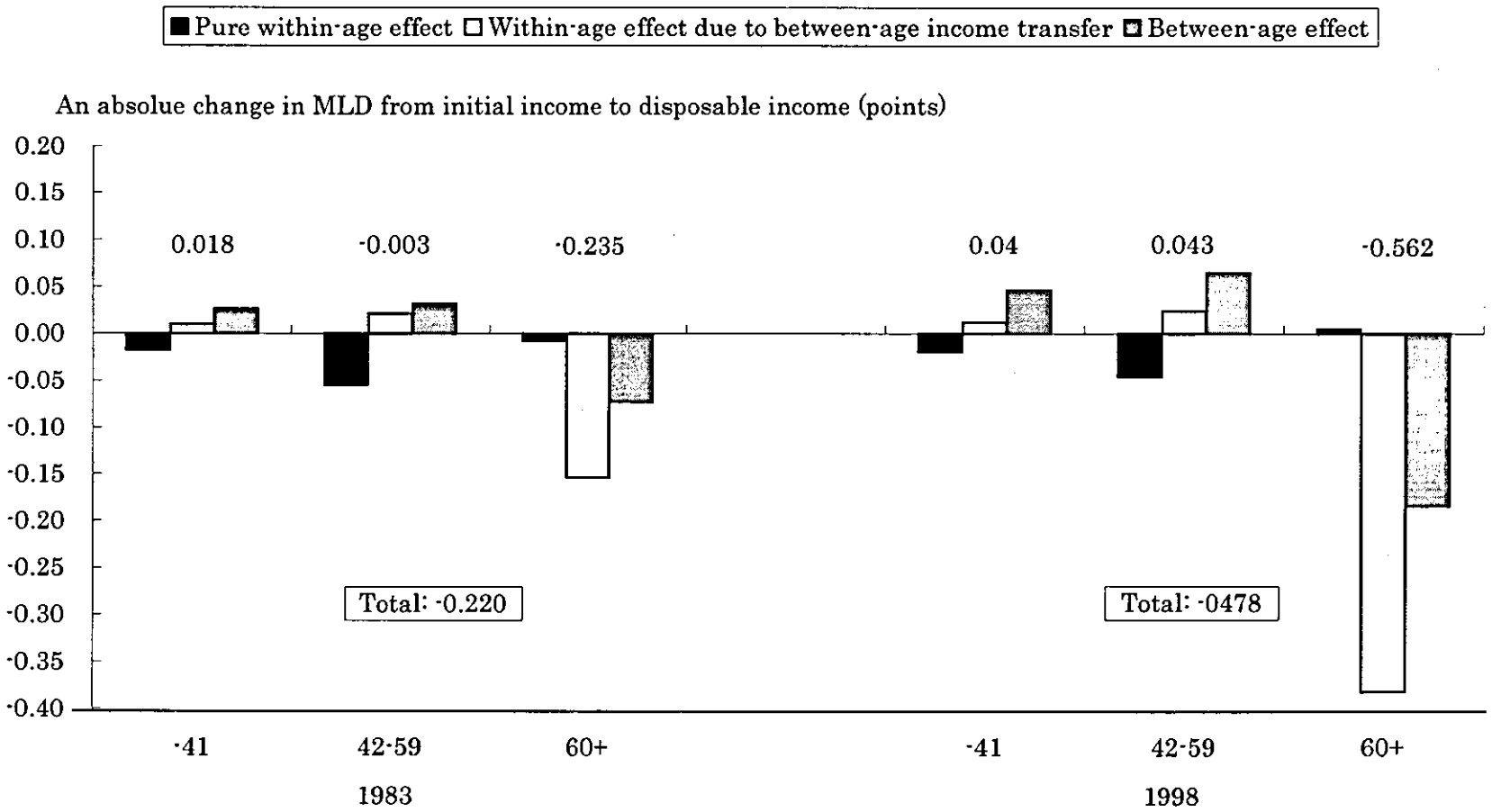
Source: The author's estimation.
Note: * and ** denotes significance at the five and one percent levels, respectively. Constant terms are not reported.

Table 6 Decomposition of income redistribution

	Initial income (a)	Disposable income (b)	Changes (c)=(b)-(a)	Within-age effects			Between-age effects (e)	Total between-age effects (d)+(e)
				Total	Pure	Due to between-age transfer (d)		
MLD								
1983	0.399	0.179	-0.220	-0.205	-0.080	-0.124	-0.015	-0.139
				(93.2%)	(36.7%)	(56.5%)	(6.8%)	(63.3%)
1989	0.505	0.195	-0.310	-0.286	-0.079	-0.208	-0.024	-0.232
				(92.4%)	(25.3%)	(67.0%)	(7.6%)	(74.7%)
1998	0.686	0.208	-0.478	-0.406	-0.060	-0.346	-0.072	-0.418
				(84.9%)	(12.6%)	(72.3%)	(15.1%)	(87.4%)
LV								
1983	1.392	0.356	-1.036	-0.742	-0.273	-0.469	-0.294	-0.763
				(71.6%)	(26.3%)	(45.3%)	(28.4%)	(73.7%)
1989	1.891	0.418	-1.473	-1.005	-0.271	-0.734	-0.468	-1.202
				(68.2%)	(18.4%)	(49.9%)	(31.8%)	(81.6%)
1998	2.661	0.441	-2.220	-1.239	-0.240	-0.999	-0.981	-1.980
				(55.8%)	(10.8%)	(45.0%)	(44.2%)	(89.2%)

Source: The author's calculations.

Figure 5 Contributions to overall income redistrubution: MLD



Source: The auhor's calculations based on Table 6.

Note: Numbers above bars indicate a total absolute reduction in MLD from initial income to disposable income for each age group.

Appendix Survey years in Table 2

Country	Latest survey year	Base survey year
Austria	1997	1981
Belgium	1997	1985
Canada	2000	1981
Czech R.	1996	1992
Denmark	1992	1987
Estonia	2000	NA
Finland	2000	1987
France	1994	1981
Germany	2000	1981
Hungary	1999	1991
Ireland	1996	1987
Israel	2001	1986
Italy	2000	1986
Luxembourg	2000	1985
Mexico	2000	1984
Netherlands	1999	1983
Norway	2000	1986
Poland	1999	1986
Taiwan	2000	1981
Romania	1997	1995
Russia	2000	1992
Slovenia	1999	1992
Spain	1990	1980
Sweden	2000	1981
Switzerland	1992	1982
U.K.	1999	1986
U.S.	2000	1986
Japan	1998	1980

Source: LIS (except for Japan) and MHLW (for Japan)

Benefits and contributions in the Japanese public pension system using IRS (Income Redistribution Survey) 1996 & 1999 (Note 1)

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Draft (March 15, 2005)

1. Introduction

The reform of the welfare state is among the priority issues in many developed countries, and the functions of income redistribution and risk pooling performed by the social security system have been reexamined under the circumstances of persistent low fertility, aging of the population, and global competition. In view of the financial difficulties of sustaining social security, trimming of public programs and expansion of private arrangements have been discussed in many countries. Political discontent has emerged in recent years in many industrialized countries due to a perceived notion that income inequality has been increasing while the middle class has been shrinking (Duncan, Smeeding and Rodgers, 1993). Inequality of income has been increasing also in Japan since 1980s. The effect of income redistribution through social security seems to have been rising since the mid 1980s, but it is explained to some extent by the increase in the number of elderly households, especially single households, receiving retirement benefits.

Income distribution and redistribution through taxes and social security has been a topic of great concern for many years in Japan. Japan was considered as an equal society in terms of income distribution, but this belief has been challenged recently, and the income equality level in Japan might be as low as that in the United Kingdom. The Gini coefficients of adjusted disposable income are low in Sweden, Denmark, the Netherlands; and high in the United Kingdom and the United States. Income distribution and redistribution in Japan needs more research work, and an in-depth study is necessary to compare Japanese income equality level to the other countries.

The purpose of this paper is to study the relationship between benefits and contributions in the Japanese pension system using the Income Redistribution Surveys 1996 and 1999.

2. Data and method

(1) Data

The Income Redistribution Survey (IRS) has been conducted in Japan every three years by the Ministry of Health and Welfare (now the Ministry of Health, Labor and Welfare) since 1962. Fig. 1 shows a summary result of these surveys published by the Ministry without any adjustments of family size. This paper draws on data from the 1999 Survey, the latest available micro data, as well as 1996 Survey. As for the household structure, the following category is used which is the same as used in the survey: La = living-alone, Co = couple-only, CC = couple-with-children, LP = lone-parent, 3G = three-generation, and other households.

Fig. 1

(2) Definition of income

Original income is the sum of a) wages and salaries, b) self-employed income, c) asset income, d) occupational pensions and retirement allowance from companies, and e) private remittance received, payment from life and non-life insurances. Only direct taxes are considered in the survey, and the following taxes are included in the direct taxes: national as well as local income taxes, immobile property tax, and automobile tax. Social security (SS) benefits include both cash benefits and benefits in-kind, most of which are health services. Health services are excluded from social security benefits in this paper. Therefore, gross income and disposable income are defined as follows:

Gross income = Original income + SS benefits excluding health services;
Disposable income = Gross income - (Direct taxes and SS contributions).
Personal contribution rate is defined here as the proportion of direct taxes and SS contributions to the gross income.

(3) Adjustment for household size

Since households differ in size and in composition, it is necessary to adjust income to account for differences in need. Equivalence scales were designed to accomplish this. The following equivalence scale is used in adjusting family size and age of children.

Equivalence scale: first adult (15+) = 1.0; additional adults = 0.5 ;
children (0-14) = 0.3

(4) Measures of inequality

The ratio of the top to bottom quintile/decile in terms of average income is referred to as the quintile/decile ratio. Comparisons of income distributions are more frequently based on the cumulative distribution of income compared to the cumulative distribution of households (i. e. the Lorenz curve). The Gini coefficient is used as a summary measure of inequality in this paper (Note 2). The Gini coefficient of disposable income for total households in 1999 Survey decreased from 0.381 to 0.344 by family size adjustment. Family size adjustment is especially necessary for households with older household head and three-generation households.

3. Results

3.1 Income distribution of the total households

Table 1 shows average gross income and average disposable income by age group of household head and by gross income quintile. The equivalized disposable income is the lowest for households aged 65+: 83 percent of the average. Personal contribution rate is 16 percent on average, but it does not differ very much among gross income deciles as shown in Fig. 2 (14 percent for the lowest decile and 20 percent for the highest decile). The changes of quintile ratio from gross income to disposable income are 6.0→5.7 in 1996 and 7.0→6.5 in 1999.

Table 1, Fig. 2

Table 2 shows average disposable income by household structure for each age group of household head. Average disposable income for living-alone households changes remarkably according to age group, whereas three-generation households have relatively stable average disposable income by age group of household head. Gini coefficients of disposable income increase steadily with age, and they are high for living-alone households within the same age group.

Table 2

3.2 Pension benefits for the elderly households (single or couple aged 65+)

(1) Income sources of the elderly households

Table 3 shows the shares of different income sources of equivalized gross income for the elderly households (single or couple aged 65+) by age group and by gross income quintile. The share of earnings decreases with age, and the share of public pension increases in return, except for the age group 85+ for which the sample size is small. Viewed by income quintile of gross income, the share of

public pension is about 80 percent or more for the first to fourth quintiles, and it decreases to 36 percent for the fifth quintile. However, actual pension amount increases as gross income increases. The share of earnings including self-employed income is more than 45 percent for the fifth quintile. The personal contribution rate is the lowest for the second quintile and increases with quintile.

Table 3

(2) Distribution of pension benefits

Fig. 3 shows the distribution of beneficiaries according to pension amount, focusing on those beneficiaries who receive employee pension. Especially for 1999 Survey, we find a relatively similar distribution between couple and single-male, and the difference is about 0.5 million yen. The highest benefit for single-female is 3.67 million yen (earnings-related part) + 0.78 million yen (basic pension part).

Fig. 3

3.3 Pension contribution of employee households

This section focuses on those households where gross income as well as initial income equal wages and salaries. About 40 percent of households surveyed are under this category.

(1) Average earnings

Average earnings are highest in the age group 55-64, except for the living-alone households. The Gini coefficients of earnings are smaller than those shown in Table 2. In fact, it is 0.296 for the whole employee households, compared to 0.344 for the total households in 1999 Survey.

(2) Personal contribution rate

Figure 4 shoes the proportions of direct taxes, health insurance contribution, and pension insurance contribution to earnings by earnings class. On the one hand, the progressiveness of direct taxes can be confirmed; on the other hand, social security contribution (employee's part only) decreases slightly with earnings increase. This could be partly explained by the fact that the contribution rate applied to bonuses was much lower than that for monthly earnings (Note 3). Individual earnings of employee households are reduced by 17 percent on

average through taxes and social security contributions.

Fig. 4

(3) Accrual rate of public pension system for the employees

Benefit (B) is determined by the following equation, where P is contribution point relative to the average wage (W) for each year, n is years of contribution, and A is the accrual rate of the system:

$$B = A \cdot \sum_{i}^{n} Pi \cdot Wi$$

Assume the difference in distribution of beneficiaries between couple and single-male comes from basic pension of dependent spouse, the difference of 0.5 million yen means that n = 25 years. Further assume that W = Wi = 6.16 million yen, and average benefit for single-male is 2.0 million yen, then A = 1.3 percent.

Assume the highest benefit for single-female is survivor's benefit, then corresponding old-age benefit B = 3.67 / 0.75 + 0.78 = 5.67 million yen. For this case, A = 1.15 percent (Note4).

4. Discussion

Based on the analysis of the IRS 1999, the following observations can be made. First of all, the Gini coefficient of disposable income for the total households decreases from 0.381 to 0.344 by family size adjustment, and family size adjustment is especially necessary for households with older household head and three-generation households. Public pension benefits are the most important income source for the elderly, especially for the low income class. As for the shares of different income sources of the elderly households (single or couple-only aged 65+) by income quintile of equivalised gross income, the share of public pension is about 80 percent or more for the first to fourth quintiles, and it decreases to 36 percent for the fifth quintile. The share of earnings is more than 45 percent for the fifth quintile. Concerning employee households, the Gini coefficients of earnings are smaller than the whole income sources. Individual earnings of employee households are reduced by 17 percent on average through taxes and social security contributions. Accrual rate of public pension system for the employees are calculated by way of illustration as 1.3 percent as well as 1.15 percent. Similar results are obtained also from the IRS 1996.

Social expenditure itself does not automatically reduce income inequality.

However, Fig. 5 suggests that income equality tends to be high in those countries where social expenditure as a percent of GDP is high. Fig. 5 also suggests that countries with same social expenditure level may have different Gini coefficients such as the Netherlands vs. the UK and Norway vs. Italy.

Fig. 5

The proportion of disposable income to original income for total households was quite similar between Japan and the United Kingdom (Fukawa, 2002): 97 percent in Japan, 94 percent in the United Kingdom. Viewed by income quintile, however, the degree of redistribution of income through taxes and transfers was much higher in the United Kingdom. The quintile ratio of disposable income was fairly similar between the two countries. Lower inequality of household earnings is the main force behind lower inequality of disposable income of Japan compared to the United Kingdom; nevertheless, a higher degree of income redistribution through public transfers in the United Kingdom does not compensate for higher inequality of earnings between households in the United Kingdom (Jacobs, 2000).

Earnings are the second most important income source in Japan, whereas pensions and annuities are the second most important in both the United Kingdom and the United States. The key challenge posed by an aging society is achieving a proper balance between the amount of time spent in work and in retirement (OECD, 2001). Employment is increasingly considered as an important alternative income source for older population in many developed countries, and how to create job opportunities for the older population is an issue.

The IRS offers such advantages as detailed data on benefits and contributions items, rich information about household structure, and good coverage of low income households. Conversely, the survey has the following shortcomings: its accuracy is inferior to that of the *Family Income and Expenditure Survey*; coverage of benefits in-kind including health services is weak; coverage of indirect taxes is also weak; and wealth is completely out of concern. Nevertheless, the survey results provide useful information. There is not a strong relationship between income and asset. The proportion of asset income to the total original income was relatively low, 10 percent at most, in Japan. Those who belong to the high income quintile have mostly high earnings. On the other hand, the inequality of assets is much larger than that of income, and wealth data as well as income data are necessary to analyze the economic position of

the population. Household living arrangements, pooling of income among household members, play a role in risk adjustment, as families de-merge and remerge over the course of later life, and these mechanisms are particularly important in Japan (OECD, 2001). Therefore, it is especially important to analyze the functions of social security in Japan according to the living arrangement of the elderly. In fact, about half of the elderly in Japan aged 65+ still live with their children.

How equal is the Japanese society in terms of income distribution is a question still to be answered, especially from the points of view of lifetime distribution and distributional effects through taxes and social insurance.

(Note 1) The data used in the paper were made available to the author by the Ministry of Health, Labour and Welfare of Japan, the notice number No.0826001 dated 26th August 2004.

(Note 2) The Gini coefficient is equal to the area between the Lorenz curve and the diagonal expressed as a proportion of the whole triangle. It is alternatively equal to the expected average difference in incomes, relative to the mean, between any two persons drawn at random from the population. All summary measures imply some a priori value judgments about the distribution itself, and the Gini coefficient is most sensitive to inequality changes around the median.

(Note 3) The contribution rates of public pension insurance for private sector employees are 17.35 percent of monthly earnings and 1 percent of bonuses, both shared evenly by employers and employees, in 2002.

(Note 4) About 40 percent of inequality in asset distribution is explained by the life-cycle effects.

(Note 4) $5.67 = A \cdot 40 \cdot 2 \cdot 6.16$; then $A = 1.15\ \%$

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Table1. Average gross income and disposable income : Equivalized

(In 10,000 yen per year)

By Age Group					By Gross income quintile				
Age group	1996		1999		Gross income quintile	1996		1999	
	Gross income	Disposable income	Gross income	Disposable income		Gross income	Disposable income	Gross income	Disposable income
Total	341.3	285.5	343.3	289.1	Total	341.3	285.5	343.3	289.1
25-34	315.6	268.1	333.3	281.3	1	114.1	97.7	102.9	90.4
35-44	337.4	281.0	352.1	295.8	2	213.5	186.1	205.6	181.5
45-54	385.0	316.9	398.2	328.8	3	294.1	253.0	289.6	251.3
55-64	363.3	324.0	402.9	331.0	4	396.6	336.4	398.2	338.2
65+	273.4	236.9	273.9	240.3	5	688.6	554.4	720.4	584.2