

The Economic Situation and Income Inequality among the Older People in Japan: Measurement by Quasi Public Assistance Standard¹

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Abstract This article examines the changing economic position of Japanese older people during half of the latest economic recession period (1989–1995), using micro data from the Comprehensive Survey of Living Condition of the People on Health and Welfare. The Quasi Public Assistance Standard (QPAS), which is based on the administrative minimum cost of living standard guaranteed by the Constitution, is applied as a benchmark and an equivalence scale. The growth of administrative minimum cost of living standard relative to other social security benefits, consumer price index and wage growth are also examined. Special attention is also paid to lone-parent households in the context of comparison with older households in the analysis.

There are four main findings; (1) Income inequality among older households is higher among others, although the working income is generally main contributor for it, reflecting the high labour force participation rate of older people. (2) However, among single female older households, the main contributor to inequality is social transfer. (3) The below-QPAS proportion among single female older households exceeds 10% and is the highest among the older households, but this number is much lower than that of lone-parent households. (4) The growth rate of administrative minimum cost of living standard is higher than that of consumer price index, although lower than wage growth rate on average, but there are certain differences by household type and residential area.

These findings suggest that how to precisely target on economically disadvantaged older households could be a key question for the next pension reform.

1. Introduction

Based on recent analyses, the traditional image of the economically disadvantaged older people has changed.² However, the Comprehensive Survey of the Living Conditions of People on Health and Welfare shows that 16% of older people households³ are living on incomes of below 1 million yen per

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¹ The views expressed here are those of the author and do not represent the views of any organisation to which the author belongs.

² See Takayama and Arita (1996) for a comprehensive study on both the wealth and income of the older people.

anum. While only 1% of the entire population are beneficiaries of public assistance (means-tested benefits), 5% of the older people are relying on such assistance. The income of the older people shows relatively wide diversity, reflecting the accrued human capital investment of the past.⁴ A certain proportion of the older people is still disadvantaged, in terms of labor force status, wealth status and pension benefit level. Raising the pensionable age and lowering future pension benefit levels would shift some older people over the borderline of means-tested benefit levels and transform them into real beneficiaries of public assistance. Nonetheless, there are few research studies⁵ on this topic. How many older people are on the borderline, and what are the consequences of economic recession, in the wake of the bubble economy, on the economic position of the older people? There would be many disadvantaged older people in terms of income flow, even if they are asset-rich because of low interest rates. It is necessary to have information that answers such questions on a time series basis for use in designing the future social security system.

This article has three objectives: first, to measure the relative economic position of the older people using the Quasi Public Assistance Standard (QPAS) based on the administrative minimum cost of living standard guaranteed by the Constitution; second, to measure income inequality amongst the older people (to arrive at a consistent measure, household disposable income is adjusted for household size and age by QPAS), and; third, to show the decomposition of inequality by income source. Two new approaches are employed for these purposes: First, when the people on the borderline are measured, savings and debt are considered, and; Second, the indexation of QPAS is also carefully examined,⁶ and compared with growth in wages, prices, and public pension benefits.

For this analysis, I chose to use the Comprehensive Survey of the Living Conditions of the People on Health and Welfare, although there are several other surveys that provide suitable data for examining the economic position of the older people in Japan. For example, the National Survey of Family Income and Expenditure,

³ The definition of an older people household in the survey is "the household is constituted of only members aged 65 and over, or of members aged 65 and over with unmarried household members under age 18."

⁴ See the study by Seike and Yamada (1998) which illustrates a strong relationship between past career and income or housing wealth diversity among the older people.

⁵ Hoshino (1995), Nishizaki et al. (1997), Wada and Kimura (1998), and Economic Planning Agency (1999) provide recent investigations into the low-income or low-consumption group and income inequality. Nishizaki et al. (1997) attempts an international comparison, and Wada and Kimura (1998) investigate the historical trends in people on the borderline.

⁶ An application of the public assistance standard (administrative minimum cost of living standard) would always present problems unless there is some examination of its indexation against other indexes, such as price index, wage growth rate, growth rate of disposable income. Otherwise, "Helping more is read as more help being *needed* (Sen 1983, p. 158)."

the Family Income and Expenditure Survey, and the Income Redistribution Survey are frequently used; but, there are substantial differences amongst those surveys in terms of measuring income distribution.⁷ Considering this ambiguousness, the purpose of my research is to identify the trends in the economic situation of the older people household in a relative context, rather than in an absolute context, by making comparisons with other household types. I would like to emphasize this limitation; otherwise my analysis might have misleading policy implications.

In the next section I will discuss the research method taken. In section 3, I will explain the specific method of calculation that generates the QPAS used as an equivalence scale. Those who are not interested in the technical discussion can skip to section 4. In section 4, I provide an empirical overview of the economic position of older people by income resource and detailed household type, using QPAS. Some implications for future reforms will be discussed in the last section.

2. Method and Data

2.1. Quasi Public Assistance Standard (QPAS) as an Equivalence Scale

In this analysis, I utilize the public assistance standard⁸ as an equivalence scale and as a benchmark to identify low-income people. I will explain how to calculate this standard in concrete terms in the following section, although I would like to emphasize that there is some difference between the real standard, which is the administrative minimum cost of living standard, and the calculated standard (QPAS) because of a lack of necessary information. Nevertheless, I believe that the QPAS is very useful in identifying low-income people for three reasons. First, public assistance is the fundamental safety net of social security in Japan, and therefore my empirical results would have direct policy implications. Second, the standard is calculated by age, household size, and individual specific needs, to satisfy the minimum cost of living standard for each household, and therefore it is de facto an equivalence scale⁹ and a benchmark. Third, I can make direct comparisons across different time periods in relative terms, since the

⁷ See Matsuura (1996) and Ida (1997). According to Matsuura (1996), the average income is the lowest and Gini coefficient is the highest in all household head age categories based on calculations from the Comprehensive Survey of the Living Conditions of the People on Health and Welfare, compared with the National Expenditure Survey and Household Survey.

⁸ For those who are not familiar with the public assistance system in Japan, Eardley et al. (1996) provides an outline of the system in English.

⁹ There are many alternative equivalence scales. For a compact survey of different equivalence scales, see Atkinson et al. (1996, p. 18–21).

administrative minimum cost of living standard is indexed by the average growth of expenditure for a typical working household. This indexation is called “Balanced Standard Method.”¹⁰ However, since there is some possibility that the indexation will be different for each household type, I will examine these differences in section 3.

There are mainly four components to be considered in the calculation of QPAS: Residential Category I, which depends on the age of each household member; Residential Category II, which depends on household size; Both category I and II have six rates for different residential areas to take account of different consumer prices in urban and rural area. Premiums, which meet additional needs for specific household types, and; housing assistance. At the same time, relatively small premiums and assistance are ignored, and some premiums and assistance are impossible to calculate because of data limitations. Thus, there is some difference between QPAS and the real administrative minimum cost of living standard.

2.2. Data

I use micro data from the Comprehensive Survey of the Living Conditions of the People on Health and Welfare from the years 1989, 1992, and 1995. The advantage of using this data set is that the survey captures well the low-income group, including the beneficiaries of means-tested benefits (public assistance),¹¹

¹⁰ Because of this method, the expenditure difference between non-beneficiaries and beneficiaries of public assistance is kept constant. Prior to introduction of this “Balanced Standard Method” in FY 1984, there were several methods used for indexation of the public assistance standard (administrative cost of living standard) since 1948. Between FY 1948 and FY 1960, “Market Basket Method” was applied. The minimum cost of living was calculated on the basis of necessary goods for livelihood. Since FY 1961, “Inverse Engel’s Coefficient Method” had been used. The minimum living cost was calculated by the equation; theoretical cost for food and drink, which provided necessary calories, divided by real Engel’s coefficient of actual low-income household’s income. Between FY 1965 and FY 1983, the indexation was based on the official projection of domestic expenditure growth, and the additional amount was also considered to abolish the expenditure difference between non-beneficiaries and beneficiaries of public assistance. For a detailed history of public assistance administration and the analyses on minimum living cost, see Konuma (1974) and Soeda (1995).

¹¹ However, I cannot estimate the take-up rate of public assistance precisely, since the survey does not contain information on inflow and outflow of beneficiaries. The effect of dropping almost 20% of the sample with missing values is unforeseen with respect to the estimation of the take-up rate, as the percentage of beneficiaries is very low. According to the Report on Social Welfare Administration by the Ministry of Health and Welfare, beneficiaries’ households are 1.4% of entire households. However, that percentage is 0.8%, according to the Comprehensive Survey on the Living Conditions of the People on Health and Welfare. Moreover, even though the survey contains an adequate sample size, it is not large enough to investigate the take-up rate of specific household type, such as that of the lone-parent household.

and this satisfies my research purpose to identify people on the borderline.¹² In those years, the survey covered a large sample, and it allows for a detailed investigation by household category. Moreover, the survey years cover the period of recession, and therefore I can also investigate the effect of extremely low interest rates on older people relying on savings.

The survey in large sample years contains three questionnaires: a household questionnaire, an incomes/savings questionnaire, and a health questionnaire. The total amount of expenditure is also available from the former questionnaire. I draw mainly on the incomes/savings questionnaire, but I also use the other questionnaires to obtain necessary information. After removing samples with missing values for income variables and demographic variables, 80% of the original sample is available for the three years.

3. Concrete Calculation Method of Quasi Public Assistance Standard (QPAS)

3.1. Basic Concept of the Public Assistance Standard

I calculated both Residential Category I and II based on the age of each household member, household size and the residential area. In addition, Residential Category II has a seasonal additional amount extended between November and March. This additional amount also differs according to residential area. I aggregate these two types of basic amounts, and I also aggregate the seasonal additional amount by 5/12.

In terms of the special needs of each household, I consider the old-age premium, single parent premium, and the childcare premium. The real public assistance standard includes the other premiums: maternity premium, disability premium, at-home patient premium, and radiation disability premium. Of those premiums, the amount of the disability premium and the radiation disability premium is relatively high. However, I ignored those premiums, since I could not identify whether the household member was disabled, nor could I identify his or her degree of disability, even using the health questionnaire. I recognize that this might cause some error.

The old-age premium can be calculated as follows. For household members aged 70 and over, I simply multiply the amount by the number of qualified

¹² In relation to real public assistance beneficiaries' households, inflow has slightly increased since FY 1992. Since FY 1993, inflow has exceeded outflow of beneficiaries' households. For detailed information, see Ministry of Health and Welfare (1998) for statistics on the trends for beneficiaries.

member(s). For household members aged between 68 and 69, I only multiply the premium amount by the number of persons that need long-term care.¹³ To be in line with the real public assistance rule applied for doubly qualified premiums, I also adjust between the old-age premium and lone-parent premium, applying a higher premium.¹⁴ For the childcare premium, I multiply the amount by the number of children in the household under the age of 3.

There are other types of assistance in addition to benefits in cash, such as temporary assistance, education assistance, medical assistance, birth assistance, and occupational assistance under the public assistance scheme. However, I do not consider those forms of assistance because there is limited information in the survey data. When calculating QPAS, I could only consider the maximum amount of housing assistance to adjust for people living in owner-occupied dwellings and people living in rented accommodation. Funeral assistance is also considered when I treat savings, since some savings are in reality allowed for older people. The amount is equivalent for the funeral assistance. Several benchmarks for considering the treatment of savings are described in the next section. In the analysis, I did not estimate the imputed rent for those people living in an owner-occupied dwelling or the imputed consumption of wealth; therefore, the adjustment for an owner-occupied dwelling and rented accommodation is still imperfect, even after taking housing assistance into consideration.

3.2. Combination of QPAS and Debt/Savings

I identify persons as below-QPAS by using ten benchmarks that combine disposable income with debt/savings, or that combine consumption with debt/savings. I labelled these benchmarks QPAS 1 to 5 for the combination of disposable income and debt/savings; and QPAS A to E for the combination of consumption and debt/savings. Originally, the public assistance standard was designed on the basis of consumption level and, accordingly, it might be more appropriate for it to be evaluated by expenditure level. Thus, “Below-QPAS A to E” are calculated.

As the real public assistance standard has a special deduction rule for working income, this rule is applied for calculating QPAS 1 to 5.

In the questionnaire, the amounts of debt or savings are coded by categorical choices. I use the median value of the categorical choice to calculate net

¹³ This calculation ignores disabled people aged over 65, who are also applicable for the old-age premium, although, again, disability status is not available in the survey.

¹⁴ This method neglects the lone-parent premium provided for lone-parent households with more than one child. Nevertheless, the maximum amount of the lone-parent premium is not usually awarded.

savings. For example, if the categorical choice of savings is “Equal or more than 5 million yen and below 7 million yen,” I simply recoded it as “6 million yen.” And for the maximum category, such as “More than 30 million yen,” I simply applied the amount “30 million yen.” Because of this recoding process, the amount of debt/savings is not entirely accurate. Nonetheless, taking the amount of net savings into consideration is one of the advantages of my analysis. The treatment of debt/savings is often problematic when low-income persons apply for public assistance.

The next table shows the combination of debt/savings¹⁵ with the disposable income/consumption used by my analysis.

3.3. Three Household Categories

I use three household types for my analysis: a) age category of household head, b) detailed category of older people household, and c) economically disadvantaged household (lone-parent household). The definition of “older people couple household” in my analysis is different from the definition in the original survey. My definition is “a two-member household comprising a male aged 65 or over and a female aged 60 or over.”

To identify a lone-parent household, I used the following method. First, I extract household heads, whose marital status is either unmarried, widowed, or divorced. If the household head is male, I add a condition of between age 18 to 64 for a male household head, and a condition of between age 16 to 59 for a female household head. In addition to this sampling, I extract households whose members are all under age 18. In my analysis, I regard this household also as an applicant for the lone-parent premium. However, the lone-parent household extracted by this estimation method would exclude some part of real lone-parent households,¹⁶ which are eligible for the real lone-parent premium.

Using those three household categories, I analyse the change in economic position by the age of household head, the concentration of low-income or income diversity by specific household type, and the relative economic position of the older people compared with average households or economically disadvantaged households. The composition of these household categories is shown in the appendix.

¹⁵ For QPAS 3 and E, I applied the explanation from Tabata (1997) for savings treatment in actual public assistance administration. However, there is no substantive enactment for this treatment in public assistance legislation.

¹⁶ For example, if the children are disabled, the single parent premium can be applied until the children reach age 20. The premium is also applied in the case that an older sibling takes care of a younger sibling and one of the parents is an in-patient, mentally sick, or disabled.

Table 1 Quasi public assistance standards
Ten Combination of Disposable Income/Consumption Expenditure with Debt/Savings

QPAS	Evaluated Matters	Treatment of Debt/Savings
1	Disposable Income minus Deductible Working Income	No Treatment of debt/savings. If the amount of disposable income is below QPAS, the household is classified as "below-QPAS 1."
2	Disposable Income minus Deductible Working Income	If the amount of disposable income is below QPAS and if net saving is below zero, the household is classified as "below-QPAS 2."
3	Disposable Income minus Deductible Working Income	If the amount of disposable income is below QPAS, and if the net saving is below half the amount of QPAS plus the amount of funeral aid (only for the household, which includes more than one member aged 65 and older), the household is classified as "below-QPAS 3."
4	Disposable Income minus Deductible Working Income	If the amount of disposable income is below QPAS and if the gross saving is equal to zero, the household is classified as "below-QPAS 4."
5	Disposable Income minus Deductible Working Income	If the amount of disposable income is below QPAS, and if the gross saving is below half the amount of QPAS plus the amount of funeral aid (only for the household, which includes more than one member aged 65 and older), the household is classified as "below-QPAS 5."
A	Consumption Expenditure	No Treatment of debt/savings. If the amount of expenditure is below QPAS, the household is classified as "below-QPAS A."
B	Consumption Expenditure	If the amount of expenditure is below QPAS and if net saving is below zero, the household is classified as "below-QPAS B."
C	Consumption Expenditure	If the amount of expenditure is below QPAS, and if the net saving is below half the amount of QPAS plus the amount of funeral aid (only for the household, which includes more than one member aged 65 and older), the household is classified as "below-QPAS C."
D	Consumption Expenditure	If the amount of expenditure is below QPAS and if the gross saving is equal to zero, the household is classified as "below-QPAS D."
E	Consumption Expenditure	If the amount of expenditure is below QPAS, and if the gross saving is below half the amount of QPAS plus the amount of funeral aid (only for the household, which includes more than one member aged 65 and older), the household is classified as "below-QPAS E."

4. Empirical Results

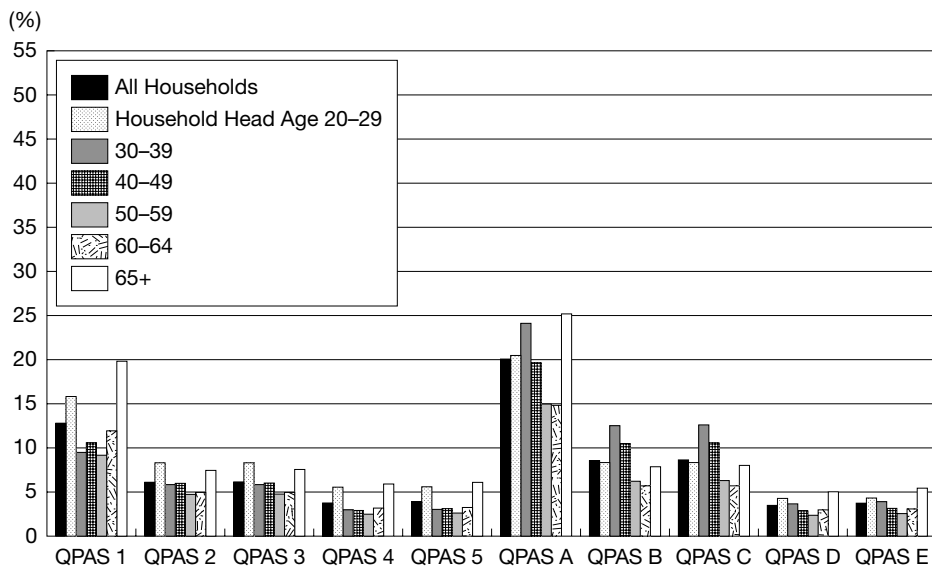
4.1. The Economic Position of Older Households in the mid-1990s

Figure 1 shows ten combinations of debt/savings with QPAS by age of household head. “Below-QPAS 1 to 5” is U-shaped except for those in the 40s age range. Household heads in the 20s age range and the 60s age range have a high proportion of people below-QPAS. When I considered debt and savings, the proportion of below-QPAS is almost halved.

In comparison to the “Below-QPAS 1” group, which is based on disposable income, the “Below-QPAS A” group, which is based on consumption, has a relatively higher proportion of members in all age categories.

Past research that attempted to estimate the proportion of older people living with income below public assistance level usually ignored their accumulated wealth and debt. Therefore, we do not know how this proportion would vary when taking into account these factors. It appears that the proportion of older people living with income/consumption below public assistance level is higher than households headed by persons aged 30 to 64, even taking accumulated wealth and debt into consideration. My results are still consistent with the past research.

Now I turn to the next question of how below-QPAS older people are



Source: Author’s calculations from the Comprehensive Survey of Living Condition of the People on Health and Welfare.

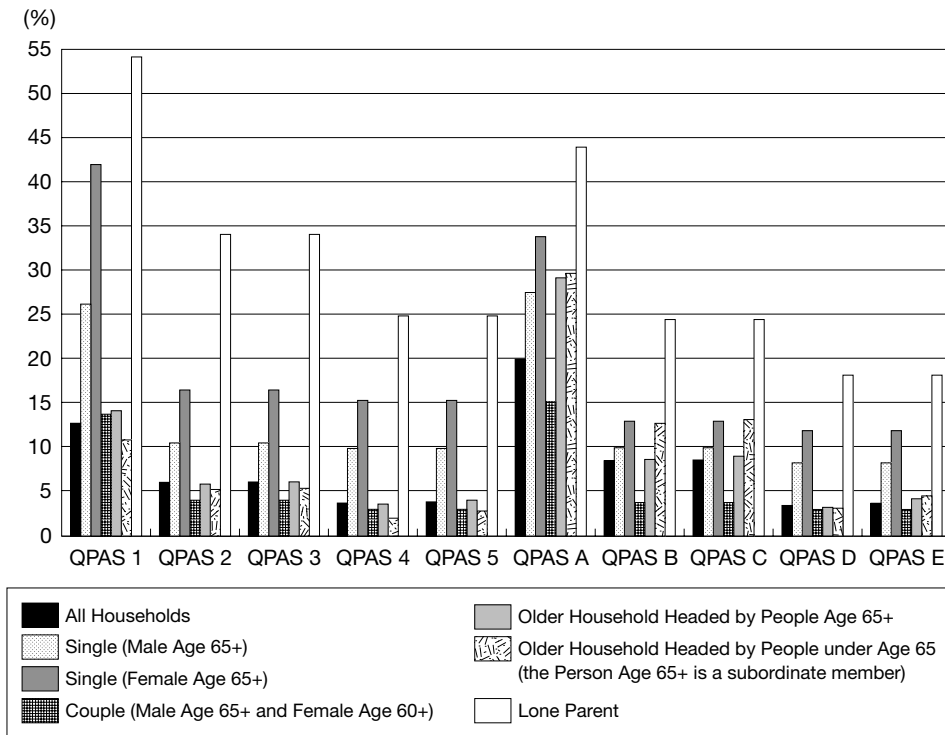
Figure 1 Proportion of below-QPAS households by age of household head (1995)

concentrated by specific type. Figure 2 shows the proportion of below-QPAS by detailed type of older people household.

Obviously, many of the single households belong to the below-QPAS income group. When I ignore the existence of savings (QPAS 1), 40% of the single female older people household are below QPAS. Using QPAS A, which evaluates the consumption level regardless of savings, 30% of single female older people households are below-QPAS. This suggests that this household type is still economically disadvantaged.

In single households only, the treatment of debt does not alter the result, which probably reflects the fact that few people in these households have debts.

In Figure 2 it is also possible to compare single older people households with lone-parent households. The proportion of below-QPAS among lone-parent households is much higher than for single female older people households. As Kido (1985) and Shinozuka (1985) show, lone-parents are still an important target group in terms of public assistance. The differences between QPAS 2 and 4, 3 and



Source: Author's calculations from the Comprehensive Survey of Living Condition of the People on Health and Welfare.

Figure 2 Proportion of below-QPAS households by detailed older household type (1995)

5, B and D, or C and E, imply that lone-parents have a certain amount of debt, and it is crucial for a borderline group of them to treat their savings in net terms.

To summarize my fact-finding in this section, the results indicate that a certain proportion of older people households still belongs to the borderline income group with respect to public assistance. However, the economic position of lone-parent households is even worse than that of older people household types.

4.2. Trends in the Economic Position of the Older People Household

I now investigate trends in the economic position of older people households. I pay special attention to QPAS 1 and A, which apply the most relaxed treatment of savings, and to QPAS 4 and D, which apply the strictest treatment of savings. The differences of below-QPAS proportions are shown in Table 2. The proportions of each household type in 1989 are used as benchmarks. As I mentioned above, there might be a problem concerning a different indexation of

Table 2 Trends of below-QPAS households' proportion

	QPAS 1		QPAS 4		QPAS A		QPAS D	
	'89-'92	'89-'95	'89-'92	'89-'95	'89-'92	'89-'95	'89-'92	'89-'95
All Households	-1.9	-2.8	-0.3	-1.1	-1.8	-2.9	-0.5	-1.1
Household Head Age 20-29	-0.2	-1.6	0.8	-0.8	-0.8	-0.4	-0.4	-0.6
30-39	-3.7	-4.3	-0.4	-0.4	-1.0	-1.1	-0.2	-0.1
40-49	-1.9	-3.3	-0.3	-1.0	-1.3	-2.2	-0.3	-0.8
50-59	-2.4	-3.3	-0.3	-1.4	-2.7	-3.7	-0.5	-1.2
60-64	-0.6	-1.2	0.0	-1.1	-1.7	-3.1	0.0	-0.2
65+	-3.4	-5.7	-2.3	-3.6	-3.3	-7.2	-2.6	-4.3
Single (Male Age 65+)	-13.6	-15.4	-11.7	-15.2	-9.7	-11.6	-6.8	-11.3
Single (Female Age 65+)	-1.1	-6.5	-4.6	-8.8	-3.6	-11.2	-5.0	-9.9
Couple (Male Age 65+ and Female Age 60+)	-4.9	-7.7	-1.3	-2.9	-4.2	-7.4	-1.3	-2.6
Older Household Headed by Age 65+	-2.2	-2.9	-1.3	-0.8	-1.4	-4.3	-2.1	-2.4
Older Household Headed by under Age 65 (Age 65+ is a dependent member)	-4.7	-5.8	-1.0	-1.6	-5.6	-9.6	-0.8	-1.4
Lone Parent	-7.2	-10.5	-3.9	-4.8	-7.9	-10.2	-1.8	-5.5

Source: Author's calculations from the Comprehensive Survey of Living Condition of the People on Health and Welfare.

QPAS from each different household type; I will investigate the different indexation of QPAS for each household type in the next section.

The borderline is getting lower in the later time period across all age groups of household heads, except for households headed by people from age 20 to 29 and people from age 60 to 64. Among the households headed by those from age 20 to 29, the proportion of below QPAS has increased between 1989 and 1992; and for the households headed by those aged 60 to 64, there is no difference among the three periods.

Turning to detailed older people household types, I find that the extent of decline in the proportion of below-QPAS among older people single households is relatively large among the other older people household types. In particular, there is a more than 10% decrease of below-QPAS proportions among single male households and a slightly smaller decrease for single female households. On the other hand, considering the large percentage of below QPAS proportion among lone-parent households, the extent of the decrease is relatively small, when I take savings into account for the QPAS benchmark. However, I have to carefully examine the variety of indexation among different household types, otherwise I misinterpret better indexation as an increasing proportion of below-QPAS households.

4.3. Trends of Indexation and Average Benefit Level

If the growth of the administrative minimum cost of living standard applied by public assistance, which is the basis of QPAS, is lower than growth in wages or the consumer price index or wage growth, the proportion of below-QPAS households automatically declines. Under these circumstances, the real value of QPAS shrinks against the standard cost of living and fewer households would be counted as below-QPAS. On the other hand, with administrative efforts to raise the minimum cost of living standard faster than growth in wages or the consumer price index, the number of people below the borderline would increase.

Table 3 allows us to compare the growth of social security benefits, average disposable income, or administrative minimum cost of living standard against growth in wages or the consumer price index.

The last two columns show the growth rates in 1992 and 1995 compared with 1989 as 100%. If the growth rates of either social security benefits or disposable income were lower than the growth rate of the consumer price index or wages, few would disagree with the conclusion that the benefit level had fallen behind the growth in national prosperity.¹⁷

¹⁷ Ideally, it should also take account of the consumption pattern, which is different for each household type, each income group, and each stage of the lifecycle. In future analysis, I would like to examine the indexation from this viewpoint.

Table 3 Growth of social security benefit

			Average Monthly Benefit (Yen) ³			Growth Rate (%) ⁴	
			1989	1992	1995	1992	1995
Consumer Price Index			—	—	—	8.2	10.3
Wage Growth			—	—	—	9.6	17.4
National Basic Pension	Old-age Pension		31,106	37,296	44,656	19.9	43.6
	Disability Pension		65,462	70,459	75,543	7.6	15.4
	Survivor's Pension		52,814	56,164	60,284	6.3	14.1
Employee's Pension	Old-age Pension		137,978	151,667	169,700	9.9	23.0
	Disability Pension		90,721	96,835	102,542	6.7	13.0
	Survivor's Pension		71,054	77,975	84,445	9.7	18.8
Public Assistance	Livelihood Aid		39,589	46,114	51,044	16.5	28.9
	Housing Aid		10,995	13,510	16,626	22.9	51.2
	Education Aid		6,037	6,484	6,759	7.4	12.0
	Medical Aid		84,910	95,854	108,104	12.9	27.3
Average Disposable Income per Household ¹	Older Household		227,583	254,417	276,833	11.8	21.6
	Household Headed by Under Age 29		245,333	277,167	285,417	13.0	16.3
	by Age 30–39		407,500	471,000	493,000	15.6	21.0
	by Age 40–49		512,583	596,750	627,667	16.4	22.5
	by Age 50–59		563,000	661,833	724,583	17.6	28.7
	by Age 60–69		436,500	506,167	539,167	16.0	23.5
	by Over Age 65		359,417	406,333	439,917	13.1	22.4
	by Over Age 70		331,083	371,750	398,083	12.3	20.2
	Lone Parent (Mother)		189,250	207,500	224,167	9.6	18.5
	Lone Parent (Father)		353,750	416,833	418,333	17.8	18.3
Minimum Living Standard ² per Household	Standard three-member household (Male age 33, Female age 29, and one child age 4)	Area Class 1-1	152,563	166,398	173,867	9.1	14.0
		Area Class 1-2	149,191	159,501	166,627	6.9	11.7
		Area Class 2-1	140,004	152,583	159,391	9.0	13.8
		Area Class 2-2	136,369	145,690	152,151	6.8	11.6
		Area Class 3-1	122,431	133,793	139,915	9.3	14.3
		Area Class 3-2	118,810	126,875	132,665	6.8	11.7
	Household with older members (Male age 63, female age 58, male age 33, female age 29, and one child age 4)	Area Class 1-1	221,973	241,413	252,440	8.8	13.7
		Area Class 1-2	216,562	231,176	241,697	6.7	11.6
		Area Class 2-1	203,155	220,854	230,897	8.7	13.7
		Area Class 2-2	197,743	210,618	220,153	6.5	11.3
		Area Class 3-1	179,358	195,292	204,339	8.9	13.9
		Area Class 3-2	173,937	185,055	193,586	6.4	11.3
	Older Couple Household (Male age 72 and female age 67)	Area Class 1-1	132,953	142,353	147,885	7.1	11.2
		Area Class 1-2	131,448	138,673	143,257	5.5	9.0
		Area Class 2-1	123,320	131,477	136,198	6.6	10.4
		Area Class 2-2	121,856	127,797	131,640	4.9	8.0
		Area Class 3-1	108,702	115,577	119,512	6.3	9.9
		Area Class 3-2	107,268	111,911	115,023	4.3	7.2
	Single Older Household (Female age 70)	Area Class 1-1	97,082	103,416	107,091	6.5	10.3
		Area Class 1-2	96,113	101,492	104,298	5.6	8.5
		Area Class 2-1	90,683	96,042	99,080	5.9	9.3
		Area Class 2-2	89,713	94,118	96,358	4.9	7.4
		Area Class 3-1	79,283	83,653	86,069	5.5	8.6
		Area Class 3-2	78,314	81,723	83,407	4.4	6.5
Lone Parent Household (Female age 37 with one child age 12)	Area Class 1-1	148,313	161,253	168,365	8.7	13.5	
	Area Class 1-2	145,328	155,563	162,397	7.0	11.7	
	Area Class 2-1	137,660	148,897	154,968	8.2	12.6	
	Area Class 2-2	134,676	143,207	149,010	6.3	10.6	
	Area Class 3-1	121,972	131,507	136,562	7.8	12.0	
	Area Class 3-2	118,988	125,821	130,593	5.7	9.8	

Source: Management and Coordination Agency "Annual Consumer Price Index", Ministry of Labour "Annual Report on Monthly Labour Survey", Social Insurance Agency "Annual Operational Report", Ministry of Health and Welfare "Survey Report on Social Welfare Administration Services", "Report on Expenditure for Public Assistance", "the Comprehensive Survey of Living Condition of the People on Health and Welfare", National Council of Social Welfare "Public Assistance Handbook", Health and Welfare Statistics Association "Trends in Social Welfare."

- Note: 1. Here, we apply the definitions of household types used by the Comprehensive Survey of Living Condition of the People on Health and Welfare. In the survey "Older Household" means a household constituted of a male over age 65 and a female over age 60 with or without unmarried child(ren) under age 18. "Lone parent" means a single woman (because of partner's death, divorced, or unmarried) age 20 to 59 (for man age 20–64) only with child under age 20.
2. The minimum living standard is equal to "Residential Category I plus Residential Category II plus Housing Assistance." Seasonal additional amount of Residential Category II, Old-age premium and lone-parent premium are also considered. In the administrative practice of the public assistance, the other premiums (pregnant premium, disability premium, etc.) are considered, although those premiums are ignored in this table. Additionally, a certain amount of working income is deductible and the beneficiaries can use "the minimum living cost plus deductible amount of working income" for their consumption.
3. The minimum living cost is based on the public assistance standard, and therefore these numbers are not average.
4. Growth rate. The benefit in 1989 = 100.

The growth rate of the average benefit of the national (basic) old-age pension was 44% between 1989 and 1995, and the growth rate of the average national disability pension and national survivor's pension exceeded at least the consumer price index in the same period. This tendency, though, is not clear between 1989 and 1992. Indeed, the growth of the average benefit of the national old-age pension exceeded consumer price index growth, but the growth rate of average national disability benefit or survivor's benefit was equal or less than the price index. Therefore, those household types, including female single older people households, seem to have fallen behind national prosperity growth during 1989 to 1992.

The growth of average public assistance per capita also exceeded at least the consumer price index between 1989 and 1995, and education assistance especially exceeded wage growth rate in that period. The average disposable income per household grew at a rate equal to or faster than wage growth, but the degree of growth was smaller among households headed by members aged over 50. Households headed by middle-aged or older people experienced less significant growth in disposable income. Lone-parent households experienced the smallest rate of growth in disposable income, although the rate was still greater than that for wage growth.

The comparisons above indicate that there is no possibility that the social security benefit level was behind the level of national prosperity during the observed periods. For example, the growth rate for the disposable income of households headed by people aged 50 to 59 was 29%, and for those aged 65 and over it was 22%. However, with regard to the extent of the decline of below-QPAS proportions shown in Table 2, the proportion of households headed by those aged 65 and over is larger than the proportion of household headed by members aged 50 to 59. Lone-parent households have the smallest growth of disposable income on average, but the extent of decline of the below-QPAS proportion of lone-parent households is relatively large.

Thus, these observations lead us to the question of how the low growth of minimum cost of living causes the high growth rate of average public assistance. Namely, the growing difference between the real value of the real minimum cost of living standard and the real value of the administrative minimum cost of living standard (public assistance standard) could cause growth in the level of average public assistance benefits. This is because the real public assistance benefit supplements the difference between the administrative minimum cost of living standard and the nominal disposable income plus deductible working income. I therefore investigated the indexation diversity of the administrative minimum cost of living standard among different household types by residential area in the bottom half of Table 3, looking at some typical households.¹⁸ Even for the most

¹⁸ Inflation differs for urban and rural areas and therefore indexation for six residential areas is different. Big cities are coded as class 1-1 areas and most rural areas are coded as class 3-2, and the indexation for class 1-1 areas is always the highest and vice versa.

generous indexation, the increase of administrative minimum cost of living standard is above the consumer price index and below wage growth. This means that the indexation of the administrative minimum cost of living standard can protect against inflation, but it cannot ensure a link to wage growth. This observation is rational, since the indexation method of the administrative minimum cost of living standard is linked with expenditure growth.

Interestingly, the increase of the administrative minimum cost of living standard for the older people couple household and older people single household is relatively lower than that of the standard three-member household, older people household, and lone-parent household. This means that the older people couple household or older people single household would face a shrinking safety net supplied by public assistance in this period. The growth of average pension benefits, though, was higher than the growth of administrative minimum living costs between 1989 and 1995. Considering that the growth rate of the national old-age pension is high and that low-income groups rely heavily on the national old-age pension, the older people households in the low economic position were well targeted by this pension scheme from 1989 to 1995. The significant decrease of the below-QPAS proportion shown in Table 2 could explain this targeting process. Nevertheless, this type of household has a relatively high proportion of people in below-QPAS income groups.

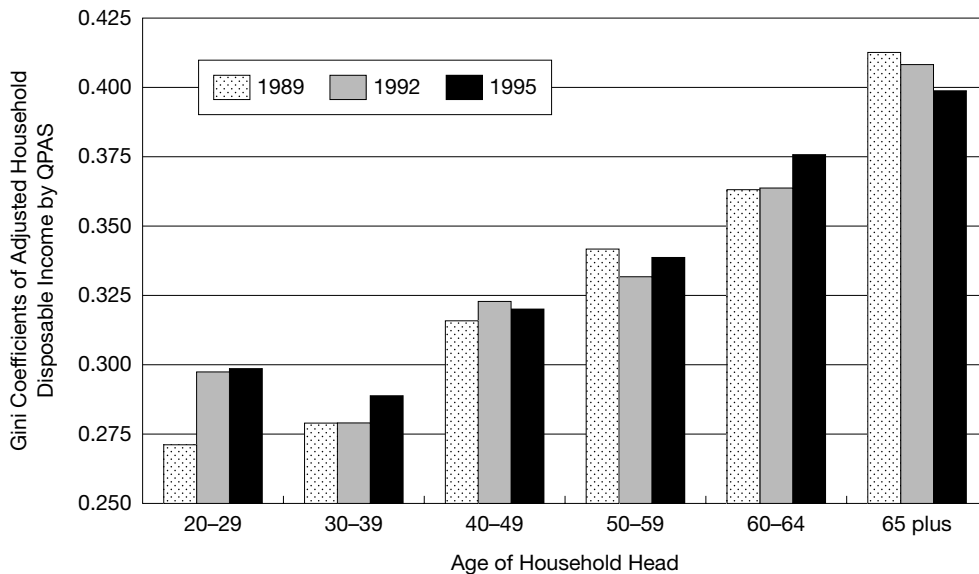
4.4. The Economic Diversity of Older People Households

Now, I turn to the question of income diversity of older people households. To answer this question, I use Gini coefficients, which are sensitive to change in the middle of income distribution.

The disposable income used for calculation of Gini coefficients is adjusted by QPAS. The purpose of this method is to adjust for different household member size and the age structure of household members. The results are shown in Figure 3.

Except for households headed by people aged 20 to 29, older people households have higher inequality. Tachibanaki (1998) implied that increasing Gini coefficients would reflect growing social inequality. However, my results indicate that some component of increasing Gini coefficients would be caused automatically by an ageing society. This observation by “adjusted” disposable income fits with research by the Economic Planning Agency (1999) and Ohtake and Saito (1998), both of which used non-adjusted income.

While Gini coefficients have decreased among household headed by people aged 65 and over, the coefficients have increased among households headed by those aged 20 to 39, and those aged 60 to 64, during the economic recession. There is no significant trend for other households. I applied the same adjustment



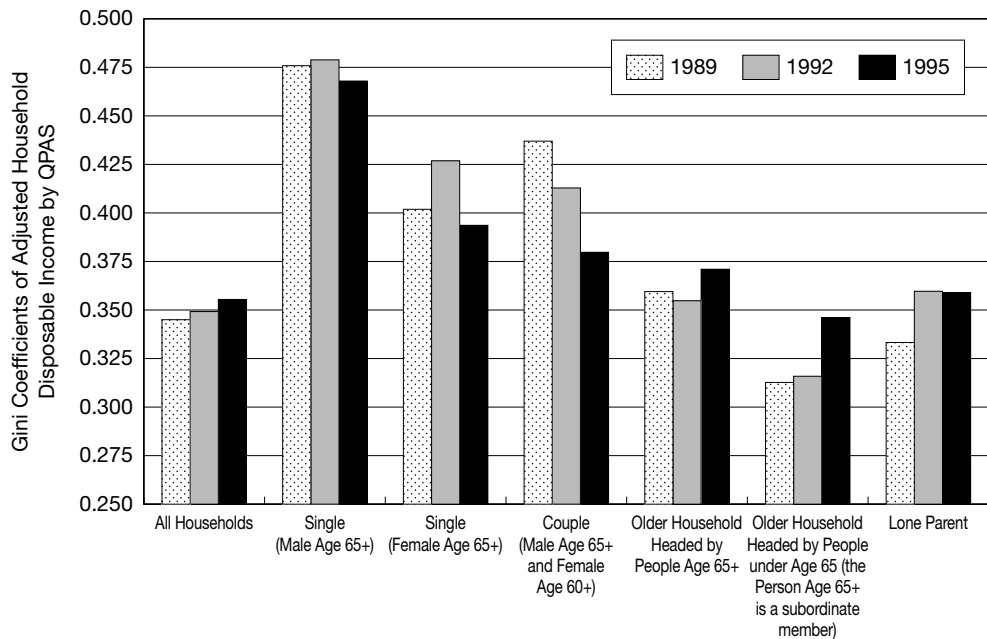
Source: Author's calculations from the Comprehensive Survey of Living Condition of the People on Health and Welfare.

Figure 3 Trends in the Gini coefficients by age of household head

method for calculating the Gini coefficients of detailed older people household types to investigate which detailed older people household type shows a strong trend of decreasing Gini coefficients. The results are shown in the next figure.

The highest Gini coefficient is recorded by the single male household, followed by the single household in 1992 and 1995, and the couple household in 1989. Households including dependent older people have the lowest Gini coefficient.

With respect to trends, the Gini coefficient of the older people couple household has decreased, and that of households with dependent older member(s) has increased. The Gini coefficient of single older people households increased between 1989 and 1992, and decreased between 1992 and 1995. In other words, household types with higher Gini coefficients have a downward tendency, and vice versa. However, it is not appropriate to interpret this result as suggesting that income inequality among older people households is diminishing. That is because the Gini coefficients in this figure indicate only relative income inequality among each household type. For example, many people in the household type actually belong to the lower income group, and there is a possibility that low income inequality could be observed. As I showed above, for the purpose of identifying the lower income group, using below-QPAS is appropriate.



Source: Author's calculations from the Comprehensive Survey of Living Condition of the People on Health and Welfare.

Figure 4 Trends in the Gini coefficients by detailed older household type

In Figure 4, I also showed income inequality among lone-parent households. Lone-parent households exhibit lower income inequality than single female older people household types, and the figure is close to that for all households. Needless to say, the below-QPAS proportion among lone-parent households is high, and therefore the Gini coefficients simply indicate that there is less income inequality among those low-income people. Additionally, it shows that the income inequality among lone-parents has increased.

4.5. Decomposition of Economic Diversity of Older People Households

The Gini coefficients can be decomposed by each income source, using quasi-Gini coefficients of each income source multiplied by the proportion of the income source to disposable income. This decomposition provides more insights on how the trends shown in Figure 3 and 4 can be explained. I use five income sources for decomposition: a) working income (wage, self-employed income), b) social transfers (public pensions, means-tested benefits, and other social security benefits), c) private transfers (periodical payment from relatives, the other private incomes), d) capital incomes (rent, interest, dividend), e) taxes and contributions

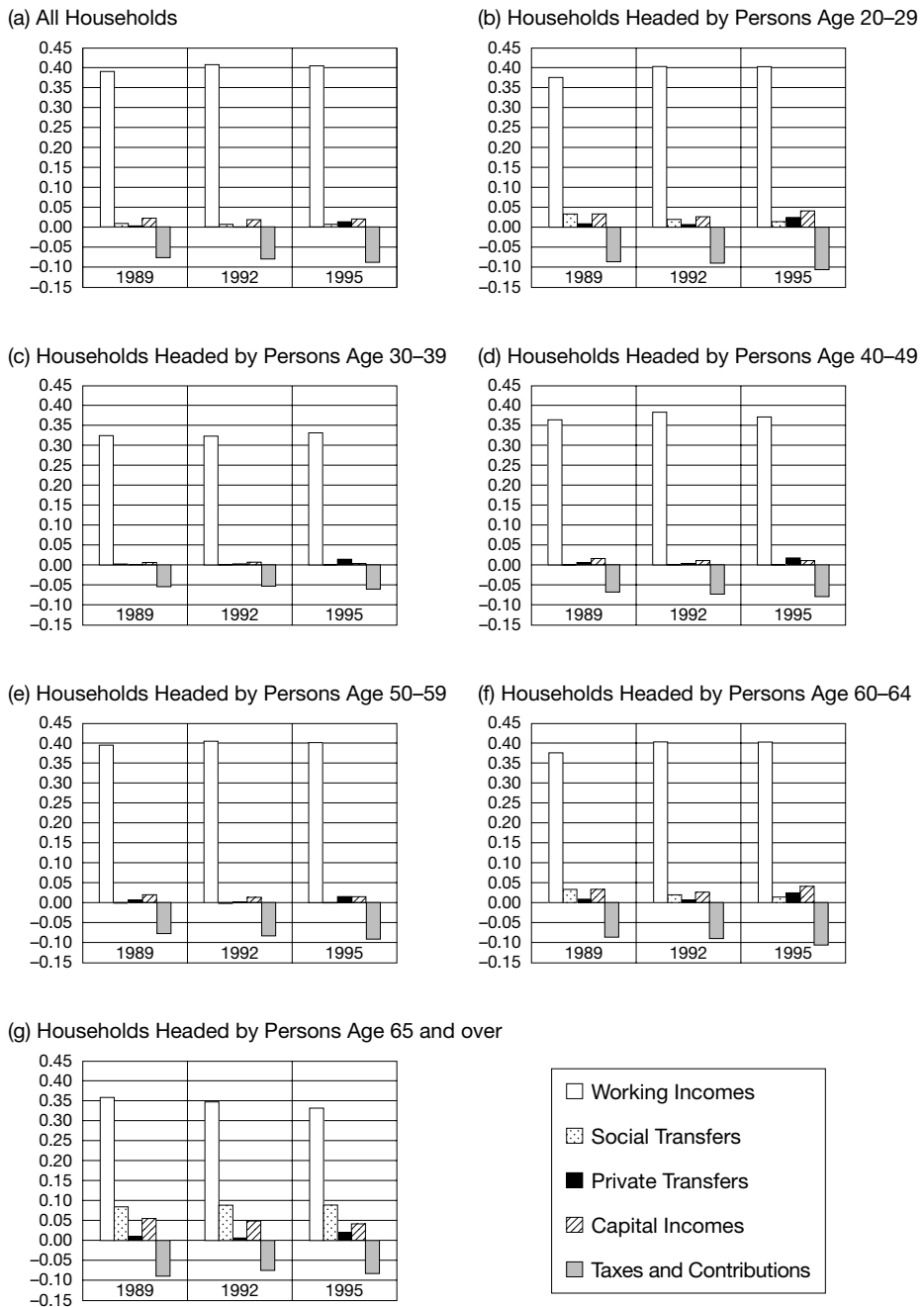
(income tax, residents' tax, property tax, social security contributions). Quasi-Gini coefficients of each income source are calculated to sort each income source in ascending order of disposable income. However, each income source itself is not necessarily sorted in ascending order. For example, households with low disposable income would receive large amount of social transfers. Hence, the term quasi-Gini coefficients is being used.

The sum of the quasi-Gini coefficient multiplied by the proportion of each income source to disposable income is equal to Gini coefficients shown in Figure 3 and 4. Figure 5 shows the result of decomposition for household head age category.

I shall offer some explanation by way of looking at an example taken from the top middle panel for households headed by members aged 20 to 29. In each panel, I show decomposition trends for three time periods. In panel (b), the largest contribution to income inequality comes from working income, indicated by white bars. On the other hand, the other income sources, social transfers, private transfers, and capital incomes, contribute a little to income inequality; taxes and contributions, indicated by black bars, lower the income inequality, as I expected. With regard to trends, the contribution of working income has increased between 1989 and 1992, although there is no significant change between 1992 and 1995. These observations are common to the households headed by the other age group up to age 59.

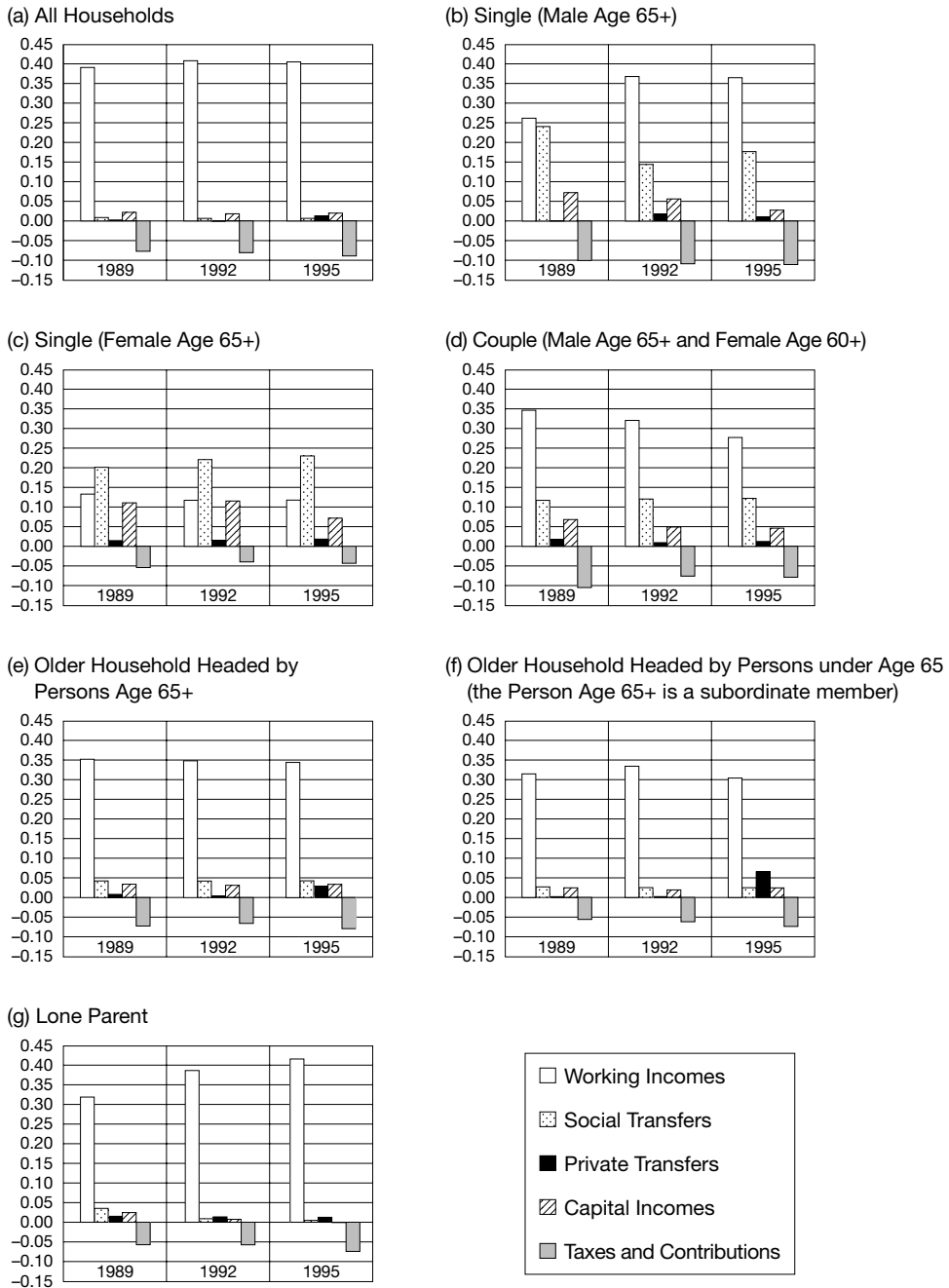
Those households headed by members aged 60 to 64, and 65 and over, have different features. In terms of households headed by those aged 60 to 64, while the contribution of working income has been slightly larger, the contribution of social transfers has become smaller. On the other hand, among households headed by people aged 65 and over, the contribution of working income and capital income has decreased between 1989 and 1995. I already mentioned that the Gini coefficients of households headed by those aged 65 and over have decreased and this can be explained by the declining contribution of working incomes and capital incomes. This result is consistent with the fact that the central bank had lowered the interest rate to zero, that high unemployment rates induce older workers to retire, and that more older people prefer to live independently from their adult children and therefore receive less working income from them. The contribution of social transfers is greater among households headed by people aged 65 and older. This could be explained by the income-related public pension scheme (Employees' Pension and Mutual Aid Association Pension) in Japan. Applying the same method, I show the results of the decomposition of Gini coefficients for detailed older household type. The decomposition for lone-parent household is also available by panel (g) in Figure 6.

It is self-explanatory that the structure of inequality differs by each detailed older people household type. Among single older people household, the



Source: Author's calculations from the Comprehensive Survey of Living Condition of the People on Health and Welfare.

Figure 5 Decomposition of the Gini coefficients by income resource and age of household head



Source: Author's calculations from the Comprehensive Survey of Living Condition of the People on Health and Welfare.

Figure 6 Decomposition of Gini coefficients by income resource and detailed older household type

contribution of social transfers is relatively large, but the contribution of working income is quite different between single female households and single male households. I showed that income inequality among single male households is high in Figure 4, and this feature is produced by the high diversity of sources of working income amongst that group. In addition to that, Figure 6 also shows that the decreasing contribution of capital income is more obvious among single male households. This result is conceivably the consequence of extremely low interest rates. With respect to female single older people households, it is desirable to pay attention to the fact that social transfers are the largest contributor to inequality and contributions have increased. Income inequality has decreased among couple older people households, and it can be mainly explained by the decreasing contribution of working income. The income inequality structure of older people households headed by members aged 65 and over, and that of households with dependent older people member(s) aged 65 and over, are the same for that of all households. Nevertheless, the contribution of working income among households with dependent older people aged 65 and over is smaller than that of older people households headed by members aged 65 and over. Concerning lone-parent households, panel (g) shows that the increasing contribution of working income is the main reason of increasing income inequality among households of this type. The negative contribution of taxes and contributions offset a part of it.

4.6. Contribution of Working Income to Diversity

It would be desirable to emphasize again that working income is the largest contributor to income inequality among older people households. According to Fukawa (1995), who presents a comparison between the composition of retirement income in Japan and the composition of retirement income in the United States by income quintile: the proportion of working income is generally high in Japan and the proportion of capital income is generally high in the United States. The importance of working income for older households in Japan was also confirmed by Disney et al. (1998) in an international comparison which covers conditions in Australia, France, Germany, Italy, Japan, the Netherlands, Sweden, the UK and the USA. Relatively high inequality among older people households in Japan is conceivably caused by the high labour force participation rate of older people. Of course, the living arrangements in Japan, which provide for intra-household transfers from working adult children, and therefore transfers of working income to older people members, provide a partial reason. However, as shown in Figure 6, the contribution of working income is also the largest contribution among those households without adult children.

For example, let us assume that there are two countries. In country A, half of

the older people are retired with pensions, and half of the older people are still working. In country B, most of the older people are retired with pensions. The income inequality amongst older people in country A would be much higher than the income inequality in country B, unless income taxes, social security contributions, or social transfers did not have any redistributive factor. Then, the question of which country is more desirable as an ageing society, is a normative question. Especially in Japan, many of the older people want to continue working, and therefore a high labour force participation rate in Japan can be regarded as an appropriate situation.¹⁹ Undoubtedly, it is still necessary to pay attention to the fact that female older people single households have low incomes and, therefore, this household type boosts the inequality indicator.

5. Conclusions

In my analysis, I examined the low-income group, income inequality among each household type, and the decomposition of inequality by five income sources, using QPAS with administrative minimum cost of living standard as an adjuster and a benchmark. The trends in the social security benefit level and its indexation were also examined. However, there are some provisos for my analysis in terms of using QPAS. QPAS is not exactly the same as the administrative minimum cost of living standard, since it does not consider several premiums except the lone-parent premium, the old-age premium, and the childcare premium. The disability premium is a relatively large amount, though I could not estimate it because of the limited information available from the data. Additionally, several types of assistance, which are in-kind benefits and provided by the public assistance scheme, tax exemptions, and social security contribution exemption, are ignored, and income mobility among people on the borderline was not examined. The real economically disadvantaged people, therefore, might not be captured appropriately in my analysis.

However, the more important criticism of this analysis would be that I use the administrative standard, and that usage itself could be called into question. Nevertheless, public assistance, which is the basis of QPAS, is a fundamental element of the Japanese social security system, as it functions as a safety net. I therefore believe that empirically capturing the people below the borderline for the safety net using the QPAS measurement would provide the basic information for future reform on social security. The information on potential beneficiaries of

¹⁹ According to Ministry of Labour (1996), 50% of males aged 65 to 69 are workers, and 40% of non-workers still wish to work.

public assistance could provide some insights on how it is impossible to cut benefit levels of public pensions generally without causing more beneficiaries to rely on public assistance.

I offer the following remarks on social policy implications. First, the below-QPAS proportion among female older people single households exceeds 10%, and among the lone-parent households that proportion is much higher. Considering the ageing society and increasing divorce rates, these two household types are still an important group for social policy to target. Second, while income inequalities among older people households are decreasing, the income inequality among lone-parent households is growing as a result of the increasing contribution of working income to inequality. This suggests that social policy needs to take account of the special needs of lone-parents for working opportunity. Third, the income inequality among households headed by older people is higher than that among households headed by younger people and people in middle age, although working income is still the main contributor. Accordingly, high-income inequality among older people is not a social problem, as it follows on from the high labour force participation rate of older people. Fourth, the contribution of capital income-to-income inequality has decreased between 1989 and 1995 among most types of household. The extremely low interest rate, followed by the latest economic recession, conceivably caused this phenomenon. Consequently, if the interest rate rises in the future, the contribution of capital income to inequality would increase again. Fifth, the main contributor to inequality among single female households is the social transfer, and this would suggest that there is some room for targeting that group.

Last, the indexation of administrative minimum living costs used for public assistance is higher than the growth in the consumer price index, although lower than wage growth rate. The indexation also varies for different household types and residential areas. The indexation of the administrative minimum living cost for single older people household or couple older people households is lower than that of the standard three-member household. The latest public pension reform, which was enacted in April 2000, modified the indexation method of the public pension. After the reform, once the pension benefit is awarded, the benefit level will be increased only in accordance with the consumer price index. Prior to this reform, the awarded pension benefit was also indexed to the growth rate in net wages every five years. This change of indexation by the reform might gradually bring the importance of public assistance into relief.

However, the special indexation rule will be applied when the benefit level hypothetically indexed by the old rule exceeds a certain proportion²⁰ of the

²⁰ What is “the certain difference” is not clear in the latest reform, though the actuarial revaluation prior to the reform suggests that it would be 5–20%. Political debate would also alter this range.

benefit level actually indexed by the new rule—and the average benefit level of the national basic pension has significantly increased. Therefore, it is yet unclear whether the number of potential beneficiaries of public assistance will increase in the future. In terms of the general policy implications for public pensions, how to precisely target specific older people households, and how to allocate the tightening pension resources in a way that takes account of other sources of retirement income that are available and the diversity of the needs of older people households could be the key questions for the next pension reform.

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Appendix Composition of household type

a. All Households = 100%

	1989	1992	1995
All Households	100.0	100.0	100.0
Households Headed by Persons Age 20–29	7.8	8.3	8.2
30–39	18.3	15.5	14.0
40–49	25.6	24.4	22.3
50–59	23.3	22.7	22.2
60–64	9.1	10.3	10.5
65+	15.8	18.8	22.9
Single (Male Age 65+)	0.7	0.8	1.1
Single (Female Age 65+)	3.0	3.6	4.2
Couple (Male Age 65+ and Female Age 60+)	5.2	6.6	8.0
Older Household Headed by Persons Age 65+	6.9	8.0	9.6
Older Household Headed by Persons under Age 65 (Members Age 65+ are subordinates)	14.2	12.4	11.5
Lone Parent	1.2	1.2	1.0

b. Household with Member(s) Age 65 and over = 100%

	1989	1992	1995
Single (Male Age 65+)	2.3	2.5	3.3
Single (Female Age 65+)	10.0	11.4	12.2
Couple (Male Age 65+ and Female Age 60+)	17.3	21.0	23.1
Older Household Headed by Persons Age 65+	23.1	25.5	27.9
Older Household Headed by Persons under Age 65 (Member Age 65+ are subordinates)	47.3	39.6	33.4

Source: Author's calculations from the Comprehensive Survey of Living Condition of the People on Health and Welfare.

Note: As some household types used in our analysis are slightly different from the original survey, the numbers in this table would be different from the official tabulations reported by Ministry of Health and Welfare.