

disadvantageous position in the payment of medical costs. As this case shows, it seems to be important that when we examine the situation of medical expense payment, we check not only the condition of such payment and the payment system but also gaps in income, the financial source for such payment. Thus, this paper attempts to analyze the present state of income differentials, which are behind gaps in the ability to pay medical expenses, by the method allowing international comparison, using the latest statistics available.

2. The data, definition of income and other matters

(1) The data

We used the questionnaires of the MHLW's "Comprehensive Survey of Living Condition of the People on Health and Welfare (income questionnaires)"³ in 1995 and 2001, and re-totaled the data by the method mentioned later. Because the income questionnaires for these studies investigated income in the previous year, the income data we use for analysis are those for 1994 and 2000. In the "Study on the Policy to Build a Vital and Affluent Aging Society," a study project supported by the Grant-in-Aid for Scientific Research from the Ministry of Health and Welfare (MHW; predecessor of the MHLW) (Study Project for Promotion of Policy Sciences) for fiscal 1999, the data in 1986 (income data in 1985) were re-totaled by the same method as the one used in this paper. We were able to use the results of this re-totalization, too, which allow us to go back to 1985 in our analysis of the trends of income differentials.

(2) Definition of income and income gap indicators

In this paper, we obtained indicators regarding income levels and income

³ The "Comprehensive Survey of Living Condition of the People on Health and Welfare" aims at investigating the basic matters of people's life, such as health, medical service, welfare, pension and income and at obtaining fundamental data for the planning and implementation of health, labor and welfare policies. Questionnaires on household and income are conducted every year. In every three years, questionnaires on savings and health are added to these two questionnaires as large scale survey. The survey in 2001 was a year of the large-scale survey, and questionnaires on long-term care were newly conducted in addition to those for households, income, health and savings. In the 2001 survey, the "household questionnaires" covered about 280,000 households, and the "income questionnaires," about 40,000 households.

differentials by defining income based on the specifications adopted by the OECD's "Income Distribution Project," "Luxembourg Income Study" and other studies. We used this definition to obtain income difference indicators and to compile necessary tables.

First, the subjects for our analysis are individual persons and so we decided to use disposable income per capita (household member). This is because all payments from a family budget, including medical expenses, are made from disposable income, the amount of income after the taxes and social insurance premiums have been deducted from it. Another reason is that if we adopt personal income for our analysis, we will fail to notice the effect of income transfers in the household from other family members. When calculating disposable income per capita, we used the equivalence scale ⁴ to take account of differences in the size of households to which individuals belong. Adopting 0.5 as the equivalent value of elasticity, we calculated the amount of disposable income using the following equation:

$$W = D/S^{0.5}$$

(W: disposable income per capita; D: disposable income of the household; S: number of household members; 0.5: equivalent value of elasticity)

We used five types of components of the income and other elements that compose disposable income: (1) employment income; (2) business income; (3) property income (interest and dividends, house and land rents, other private transfers); (4) social security benefits (public pensions, including public employees' pensions, other social security benefits); and (5) direct taxes (income tax, inhabitant tax, property tax) and social insurance premiums. For (1) employment income, we sometimes subdivided it into the employment income of the head of the household, the head's spouse, and other household members whenever needed for analysis.

Disposable income is the sum of (1) to (4) less (5). To examine the effect of income redistribution by direct taxes and social security benefits, we used the concept of

⁴ For further details, see Atkinson (1995).

"market income" defined as the sum of (1) to (3), in addition to that of disposable income. Composed of the earnings resulting from the person's employment and from the management of his or her property and private transfers, such as allowances and corporate pension benefits, market income is the income that excludes the effect of direct taxes and social security benefits.

Then, we calculated three types of indicators of income differentials: the Gini index, MLD (mean log deviation) and SCV (squared coefficient of variation). While the Gini index is the best known indicator of income difference, MLD can conduct decomposition paying attention to population structure, thus allowing the calculation of income differentials according to the contribution of each age group.⁵ SCV can carry out decomposition according to income type and can examine the "effect of social security benefits on income difference of the elderly." The equations for calculating these indicators are as follows:

(a) GINI index:

$$Gini = \left(\frac{2}{\mu \cdot n^2} \cdot \sum_{k=1}^n k \cdot W_k \right) - \frac{n+1}{n}$$

(b) MLD:

$$MLD = \frac{\sum_{k=1}^n \ln \left(\frac{\mu}{W_k} \right)}{n}$$

⁵ This indicator can also conduct decomposition of changes in income differentials using the decomposition method developed by the U.S. Department of Commerce (1993). Analyses using this method include those made by Kojima (2001) and Kojima (2003).

(c) SCV:

$$SCV = \frac{\text{var}(W_k)}{\mu^2} = \frac{\frac{1}{n} \sum_{k=1}^n (W_k - \mu)^2}{\mu^2}$$

Note: W_k is income per person of Individual k , n is the number of household members, and μ is the arithmetic average of income per capita. For W_k^* of MLD, the income of those whose disposable income is less than 1% of the average disposable income is regarded as 1% of the average.

Besides these income difference indicators, we calculated the poverty rate, too. "Poverty rate" means the percentage of those who earn income below the given income level (poverty line) to the population. While the poverty line is defined as 50% of the median of disposable income in most cases, there are some cases where 30%, 40% or 60% of the median is used. In this paper, we used 50% of the median of the equivalent disposable income in our analysis. ⁶

(3) Data cleaning etc.

To eliminate the effect of outliers, we conducted the cleaning of the data collected. As the criterion for this data cleaning, we adopted the rule: "to exclude the households that earn income exceeding three times the average of total household income and its standard deviation." In the case where the household has extremely high income, it may make an excessive income return, and as a result income differentials can be evaluated too great. We also excluded the samples whose disposable income was unknown, and we treated the samples with negative disposable income as those having no income.

In addition, we excluded the households having any member whose age was unknown and the single-member households whose head was younger than 18 years

⁶ For the definition of poverty rate and the measurement of the poverty rate of the elderly, see Yamada (2003).

because we had to analyze the samples according to population and household structures.

Consideration was also given to price rises so as to make time-series analyses. More specifically, the income in 1994 and 2000 was converted into that at 1985 prices using CPI (consumers' price indexes). Income in 1994 was deflated by 13%, and income in 2000 by 14%.

3. Basic Analysis

First, let's look at the two basic attributes, population and household structures. The percentage of those aged 65 years and over was 10.5% in 1985, 16.0% in 1994 and 21.1% in 2000. Aging has been in progress. The average household size was 3.44 persons in 1985, 3.02 persons in 1994 and 2.86 persons in 2000, which indicates that the household size became smaller consistently. The percentage of those belonging to the elderly's households (those whose head is 65 years and over) also increased from 13.1% in 1985 to 20.4% in 1994 and to 26.8% in 2000, showing that household structure has been aging, too.

Next, the average of equivalent disposable income was ¥2,324 thousand in 1985, ¥2,759 thousand in 1994, and ¥2,649 thousand in 2000; due to economic recessions in recent years, the income in 2000 was smaller than that in 1994. But the income in 2000 was greater than that in 1985 by ¥325 thousand. By age group, the average income of those from 18 to 64 years of age was ¥2,430 thousand, ¥2,926 thousand, and ¥2,821 thousand in these years, which was higher than that for all the age groups by about 4 - 5%. The figures for those from 65 years and over were ¥2,134 thousand, ¥2,435 thousand, and ¥2,379 thousand, which was about 90% of the income of all the age groups. These statistics show that the average income level of the elderly compared favorably with that of all the age groups and with that of active generations.

[Table 1 Basic Result of the data]

4. Analysis of situation of income differentials and effect of income redistribution schemes

(1) Situation of income differentials

(a) Differentials in disposable income

The situation of income difference in Japan as shown by the Gini index on a disposable income basis is 0.314 in 2000. Because the figure was 0.278 in 1985 and 0.295 in 1994, it can be said that the index was on an upward trend in these years. The other two indicators show similar tendencies, too. Data for later years also show that the income differentials have had increasing trends in terms of income per capita.⁷

By age group, the index in 2000 was 0.310 for those between 18 to 64 and 0.338 for those aged 65 and over. These figures suggest that younger generations have a smaller income difference and the elderly have a greater difference as compared with all the age groups. The similar trends were observed in 1985 and 1994, and it is noteworthy that the elderly had higher Gini indexes than all the age groups: the index of the elderly was 0.340 in 1985 and 0.341 in 1994 while that of all the age groups was less than 0.3 in these years. Another characteristic is that whereas the Gini index of all the age groups and those from 18 to 64 tended to increase, that of those aged 65 and above dropped though only a little. This suggests that the elderly have greater income differentials than all the age groups and younger generations but their income difference have a downward tendency.

[Figure 1 Gini Index in Japan by type of income and age]

[Table 2 MLD & SCV in terms of disposable income in Japan]

(b) Income differentials on a market income basis

The values of the Gini index on a market income basis, which excludes the effect of income transfers owing to direct taxes and social security benefits, are higher than those on a disposable income basis. The index of all the age groups was 0.410 in 2000, higher than that on a disposable income basis by about 0.1. The figure was 0.317 in 1985 and 0.369 in 1994, which are higher than that in the respective

⁷ For similar analyses using past data, see the Economic Research Institute, Economic Planning Agency (1998) and Kojima (2001).

corresponding years' Gini index on disposable income basis.

Similar tendencies can be observed in the indexes by age group, and those aged 65 and over have especially higher Gini index values on a market income basis. In 2000, the index was 0.362 for those between 18 to 64 and 0.629 for those aged 65 or over, the latter being about 1.7 times the former. The figure was 0.309 and 0.473 in 1985 and 0.338 and 0.575 in 1994, respectively. As these figures indicate, income difference in terms of market income is wider than those in terms of disposable income, and this is especially noticeable among the elderly. The factors behind this fact will include the labor participation and the household structure among elderly people. First, when they attain retirement ages, people mostly retire from work, but the percentage of those who continue working is considerably high.⁸ This results in greater income differentials between the elderly with employment income and those without. On the other hand, the elderly in Japan mostly belong to three-generation households.⁹ Because of this, even if the elderly member of a household has no income himself or herself, he or she is regarded as earning income when his or her child living together with him or her has income. As a result, difference will arise between the elderly living together with their children and those not. It seems that these factors are combined to cause the income difference of the elderly on a market income basis to widen very greatly (Figure1).

(2) Effect of income redistribution

Market income and disposable income differ from each other in that the latter includes direct taxes and social security benefits and the former does not. Gini index

⁸ The labor participation among the elderly in Japan was 20.2% in 2003 (based on the "Labor Force Survey" by the Statistics Bureau of the Ministry of Public Management, Home Affairs, Posts and Telecommunications).

⁹ The ratio of the elderly who lived together with their children was 69.0% in 1980. Although the ratio has tended to decrease thereafter, it was still 47.1% in 2002 for about a half of the elderly population (based on the MHLW's "Comprehensive Survey of Living Condition of the People on Health and Welfare").

values are greater on a market income basis than on a disposable income basis, which is especially noteworthy among the elderly. This fact indicates that taxation and social security schemes have the function of income redistribution. Thus, we analyzed this income redistribution effect by defining the rate of change between the Gini index in terms of market income and the index in terms of disposable income ((market-income based Gini index) – (disposable-income based Gini index)) as the "improvement rate."

The improvement rate in 2000 was 23.5%, which shows that taxation and social security schemes made considerable contribution to the reduction of income differentials. The rate was 12.3% in 1985, 20.3% in 1994, the effect became stronger as time passed. This shows that, in the situation where income differentials are widening year after year, the role of taxes and social security benefits in income redistribution is growing more and more important.

By age group, the improvement rate of those from 18 to 64 is lower than that for all the age groups, but that of those from 65 years and over is remarkably higher. In 2000, while the figure was 14.3% for those between 18 and 64, it was 46.3% for those aged 65 and over, or nearly twice that for all the age groups. In 1985 and 1994, the figure was 10.7% and 14.4% for those from 18 to 64, respectively, and 28.1% and 40.8% for those of 65 years and over, considerably higher than the former group. This suggests that taxation and social security schemes had great effect on the elderly's income redistribution. This is probably because the elderly have higher Gini index values on a market income basis and because social security benefits, including public pensions, are paid mainly to the elderly, especially to medium- and low-income peoples.

[Figure 2 Income redistribution effect in Japan (Improvement rate by age)]

5. Background of income difference in Japan

(1) What type of income does contribute to income difference in Japan?

Income difference is on an upward trend in Japan. Income has several different types of sources in addition to employment income, such as property income and social security benefits. Some of these incomes will provide mainly to higher income peoples, and others, to low-income peoples. Therefore, if we analyze the

background of income difference from the point of income type, we may find what kind of income contributes to widen income difference most. Thus, we conducted the decomposition of the SCV to find the degree of contribution of each income type to increase in income difference.¹⁰

Employment income showed the greatest contribution to the income difference (shown by SCV) of all the age groups: it explained 102.0% of the income difference in 2000. The employment income of the head of household had an especially high degree of contribution, explaining 64.3% of the income difference. The contribution of business income and property income was 7.7% and 8.1%, respectively. The figure for social security benefits and direct taxes/social insurance premiums was 1.7% and -19.5%, respectively, the latter being a negative contribution. Employment income had a high degree of contribution in 1985 (104.7%) and 1994 (108.5%), too. These figures are on similar levels to that in 2000, indicating that employment income had stable degrees of contribution in these years. For other types of income, while the contribution of property income tended to increase (5.3% in 1985; 7.7% in 2000), the negative contribution of direct taxes and social insurance premiums was on a downward trend (-22.2% in 1985; -19.5% in 2000). The probable reason for this is that the tax burdens were lightened by the reform of the taxation system for the latter.¹¹

By age group, those from 18 to 64 show a similar tendency to all the age groups, but a unique trend can be observed for those from 65 years and over. While employment income plays the most important role as in other age groups, its degree of contribution in 2000 was 77.9%, which is lower than the figure for all the age groups by about 30 percentage points. This figure is lower than 92.0% in 1985 by 14 points, suggesting that the contribution of employment income to the elderly's income

¹⁰ For a detailed description of the technique for decomposing the SCV according to income type, see A.F. Shorrocks (1982).

¹¹ In 1986 (before the drastic taxation reform in 1987), the rates of income tax and individual inhabitant tax were divided into 15 and 14 classes, respectively, and the highest rate for the two tax types was 88%. At present, these taxes have 4 and 3 classes, and the highest rate has been reduced to 50%. Reductions in income tax at a fixed rate have also been made, lessening the burden of direct taxes.

differentials decreased in these years. For property income and business income, the degree of contribution in 2000 was 15.8% and 12.0%, respectively, which were higher than the figures for all the age groups by several points, and tended to grow higher as time passed. The contribution of social security benefits and taxes/social insurance premiums was 11.8% and -17.5%, respectively. While the latter has a smaller negative figure than all the age groups by several points, the former is higher than all the age groups by about 10 points. In addition, property income and social security benefits tended to have higher degrees of contribution with the passage of time. Behind this is probably the fact that the elderly's main income source is social security benefits, such as public pensions; these benefits have the effect of lessening income differentials, but because employees' pension (Kosei Nenkin) has a remuneration-related part, there arise gaps in the amount of the benefits payment¹².

[Table 3 Decomposition of SCV by type of income in Japan]

(2) Which age group does contribute to income difference in Japan? (relations to population aging)

The population in Japan has been aging, and elderly people have greater income difference than all the age groups. Because of this, it can be supposed that the elderly make considerable contribution to the widening of income difference. To examine this degree of contribution quantitatively, we decomposed the MLD, one of the indicators of income differentials, into three age groups (0-17, 18-64, 65 and over) and calculated the degree of contribution for each of these age groups.

In the figures for 2000, the contribution of those of 65 and over was 23.9% of the MLD, which is greater than the percentage of those aged 65 and over to household members (21.1%). Because the figure for this age group in 1985 was 16.3% (the percentage of this group in the household: 10.5%), it is evident that as the population was aging, the elderly's contribution to income differentials increased.

¹² The distribution of the amount of the elderly's pensions has a peak in the ¥400 - 600 thousand class, but there are many who receive ¥3 million or more, too (based on the "White Paper on Health and Welfare 2000").

By contrast, those between 18 and 64 had the highest degree of contribution in 2000 (59.4%), but this figure was 61.4% in 1985, showing that the contribution of this age group was on a downward trend. The figure for those below 18 years declined from 21.0% in 1985 to 15.0% in 2000, reflecting declining birth rates. The reason for this is probably the fact that as the elderly with wide income difference increased, their contribution to the entire income differentials became greater. Thus, we estimated the degree of contribution of aging and changes in the elderly's income differentials to changes in the entire income difference. Of the change in the MLD from 1985 to 2000 of 0.050, 0.008 can be attributed to the population structure (aging) and 0.042, to other factors, including income differentials, the former accounting for 16.1% of the change in income differentials and the latter, 83.9%. As these figures indicate, the elderly's explanatory power became greater as a factor for income difference and their change.

[Figure 3 Decomposition of MLD and Population by age group in Japan]
[Table 4 Decomposition of change in income difference in Japan]

6. Poverty rate in Japan

The existence of income difference means that some of people will fall into poverty. While poverty has a number of different definitions, we will here examine the trend of the poverty rate defined earlier. The poverty rate (poverty line = 50% of the median of equivalent adjusted disposable income for each year) in 2000 was 15.3% on a disposable income basis, which is higher than 11.9% in 1985 and 13.7% in 1994. On the other hand, the poverty rate on a market income basis (poverty line is the same as above: 50% of the median of equivalent adjusted disposable income for each year) was 24.1% in 2000. The rate was on an upward trend in this case, too: 12.5% in 1985 and 19.1% in 1994. The figures on a market income basis were greater than those on a disposable income basis, and the difference in 2000 was as large as about 10 percentage points. If there are income transfers by taxes and social security schemes, those who fall into poverty will increase. From another point of view, it can be said that taxes and social security schemes have the function of reducing poverty.

The poverty rate was higher among the elderly. The rate on a disposable income in 2000 was 13.5% for those from 18 to 64 and 21.1% for those of 65 years and

over. The figures were 10.6% and 23.0% in 1985 and 11.9% and 22.9% in 1994, respectively. As these data show, the elderly had higher poverty rates, which was consistent in these years. One characteristic of the elderly's poverty rate is that there were remarkable differences between the rate on a market income basis and that on a disposable income basis. In 2000, the former was 56.0% and the latter, 21.1%, with a difference of about 35 percentage points. Considerable gaps were observed in 1985 and 1994, too: 35.5% vs. 23.0%, and 49.4% vs. 22.9%. These large differences indicate that the poverty-reducing function of taxes and social security schemes worked well, and this tendency is noticeable for the elderly in Japan.

[Table 5 Poverty rate in Japan]

7. Income difference by type of household

In Japan, most elderly people live together with their son's (or daughter's) family, which is one of the characteristics of the living arrangement of Japanese elderlies.¹³ This means that the household structure in Japan has a greater variety than that in other countries. Such household structures will have some influence on the economic status and income difference. Thus, we would like to outline the state of income difference by type of household. We classified the type of household according to the age of the head of household (whether or not the head was 65 and over), the age of household members (whether or not they were 18 and over), and whether or not the household had working members. For example, the household having a head below 65, no child and one working person is one-person household of a young working person.

(1) Income levels and the distribution of income by type of household

Noticeable differences can be observed in income levels by household type.

¹³ The "White Paper on Aging Society 2002" describes in a column the results of the re-totalization of the data of the "International Comparison Study on the Life and Opinions of the Elderly," conducted in 2001 by the Cabinet Office, for international comparison of the elderly's living arrangement in Japan, South Korea, U.S., Germany and Sweden. According to the column, Japan and South Korea had many three-generation households, but these households were rare in the other countries.

Among the households whose head was younger than 65, equivalent adjusted disposable income per capita was high in the households having an adult, no child and one working person (equivalent to the one-person household of a young working person), in the households having two or more adults, no child and two or more working persons, and in the households having two or more adults, no child and one working person (equivalent to the households of a married couple and to those of a married couple and their parent(s)). Among the households whose head was 65 and over, those having two or more adults and two or more working persons (equivalent to three-generation households having two or more employed persons) had high equivalent adjusted disposable income per capita. The disposable income of these types of households was ¥2,694 thousand, ¥3,342 thousand, ¥2,716 thousand and ¥2,875 thousand, respectively.

On the other hand, among the households headed by younger than 65, income was low in the households having an adult, no child and no working person (one-person household of a young person having no job), in the households having an adult, a child or children and working person (one parent household with a job), and in the households having an adult, a child or children and an no working person (one parent household without a job). Among the households headed by 65 and above, those having an adult and no working person (equivalent to, for example, one-person household of an elderly without working person, the households composed of an elderly not working person and a child or children (younger than 18) had low equivalent disposable income per capita. The disposable income of these types of households was ¥1,214 thousand, ¥1,310 thousand, ¥1,197 thousand and ¥1,394 thousand, which are about a half the income of the high-income earning households mentioned above.

Next let's look at the distribution of household members according to their income levels by type of household. To describe the results simply, the income levels are classified as follows. In the first to third deciles of income were regarded as those belonging to the low-income group, those in the fourth to seventh deciles, as those belonging to the medium-income group, and those in the eighth to tenth deciles, as those belonging to the high-income group. Because the deciles of income were

divided based on all the age groups, the percentage of the household members is 30% for the low-income group (three deciles), 40% for the medium-income group (four deciles), and 30% for the high-income group (three deciles). The results show that there are the household structures having many members belonging to the low-income group and those not. Among the households whose head was younger than 65, the households with many low-income members were those having an adult, no child and no working person (one-person household of a young no working person), those having an adult, a child or children and no working person, those having an adult, a child or children and a working person (one parent household), and those having two or more adults, a child or children and no working person (households of not working persons having a child or children). Among the households whose head was 65 years and over, the households with many low-income members were those having an adult and a working person (one-person household of an elderly person or those composed of an elderly person and a child or children (younger than 18) and those having an adult and no employed person (one-person household of no working elderly person or those composed of no working elderly and a child or children (younger than 18)). The percentage of low-income members in these households was about 50-80%.

On the other hand, many high-income members were distributed in the households having two or more adults, no child and two or more working persons and those having two or more adults, no child and one working person (e.g., households of a couple, those of a couple and the husband's (or the wife's) parent or parents) among the households with the head younger than 65, and those having two or more adults and two or more working persons (e.g., three-generation households with two or more working persons) among the households with the head 65 years and above. Thirty to forty percent of the members of these households belong to the high-income group.

As described above, there are notable differences between household types in the income level and income distribution.

[Table 6 Income difference by type of household in Japan(2000)]

(2) Poverty rate by type of household

The poverty rate by type of household based on the poverty line (50% of the median of equivalent adjusted disposable income for each year) of all the age groups is as follows: among the households whose head was younger than 65, the poverty rate on a disposable income basis was very high in the households having an adult, no child and no working person (one-person household of a young not working person), those having an adult, a child or children and no working person, those having an adult, a child or children and one working person (one parent household), and those having two or more adults, a child or children and no working person (households having a child or children and no working person). Among the households whose head is 65 and over, the rate was high in those having an adult and no working person (one-person household of an elderly not working person or households composed of an elderly not working person and a child or children (younger than 18)). The ratio was 60.9%, 57.9%, 52.1%, 46.0% and 48.3%, respectively, suggesting that many members of these households were below the poverty line.

In terms of the poverty rate on a market income basis, more households had a rate of over 50%. Among the households with the head younger than 65, the rate was higher than 50% in those having an adult, no child and no working person (one-person household of a young not working person), those having an adult, a child or children and no working person, those having an adult, no child and one working person (one parent household), and those having two or more adults, a child or children and no working person (households having a child or children and no working person). Among the households whose head is 65 years and over, the rate was over 50% in all the households except those having two or more adults and two or more working persons (e.g., three-generation households having two or more working persons).

The comparison between the poverty rate on a disposable income basis and that on a market income basis allows us to observe to what degree the poverty-reducing effect of taxes and social security benefits has worked on each household type. When this effect was measured by checking the difference between the two types of the poverty rate, the difference was negative for all the households whose head was 65 or over, indicating that taxes and social security schemes had the poverty-reducing effect.

By contrast, some of the households headed by householder younger than 65 remained to have a high poverty rate. Specifically, these households were those having an adult, no child and no working person (one-person household of a young working person), those having an adult, a child or children and one working person, and those having an adult, a child or children and no working person (one parent household), and the poverty rate of these households was higher than 50% even on a disposable income basis. This probably suggests that the poverty-reducing effect of taxes and social security schemes have been not very great on these household structures (Table 7).

[Table 7 Poverty rate by type of household in Japan (2000)]

8. Conclusion

The conclusion of discussions above can be summarized as follows:

- (1) The Gini index of Japan increased from 0.278 in 1985 to 0.314 in 2000, and income differences was still on an upward trend. By age group, those aged 65 and over had wider income difference than those younger than 65, but their income differentials were decreasing.
- (2) On the other hand, taxes and social security benefits had the function of income redistribution. This income redistribution function seen from the degree of improvement of the Gini index became higher from year to year. Also, those aged 65 and over had a higher degree of improvement than all the age groups and those younger than 65.
- (3) By the type of income, employment income made the greatest contribution to income difference. The degree of this contribution for those aged 65 and over was smaller than that for all the age groups. The decomposition of the degree of contribution to income difference by age group shows that the degree of contribution of those aged 65 years and over was over 20%, which was higher than the ratio of this age group to the total number of household members.
- (4) The poverty rate on a disposable income basis was about 15% for all the age groups but was more than 20% for those aged 65 and up. This rate tended to rise as the time passed. On the other hand, the poverty rate on a market income basis was

substantially higher than that on a disposable income basis, which indicates that taxes and social security benefits performed the poverty-reducing function.

- (5) The observation of income levels by type of household reveals the remarkable differences in income existing between different household types. In particular, one-person household of a young not working person and one parent household have many low-income members and high poverty rates.

This study has confirmed that income difference in Japan tend to become wider. It also shows that backgrounds of this conclusion are (1) the fact that by the type of income, employment income makes a greater contribution to income difference, and (2) the fact that by age group, the contribution of those aged 65 and over increases with the aging of the population. While the poverty rate tends to increase, taxes and social security benefits perform the poverty-alleviating function, which works more on the elderly. However, some types of households (households of not working young generations and those of one parent) are not benefited by this function. One reason for this is that benefits for the elderly account for nearly 70% of the social security benefit expenses, while those for active generations are smaller than those for the elderly.

It is important to promote income guarantee policies for the elderly who have wider income difference. But it will also become a more important problem in the future to promote income guarantee and employment policies for the types of people mentioned above. A variety of employment measures have already been taken for young people, such as those for young without stable working status. In addition, as the policies for one-parent households, especially mother-and-child households, the child allowance system has been improved, and employment measures for these households have been reinforced. As the lowering of fertility and population aging are expected to continue, there will be the need to carry out careful policies for income guarantee and employment for a various categories of people.

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ANNEX Figures and Tables

Table 1 Basic Result of the data

	1985	1994	2000	1985-2000
Age structure				
Percentage of the elderly	10.5%	16.0%	21.1%	10.6%
Average Household Members	3.44	3.02	2.86	-0.58
Percentage of those who belong to the household headed by the elderly	13.1%	20.4%	26.8%	13.7%

Equivalent disposable income(Ten thousand Yen, Annual)				
All ages	232.4	275.9	264.9	32.5
18-64	243.0 (104.6%)	292.6 (106.1%)	282.1 (106.5%)	39.1
65+	213.4 (91.8%)	243.5 (88.3%)	237.9 (89.8%)	24.5

Source: The results of the re-total of "Comprehensive Survey of Living Condition of the People on Health and Welfare (income questionnaires) the income re-distribution survey".

Not: In the parenthesis, the number is the index when equivalent disposable income of all ages is 100)

Figure 1 Gini Index in Japan by type of income and age

