

## abstract

This study examines the extent of income inequality in Japan in comparison to Great Britain, Sweden, Taiwan, and the United States. Japan's income inequality at the aggregate level measured by the gini coefficient is not very different from those of other societies. However, income inequality among households composed of only the elderly is much higher in Japan than other societies. The different living arrangements among the Japanese elderly seem to be directly responsible for the greater degree of inequality; the elderly living with their children enjoy the most advantaged position while single-female households have the worst economic condition.

## 1. Introduction

The main purpose of this study is to examine the extent of income inequality in Japan and to speculate on the extent of Japan's economic inequality in comparative perspective.

Among industrial societies, Japan has often been identified as occupying a distinctive place because it is the first non-western society in which industrialization has reached full maturity (Vogel 1979; Okochi et al. 1973) and because it has followed a particular course of industrialization, that is, a late and rapid course of development (Dore 1973; Cole 1979).

In the late 1970s and the 1980s, the emergence of the middle mass has been actively pointed out in Japan, where the homogeneity of Japanese society is emphasized. Murakami's work (1984) helped to spark this debate. He claimed that Japan was no longer a class society and people's life styles and attitudes had become homogeneous. Using attitudinal surveys, he and others argued that class distinctions have become blurred and a mass middle class has emerged in Japan. Tominaga (1979) also joined the debate and claimed that the majority of the Japanese believed that they belonged to middle strata, because most scored high on one of the dimensions of status (such as education, occupational prestige, income) while low on others.

In 1976, the OECD presented the results of its cross-national study on income inequality, and Japan was ranked fourth from the bottom, meaning that it was one of the

most equal societies (Sawyer 1976). Even though there were some problems with the quality of the Japanese data from which the figure was computed (Tachibanaki 1998), people accepted the idea that Japan is an equal society. The results of the OECD report and of the attitudes surveys led people to believe generally that Japan exhibited a high degree of equality. However, this perception, of course, was not derived from rigid cross-national comparisons.

The recent best-seller, *Economic Inequality in Japan* by Tachibanaki (1998), has sparked a new debate on equality in Japan. He claims that Japan is no longer an equal society, but is instead as unequal as the United States. This was a shocking finding for many people, but has eventually been widely accepted because Japanese have increasingly voiced doubts about the persistent equality. Another best-seller written by a sociologist has also pointed out increasing inequality (Sato 2000). Although Sato did not present any international comparison of inequality, he stated that entry into the upper white-collar class has become more restricted from the 1980s to the 1990s, making Japan a more class-oriented society. Their arguments together point out the salience of socioeconomic inequality in Japan.

In the recent discussion on social and economic inequality in Japan, there are two main arguments: one dealing with the trend in the degree of equality in Japan and the other

dealing with the position of Japan among industrial societies in terms of socioeconomic inequality. On the first issue, there seems to be a shared view among scholars that inequality in Japanese society is increasing. Kanomata (1999), using the Social Stratification and Mobility Survey, claims that there has been a gradual increase in economic inequality in post-war Japan, although from 1965 to 1975, the trend was briefly toward greater equality. Ishikawa (1991; 1994) and Tachibanaki and Yagi (1994) have pointed out that Japan was not as equal a society as many people believed, and showed that the popular view of Japan as an equal and homogeneous society was misleading.

Ohtake and Saito (1999) identify a recent trend of increasing income inequality, which can be derived in part from the aging of population and from the increase in the dual-income families (Ohtake 2000; Ohtake and Saito 1999). Nishizaki, Yamada, and Ando (1998) also suggest that Japan's economic inequality increased for the ten years following 1984, confirming the effect of the aging population on the expanding trend of economic inequality. It thus appears that there is a common understanding of the growth of economic inequality in contemporary Japan.

Another significant debate exists over how unequal or equal Japan's income distribution is within a cross-national framework. While there are quite a few studies on Japanese peculiarities, rigid cross-national studies are limited in number. The studies on

intergenerational social mobility in Japan, done by Ishida (1993), Ishida, Goldthorpe and Erikson (1991) , and Erikson and Goldthorpe (1992), are a few exceptions that base their conclusions on rigid empirical analyses using highly comparable data. They find that Japan is peculiar in some ways but at the same time shares common patterns of social mobility. Specifically, the effects of social origin on mobility chances are similar in Japan and Europe, while the absolute mobility rates in Japan are different. The peculiarities in mobility regimes in Japan can be mostly explained by its distinctive course of late industrialization.

Nishizaki, Yamada, and Ando (1998) examine the Japanese level of economic inequalities using the National Consumption Survey in 1984 and 1994 and placing these against comparable European data sets. They conclude that Japan occupies a middle position in the extent of economic inequality among industrial societies, neither especially equal nor unequal. Ohta (2000) explores the position of Japan with respect to economic differentiation, and also concludes that Japan was in the medium level of income inequality among OECD countries. He does not see any dramatic increase in economic inequality in Japan nor in Europe. In these rigorous cross-national comparisons using comparable datasets, Japanese peculiarities do not emerge.

In this study, I focus on Japanese income distribution and examine the trends from

mid-1980s to late 1990s and the comparisons with other societies. The main questions that are addressed in the analysis are: (1) whether or not Japan's income distribution has become more unequal recently, and (2) whether or not income inequality in Japan is different from that in other industrial nations. I also identify the sources of the trends as well as possible reasons for observable international differences.

In particular, I will pay attention to income inequality by the type of household.

It is possible that the trend of income inequality for a particular type of household is different from the general trend of income inequality among all households. Furthermore, the differences emerging in cross-national comparisons may be explained in part by the cross-national difference in household composition among the elderly population.

## 2. Data and Variables

The Japanese data which we analyze in this study are derived from the National Survey of Living Conditions<sup>1</sup> (Kokumin Seikatsu Kiso Chosa) conducted by the Japanese Ministry of Health, Labor and Welfare every year since 1985. The National Survey of Living Conditions was constructed by merging four different surveys conducted by the former Ministry of Health and Welfare: the Welfare Administration Basic Survey from 1953 to 1985, the National Health Survey from 1953 to 1985, the National Living Survey from

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<sup>1</sup> The full translation of name of the survey is the Comprehensive Survey of Living

1962 to 1985 , and the Public Health Basic Survey from 1968 to 1985. Every three years, the National Survey of Living Conditions used a larger sample with a more detailed questionnaire. In this study, I use five surveys of the National Survey of Living Conditions which had large samples, so as to look further into the income distribution by household type. I use information on the income of the household level, not on the individual level.

In order to elucidate the position of Japan in comparative perspective, I examine the United States (1986, 1994), Britain (1986, 1995), Sweden (1987, 1995), and Taiwan (1976, 1995), as reference groups. I include Taiwan because Japan is often compared only with American and European societies. The data for these four societies are derived from the Luxembourg Income Study (below, LIS) which assures high comparability across nations. I have recoded the Japanese data in order to make them as comparable to the LIS data as possible.

In examining the extent of income inequality, I focus on disposable income, which I calculate by subtracting tax and social insurance payments from total gross income. In all societies including Japan, I use disposable income with the equivalent scale of elasticity

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Conditions of People on Health and Welfare.

0.5, following the previous study by Nishizaki et al. (1998)<sup>2</sup>. I assume that there is no difference in equivalence of elasticity between working adult and children or retired elderly<sup>3</sup>. Behind this assumption, it is supposed that family members more or less equally share the economic well-being within the same household. Since the basic unit of consumption is the household, I believe that this assumption is in general reasonable in contemporary capitalist societies.

The degree of income inequality is measured by the gini coefficient shown below.

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

where  $W_k$  is the disposable income with equivalent scale in the  $k$ th household;  $n$  is the total number of households; and  $\mu$  is the mean disposable income.

In order to ensure the validity of cross-national and cross-temporal comparisons, I excluded the following households from the analysis: (1) those with negative or zero disposable income, (2) those in which no pension income was reported even though the

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<sup>2</sup> Atkinson, Rainwater, and Smeeding (1995) showed the results of family size exponents in different equivalence scales.

<sup>3</sup> Figini (1998) nicely discusses the consequences of measuring economic inequality, by

head of the household was 70 years old or more, and (3) self-employed households that reported no self-employment income.

Another important variable in this study is household type. I examine the extent of income inequality as a whole as well as by the type of household. First, I focus on whether the household contains elderly inhabitants (65 or older), because previous studies found the effect of aging on income inequality to be important. I first break down two types of household: households with the elderly and those without the elderly. I then distinguish four types of household with elderly members: single male households, single female households, married couple-only households, and “other” types of household with the elderly. The “other” category denotes those shared by elderly and non-elderly family members. Figures from 1998 show that about 40 percent of the “other” households are three-generational household in which the elderly co-reside with their son’s or daughter’s family in Japan. Occasionally I combine the first three types of households with the elderly (that is, male and female single households and the married couple-only households) into a comprehensive “elderly-only household” category. I will examine the extent of income inequality by these different types of household with and without the elderly.

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taking into account household size and its composition.

### 3. Analysis

#### 3-1 Household type

Table 1

Table 1 shows the trend in household type in Japan. As of 1998, 37.2 percent of all households contain elderly family members aged 65 and over, and the share of this type of household increased by about 10 percent from 1986. The largest increase among households with the elderly is the couple-only household: that is, a 10 percent increase from 17.3 percent in 1986 to 27.5 percent in 1998. In contrast, the “other” type of the household with the elderly has declined by about 15 percent from 70.5 percent in 1986 to 54.7 percent in 1998, although it still constitutes the majority among all households containing elderly inhabitants. The percentage of elderly who live alone or live only with their spouse has increased recently, at the expense of those who live with other family members.

Table 2

Table 2 presents household type in four societies in the mid 1990s. About one fourth of all households in the United States, Great Britain, Sweden and Taiwan include the family members aged 65 and over<sup>4</sup>. The corresponding figure in Japan in Table 1 is for

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<sup>4</sup> The proportion of the elderly aged 65 and over in the total population in the U.S., Britain,

1995, and it shows that more than one-third of households contain the elderly. When the type of household with the elderly is further broken down in the United States, Britain, and Sweden, the large majority is the elderly-only type (single-member households and married couples). However, in Taiwan, 59 percent of the elderly live with non-elderly persons, and this figure is very close to the Japanese one: 59.8 percent in 1995. In the two Asian societies, Japan and Taiwan, a large number of the elderly aged 65 and over live with their single child(ren) or with child(ren) who are married. Coresidence with the younger generation appears to be one of the typical living arrangements for the elderly in these two societies. Martin (1989) pointed out that Japanese elderly were much more likely to share the same household with their children than in the West in the 1980s, and the situation has not changed in the 1990s. However, as we have seen in Table 1, coresidence with the younger generation among the elderly has decreased recently.

In sum, the most striking difference in the household type in Japan compared with that in the United States and Europe is that the majority of households with the elderly contain non-elderly members in the same household. In other words, the Japanese elderly, similar to their Taiwanese counterparts, belong to a greater variety of household types than in Europe and the United States, where the large majority of the elderly do not share the

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Sweden, and Taiwan is 12.54, 15.87, 17.56, 7.3, respectively, in 1995. The corresponding

same household with non-elderly members.

### 3-2 Trend in income inequality in Japan

In examining the relevant developments in Japan, I first report trends in the extent of income inequality by different household type since the 1980s. The result reflects a test of whether economic inequalities have expanded recently (c.f. Tachibanaki 1998; Nishizaki et al. 1998).

Figure 1

The first bar (left-hand side) of the Figure 1 represents the gini coefficient of the total sample. The figures have increased from 1986 to 1989, and have remained more or less stable since then. Judging from Figure 1, there is no dramatic increase in income inequality as a whole in the last 10 years. Instead, the overall extent of economic well-being has remained stable<sup>5</sup>. The generally stable degree of income inequality, however, does not always mean that the degree of income inequality within social subgroups has remained the same. In order to examine the difference in the extent of

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Japanese figure is 14.54 percent (NIPSSR 2000).

<sup>5</sup> The result of my analysis shows different trend than those reported by Tachibanaki (1998) and Nishizaki et al (1998). The difference may be real, but it may be due to the difference in the data source. Nishizaki et al (1998), for example, used the national Consumption Survey which contains more people with medium range income than the National Survey of Living Conditions which I analyzed (Matsuura 2001).

income inequality within the subgroups under investigation, I have computed the gini coefficients by different types of household.

When I divide the households into two types, one with the elderly and the other without the elderly, I find a similar trend in the extent of income inequality in the two subgroups. The gini coefficients among households without the elderly increased from 1986 to 1989, and stabilized until 1995, then slightly increased from 1995 to 1998. The gini coefficient among households with the elderly showed a similar increase from 1986 to 1989 and stability during the 1990. However, the extent of income inequality among households without the elderly is always lower than those including elderly inhabitants. If we shift our attention to the elderly-only households, which are represented by the white bar, we see that the gini coefficient among the elderly-only households is the highest among different sub-groups, while the extent of income inequality generally has declined over the period. Consequently, the difference in the degree of income inequality among these four sub-groups has become smaller in 1998. The results of analyses suggest that income inequality in the 1980s and 1990s has not changed as much as other people often claimed (c.f. Tachibanaki 1999). The overall degree of income inequality in Japan has been more or less stable.

There has been a high degree of income inequality among households with the

elderly, but let us look at the gini coefficient by the age of household head in order to examine the extent of income inequality by age group (Figure 2).

#### Figure 2

In each year, the extent of income inequality increases along with the age of the household head. In general, there is no specific pattern in the change of income inequality by period, but if anything, there is a consistent increase in income inequality among the 25 to 39 age group from 1986 to 1998, while there is an overall decline in income inequality among the age groups of 65 and over from 1986 to 1998. In corresponding to the finding of the high extent of income inequality among elderly households, the age of the household head is positively related to the extent of income inequality throughout the period.

In order to investigate the results in more detail, I analyze the inequality among the elderly by dividing the elderly households into four groups: single men, single women, married couples, and the “other” type described above (Figure 3).

#### Figure 3

In the 1998 data, the highest degree of income inequality can be found among the single male household, and the next highest among the single female household, and the “other” type of household with the elderly shows the lowest degree of income inequality. The single male household shows a large decline in income inequality over the period,

particularly after 1992. The married-couple only household also shows a decline, although the extent of change is small. The single female household shows a peculiar trend: an increase in income inequality from 1986 to 1992 and a slight decline afterwards. The “other” type of elderly household presents the highest degree of stability in the degree of income inequality and its figures are always the smallest over the period. Among the households containing elderly members, there are differences in the degree of income inequality depending on the type of household; the single male household is highly differentiated in terms of income, while the households in which the elderly and non-elderly live together show the lowest degree of income inequality.

Since the degree of income inequality differs by the type of household, we need to examine the income level among different types of household. Japan has been characterized by its large number of elderly people who cohabit with the family of their married children, usually the eldest son. This tends to be advantageous for them because they share the relatively high level of household income which is mainly derived from their son’s earnings (Martin 1987; Martin and Tsuya 1991).

In order to compare the economic situation by the type of household, we set the household without the elderly at 100 and calculate the ratio of the median income in each type of household with the elderly to that without the elderly (Table 3).

Table 3

The “other” type of household which contains the elderly and the younger member is economically better-off than the household without the elderly and this advantage in the economic well-being becomes larger over the period. In contrast, the elderly-only household is much more disadvantaged in its economic situation when compared with the non-elderly household. The median disposable income of the elderly-only household is only 64.75 percent of the median income of the household without the elderly. In 1986, however, this relative income level stood at 53.02 percent, and the improvement seems rather striking.

In dividing the households with the elderly into four groups and comparing the economic situation among these sub-groups, we see the relative economic advantage among households of the “other” type, which include both elderly and non-elderly inhabitants (Table 4).

Table 4

By setting the median disposable income among the “other” type of household at 100, we can compare the median incomes of the remaining three types of household, which are clearly below 100 -- a disadvantage in economic situation. In the 1998 data, the median disposable income of the single male household is only 59 percent of that of the “other”

type of household, and the corresponding figures among the single female household and the married-couple only household are 41 and 71, respectively. The single female household is the most disadvantaged in economic situation, although there is a gradual improvement since 1992. We should also remember from Figure 3 that the single male and the single female households had higher levels of income inequality than did the “other” type of household.

In contrast, the extent of income inequality within the multi-generational household (“other” type) is relatively small, and it also displays a more advantageous economic position than does the elderly-only household. We therefore need to bear in mind the variety in economic situations, depending on the type of household to which the elderly aged 65 and over belong, because the household types display significant differences. There has, however, been a recent reduction in disparities between both the income levels and extent of income inequality among different types of elderly-inclusive households

In sum, according to our analyses, the extent of income inequality as a whole has been more or less stable during the 1990s, so we do not find an obvious trend towards increasing inequality in contemporary Japan. However, the diversity in income inequality by the type of household cannot be overlooked. In the next section, I explore the

comparative position of Japan in terms of the level of economic well-being.

### 3-3 Cross-national comparison of income inequality by household type

Gini coefficients by different household type in the mid 1980s and the mid 1990s in five countries are given in Figure 4.

Figure 4

The bar on the left side for each country represents the gini coefficient for the entire sample, the second bar from the left for households without elderly members, the third from the left for households with the elderly, and the last bar for elderly-only households.

First, let us concentrate on the gini coefficients for the entire sample both in the mid 1980s and 1990s; the gini coefficient in Japan is ranked at the middle among the five countries. In the 1980s, the Japanese figures are almost the same as those for Britain, but in the 1990s, income inequality in Britain expanded faster than it did in Japan.

Between the 1980s and 1990s, the extent of income inequality has increased in four of five societies; only Sweden experienced a reduction of the gini coefficient, from .2219 to .2199. Increasing inequality took place not only in Japan but also in other societies, although the extent of change varies by country. Taiwan shows only a slight increase, while Britain and the United States show larger increase in the gini coefficients

than does Japan. The degree of change in the Japanese figures is almost half the corresponding figures for Britain. Thus, as far as the entire sample is concerned, Japan does not deviate from other industrial societies in terms of the extent of income inequality and the extent of change in inequality. However, when we take into account the differences by household type, Japan exhibits some peculiar characteristics, compared with Europe and the United States.

In Japan, like Taiwan, the extent of income inequality among households with the elderly, particularly households which are composed of the elderly alone, is higher than that among the households without elderly members. In the mid-1980s, the elderly-only household showed the highest extent of income inequality in Japan; the gini coefficient for that period is .4236. Taiwan similarly shows a high degree of income inequality among the elderly-only household, that is .3664. However, corresponding figures in the 1990s diminish significantly both in Japan and Taiwan, while income inequality among the elderly-only households is still higher in these societies than in the other three societies. In Sweden and Britain, on the other hand, the gini coefficient among households without the elderly is higher than that among the households with the elderly. In the United States, the gini coefficients among the households with and without the elderly are almost the same, although there is an increasing trend in the gini coefficients among households without the

elderly between the 1980s and the 1990s. In Japan and Taiwan, the extent of income inequality varies more by the type of household than in Europe and the United States. In particular, the households which are composed only of the elderly (the elderly-only household) clearly have higher levels of income inequality than other types of households in the two Asian societies.

In order to confirm the importance of the age effect on income inequality, we examine the gini coefficients by the age of the household head (categorized into five-year age group) in the five countries (Figure 5).

#### Figure 5

The most obvious feature in Japan is that the extent of the economic differentiation becomes larger as the age of the household head becomes older. In fact, a nearly linear increase in the degree of income inequality by the age of household head can be observed in Japan. Taiwan also shows a similar trend in the gini coefficient by the age of household head, but the gini coefficients among the age groups of 65 and over declines, unlike in Japan. In contrast, Britain shows decline in the gini coefficients after the age of 55, while the gini coefficients among the younger age groups are overall higher. The extent of income inequality in the United States does not change significantly with the age of the household head; it is high across all the age groups. In Sweden, income inequality is