Trends in Poverty among Low-income Workers in Japan since the Nineties

Toshiaki Tachibanaki
Doshisha University

Kunio Urakawa
Kyushu University

I. Introduction

After the rapid economic growth in Japan during the 1950s and 1960s, the energy policy in response to the two oil crises and technological innovation, Japan's economy has grown to a scale that is sufficiently large to produce the world's second largest GDP. Its residents' living standard is very high compared with those of people who live in most other countries.

Over the past decade or so, however, a number of factors, including the falling birthrate and population aging, growing market globalization, and the effects of the Heisei recession, have combined to wreak ongoing major changes in the economic and social environment of Japan, where it was once held that "everyone is middle class." Since the mid-1990s, marked increases in the number of households receiving public assistance and households without savings have been confirmed, and many households, especially those on low incomes, are experiencing growing livelihood insecurity. This situation has prompted a strong interest in the subject of poverty in Japan.[1]

An overview of poverty in Japan from a historical perspective shows poverty in the past and poverty today to be extremely different in character. The most important difference is that poverty is today less serious than in the past, for, while long ago occasional famines could lead to starvation, there are now few people who live in such extreme poverty that they are almost starving to death.

Nonetheless, people evaluate their lives by comparing with those of others, and, if they feel that their standard of living is much worse, they will consider themselves to be poor and many other people in the society, too, will reach a similar conclusion. As the severity of poverty needs to be evaluated in comparison to others, research into poverty is a worthwhile pursuit in any age.[2]

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[1] Analyses of the state of poverty in Japan since the 1990s include Abe (2006), Iwata (2004, 2005), Komamura (2003), and Wada and Kimura (1998).

[2] Citing Schulz in *Die Bewegung der Produktion* (1843, 65) Marx emphasizes in

In other words, this kind of poverty, too, cannot be ignored in a mature society such as Japan's. In addition, due to growing homelessness and indebtedness, the number of people leading a hand-to-mouth existence is following an upward trend even in the modern economic powerhouse that Japan now is.[3]

According to the Ministry of Health, Labour and Welfare's *Shakai fukushi gyosei gyomu hokoku* [Social Welfare Services Report], the aforementioned number of households receiving public assistance exceeded the one million mark in 2005, and had reached 1,075,820 in 2006. As most households receiving assistance are taken up by elderly households (especially elderly single- person households) or fatherless households, most interest in the issue of poverty is directed toward these groups. Howerer, an increasing number of households headed by adults of working age, and not just fatherless households, are falling below the public assistance standard (Tachibanaki and Urakawa 2006). Although the spread of poverty among people of working age is thought to be closely related to the prolonged slump of the 1990s and changes in firms' governance and the employment environment, relatively few studies in Japan have as yet examined the expansion of the working poor.

In this paper, therefore, we first summarize the various approaches to the issue of "poverty," and then consider the situation regarding the "poverty" of workers in Japan since the 1990s based mainly on estimates calculated using micro data from the *Shotoku saibunpai chosa* [Income Redistribution Survey].

II. Definitions and Methods of Estimating "Poverty"

1. "Absolute Poverty" and "Relative Poverty"

To measure poverty, we must first decide what circumstances experienced by members of society should be regarded as "poverty." This is a task referred

Ökonomisch-philosophische Manuskripte (1844) the problem of poverty caused by increased disparity relative to others, and raises strong doubts about reducing the issue of workers' poverty to just the realm of physical wants.

[3] According to *Hoomuresu no jittai ni kansuru zenkoku chosa* [National Survey of the State of the Homeless] conducted jointly by the Ministry of Health, Labour and Welfare and the Ministry of Land, Infrastructure, Transport and Tourism, the homeless population of Japan had reached 25,296 in 2003. Although this figure has since declined to 18,564 according to the latest survey in 2007, studies reveal widespread homelessness in regional hub cities as well as major cities. A large proportion of the homeless are day laborers (especially middle- and old-aged unskilled workers) in long-term unemployment.

to as the recognition of poverty, with poverty normally defined based on a set standard, known as the "poverty line" established on the basis of specific criteria. Under this definition, individuals (or households) falling below the poverty line are judged to be in poverty.

The key question here concerns exactly what should be regarded as poverty, and there are basically two approaches to this question: "absolute poverty" and "relative poverty." The concept of absolute poverty focuses on an absolute standard defined as an income below which a household is unable to eat or lead the absolute level of subsistence. A well-known survey of poverty that employs this approach is Rowntree's survey of poverty in York in England (1899).

Focusing on the minimum cost of living necessary for a human to survive, Rowntree defined the state of being unable to obtain the necessary calories for subsistence as "primary poverty." According to this definition, people who cannot spend the minimum cost for bare physical subsistence[4] are considered to be in poverty. Rowntree found that approximately 15% of the working class and 10% of the total population lived in "primary poverty." This finding that one in seven of the working class of the United Kingdom, which at the time occupied a central position in economic development, experienced such deprivation that they were enable to maintain a healthy physical existence caused tremendous shock and generated awareness of poverty as a social concern.

An interesting aspect of Rowntree's survey is its consideration of secondary as well as primary poverty. Unlike primary poverty, which considers only the cost of food necessary for subsistence, secondary poverty also takes into account other minimum expenditures necessary for life. Most countries now include minimum expenditures on things such as clothing and housing as well as the cost of food in defining poverty, so Rowntree's study of poverty was highly significant in that it marked the starting point of this approach.

A well-known Japanese work that introduced the state of poverty in the West in the 19th and early 20th centuries to a Japanese audience was Hajime Kawakami's *Binbo Monogatari* [Tales of Poverty] (1916). Writing that "By poverty in these tales, I mean the inability to obtain even the necessary materials to maintain the *sound development of mind and body*,"[5] Kawakami argued that it was necessary to include clothing, accommodation, and fuel

4 Yamamori (2005), 38.
5 Kawakami (1916), 42.

costs and other sundry expenses in the minimum cost of living, as well as simply expenditures necessary to maintain subsistence. Although his focus was on the concept of absolute poverty, he was more interested in secondary than primary poverty according to Rowntree's definition above.

Next, we described the concept of "relative poverty." In simple terms, this is poverty relative to society as a whole, and is a definition that is informed by a recognition of the extent to which poverty is socially accepted in comparison to others. In developed countries, where the tragedy of starvation is at least not a serious social problem, poverty is commonly measured using this relative concept. In other words, people who do not enjoy a standard of living considered sufficient to participate unashamedly in various social activities are regarded as being in poverty. For example, a threshold such as 60% or 50% or less of median disposable income, as employed in EU and OECD statistics, is used for this standard, and a recent OECD report that indicated that the relative poverty rate in Japan had risen from 13.7% in 1994 to 15.3% in 2000—the highest among developed countries after the United States at 17.1% (Förster and d'Ercole 2005)—generated shock waves in Japan when it was published.[6]

Whether 60%, 50%, or some other figure, the well-suited level of this threshold will vary depending on a country's stage of economic development, and should also be determined taking into consideration its specific cultural characteristics. Nevertheless, defining poverty according to a certain percentage of median income is a commonly used method of measuring poverty, and so is valuable as means of ensuring the reliability of international comparisons.

Another important concept is that of "relative deprivation," which was developed by Peter Townsend based on the concept of relative poverty. Townsend regarded poverty as the condition of being unable to participate in social activities that have become customary in the society to which one belongs, or the state of being deprived of the social resources required in society, and measured deprivation by a variety of measures (Townsend 1979).

Townsend's approach to poverty is characterized by its use of multidimensional variables as well as simply income variables in order to measure poverty, and his approach has exerted a major impact on various measures of poverty in

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[6] A recent study on poverty indicates that if the poverty rate in 2000 is calculated keeping the relative poverty line at its level in the mid-1980s, the poverty rate declines in other OECD countries, but rises in Japan (Abe 2006, 112).

Europe today. This point is considered further in Section V.

2. Measurement of Poverty Based on the Public Assistance Standard

In most countries today, a certain (albeit varying) degree of public assistance is provided to people in poverty or on extremely low incomes. This may be regarded as the product of a social consensus on the idea that it is necessary to secure a national minimum for all, and the base amounts set for assistance benefits may also be interpreted as a form of poverty line.

Under Japan's public assistance system, the base amounts used as standards for calculating benefits were determined by a method called the Gap Reduction Method from 1965 to 1983, while since 1984 they have been determined by the Standard Equilibrium Method. This method is used to calculate the minimum cost of living, and is characterized by its incorporation of elements of both the aforementioned concepts of "absolute poverty" and "relative poverty." To briefly summarize, the cost of living is calculated based on the nutritional requirements required in each age group to live. This cost of living is then adjusted on a sliding scale according to a given revision rate in order to reduce the gap in the consumption level between ordinary households and households receiving public assistance. The base amounts for the public assistance standard in fiscal 2005 (Region Grade 1-1) are shown in Table 1.

Article 1 of the Public Assistance Act states that "the purpose of public assistance is for the State to guarantee a minimum standard of living … for all citizens who are living in poverty by providing the necessary benefit according to the level of poverty," based on the principles prescribed in Article 25 of the Constitution of Japan. Therefore, the minimum cost of living established by the State may be said to contain a strong "absolute" element in the sense that it "secures a national minimum for all citizens." It is thus normative in the sense that it says that "society will not allow citizens to fall below this level." However, the standard of living (level of consumption) of ordinary households is taken into consideration in calculating minimum cost of living, so the system also incorporates a "relative" element, creating a contradiction of sorts that blurs the role and position of public assistance in Japan.

Though a difficult task, further detailed investigation of the suitability or otherwise of the public assistance standard as a minimum level of income security is needed, and it is hoped that there will emerge an institutional design in which the base amounts can be shared by society as a whole as a form of universal

Table 1. Public assistance standard base amounts (FY2005: Region grade 1-1, monthly amounts)

Type 1

(Unit: yen)

Age category (years of age)	Base amount
0-2	20,900
3-5	26,350
6-11	34,070
12-19	42,080
20-40	40,270
41-59	38,180
60-69	36,100
70 or over	32,340

Notes: 1. The under-20-year-old category in Type 1 was simplified and regrouped from eight into four age groups in 2005.
2. From 2005, the sum of Type 1 individual expenses is multiplied by 0.98 to yield the Type 1 expense for households consisting of four members. In the case of households with five or more members, this sum is multiplied by 0.96.

Type 2

(Unit: yen)

	Number of members of household				
	1	2	3	4	Amount added per member in excess of 4
Base amount	43,430	48,070	53,290	55,160	440

Source: Health and Welfare Statistics Association (2005), *Trends in National Welfare*.

standard below which people are not allowed to fall, rather than being interpreted simply as variables for manipulation.

III. Rising Relative Poverty Rate

1. Yearly Movements in the Poverty Level

Having thus discussed the concepts of absolute and relative poverty and the characteristics of the public assistance standard in Japan, we proceed in this section to examine poverty since the 1990s. We do so primarily from the point of view of relative poverty using micro data from the Income Redistribution

Survey.[7] Our choice of using the concept of relative poverty as our standard is due to the following reasons. Firstly, while the focus of absolute poverty is on bare subsistence, it is surprisingly difficult to clearly define the level of this in an economically developed country such as Japan. Secondly, despite the even greater need to conduct a comprehensive analysis that encompasses people such as the homeless who are excluded from customary residential life if absolute poverty is to be observed, such people are not included in the data used here. In this survey, therefore, we have opted to trace poverty relatively using "income" as our benchmark. As we shall describe in detail later on, it is important to emphasize also that the poverty line determined in accordance with the relative concept is set at an extremely low level in present-day Japan.

Table 2 shows trends in poverty since the 1990s among households in Japan based on disposable income[8] expressed by two indices: the poverty rate and the poverty gap rate. The poverty line is set at 50% of the median value of equivalent disposable income (e = 0.5) adjusted for differences in household size.[9]

Looking at Case 1 in Table 2, it is apparent that the poverty rate expressing the proportion of households at or below the poverty line has increased yearly since the mid-1990s, rising from 15.2% in 1995 to 16.2% in 1998 and 17.0% in 2001. From 1995 to 2001, there is a somewhat startling increase in the relative poverty rate, notwithstanding a dip in the income level of the middle class that brings the poverty line down by around 100,000 yen.[10] If we look at the estimates

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[7] Data from the Income redistribution survey were cleaned to remove contradictory data. In this paper, households with negative disposable income were excluded from the analysis. These were defined as those cases whose tax and social contributions were completely out of balance with their income level before deduction of tax and social insurance contributions, which was regarded as due to understatement of income or overstatement of contributions. As a result, around 0.2-0.5% of the sample was excluded in each year, and the samples consisted of 8,796 households in 1993, 8,132 households in 1996, 7,936 households in 1999, and 7,621 households in 2002.

[8] Expressed as follows: [disposable income] = [initial income] + [public and service pensions] + [other social security benefits] – [direct taxes] – [social insurance contributions]. [Other social security benefits] includes assistance under the Public Assistance Act, health insurance disability/maternity allowances and childbirth expenses, employment insurance and industrial accident benefits, and child support.

[9] Equivalent disposable income is expressed by W (equivalent disposable income) = D / S^e, where D is disposable income, S is household size, and e is the equivalence scale. For the analysis in this paper, we use e = 0.5, as commonly used in OECD and other reports.

[10] Abe (2006), who estimated the poverty rate on an individual basis (proportion of all

Table 2. Yearly trends in poverty index based on equivalent disposable income I

[e=0.5]	Median (10,000 yen)	Case 1: Annually variable poverty line			Case 2: Poverty line fixed at 1995 level		
		Poverty line (10,000 yen)	Poverty rate (%)	Poverty gap rate (%)	Poverty line (10,000 yen)	Poverty rate (%)	Poverty gap rate (%)
All households (1992)	270.1	135.1	**15.2**	5.2	139.2	**16.1**	5.5
All households (1995)	284.2	142.0	**15.2**	5.3	142.0	**15.2**	5.3
All households (1998)	280.5	140.3	**16.2**	5.9	145.9	**17.5**	6.3
All households (2001)	262.1	131.1	**17.0**	5.9	144.4	**20.2**	7.1
Difference in poverty rates test		Case.1: 95-98(+0.90^{+}), 95-01(+1.68**), 98-01(+0.78)			Case.2: 95-98(+2.31**), 95-01(+5.03**), 98-01(+2.72**)		

Notes: 1. Calculated from *The Income Redistribution Survey* (1993, 1996, 1999, 2002).

2. In Case 1, the poverty line is estimated to be 50% of the median of equivalent disposable income.
3. In Case 2, the poverty line is established using as the standard 50% of the median value of equivalent disposable income in 1995, taking into account the rate of increase in consumer prices. Used for these calculations is the *Annual Report on the Consumer Price Index 2003* (Ministry of Internal Affairs and Communications Statistics Bureau 2004).
4. **, * and $^{+}$ indicate that the difference in the poverty rates in each year is statistically significant at the 1% level, 5% level and 10% level, respectively.

shown in Case 2, for which the 1995 poverty line was applied to other years as well (after adjusting for the price level in each year), we find that there was a serious situation, with over 20% of all households falling below the poverty line in 2001.[11]

individuals who are in a state of poverty) rather than a household basis (proportion of all households that are in poverty), similarly found that the poverty rate in society as a whole has been rising yearly since the 1980s. However, estimating the poverty rate for individuals produces a slightly higher poverty rate in 1998 (14.85%) than 2001 (14.80%), which may be ascribed to changes in household structure, including a rise in single-person households. However, both sets of estimates confirm that overall poverty is following an upward trend.

[11] The 1995 poverty line of 1,420,000 yen was used for both 1998 and 2001, and data from the 2003 edition of the *Shohisha bukka shisu nenpo* [Annual Report on the Consumer Price Index] produced by the Ministry of Internal Affairs and Communications Statistics Bureau was used to adjust for the rate of increase in the consumer

Table 3. Differences in poverty line according to household size

Poverty line	Household size (number of members)					
	1	2	3	4	5	6
1992	135.1	191.1	234.0	270.2	302.1	330.9
1995	142.0	201.0	246.1	284.2	317.7	348.1
1998	140.3	198.4	243.0	280.6	313.7	343.7
2001	131.1	185.4	227.1	262.2	293.1	321.1

Notes: 1. The poverty line is expressed in units of 10,000 yen. Households in poverty are defined as households whose household disposable income does not exceed the above amounts.
2. Calculated based on an equivalence scale of e = 0.5.

Table 3 shows the level of the poverty line according to household size when considered in terms of ordinary disposable income. Taking 2001 as an example, the poverty line is 1,310,000 for single-person households, 1,850,000 for two-person households, and 2,270,000 for three-person households. As is evident from the table, the poverty line is set at quite a low level even when poverty is defined based on the concept of relative poverty. Notwithstanding the lowness of the poverty line, one in six households is on or below the poverty line in present-day Japanese society.

2. Verification by the TIP Curve

The expansion of poverty in the late 1990s can be represented graphically by the three indices of poverty (TIP) curve applying the Lorentz curve described by Jenkins and Lambert (1997).

The TIP curve is created by plotting the cumulative rate of households $p(k)$ ($0 \le p(k) \le 1$) to households $i = 1,2,...,k,...,n$ in order of low to high income on the horizontal axis, and the cumulative value of the poverty gap per household on the vertical axis, and can be expressed by Formula (1) below.

$$TIP(g;k/n) = \sum_{i=1}^{k} g_i / n \qquad for\ k \le n \qquad [g_i = max\{z - x_i, 0\}] \qquad (1)$$

The value on the horizontal axis when the TIP curve is exactly horizontal is the poverty rate (head-count ratio), and the value on the vertical axis when it is

price index from 1995 to 1998 and 2001. The poverty lines in 1998 and 2001 were as a result calculated to be, respectively, 1,459,000 yen and 1,444,000 yen.

horizontal coincides with the poverty gap ratio.[12] The inequality of income distribution of people in poverty is also given by the degree of concavity of the TIP curve.

It is thus possible to ascertain visually the frequency, intensity, and inequality of poverty by analyzing the shape of the TIP curve.

Figure 1 shows the TIP curves for 1995, 1998, and 2001 in the case that the poverty line is set at 50% of the median of equivalent disposable income, as in the case of the estimated results in Table 2. From this it is clearly evident that the frequency of poverty (poverty rate) is trending upward.

Turning to Figure 2, which shows the TIP curve when the poverty lines in 1998 and 2001 are based on the poverty line in 1995 adjusted according to the subsequent level of consumer prices, it can be seen that poverty grows in every respect—whether in terms of frequency, intensity, or inequality—from the mid-1990s.

3. Trends in Poverty Index by Employment Status of Head of Household

To investigate the types of household which tends to go into poverty, it is important to consider the occupation of the head of household. One would expect factors such as the head's having already retired or being in self-employment, employment as a white-collar worker, or being without employment despite being of working age to be closely correlated with the probability of experiencing poverty. Changes in the household structure according to the various statuses of their heads may be affecting the rise in the poverty rate in the economy as a whole. Focusing on the employment status of the head of household, therefore, our calculations of the poverty rate according to employment status of head of household and the rates of contribution to the poverty rate $\left[\left(n^k P(x^k, z)/nP(x,z)\right)\cdot 100\right]$ in 1995 and 2001 are shown in Table 4.

From Table 4, it can be seen that in both 1995 and 2001, high contributions to the rise in the poverty rate were made by those without employment (old),

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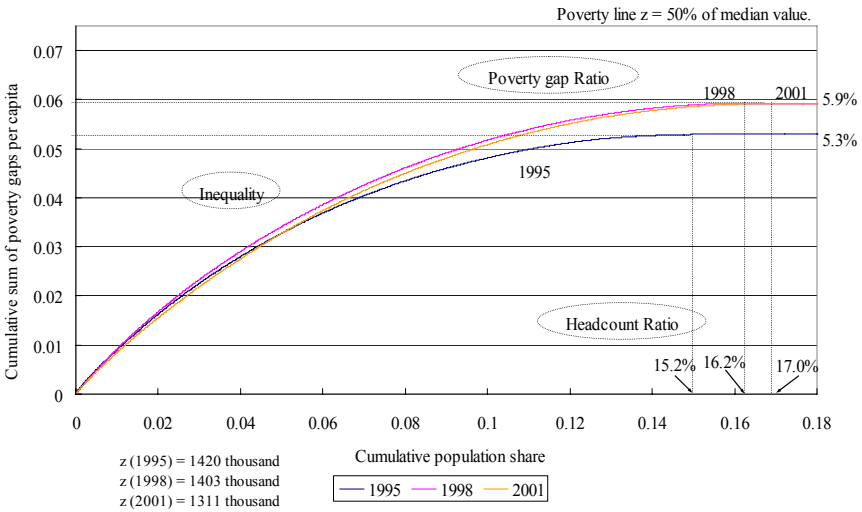
[12] The poverty gap rate is expressed by $PG = \int_0^z \left(\frac{z-x}{z}\right) f(x)dx$, and is used as a measure of the severity of poverty. [x : income, $f(x)$: probability density function of x, z : poverty line]

Figure 1. TIP curve (95, 98, 01)

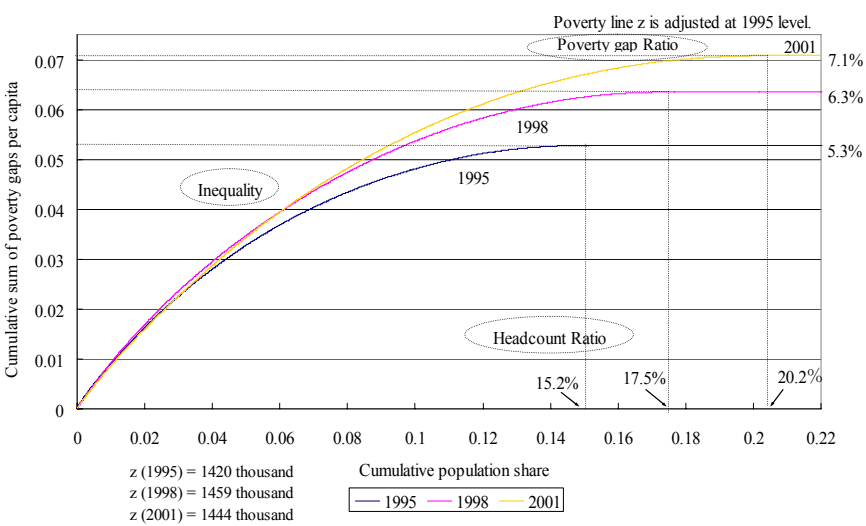
Equivalent disposable income [Case. 1]



Source: Calculated from *The Income Redistribution Survey.*

Figure 2. TIP curve (95, 98, 01)

Equivalent disposable income [Case. 2]



Source: Calculated from *The Income Redistribution Survey.*

Table 4. Poverty rates and contribution rates by employment status of head of household (1995-2001)

	Percentage of total (%)		Percentage of households in poverty (%)		Poverty rate (%)		Contribution to poverty rate (%)		
	1995	2001	1995	2001	1995	2001	1995	2001	Change in contribution rate
Poverty rate for all households					15.24	16.88 (+1.64**)			
Employment status of head of household									
Company/organization executives	4.7	4.8	1.3	1.5	4.2	5.2	1.3	1.5	+0.2
Regular employee (firm size: 1-29 employees)	12.46	11.92	11.1	8.9	13.62	12.61	11.1	8.9	-2.2
Regular employee (firm size: 30-99 employees)	9.6	8.76	6.5	5.3	10.37	10.24	6.5	5.3	-1.2
Regular employee (firm size: 100-999 employees)	13.81	12.87	6.6	4.1	7.3	5.33	6.6	4.1	-2.5
Regular employee (firm size: 1,000 or more employees)	11.83	9.46	1.7	2.0	2.18	3.63	1.7	2.0	+0.4
Civil servants	7.12	7.6	1.0	0.9	2.07	2.08	1.0	0.9	0.0
Employee on contract of less than one year	1.71	3.16	3.2	5.7	28.78	30.42	3.2	5.7	**+2.5**
Self-employed	13.33	13.27	21.2	18.8	24.26	23.86	21.2	18.8	-2.4
Home piece-rate worker and other	10.98	7.29	11.8	8.0	16.35	18.44	11.8	8.0	-3.8
Without employment (young, early middle-age, late middle-age)	3.23	5.37	8.1	16.5	38.02	51.6	8.1	16.5	**+8.4**
Without employment (old)	11.24	15.48	27.4	28.2	37.2	30.58	27.4	28.2	+0.7

Source: Calculated by the authors from *The Income Redistribution Survey* (1996, 2002). Households headed by someone of unknown employment status were excluded from the sample.

1995 poverty line = 142.0

2001 poverty line = 131.1

Notes: 1. "Old" refers to household heads aged 65 or over (men) and 60 or over (women).

2. ** indicates that the difference between the poverty rates for 1995 and 2001 is statistically significant at the 1% level.

those without employment (young, early middle-age, late middle-age), the self-employed, and home piece-rate workers. These are followed by regular employees of enterprises with fewer than 30 employees, and employees on contracts of less than one year. As one might have expected, older people on low incomes, people without employment, workers in unstable employment, and the self-employed have an enormous impact on poverty.

When the change in the contribution rates in 2001 compared with 1995 are taken into account, the largest positive change is 8.4% for households whose heads are without employment (young, early middle-age, late middle-age), followed by 2.5% for households headed by employees on contracts of less than one year. Although heads of working age without employment are not necessarily unemployed (i.e., persons who did not work at least one hour of income-generating work per week but who are able to work, desire to work, and are job hunting), it is estimated that there were a considerable number of unemployed if the "latent" unemployed, i.e., those who want to work but have given up trying to find a job due to the recession, are also included. (Tachibanaki 2002). This period also coincides with the time that the unemployment and business closure rates jumped due to the increasing severity of the economic downturn. Accordingly, the increase in unemployment in the latter half of the 1990s is likely to have had a major impact on the overall increase in poverty in Japan. According to the Ministry of Internal Affairs and Communications' annual *Rodoryoku chosa* [Labor Force Survey], the number of unemployed increased by approximately 1.3 million between 1995 to 2001, and the unemployment rate rose 1.8%.[13]

There are various contentions concerning the impact of the growth in non-regular workers[14] on income disparity and poverty. It is argued by some people that the increase has stemmed growth in unemployment and so may in fact have served to reduce poverty. However, the extremely low level at which the minimum wage is set in Japan compared with in other countries[15] and the

[13] For a detailed analysis of the increase in unemployment in Japan in the late 1990s, see Abe (2005, chap. 2).

[14] According to the Ministry of Health, Labour and Welfare's *Rodo keizai hakusho* [White Paper on the Labour Economy] (2004), the proportion of non-regular personnel and employees among all employed persons (excluding directors) rose from 20.9% in 1995 to 27.2% in 2001.

[15] See Tachibanaki and Urakawa (2006). For analyses of the minimum wage in Japan, see Abe (2001, 2004). For an overview of changes in the minimum wage system in

extremely high poverty rate and rising contribution rate among households headed by employees on contracts of less than one year are shown in the estimated results. It can be thought that a simple expansion of non-regular labor does not intrinsically lead to reduction in poverty.

4. Poverty of Single-person Households of Working Age

Tachibanaki and Urakawa (2006) note that the type of household most affected by the rise in unemployment and rise in unstable employment has been single-person households of working age, and we review this point in this paper too.

Table 5 shows trends in the poverty and contribution rates by employment status of household head among single-person households. Unlike in Table 4, the single-person households shown here exclude households headed by someone aged under 25 in order to eliminate as far as possible households headed by students.

The main observations that can be made from Table 5 are as follows. Firstly, the breakdown by employment status of head of household shows that the proportion whose heads are without employment or are employees on contracts of less than one year is higher than among all households. In 2001, the proportion of heads without employment was 18.4%, and the proportion of employees on contracts of less than one year was 6.9%.

Secondly, the change in the contribution rate between 1995 and 2001 is greater for "without employment" households (+19.1%) and "employees on contracts of less than one year" households (+5.6%) than for households as a whole.[16]

Japan and foreign research on the minimum wage, see the Japan Institute for Labour Policy and Training (2005).

[16] Among single-person households of working age, there is a particularly marked increase between 1995 and 2001 in cases of heads aged 55-64 who are without employment. In 2001, approximately 67% of single-person households without employment (whose heads were aged 25-64) had household heads aged 55-64. According to Abe (2005), underlying this situation is, among other things, the rise in involuntary redundancies among older people due to the deteriorating economic situation in the late 1990s. Considering that the relative poverty rate among the above households is actually rising, there appears to have been a major rise in the level of poverty among single-person households headed by middle- and old-aged people. The correlation between low income and non-ownership of financial assets is also extremely high (see Suzuki [2005]).

Table 5. Trends in poverty rates and contribution rates by employment status of head of household among single-person households of working age (1995-2001)

(Poverty line = 50% of median of equivalent disposable income)

	Percentage of total (%)		Percentage of households in poverty (%)		Poverty rate (%)		Contribution to poverty rate (%)		
	1995	2001	1995	2001	1995	2001	1995	2001	Change in contribution rate
Poverty rate of single-person households					15.80	20.10 (+4.30*)			
Employment status of head of household									
Company/organization executives	2.4	1.8	1.0	1.3	6.7	14.3	1.0	1.3	+0.3
Regular employee (firm size: 1-29 employees)	19.0	16.2	18.0	7.8	15.0	9.7	18.0	7.8	-10.2
Regular employee (firm size: 30-99 employees)	14.4	10.6	11.0	5.2	12.1	9.9	11.0	5.2	-5.8
Regular employee (firm size: 100-999 employees)	20.1	14.0	10.0	4.6	7.9	6.5	10.1	4.5	-5.6
Regular employee (firm size: 1,000 or more employees)	10.9	12.5	0.0	2.0	0.0	3.1	0.0	1.9	+1.9
Civil servants	8.4	9.9	0.0	1.3	0.0	2.6	0.0	1.3	+1.3
Employee on contract of less than one year	4.4	6.9	8.0	13.7	28.6	39.6	8.0	13.6	+5.6
Self-employed	8.5	5.9	18.0	13.7	33.3	46.7	17.9	13.7	-4.2
Home piece-rate worker and other	2.7	3.8	7.0	4.5	41.1	24.1	7.0	4.6	-2.4
Without employment	9.3	18.4	27.0	46.1	45.8	50.4	27.0	46.1	+19.1
Poverty rate of single-person households (if breakdown by employment status of head of household in 1995 is unchanged)					15.80	16.54 (+0.74)			

Source: Calculated by the authors from *The Income Redistribution Survey* (1996, 2002). Households headed by someone of unknown employment status were excluded from the sample.

Note: Single-person households excluding old single-person households and households whose head of household is aged under 25 were used for the analysis (1995: N = 633, 2001: N = 766)

As is also apparent from the high contribution rate of households whose heads are without employment, there is an extremely strong correlation between poverty and whether or not heads of households of working age have work. Normally, a person can receive unemployment benefit in the event of unemployment provided that he/she is enrolled in employment insurance and meets several conditions. Employment insurance is an exceedingly important safety net against unemployment. As Tachibanaki (2002) observes, however, Japan's unemployment safety net is as restricted as that of the U.S., and some 60% of the unemployed presently do not receive unemployment benefits.[17] A great many people thus fall between the cracks of the system. Moreover, even if a person is able to receive unemployment benefit, there are cases where benefits cease due to the length of unemployment. In other words, the increase in people falling between the cracks of the employment insurance system and those who cannot find work even after their eligibility for unemployment benefit expires is also probably a factor behind the increase in the poverty level in Japan.

The poverty rate in 2001 if the breakdown by employment status of head of household is fixed at the level in 1995 is 16.5%, which is approximately 3.5% lower than the actual poverty rate of 20.1%. From 1995 to 2001, the proportion among single-person households headed by people such as directors, regular workers, and government employees, which typically have lower poverty rates, fell from 75.2% to 65%, and the proportion among households headed by non-regular employees, persons without employment, and home piece-rate workers, which have higher poverty rates, rose from 16.4% to 29.1%. The impact of these changes on the rise in the level of poverty in Japan was considerable.

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[17] According to the Ministry of Internal Affairs and Communications' Labor Force Survey, the average number of unemployed in 2001 was approximately 3.4 million, but the number of recipients of unemployment benefit in the same year was approximately 1.1 million. (See Health and Welfare Statistics Association [2002, 199-207]).
In order to enroll in the present employment insurance system, employed persons must meet two conditions: i) they must be continuously employed, and ii) they must work normal working hours of at least 20 hours per week. In 2001, the annual requirement for part-time and dispatched workers (requiring that they earn at least 900,000 yen a year) was abolished, but many part-time and contract workers remain excluded. Government employees are also not covered.

IV. Characteristics of Poor Households: Type of Household, Age Group, Industry, and Region

Having examined the characteristics of households that fall below the relative poverty line (poor households) focusing on the employment status of the head of household, there is a strong possibility that the age group of the head of household, household type, region of residence, and other such attributes are also closely related to poverty. In order to examine in greater detail what attributes characterize poor households in comparison with ordinary households, therefore, we performed a probit analysis of poverty factors by controlling variables concerning household attributes. The data used are micro data from the Ministry of Health, Labour and Welfare's Income redistribution survey (1996-2002), as in the preceding section, and the descriptive statistics of the dummy variables used in the analysis are shown in Table 6.

1. Characteristics of Poor Households

Table 7 shows the results of a probit analysis of the characteristics exhibited by households on or below the relative poverty line. For the explained variable we use a discrete variable, which equals 1 if a household is at or below the relative poverty line and 0 if not. As in the preceding section, the poverty line is set at 50% of the median value of equivalent disposable income (e = 0.5). The explanatory variables are dummy variables that express households' various attributes, including type of household, age group of head of household, employment status of head of household, and area of residence of household. The reference group for each group of explanatory variables is shown in angle brackets on the left side of the table. If we take household type as an example, the marginal effect of "single female parent household" expresses the extent of the change in the probability of falling into poverty compared with "nuclear family" when other control variables are unchanged.

According to the results of estimates shown in Table 7, the "Household type" that were positively significant at the 1% significance level in both 1995 and 2001 were "single female parent household," "older single-person household," and "single-person household (excluding older person households). The probability of these households falling into poverty is evidently extremely high, even after controlling for other factors, and the marginal effects of the variables "single female parent household" and "older single-person household"

Table 6. Descriptive statistics of variables used (1995, 2001)

Dummy variables	1995		2001	
	Mean	Standard deviation	Mean	Standard deviation
Household type				
Nuclear family household	0.591	0.491	0.547	0.498
Single-person household (excluding older person households)	0.094	0.292	0.127	0.333
Older two-or-more-person household	0.088	0.284	0.095	0.293
Older single-person household	0.067	0.250	0.082	0.274
Single female parent household	0.013	0.112	0.015	0.122
Three-generation household	0.131	0.337	0.113	0.317
Other household	0.098	0.297	0.109	0.312
Age group of head of household				
Under 30	0.071	0.256	0.075	0.264
30-49	0.367	0.482	0.283	0.450
50-59	0.220	0.414	0.224	0.417
60-69	0.201	0.401	0.208	0.406
70 or over	0.140	0.347	0.210	0.407
Employment status of head of household				
Company/organization executives	0.047	0.211	0.048	0.214
Regular employee (firm size: 1-29 employees)	0.125	0.330	0.119	0.324
Regular employee (firm size: 30-99 employees)	0.096	0.295	0.088	0.283
Regular employee (firm size: 100-999 employees)	0.138	0.345	0.129	0.335
Regular employee (firm size: 1,000 or more employees)	0.118	0.323	0.095	0.293
Civil servants	0.071	0.257	0.076	0.265
Employee on contract of less than one year	0.017	0.130	0.032	0.175
Self-employed	0.133	0.340	0.132	0.339
Home piece-rate worker and other	0.110	0.313	0.073	0.260
Without employment (working age)	0.040	0.195	0.077	0.266
Without employment (older person)	0.105	0.306	0.132	0.338
Size of municipality of residence				
Large city	0.187	0.390	0.205	0.404
City of 50,000 or more population	0.546	0.498	0.495	0.500
City of less than 50,000 population	0.268	0.443	0.300	0.458
Regional block				
Hokkaido	0.042	0.201	0.050	0.218
Tohoku	0.080	0.272	0.078	0.269
Kanto I	0.244	0.429	0.240	0.427
Kanto II	0.065	0.246	0.088	0.283
Hokuriku	0.047	0.211	0.044	0.206
Tokai	0.136	0.343	0.123	0.328
Kinki I	0.124	0.330	0.108	0.311
Kinki II	0.026	0.160	0.031	0.174
Chugoku	0.064	0.245	0.069	0.254
Shikoku	0.030	0.170	0.034	0.181
Kita-Kyushu	0.071	0.257	0.076	0.266
Minami-Kyushu	0.071	0.257	0.058	0.234
Sample size	8125		7580	

Table 7. Probit analysis of causes of poverty (1995, 2001)

Explained variable: Household at or below relative poverty line = 1

Explanatory variables	1995		2001	
	Marginal effect	Standard error	Marginal effect	Standard error
Household type				
<Nuclear family household>				
Single-person household (excluding older person households)	0.067 **	0.017	0.114 **	0.018
Older two-or-more-person household	0.047 *	0.021	0.108 **	0.027
Older single-person household	0.265 **	0.037	0.350 **	0.039
Single female parent household	0.415 **	0.053	0.472 **	0.050
Three-generation household	-0.024 *	0.011	0.009	0.016
Other household	0.058 **	0.015	0.104 **	0.018
Age group of head of household				
<30-49>				
Under 30	0.088 **	0.020	0.064 **	0.021
50-59	-0.016	0.010	-0.013	0.012
60 or over	-0.008	0.011	-0.050 **	0.012
Employment status of head of household				
<Regular employee (firm size: 30-99 employees)>				
Company/organization executives	-0.053 **	0.016	-0.047 *	0.019
Regular employee (firm size:1-29 employees)	0.023	0.017	0.015	0.019
Regular employee (firm size: 100-999 employees)	-0.023	0.014	-0.057 **	0.014
Regular employee (firm size: 1,000 or more employees)	-0.086 **	0.010	-0.073 **	0.014
Civil servants	-0.094 **	0.009	-0.100 **	0.011
Employee on contract of less than one year	0.152 **	0.043	0.192 **	0.040
Self-employed	0.155 **	0.023	0.176 **	0.027
Home piece-rate worker and other	0.078 **	0.022	0.124 **	0.029
Without employment (working age)	0.266 **	0.037	0.327 **	0.035
Without employment (older person)	0.122 **	0.031	0.094 **	0.031
Size of municipality of residence				
<City of 50,000 or more population>				
Large city	-0.002	0.010	-0.019 +	0.010
City of less than 50,000 population	0.008	0.009	0.010	0.010
Regional block				
<Tokai>				
Hokkaido	0.013	0.021	-0.010	0.020
Tohoku	0.023	0.018	0.026	0.020
Kanto I	-0.018	0.012	-0.010	0.014
Kanto II	0.017	0.018	0.004	0.018
Hokuriku	-0.017	0.018	-0.016	0.020
Kinki I	-0.005	0.014	0.034 +	0.019
Kinki II	-0.005	0.024	0.039 +	0.029
Chugoku	-0.003	0.017	-0.037	0.016
Shikoku	0.028	0.025	0.049 *	0.028
Kita-Kyushu	0.042 *	0.019	0.056 **	0.022
Minami-Kyushu	0.120 **	0.023	0.113 **	0.027
Sample size	8125		7580	
Pseudo R	0.182		0.193	
Log likelihood	-2834.4		-2767.2	

Note: The reference groups are shown in angle brackets < >. Explanatory variables are all dummy variables. **, * and + are significant at the 1% level, 5% level, and 10% level, respectively.

in particular are high.

In the "age group of head of household" category, the probability of younger households headed by someone aged under 30 falling into poverty is significantly higher than in the case of the reference group (30-49 years old). A breakdown by age of the unemployment rate between 1995 and 2001 using data from the Ministry of Internal Affairs and Communications' Labor force survey reveals sharp rises in unemployment in younger age groups: from 8.2% to 12.2% among 15-19 year olds, 5.7% to 9.0% among 20-24 year olds, and 4.3% to 6.7% among 25-29 year olds. It would thus appear that the increasing instability of employment conditions experienced by younger people caused an increase in the poverty level among younger households from the mid-1990s.

As younger households can sometimes avoid poverty by obtaining economic assistance from their own parents, one might argue that the expansion of poverty should not be taken too seriously. However, it is quite conceivable that many younger households do not have any recourse to their parents, too, being in poverty. How the annual incomes of the parent households of these younger poor households are distributed is a question of exceeding importance that must be investigated.

Looking next at the "employment status of head of household" dummy variable group, several interesting facts emerge. Firstly, when "regular employee (firm size: 30-99 employees)" is adopted as the reference group, the dummy variables "company/organization executives," "regular employee (firm size: more than 1,000 employees)" and "civil servants" are negatively significant in both 1995 and 2001. It can thus be seen that households headed by company/organization executives or employees of large firms are less likely to fall into poverty. As according to data for 2001 only 3.6% of households headed by employees of firms with 1,000 or more employees have an income that does not exceed the relative poverty line, compared with 16.9% overall, the chances of a household whose head works for a leading firm falling into poverty may be said to be low. Among households headed by employees of firms fewer than 30 employees, on the other hand, 12.6% are at or below the relative poverty line. There is thus a disparity in the proportion of households in poverty depending on the head's firm size.

"Employee on contract of less than one year," "self-employed," "home piece-rate worker and other," "without employment (working age)," and "without employment (old)," on the other hand, were found to be significantly positive

at the 1% significance level. Of particular note is the finding that the marginal effect of "self-employed" comes highest after "without employment (working age)" and "employee on contract of less than one year." Genda (2002) observes that the incomes of the self-employed are falling in comparison with those of employees, and a similar trend is confirmed in this estimated result too.

In the "regional block" group,[18] too, large differences are observed between 1995 and 2001 when "Tokai" is adopted as the reference group. In 1995, only "Kita-Kyushu" and "Minami-Kyushu" were significantly positive. In 2001, however, these variables were joined by the "Kinki I," "Kinki II," and "Shikoku" dummy variables in being significantly positive. Most striking in both years is the high marginal effect of the "Minami-Kyushu" variable. Even after controlling for various attributes, the probability of falling into poverty differs significantly between the Tokai area, which is enjoying buoyant economic growth, and the Minami-Kyushu area, which contains areas of high unemployment such as Okinawa Prefecture.

V. Issues in Measuring Poverty

Thus far, we have analyzed the present state of poverty in Japan and its causes. While the estimates in the preceding section were based mainly on an analysis of poverty in terms of "income" employing the concept of relative poverty, one must naturally beware of using just one-dimensional variables such as income as measures of poverty. As argued by Townsend in his advocating of the concept of "relative deprivation," people can experience dissatisfaction and misfortune concerning, for example, their health, living environment, and interpersonal relations, even though they may enjoy a sufficient income. Conversely, it is important to note that people on low incomes may perhaps not be in poverty if they have assets at their disposable (Yamada 2000). Sen (1982), meanwhile, criticizes the interpretation of poverty in terms of income and property only, and argues that attention should be paid to differences in competence when people use daily essentials. There thus exist numerous points

[18] The four regional blocks are made up of the following prefectures.
Kanto I: Saitama, Chiba, Tokyo, Kanagawa
Kanto II: Ibaraki, Tochigi, Gunma, Yamanashi, Nagano
Kinki I: Kyoto, Osaka, Hyogo
Kinki II: Shiga, Nara, Wakayama

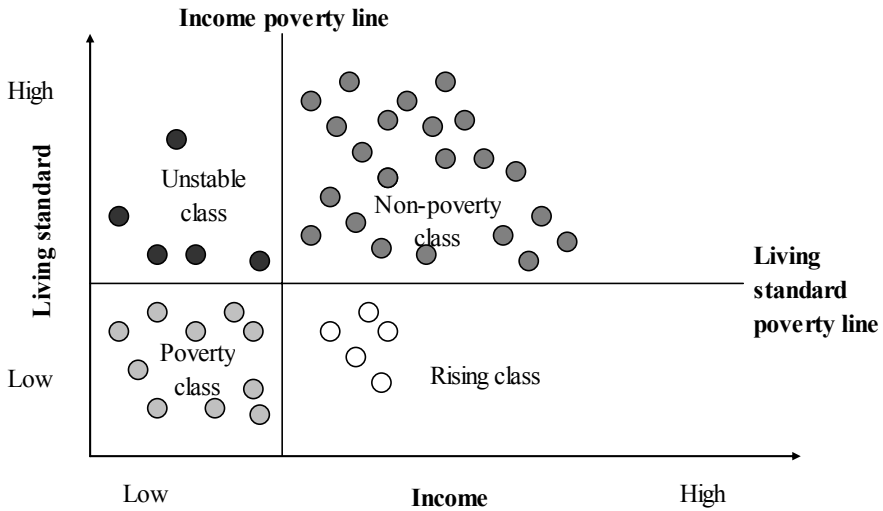
of contention regarding what indices should be focused upon in defining poverty.

A noticeable development in recent years, particularly in Europe and North America, had been the more active use of indices calculated on the basis of concepts linked to "quality of life," such as "relative deprivation" and "social exclusion," as criteria for measuring poverty. In the U.K., for example, attempts have been made in studies such as Gordon (2006) to define poverty taking into account various deprivation indices based on the Poverty and Social Exclusion Survey conducted in 1999. Gordon (2006) regards those who enjoy a high standard of living, despite having a low income, as not being in poverty, and sets out to calculate the proportion of people in poverty taking into consideration both income and standard of living.

Figure 3 is a simple schematic of the definition of poverty along the two axes of income and standard of living. The horizontal axis represents level of income, and the vertical axis the level of standard of living. Poverty lines are established according to certain criteria on both axes, and those who fall below the poverty lines on both axes are defined as being in poverty. The standard of living is measured according to the monetary amount of consumption over a given period or the aforementioned deprivation index. Even if only cross-sectional data at a given point in time are available, this approach makes it possible to ascertain in greater detail the state of poverty in society provided that information is available on both incomes and standard of living.

The Income Redistribution Survey used by the authors for the analysis in this paper is characterized by including a range of data on taxes and social security benefits, such as receipt of public assistance, medical benefits in kind, and public pension benefits, and covering a wider range of income classes than other large-scale surveys (Matsuura 2002). While this survey may be regarded as one of the most reliable sets of government statistics for analysis of income distribution and poverty in Japan, it unfortunately provides hardly any information on assets and quality of life. As the Income redistribution survey already consists of an enormous number of questions, adding further questions is admittedly difficult. If questions on the above items were to be added, however, it is likely that more detailed, wide-ranging insights would be provided for identifying the actual state of poverty in Japan and the poverty reduction effect of government redistribution policies.

Figure 3. Definition of poverty by Gordon (2006)



Source: Based on Gordon (2006).

VI. Conclusion

We began this paper by summarizing the various approaches to poverty, including the concepts of absolute and relative poverty, after which we examined trends in the relative poverty rate in Japan since the 1990s using micro data.

To sum up, since the mid-1990s marked increases in poverty among single-person households of working age as well as older single-person households appear to have caused an upward trend in poverty as a whole in Japan. Furthermore, the poverty rate among single female parent households is extremely high, though they do not yet account for a very large proportion of households in poverty.

In addition to enhancing the safety net for people who have retired, therefore, the safety net for those in the working generation also needs to be strengthened if rising poverty is to be reduced. As the poverty rate is particularly high among households headed by people without employment and by employees on contracts of less than one year, measures to cut poverty among such households are especially important.

Regarding firstly the reduction of poverty among those without employment,

the unemployment safety net needs to be strengthened for all workers. One possible means of doing this is by requiring all workers to enroll in employment insurance, irrespective of differences in occupation, form of employment, and working conditions.

In many developed countries, unemployment benefits packaged with self-support program is provided subject to a moderate means test for young people in poverty arising from youth unemployment (Komamura 2005, 189). Institutions need to be designed to provide a universal safety net that does not exclude the poor across a wide range of age groups, including people of working age as well as the young. A serious problem at present is that "social insurance and public assistance do not function in a coordination manner regarding the livelihood security of the unemployed,"[19] and redistribution policy for households in poverty headed by people of working age is almost entirely ineffective at reducing poverty (Tachibanaki and Urakawa 2006, chap. 4).

Regarding employees on contracts of less than one year, one option is to bring their wages closer to the wage level of permanent employees. As is apparent from Table 4, the probability of falling into poverty differs considerably between regular employees, at around 10%, and employees on contracts of less than one year, which in 2001 exceeded 30%. The low wage level of employees on contracts of less than one year thus gives rise to major disparity of this kind.[20]

Raising the wage level of non-permanent employees faces not only opposition from firms, but also reluctance from people who are already permanent employees, and little progress has so far been made. As the number of non-permanent employees has increased, however, calls to reduce the wage gap between full-timers and part-timers and to abolish barriers to movement between the two are growing.[21] Reforms of benefit to both sides, such as reduction of the long working hours of permanent employees to raise the wages of non-permanent employees and increase employment, need to be adopted

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[19] See Kumazawa (2003, 195). Drawing on a variety of sources, including *Social Assistance in OECD Countries* (1996, vol. 1) by United Kingdom Department of Social Security, Uzuhashi (1999) observes that the number of people receiving public assistance is quite low by international standards, representing only 0.7% of the total Japanese population.

[20] Mitani (2003) observes that the wage gap between full-time and part-time workers and between permanent employees and temporary employees is widening.

[21] For an analysis of the effects of work sharing schemes in Japan, see Saito and Tachibanaki (2002).

to reduce poverty.

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