Trends in Measures of Economic Inequality in Japan[*1][*2]

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Abstract

The Gini coefficient and the relative poverty rate are among the most widely employed metrics for assessing economic inequality. In Japan, these indicators are derived from the Comprehensive Survey of Living Conditions (CSLC), the Survey on the Redistribution of Income (SRI), and the National Survey of Family Income, Consumption and Wealth (NSFICW; formerly the National Survey of Family Income and Expenditure), with aggregated results publicly released. It is well documented, however, that the reported values vary systematically depending on the source. This study examines the Gini coefficient and the relative poverty rate, undertaking a cross-source comparison. Our analysis shows that, over the 2010s, income inequality measured on a market-income basis increased, while redistribution consistently attenuated this rise across all datasets. Estimates from the CSLC and SRI are persistently higher than those from the NSFICW, a pattern that remains stable over time. Discrepancies between the CSLC/SRI and the NSFICW are particularly pronounced among younger and older age groups, as well as single-person households. These results highlight the importance of employing multiple statistical sources in the measurement of income inequality.

Keywords: Economic Inequality, Gini Coefficient, Relative Poverty Rate

JEL Classification: I31, I32

I. Introduction

The state of income distribution is commonly assessed using the Gini coefficient and the relative poverty rate, two of the most widely employed indicators of economic inequality. These measures are central to evaluating the extent to which redistribution modifies market-determined allocations of resources. Understanding both the magnitude of inequality under market-based allocations and the extent to which redistribution reduces these disparities is of critical policy relevance for the design of tax and social security systems.

In order to understand the state of inequality in Japan, a substantial body of research has examined disparities in income (Ohta, 2000; Ohtake, 2005; Oshio and Urakawa, 2008; Ohtake and Kohara, 2010; Urakawa and Oshio, 2016; Shirahase, 2018; Takahashi and Mi-

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yazaki, 2022; Kitao and Yamada, 2019, 2024), wealth (Kitao and Yamada, 2019), and consumption (Ohtake and Saito, 1999; Kitao and Yamada, 2024), as well as relative poverty rates (Tokutomi and Urakawa, 2018) and top-income shares (Moriguchi and Saez, 2008; Mikayama et al., 2023). Frequently used data sources in this literature include the Comprehensive Survey of Living Conditions (CSLC), the Survey on the Redistribution of Income (SRI), the National Survey of Family Income, Consumption and Wealth (NSFICW; formerly the National Survey of Family Income and Expenditure), and the Family Income and Expenditure Survey (FIES). However, CAO(Cabinet Office)–MIC(Ministry of Internal Affairs and Communications)–MHLW(Ministry of Health, Labour and Welfare) (2015) note that the levels of inequality indicators vary systematically depending on the source. Comparing the relative poverty rate based on the CSLC with that based on the NSFICW, they attribute these differences to variations in survey methodology, concluding that neither source can be deemed definitively correct and recommending that judgments be made using a comprehensive set of indicators. Since that analysis, how has the divergence between these statistical sources evolved, and what are the recent trends in inequality measures?

The purpose of this study is to examine the characteristics of inequality indicators and the official statistics used to compute them through cross-source comparisons, thereby enhancing understanding of these measures and their limitations. Specifically, we document how differences across statistical sources have changed since the analysis by CAO–MIC–MHLW (2015) and describe recent trends and key issues covering the 2010s and the early 2020s. This analysis focuses primarily on the income-based Gini coefficient and the relative poverty rate, presenting their time-series trends for each dataset. Following CAO–MIC–MHLW (2015), we also compare sample characteristics between the CSLC and the NSFICW and examine the attributes of households in poverty.

The remainder of this paper is organized as follows. Section II reviews key concepts related to inequality measures. Section III describes the principal official statistics used to measure inequality in Japan and outlines their characteristics. Section IV examines time-series trends using published statistics, highlighting differences across data sources and demographic attributes based on aggregated data. Section V concludes.

II. Concepts of Inequality Measures[1]

This section outlines the principal indicators used to measure economic inequality. For ease of exposition, the explanation focuses on calculation methods based on income. The relationship between income and other economic variables will be discussed later.

The Gini coefficient is one of the most frequently employed indicators of inequality. It measures the overall dispersion of a distribution and captures the degree of income inequality within a society on a scale from 0 to 1. The Gini coefficient is defined as shown in Equation (1).

[1] This section draws heavily on Sano (2022).

$$Gini = \frac{1}{2n^2\mu} \sum_{i}^{n} \sum_{j}^{n} |y_i - y_j| \quad (1)$$

Here, n denotes the number of households, y_i the income of household i, and μ the mean income. The formula can be interpreted as drawing all possible n^2 ordered pairs of households, calculating the absolute difference in income for each pair, summing these differences, and normalizing the total by the mean income. The resulting Gini coefficient ranges from 0 to 1, where 0 indicates perfect equality and 1 indicates perfect inequality.

The Lorenz curve is also frequently used to visualize the state of income distribution. It is constructed by ranking households in ascending order of income, plotting the cumulative share of households on the horizontal axis and the cumulative share of income on the vertical axis. The magnitude of inequality is represented by the area between the Lorenz curve and the 45-degree line of perfect equality. Twice the area between the Lorenz curve and the line of perfect equality corresponds to the Gini coefficient.[2]

The Gini coefficient varies under several circumstances. First, it changes when actual income inequality widens or narrows, which occurs when the movements of different income groups diverge. For example, if incomes decline equally across all income groups, the Gini coefficient remains unchanged. Inequality increases when the decline in income is greater among lower-income groups than among higher-income groups. Second, it can change for reasons unrelated to income variation, such as shifts in household composition. For instance, if a household consisting of a married couple with one child splits into two households after the child becomes independent, the creation of a new household with a lower apparent income can increase the Gini coefficient, even if absolute incomes remain unchanged. Finally, differences in the target population across statistical sources can also affect the Gini coefficient, a point discussed later.

Income distribution measures are also used as indicators of inequality. Among these, measures focusing on the upper tail of the distribution include the income share of the top 1 percent or top 5 percent. In contrast, measures focusing on the lower tail include the relative poverty rate, which is defined as the proportion of individuals living in households with income below the poverty line to the total population. In the context of relative poverty, the poverty line is set at one-half of the median equivalized annual disposable income. The relative poverty rate among children, defined as the proportion of individuals under the age of 18 living in households with income below the poverty line, is another indicator that has attracted considerable attention.

The relative poverty rate can vary under several circumstances. First, it increases when the number of low-income individuals rises. Second, it changes when the level of the poverty line shifts. For example, if the entire population becomes poorer, the poverty line will move downward, and the relative poverty rate will not necessarily increase. Finally, it can vary depending on the statistical source used. Because both low-income individuals and

[2] For example, see Oshio (2013).

top-income earners represent a relatively small share of the total population, differences in how they are captured in the data can affect the reported figures.[3]

From an economic perspective, disparities in consumption and wealth are as important as disparities in income. According to the life-cycle hypothesis[4], lifetime income should be equal to lifetime consumption, making consumption inequality a critical indicator. Likewise, wealth inequality is also a key measure[5]. While various indicators of inequality exist, this study focuses primarily on the income-based Gini coefficient and the relative poverty rate.

It is also important to distinguish between individuals and households. Although inequality measures can be computed for any unit of aggregation, the reported figures are often equivalized. Equivalization involves dividing the total household value by the square root of the household size to obtain a per capita measure, thereby reflecting economies of scale within households.

III. Representative Official Statistics for Measuring Inequality in Japan

This section describes the principal official statistics used to measure inequality in Japan and outlines their key characteristics.

III-1. Comprehensive Survey of Living Conditions (CSLC)[6]

The Comprehensive Survey of Living Conditions (CSLC) is a fundamental statistical survey conducted "to investigate basic matters related to the living conditions of the population, such as health, medical care, welfare, pensions, and income, in order to obtain fundamental data necessary for the planning and administration of health and welfare policies, as well as to establish a master sample for selecting subjects for various other surveys" (MHLW, 2024). Since 1986, a large-scale survey has been conducted every three years, with simplified surveys carried out in the intervening years.

The large-scale survey consists of the Household Questionnaire, Health Questionnaire, and Long-term Care Questionnaire administered in June, and the Income Questionnaire and Savings Questionnaire administered in July. It covers households and household members nationwide, employing a stratified two-stage sampling design with approximately 5,000 census enumeration districts as the primary sampling units. For the inequality measures examined in this study, relevant components include the Household Questionnaire, which col-

[3] In this regard, large-scale surveys or administrative data are useful for capturing poverty.

[4] For a detailed discussion of the life-cycle theory of consumption and its application to the analysis of consumption in Japan, see Unayama (2023).

[5] There are also relative poverty measures that take assets into account. These measures reflect the idea that even if income is insufficient for a certain period—such as during unemployment while job hunting—households may be able to maintain their standard of living temporarily by drawing down savings and other assets. Specifically, the asset-based relative poverty line is defined as the amount equivalent to 25% of the income poverty line (corresponding to three months of income), measured in liquid assets. Households whose liquid assets fall below this threshold are considered to be in relative poverty from an asset perspective.

[6] The following explanation is based on https://www.mhlw.go.jp/toukei/list/20-21.html (2024).

lects information on household and individual characteristics as well as household expenditures, health insurance, and pension status; the Income Questionnaire, which records income amounts by source and taxation status for the preceding year; and the Savings Questionnaire, which collects data on current savings balances, outstanding loans, and related items. The simplified survey comprises only the Household Questionnaire and the Income Questionnaire, with approximately 1,100 census enumeration districts as the primary sampling units. Representative inequality indicators such as the Gini coefficient and the relative poverty rate are calculated and published based on the results of the large-scale survey.

The definition of "income" in the CSLC warrants clarification. In the Income Questionnaire, respondents are asked to record their income and pension benefits for the year preceding the survey date by transcribing information from documents such as withholding slips, final tax returns, and pension payment notices. Income items include employment income, business income, income from farming and livestock operations, home-based work income, and property income, corresponding to the gross amounts reported on withholding slips or the gross receipts reported on final tax returns—that is, income before taxation. In addition, the survey records income from public pensions and gratuities, unemployment insurance, child allowances, other social security benefits, and remittances received. Regarding taxation, it collects information on the amount of income tax and resident tax paid in the previous year, as well as social insurance contributions, property tax, city planning tax, and automobile tax. Furthermore, it records the amounts of corporate pensions, private pensions, and remittances made to others.

III-2. Survey on the Redistribution of Income (SRI)[7]

The Survey on the Redistribution of Income (SRI) is a general statistical survey conducted "to clarify, by income class, household, and household member characteristics, the impact of social security benefits and contributions as well as tax burdens on the distribution of income, and to assess the extent and effects of the social security system, thereby providing basic data for the formulation of effective future policies" (MHLW, 2021). It has been conducted approximately every three years since 1961, typically between July and August of the year preceding the large-scale CSLC. The survey covers the entire country, targeting respondents of the CSLC. The SRI collects information on contributions to and benefits from life insurance, as well as on the use of medical care, long-term care, and childcare services. By matching these results with the income data from the CSLC's Income Questionnaire, it enables the assessment of income redistribution.

The aggregated results of the SRI report three income concepts: primary income, disposable income, and post-redistribution income. Primary income consists of the sum of employment income, business income, income from farming and livestock operations, property income, home-based work income, miscellaneous income, remittances, corporate pensions,

[7] The following explanation is based on https://www.mhlw.go.jp/toukei/list/96-1.html (2021).

life insurance benefits, and other private transfers. Disposable income is obtained by adding cash social security benefits to primary income and then subtracting taxes and social insurance contributions from the total income thus calculated. Post-redistribution income is defined as disposable income plus social security benefits, both in cash and in kind.

The change in inequality measures from primary income earned in the market to post-redistribution income reflects the degree of improvement, serving as an indicator for evaluating the inequality-reducing effects of taxes and social security.

III-3. National Survey of Family Income, Consumption and Wealth (NSFICW)[8]

The National Survey of Family Income, Consumption and Wealth (NSFICW) is a fundamental statistical survey conducted "to comprehensively ascertain the actual conditions of household consumption, income, assets, and liabilities, and to clarify the distribution of household income and the level and structure of consumption nationwide and by region" (MIC, 2019). It is the successor to the National Survey of Family Income and Expenditure (NSFIE), which was conducted until 2014, but incorporates several changes (MIC, 2019). First, the survey continues to be conducted every five years, in years ending in 4 and 9. However, the household account book recording period, previously three months, has been shortened to two months (October-November). The sample size for single-person households has been expanded, and a "Basic Survey" requiring the completion of household account books and a "Simplified Survey" without account books have been introduced to increase the sample size for the Income, Savings, and Related Items Questionnaire. As a result, the number of households surveyed for both the Household Questionnaire and the Income, Savings, and Related Items Questionnaire has increased to approximately 90,000.[9]

The definition of income in the NSFICW warrants clarification. Income data are obtained from the Income, Savings, and Related Items Questionnaire, which asks about annual income (before tax) for the preceding year (November 2018 to October 2019) and covers not only the household head but also all household members. Reported income consists of earnings from employment, agriculture, forestry, and fisheries; non-agricultural and non-fishery self-employment; home-based work; rental income from land and buildings; public pensions and gratuities; social security benefits; corporate pension benefits; private pension benefits; interest and dividends; other income; and the estimated annual value of in-kind consumption for the household. The survey also collects household-level information on remittances made, corporate pension contributions, property taxes, savings balances, and outstanding loan balances. Annual disposable income is defined as annual income minus taxes and social insurance contributions. For taxes and social insurance contributions not directly captured in the questionnaire, such as income tax, amounts are estimated using other household-level information.

[8] The following explanation is based on https://www.stat.go.jp/english/data/zenkokukakei/index.html (2019) and Sano (2022).
[9] The 2014 NSFIE covered 56,400 households.

The NSFICW reports both annual disposable income as measured in the former NSFIE, defined as "annual income" minus "taxes and social insurance contributions on income," and income measured according to the OECD's 2015 revised standard. Under the OECD (2015) definition, annual disposable income is calculated by subtracting "taxes and social insurance contributions on income," "property tax and city planning tax," and "automobile tax, light vehicle tax, and automobile weight tax" from "annual gross income." Annual gross income is defined as "annual market-income" plus "public pension and gratuity benefits" plus "social security benefits (other than public pensions and gratuities)" minus "corporate pension contributions." Annual market-income is calculated as "annual primary income" plus "corporate pension benefits," where annual primary income consists of "earnings from employment," "self-employment and home-based work income," "private pension benefits," "interest and dividends," "other income," "in-kind benefits," and "remittances received," minus "remittances paid." The extent to which income inequality changes through redistribution corresponds to the change from annual primary income to annual disposable income.

The introduction of the simplified survey and the addition of new survey items in the NSFICW, compared with the former NSFIE, are likely to have had important implications for measuring inequality. First, the introduction of the simplified survey increased the total number of households surveyed to approximately 90,000, enabling the publication of tabulations with more detailed class intervals as well as results for the top 1 percent and top 5 percent. However, for time-series comparisons, published results are based solely on households from the Basic Survey. Second, by adding questions on employment status and the educational attainment of household members, the survey now allows for analyses that account for differences by labor force status and educational attainment.

III-4. Other Statistical Sources

Other statistical sources for measuring inequality include the Family Income and Expenditure Survey (FIES) and tax records. This subsection briefly reviews each.

The FIES is a fundamental statistical survey designed to produce household statistics and is conducted monthly on approximately 9,000 households nationwide. Participating households record their daily receipts and expenditures over a six-month period in household account books, and their income is ascertained through the Annual Income Questionnaire and the Savings Questionnaire. The Annual Income Questionnaire asks the household head and all household members to report approximate gross annual amounts for the past year, including annual employment income (regular earnings and bonuses), annual business profits, annual income from home-based work, public pensions and gratuities, income from agriculture, forestry, and fisheries, other annual income, and the estimated value of in-kind consumption. Because the FIES reports income quintile and decile thresholds, it is possible to calculate the Gini coefficient for income from this information.[10]

Tax records are administrative data obtained from annual income tax returns and have been increasingly utilized in recent research (Kunieda and Yoneta, 2023). The advantages of

tax records include their substantially larger sample sizes compared with survey data and their ability to capture reported income, particularly that of high-income individuals who are often underrepresented in surveys. They also enable the estimation of income distributions by combining tax data with the NSFICW and other surveys (Mikayama et al., 2023). However, tax records have limitations: they do not capture low-income individuals who do not file tax returns, much of the interest income subject to separate taxation is excluded, and household attributes such as family composition are not recorded (Kunieda and Yoneta, 2023).

IV. Trend in Economic Inequality Measures

This section presents the results for the income-based Gini coefficient and the relative poverty rate from each statistical source. We first examine their time-series trends and then compare the statistics by demographic attributes using a method similar to that employed in CAO–MIC–MHLW (2015). Whereas CAO–MIC–MHLW (2015) re-tabulated microdata for the purpose of comparison, this study relies solely on published figures. It should therefore be noted that the comparison method used here is not identical to that in CAO–MIC–MHLW (2015).

IV-1. Income-Based Gini Coefficient

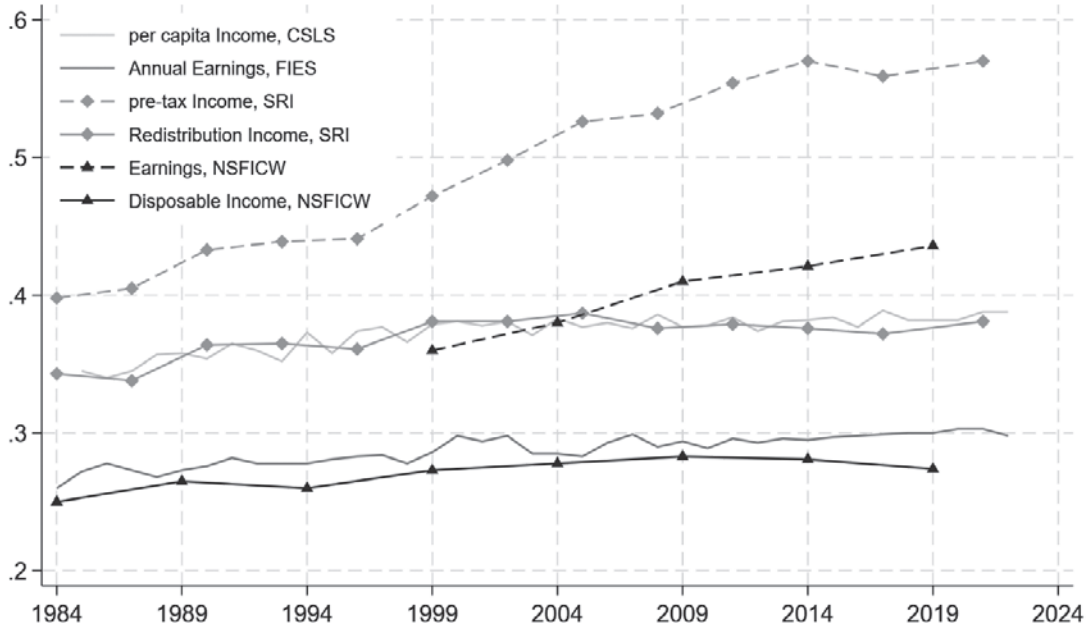
IV-1-1. Time-Series Trends

This subsection presents the time-series trends in the income-based Gini coefficient. Figure 1 shows the trends based on the Survey on the Redistribution of Income (SRI), the National Survey of Family Income, Consumption and Wealth (NSFICW), the Comprehensive Survey of Living Conditions (CSLC), and the Family Income and Expenditure Survey (FIES). The Gini coefficients from the SRI and the NSFICW are taken directly from published results, whereas those for the CSLC and the FIES are calculated from the income quantile information reported in each survey.

The results from the SRI are shown by the gray diamond markers, with dashed lines representing primary income and solid lines representing post-redistribution income. The Gini coefficient for primary income rose from 0.40 in 1984 to 0.50 between the 1990s and 2000 and fluctuated around 0.57 during the 2010s. This indicates that income inequality, as measured by market-generated income, has widened. In contrast, the Gini coefficient for post-redistribution income, which incorporates transfers such as taxes, social security benefits, and in-kind benefits, increased only moderately, from 0.34 in 1984 to 0.38 in the 2000s, and has remained in the range of 0.37 to 0.38 throughout the 2000s and 2010s. These figures suggest that the upward trend in market-income inequality has been partially offset by redistribution

[10] Studies comparing methods for estimating the Gini coefficient from grouped data in the Family Income and Expenditure Survey include Kakamu (2017) and Kobayashi et al. (2021).

Figure 1. Trends in Income Gini Coefficients Across Surveys



Source: Author's compilation based on each statistical survey

through taxes and social security.

The results from the NSFICW are shown by the black triangle markers, with dashed lines representing income (before redistribution) and solid lines representing disposable income. The Gini coefficient for income rose from 0.36 in 1999 to 0.43 in 2019. In contrast, the Gini coefficient for disposable income was 0.27 in 1999, fluctuated within the range of 0.27 to 0.28 thereafter, and stood at 0.27 in 2019. The tendency for redistribution through taxes and social security to reduce inequality in market-generated income is consistent with the results from the SRI.

Thus, while income inequality measured using market-generated income has widened, this expansion has been mitigated by redistribution—a pattern observed in both the SRI and the NSFICW. Between the two, the SRI consistently reports higher Gini coefficients, whereas the NSFICW yields lower values, a relationship that remains stable over time.

The thin solid line represents the figures from the CSLC, while the thick solid line represents those from the FIES; each is calculated using income corresponding to post-redistribution income and disposable income, respectively. The results from the CSLC and the SRI, as well as those from the FIES and the NSFICW, exhibit broadly similar trends. At a minimum, results produced by the same statistical agency display comparable patterns.

IV-1-2. Comparison Between SRI and NSFIE

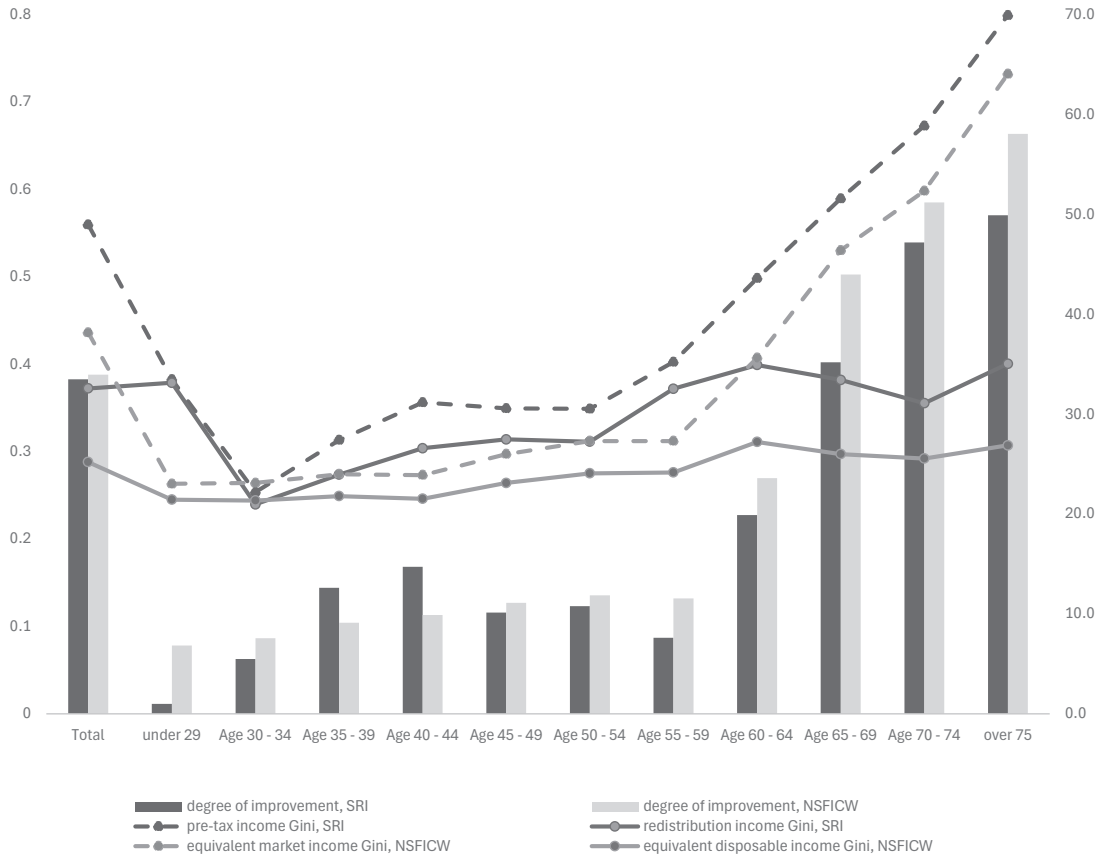
This subsection compares the SRI and the NSFICW. It should be noted, however, that

the survey years differ—the SRI was conducted in 2017, whereas the NSFICW was conducted in 2019—and that the two surveys employ different income concepts. Nevertheless, the comparison is made using age and household size, which are measured on the same scale in both datasets.

Figure 2 plots the Gini coefficients from the SRI and the NSFICW by age group of the household head. The dashed lines correspond to market-income, while the solid lines correspond to post-redistribution income. Although the SRI generally reports higher values than the NSFICW, in some age groups the two surveys yield similar levels. For market-income, the Gini coefficient remains roughly flat for individuals in their 30s to 50s but rises with age from the 60s onward—a pattern observed in both datasets. In addition, both surveys show that redistribution tends to equalize the Gini coefficient across age groups.

The bars in Figure 2 represent the degree of improvement through redistribution. This measure is calculated as the percentage change from the Gini coefficient before redistribu-

Figure 2. Gini Coefficients and Improvement Rates by Income Category and Age Group: SRI and NSFICW



Note: The SRI refers to the 2017 survey, and the NSFICW refers to the 2019 survey. Note that the definitions of income differ between the two surveys.
Source: Author's compilation based on each statistical survey

tion to that after redistribution, and it serves to verify whether the magnitude of change is similar even when the levels of the Gini coefficient differ across sources. According to Figure 2, the degree of improvement through redistribution is broadly similar for those in their 20s to 50s, while it increases with age from the 60s onward—a pattern common to both surveys. However, the absolute values and age-specific patterns differ slightly between the two datasets. Overall, the NSFICW shows a greater degree of improvement than the SRI, although for the 35-39 and 40-44 age groups the improvement is greater in the SRI. In addition, for those under 30 and for the 65-69 age group, the degree of improvement differs by more than five percentage points between the two surveys.

To examine differences in age-group patterns, we compare the age distribution of households across the two surveys. Table 1 presents the distribution of households by age group of the household head. Although the survey years differ, no systematic divergence in the age distribution of household heads is observed between the two datasets. Discrepancies of more than one percentage point are found only among those aged 70 and above: for the 70-74 age group, the NSFICW reports a higher share, whereas for those aged 75 and above, the CSLC reports a higher share.

Table 1. Comparison of the Distribution of Households by Age Group of Household Head Between the SRI and the NSFICW

	Number of Households, SRI	Number of Households, NSFICW
under 29	3.90	3.85
Age 30 - 34	3.31	3.60
Age 35 - 39	5.12	5.53
Age 40 - 44	7.57	7.39
Age 45 - 49	7.84	8.68
Age 50 - 54	8.06	8.29
Age 55 - 59	8.36	8.36
Age 60 - 64	9.63	10.17
Age 65 - 69	12.55	12.28
Age 70 - 74	10.87	12.45
over 75	22.81	19.40

Note: The SRI refers to the 2017 survey, and the NSFICW refers to the 2019 survey.
Source: Author's compilation based on each statistical survey

What about differences in household composition? Table 2 compares the Gini coefficient, the degree of improvement through redistribution, and household shares by household size. In terms of the Gini coefficient, both surveys show the highest value for single-person households. The divergence between the Gini coefficient for primary income and that for market-income is also greatest for single-person households, while the corresponding figures for other household sizes are similar across the two surveys. Moreover, the difference in the degree of improvement between the surveys is largest for single-person households. This pattern is mirrored in the divergence in the share of single-person households: the

Table 2. Comparison of the Distribution of Households by Household Size

	SRI				NSFICW			
Househols Menbers	pre-tax income Gini	redistribution income Gini	degree of improvement	household share	equivalent disposable income Gini	equivalent disposable income Gini	degree of improvement	household share
1	0.68	0.38	44.0%	26.5	0.53	0.33	39.0%	18.5
2	0.62	0.32	48.5%	36.4	0.59	0.31	47.4%	37.6
3	0.41	0.30	27.4%	17.6	0.41	0.28	31.4%	20.4
4	0.34	0.28	15.6%	14.0	0.30	0.25	17.2%	16.1
5	0.32	0.27	13.6%	3.9	0.30	0.26	14.1%	5.2
over 6	0.37	0.30	18.7%	1.6	0.34	0.29	16.3%	2.2

Note: The SRI refers to the 2017 survey, and the NSFICW refers to the 2019 survey. Note that the definitions of income differ between the two surveys.
Source: Author's compilation based on each statistical survey

Table 3. Comparison of the Distribution of Households by Income Class

	Number of Households, SRI	Number of Households, NSFICW
Less than 2 million yen	18.71	19.59
2 to 5 million yen	42.04	48.70
5 to 8 million yen	24.30	22.23
8 to 10 million yen	6.75	5.18
Over 10 million yen	8.20	4.31

Note: The SRI refers to the 2017 survey, and the NSFICW refers to the 2019 survey. Note that the definitions of income differ between the two surveys.
Source: Author's compilation based on each statistical survey

CSLC reports a higher share than the NSFICW. For households with two or more members, by contrast, the CSLC reports a lower share than the NSFICW.

Table 3 compares household shares by income class. It should be noted, however, that the SRI uses equivalized post-redistribution income, whereas the NSFICW uses equivalized disposable income, and that the survey years differ. According to Table 3, for incomes below 5 million yen, the SRI reports a lower share than the NSFICW, while for other income ranges it reports a higher share. The groups with relatively large discrepancies between the two surveys are those with incomes of 2-5 million yen and those with incomes of 10 million yen or more.

Taken together, the discrepancies between the two surveys, when considered in light of the properties of the Gini coefficient, suggest that households with extremely different incomes are being captured in the case of single-person households and households headed by younger or older individuals.

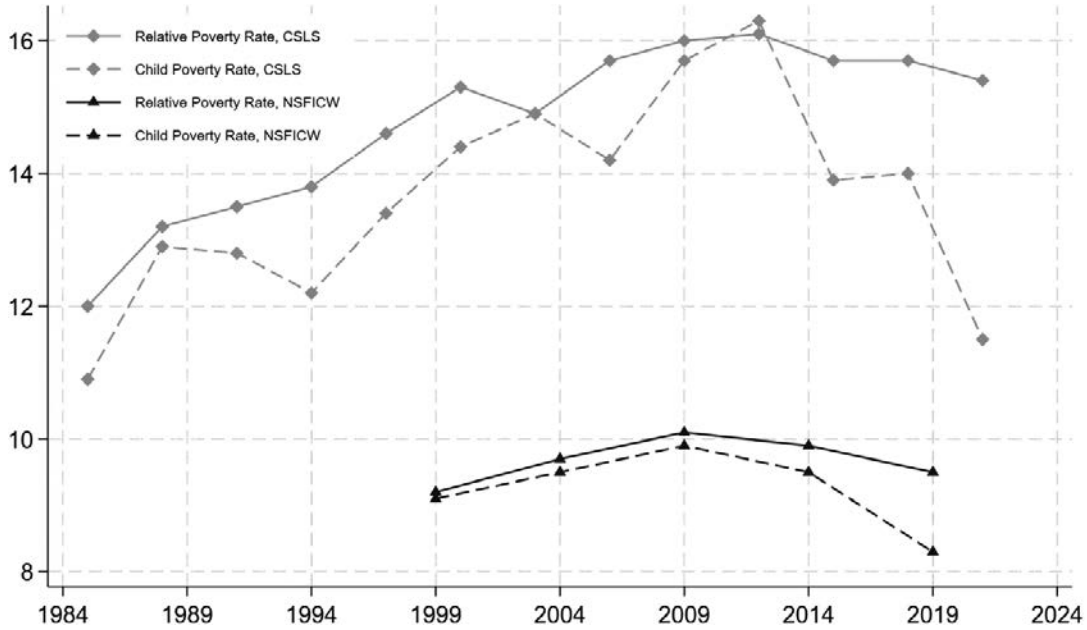
IV-2. Relative Poverty Rates

IV-2-1. Time-series Trends

This subsection presents the time-series trends in the relative poverty rate. Figure 3 illustrates the trends in the relative poverty rate and the child poverty rate as reported in the Comprehensive Survey of Living Conditions (CSLC) and the National Survey of Family In-

come, Consumption and Wealth (NSFICW). Both indicators show an upward trend from the 1980s through the 2000s, peaking around 2012, followed by a plateau or a slight decline. The CSLC consistently reports higher values than the NSFICW, and this pattern has persisted over time.

Figure 3. Trends in the Relative Poverty Rate in the CSLC and NSFICW



Source: Author's compilation based on each statistical survey

The pattern observed by the CAO–MIC–MHLW (2015) up to 2009 is also confirmed for the values in 2014 and 2019. In other words, the tendency for the CSLC to provide an upper bound and the NSFICW a lower bound remains unchanged.

IV-2-2. Comparison Between the CSLC and the NSFICW

This subsection compares the CSLC and the NSFICW. To align survey years, the comparison focuses on 2019, following as closely as possible the methodology of CAO–MIC–MHLW (2015). However, while the earlier study re-tabulated microdata from both surveys, this paper conducts the comparison based on published statistics.

Table 4 presents the relative poverty rates from the 2019 surveys. Beginning with the 2019 survey results, figures under both the OECD's new standard and the previous standard have been published in parallel. In both surveys, the revision of the standard resulted in an overall increase in the reported values. Furthermore, in both surveys, the poverty rate among children is notably higher when there is only one adult in the household. The poverty line is 1.24-1.27 million yen in the CSLC and 1.34-1.39 million yen in the NSFICW, with the NS-

FICW consistently reporting a higher threshold.

Table 4. Comparison of the Relative Poverty Rate Between the CSLC and the NSFICW

	CSLC old	NSFICW old	CSLC new	NSFICW new
Relative Poverty Rate (%)	15.4	9.5	15.7	11.2
Child Poverty Rate (%)	13.5	8.3	14	
one adult (%)	48.1	57	48.3	53.4
Two or more adults (%)	10.7	5.7	11.2	6.7
Poverty line (million yen)	127	139.6	124	134.5

Note: Both the CSLC and the NSFICW are based on the 2019 survey. Note that the income components included differ between the two surveys.
Source: Author's compilation based on each statistical survey

We also examine whether the two surveys capture different income groups. Figure 5 presents the distribution of households by disposable income class. At the 2-million-yen threshold, the CSLC records a higher proportion than the NSFICW, while in the 3-5 million yen and 5-8 million yen ranges, the CSLC records lower proportions. For other ranges, the distributions largely overlap. This is consistent with the comparative results reported in CAO–MIC–MHLW (2015).

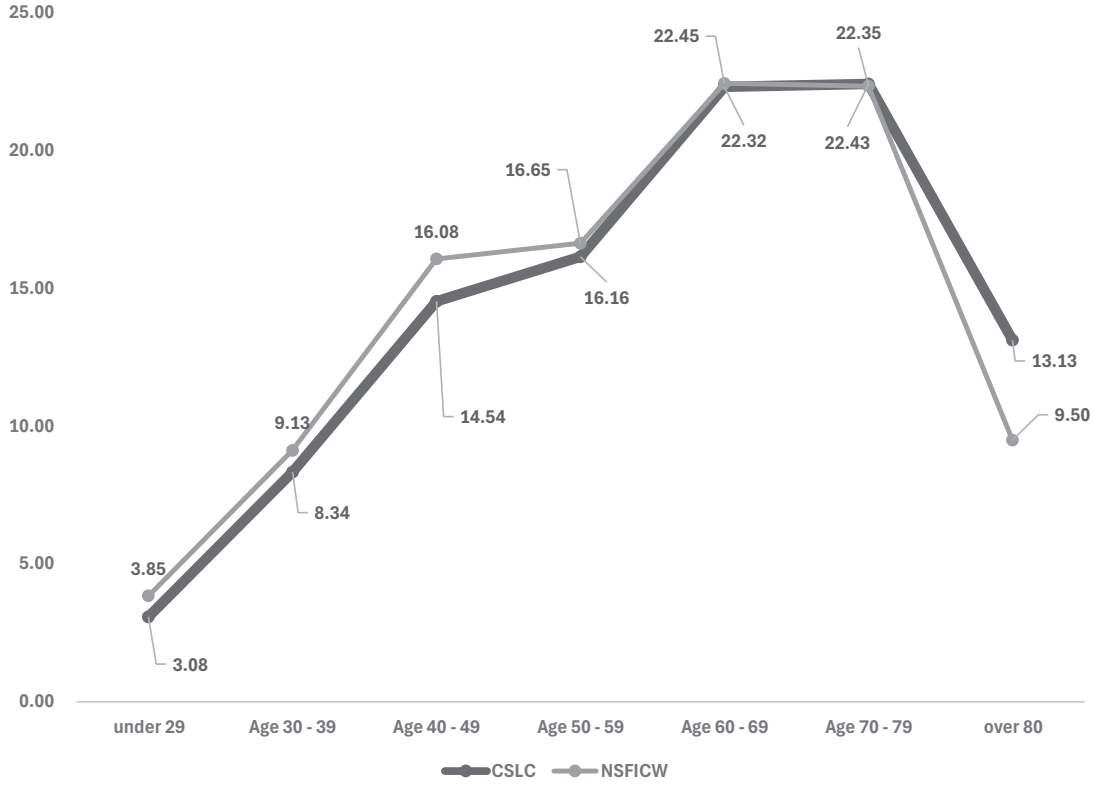
In the earlier study, the causes of discrepancies in the relative poverty rate were explored primarily for low-income groups, using re-tabulated microdata for cross-survey comparisons. Here, we perform comparisons to the extent possible using published data.

Table 6 compares household composition for all households and for those with incomes below 1 million yen in each survey. The values represent each category's share of the total. For all households without income classification, the proportion of single-person households is lower in the CSLC than in the NSFICW, while the proportion of multi-person households is higher. When limited to households with incomes below 1 million yen, the CSLC records higher proportions in all categories.

Figure 6 compares the age distribution of household heads in households with incomes below 1 million yen between the two surveys. In the left panel (CSLC), the shares are higher for those aged 29 or younger and those in their 70s or older compared to the overall distribution, consistent with the findings of CAO–MIC–MHLW (2015). In the right panel (NSFICW), the shares are higher for those aged 29 or younger and those aged 80 or older, while lower for other age groups. The earlier study found higher shares for those under 26 and those aged 60 or older compared to the overall distribution, which differs from the current NSFICW results.

Given the findings from the cross-survey comparison of Gini coefficients, it is necessary to examine discrepancies not only among low-income households but also in higher-income groups. Figure 7 compares the age distribution of household heads for all households, mid-

Figure 4. Age Distribution of Household Heads: CSLC vs. NSFICW



Note: Both the CSLC and the NSFICW are based on the 2019 survey.
Source: Author's compilation based on each statistical survey

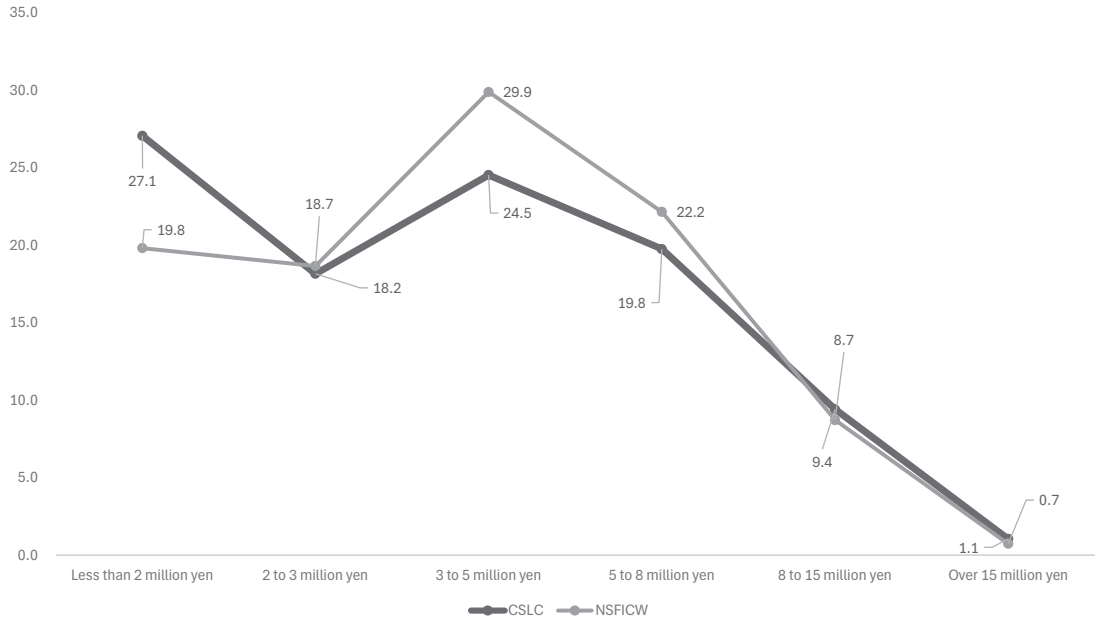
dle-income households (3-5 million yen and 5-8 million yen), and high-income households (15 million yen or more) between the two surveys.

In the left panel (CSLC), the 3-5 million yen group closely resembles the overall distribution. The 5-8 million yen group has lower shares for those aged 29 or younger and those in their 70s, but higher shares, particularly among those in their 40s and 50s, than the overall distribution. For the 15 million yen or more group, shares are higher among those in their 50s and 60s, but lower in other age groups.

In the right panel (NSFICW), the 3-5 million yen group also resembles the overall distribution. The 5-8 million yen group shows lower shares for those aged 29 or younger and those in their 70s, but higher shares, especially among those in their 40s and 50s, than the overall distribution. For the 15 million yen or more group, shares are higher among those in their 50s through 70s, but lower for other age groups.

Finally, we consider differences in survey methodology. The NSFICW employs stratified sampling, whereas the CSLC uses cluster sampling. Although the two methods are theoretically equivalent, differences may arise depending on whether substitute households are available when the selected respondents refuse to participate (Sano, Tada, and Yamamoto,

Figure 5. Comparison of the Number of Households by Disposable Income Class Between the CSLC and the NSFICW



Note: Both the CSLC and the NSFICW are based on the 2019 survey. Note that the income components included differ between the two surveys.
Source: Author's compilation based on each statistical survey

Table 5. Number of Household Members in Households with Equivalized Disposable Income Below 2 Million Yen

	CSLC	NSFICW
Single	16.8%	14.1%
2 persons	6.9%	4.0%
over 3 persons	3.3%	1.7%
Total	27.1%	19.8%

Note: Both the CSLC and the NSFICW are based on the 2019 survey. Note that the income components included differ between the two surveys.
Source: Author's compilation based on each statistical survey

2015). The NSFICW, which incorporates simplified surveys and allows for replacement households, achieved a response rate of 91%[11], while the CSLC's response rate in 2019 was 72%. Beyond non-response, there is also the issue of "Unknown" responses, where respondents fail to answer required items. The CSLC reports "Unknown" cases in its tabulations of household counts by disposable income and household size, with an overall proportion of

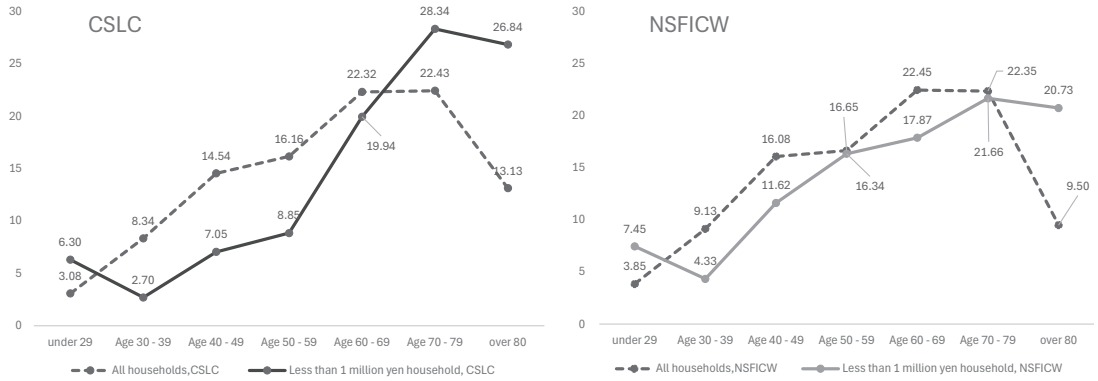
[11] The FY2024 National Survey of Family Income and Expenditure: Survey Implementers' Instructional Materials (Ministry of Internal Affairs and Communications) provides detailed information on response rates and related matters.

Table 6. Household Structure of All Households and Households with Income Below 1 Million Yen

	CSLC		NSFICW	
	All households	Less than 1 million yen household	All households	Less than 1 million yen household
Total	100.0	6.7	100.0	5.4
single household	24.5	4.6	35.3	4.1
household of two or more people	75.5	2.1	64.7	1.3

Note: Both the CSLC and the NSFICW are based on the 2019 survey. Note that the income components included differ between the two surveys.
Source: Author's compilation based on each statistical survey

Figure 6. Age Distribution of Household Heads: All vs. Low-Income Households

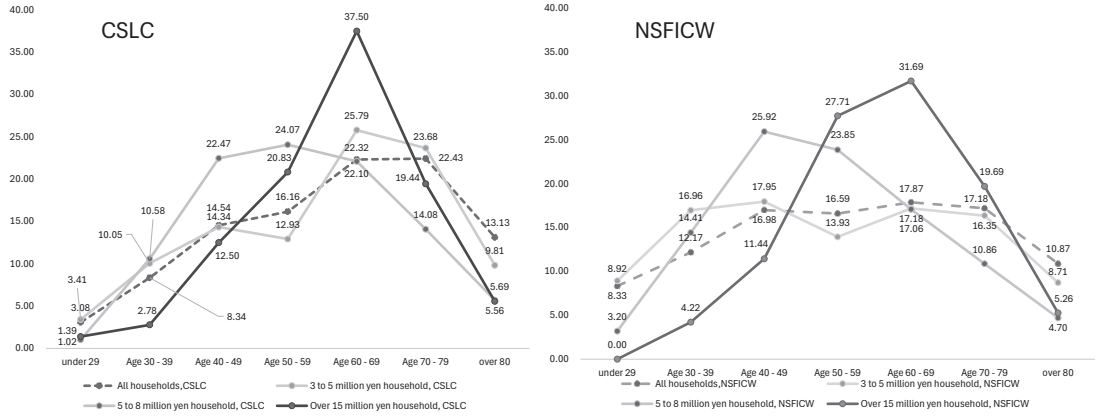


Note: Both the CSLC and the NSFICW are based on the 2019 survey. Note that the income components included differ between the two surveys.
Source: Author's compilation based on each statistical survey

about 31%-27% for single-person households, 35% for two-person households, 19% for three-person households, and 17% for households with four or more members. According to the Ministry of Health, Labour and Welfare (2018), which examined non-sampling errors in the 2010 CSLC, the survey undercounts urban areas and younger age groups compared to the Population Census. Whether this directly contributes to discrepancies in inequality measures between the NSFICW and CSLC is unclear. Gini coefficients calculated from income distributions adjusted for non-response by several methods, as presented in the same study, did not differ substantially. Sano, Tada, and Yamamoto (2015) found that, in the 2010 Population Census, "Unknown" education levels were more frequent among individuals with compulsory or upper secondary education. Given that the NSFICW includes additional questions on household characteristics, including education, further examination is warranted to determine which types of households have missing data.

Overall, the comparison of household attributes between the 2009 NSFICW and the 2013 CSLC in CAO-MIC-MHLW (2015) and the comparison between the 2019 NSFICW and the CSLC conducted in this paper show similar trends. These results suggest that inequality indicators should still be observed using multiple data sources. In the comparison of Gini coefficients, we inferred that the discrepancies between the Survey on the Redistri-

Figure 7. Age Distribution of Household Heads by Income Group



Note: Both the CSLC and the NSFICW are based on the 2019 survey. Note that the income components included differ between the two surveys.
Source: Author's compilation based on each statistical survey

bution of Income and the NSFICW were due to the inclusion of households with extremely different incomes among single-person, younger, and older households; a similar possibility cannot be ruled out for the CSLC.

V. Conclusion

This study examined the Gini coefficient of income and the relative poverty rate, focusing on the characteristics of the statistical sources used and comparing these indicators across different datasets. The analysis drew publicly available results from the Comprehensive Survey of Living Conditions (CSLC), the Survey on the Redistribution of Income (SRI), the National Survey of Family Income, Consumption and Wealth (NSFICW), and the Family Income and Expenditure Survey (FIES), identifying systematic differences in measurement outcomes.

The results indicate that during the 2010s, income inequality measured by market-generated income widened, yet redistribution through taxes and social security tended to mitigate this increase across all datasets. The inequality levels reported by the CSLC and SRI are consistently higher than those derived from the NSFICW throughout the observation period. Discrepancies between the CSLC/SRI and the NSFICW are most pronounced among younger and older age groups, as well as among single-person households.

These findings underscore the continued necessity of monitoring inequality indicators using multiple statistical sources in combination. At the same time, the presence of "Unknown" or unreported values—particularly prevalent in certain household types—may introduce bias into measurement results, highlighting the importance of further investigation into their potential impact.

Reference

CAO–MIC–MHLW (2015), "Results of the Survey and Analysis on Relative Poverty Rate and Related Indicators" (in Japanese)
〈https://www.mhlw.go.jp/seisakunitsuite/soshiki/toukei/tp151218-01.html〉

Funaoka, T. (2001), "Japan's Inequality in Income Distribution", *The Economic Review (Keizai Kenkyu)*, 52(2), pp. 117-131 (in Japanese)

Kakamu, K. (2017), "A study on the measurement of the Gini coefficients from the Family Income and Expenditure Survey", *Journal of Economics & Business Administration (The Kokumin-keizai zasshi)*, 216(6), pp. 47-57 (in Japanese)

Kitao, S. and Yamada, T. (2019), "Dimensions of inequality in Japan: Distributions of earnings, income and wealth between 1984 and 2014", *RIETI Discussion Paper Series 19-E-034*

Kitao, S. and Yamada, T. (2024), "Inequality Dynamics in Japan, 1981-2021", *ESRI Discussion Paper Series No.392*

Kobayashi, G., Yamauchi, Y., Kakamu, K., Kawakubo, Y., and Sugasawa, S. (2021), "Bayesian Approach to Lorenz Curve Using Time Series Grouped Data", *Journal of Business & Economic Statistics*, 40(2), pp. 897-912

Kunieda, S., and Yoneta, Y. (2023), "The Significance of Analyses Based on Tax Data on Japan's Income Tax System", *National Tax College Discussion Paper*, 230100–01ST (in Japanese)

Mikayama, M., Imahori T., Ohno T., Yoneta, Y. and Ueda J. (2023), "Top Income Shares in Japan from 2014 and 2019 Survey and Tax Data: Following the Distributional National Accounts Guidelines", *PRI Discussion Paper Series*, No.23A-04

MHLW (2018), "Report of the Study Group on Reducing Non-Sampling Errors in the Comprehensive Survey of Living Conditions" (in Japanese)

Moriguchi, C. (2017), "Did Japan Become an Unequal Society? Japan's Income Disparity in Comparative Historical Perspective", *The Economic Review (Keizai Kenkyu)*, 68(2) pp. 169-189 (in Japanese)

Moriguchi, C. and Saez, E. (2008), "The evolution of income concentration in Japan, 1886-2005: evidence from income tax statistics", *The Review of Economics and Statistics*, 90(4), pp. 713-734

Ohta, K. (2000), "Income Distribution in Japan from an International Perspective", The Japanese Journal of Labour Studies (Nihon Rodo Kenkyu Zasshi), No. 480, pp. 33-40 (in Japanese)

Ohtake, F. (2005), *Inequality in Japan*, Nikkei Publishing Inc. (in Japanese)

Ohtake, F. and Kohara, M. (2010), "Income Inequality", in Y. Higuchi (Ed.), *Labor Markets and Income Distribution*, Keio University Press (in Japanese)

Ohtake, F. and Saito, M. (1999), "On the income inequality during the 1980s: causes and implications"., *The Quarterly of Social Security Research (Kikan shakai hosho ken-*

kyu), 35(1), pp. 65-76 (in Japanese)
Oshio, T. (2013), *Economics of Social Security (4th ed.)*, Nihon Hyoronsha (in Japanese)
Oshio, T. and Urakawa, K. (2008), "The trend of poverty and redistribution policies in the first half of the 2000s"., *The Quarterly of Social Security Research (Kikan shakai hosho kenkyu)*, 44(3), pp. 278-290 (in Japanese)
Sano, S. (2022), "How to Interpret Inequality Indicators", *Statistics (Tokei)* (in Japanese)
Sano, S. (2025), "Kakusa no doukou", *the Financial Review* 159, pp. 88-104 (in Japanese)
Sano, S., Tada, H., and Yamamoto, M. (2015), "Method of Household Surveys and Characteristics of Surveyed Households: Comparison regarding Household Composition, Annual Income and Educational Attainment", *Public Policy Review*, 2015(2), pp. 4-24 (in Japanese)
Shiranase, S. (2018), "Demographic Transformation and Economic Inequality in Japan", *The Japanese Journal of Labour Studies (Nihon Rodo Kenkyu Zasshi)*, No. 690 (in Japanese)
Takahashi, I. and Miyazaki, T. (2022), "Income disparity in the early 2010s in Japan: an investigation using the micro data of the Comprehensive Survey of Living Conditions", *Journal of Economics & Business Administration (The Kokumin-keizai zasshi)*, 225(1), pp. 31-45 (in Japanese)
Tokudomi, T. and Urakawa, K. (2018), "Poverty variation in Japan during the 2000s: Decomposition Analysis of Poverty Measure Changes", *Journal of Social Security Research (Shakai hosho kenkyu)*, 2(4), pp. 551-565 (in Japanese)
Unayama, T. (2023), *Consumption Analysis in Contemporary Japan: The Current State of the Life-Cycle Theory*, Keio University Press (in Japanese)
Urakawa, K. and Oshio, T. (2016),"Economic Theories of Poverty Measurement: The Current and Future Issues", *The Economic Review (Keizai Kenkyu)*, 67(3), pp. 261-284 (in Japanese)