

Research in Brief



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A Look through Indicators into Inequalities in the Past Decade

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Introduction

The International Monetary Fund earlier this year ranked the Republic of Korea the 10th largest economy in the world. Also, the United National Conference on Trade and Development added Korea to the group of “advanced economies.” Now that it has become the economic powerhouse it is, it stands to reason that Korea should extend its policy interest beyond growth to inequality in distribution. Inequality has been viewed as detrimental to economic efficiency and growth and even to democracy (Joseph Stiglitz, *The Price of Inequality*). Furthermore, inequalities in capital and assets pass down across generations, gradually eroding the quality of life of individuals (Thomas Piketty, *Capital in the Twenty-First Century*).

Against this backdrop, the government, set to pursue “people-centered” economic growth, announced in July 2021 its Korean New Deal 2.0 initiative with a promise for greater investments in people and reduced inequality and disparities. This study aims to examine inequality in income and assets and to provide basic data on which to base policymaking for reducing inequality.

This study draws on several sources of data. The income inequality of the 10-year period preceding the outbreak of covid-19 is examined via Statistics Korea’s income distribution indicators that were generated with data from the Survey of Household Finances and Living Conditions. Income inequality

after covid-19 is examined by means of indicators drawn from the Household Income and Expenditure Survey for years from 2019 to 2021 only, as the emphasis here is on seeing the impact of the pandemic on inequality. This study looks also at assets, another source of unequally-distributed wealth, through indicators generated with data from the Survey of Household Finances and Living Conditions for 2019.



Terms and indicators

“Market income” is defined as the sum of earned income, business income and private transfer income less private transfer expenditure. “Current income” is market income and public transfer income combined. Defined as current income less social security contributions and taxes, “disposable income” refers to the total income households or individuals have in their disposal to spend.

[Table 1] Three categories of income defined

Category	Definition					
Market income	Earned income	+ Business income	+ Property income	+ Private transfer income	+ Public transfer income	- Public transfer expenditure
Current income						
Disposable income						

Source: Author’s own configuration

The income inequality indicators used in this study are defined as follows. “Relative poverty rate” is the proportion of the population living on a disposable income less than 50 percent of the national median income. “Decile share ratio” is the ratio of the income held by the top income decile to the income held by the bottom income decile; “quintile share ratio” divides the income held by the top income quintile by the income held by the bottom income quintile. The Palma ratio refers to the share of income held by 10 percent of the population with highest income divided by the share of income held by 40 percent of the population with the lowest income. The concept of the Palma ratio comes from a study by Palma (2011), where the author found, in his analysis of the World Bank’s World Development Indicators for some 130 countries around the world, that the share of income held by deciles 5 through 9 remained stable throughout, while the share held by the top decile and by deciles 1 through 4 varied across the countries. In short, the Palma ratio compares the volatile income shares of the top 10 percent and the bottom 40 percent. The Gini coefficient is the cumulative shares of the population arranged according to the level of income, divided by the cumulative share of income held by them. The closer the Gini value is to 0, the more equal the distribution of income is; the closer the Gini value gets to 1,

the more unequal the distribution of income is. The difference between market-income inequality and current-income inequality is attributable to government transfers [effect of public transfers = (market income inequality – current income inequality)/ market income inequality x 100]. The difference between market-income inequality and disposable-income inequality can be thought of as the redistributive effect of taxes and public transfers [income redistributive effect = effect of public transfers + effect of taxation = (market income inequality – disposable income inequality) / market income inequality x 100].

This study looks at asset inequality as well. The assets examined here are defined as in Table 2. “Real estate assets” refer to the sum of one’s home, non-home real estate holdings, down payment and installments, other real assets and financial assets less debt.

[Table 2] Categories of assets defined

Category	Definition					
Real estate assets	Home	+ non-home real estate	+ down payment and installments	+ other real assets	+ financial assets	- debt
Real property						
Total assets						
Net assets						

Source: Author’s own configuration



Trends in inequality indicators

This study looks through several indicators at income inequality trends in the years from 2011 to 2019. We examine trends in relative poverty rates, the decile share ratio, and the Palma ratio. We then look at the redistributive effect of taxes and public transfers. For this, this study uses data from Statistics Korea on income sources and income shares.

Earned income as a share current income grew by a little from 63.7 percent in 2011 to 67.7 percent in 2019. As a result, business income fell as a share of total income, from 27.2 percent in 2011 to 20.3 percent in 2019. Public transfer income occupied an increasing share of current income, from 4.0 percent in 2011 to 6.9 percent in 2019. Along the years, tax burden as a share of current income increased from 10.4 percent in 2011 to 12.7 percent in 2019, a sign of a strengthening redistributive mechanism.

[Table 3] Trends in income sources as percentage of total income

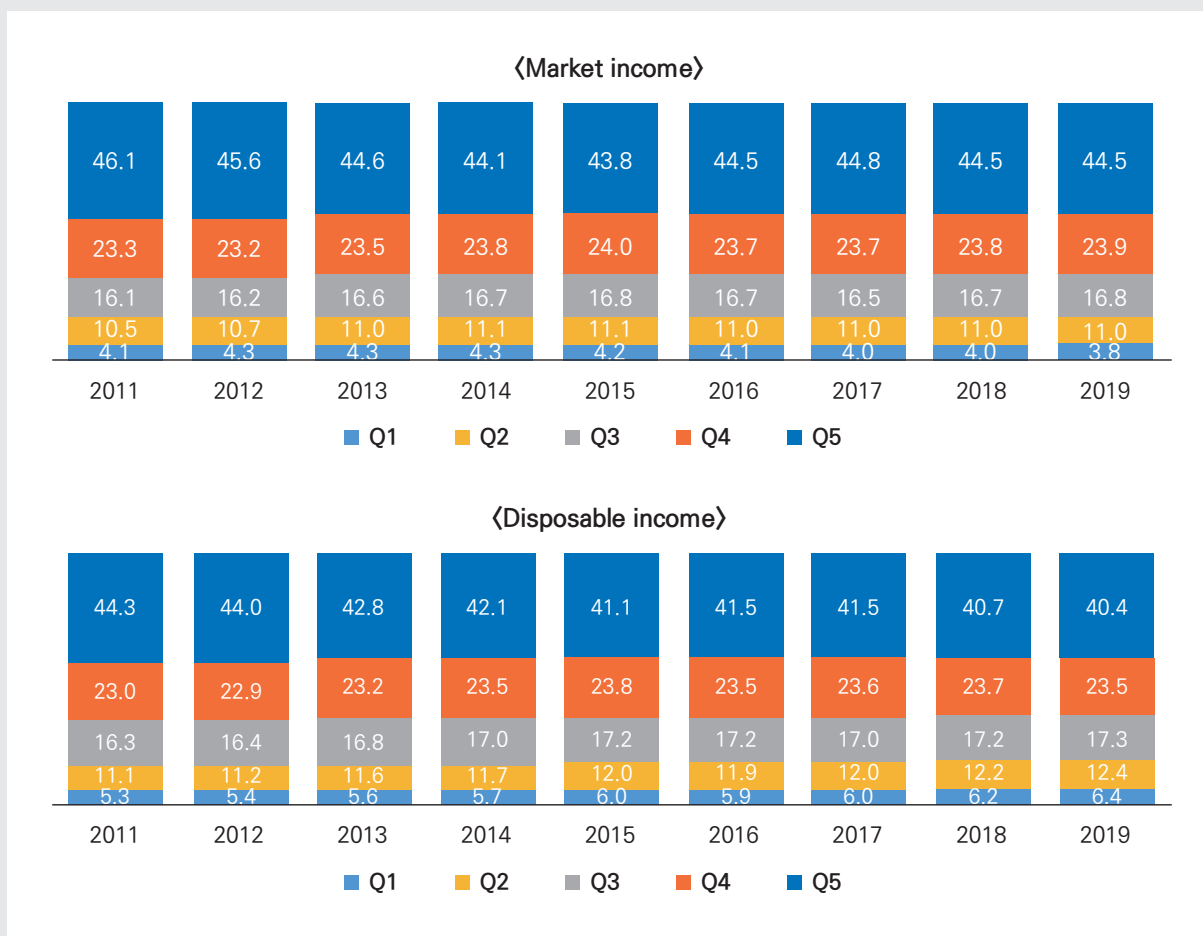
구분	2011	2012	2013	2014	2015	2016	2017	2018	2019
Market income									
Earned income	63.7	65.8	67.0	67.2	67.3	67.2	67.3	68.7	67.7
Business income	27.2	25.9	24.9	24.6	23.2	23.2	22.8	21.1	20.3
Property income	6.9	7.0	6.3	6.2	6.6	6.3	6.5	6.5	6.9
Private transfer income	1.4	1.2	1.1	1.0	1.0	1.2	1.3	1.5	1.5
Private transfer expenditure	3.3	3.7	3.4	3.5	3.3	3.2	3.4	3.6	3.3
Current income									
Public transfer income	4.0	3.8	4.1	4.5	5.1	5.4	5.5	5.9	6.9
Disposable income									
Public transfer expenditure	10.4	10.4	10.2	10.3	11.3	11.7	12.2	12.6	12.7

Note: The figures are based on equalized current income—a household's current income divided by the square root of the number of members in the household.

Source: Statistics Korea. https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1HDLF05&conn_path=I3

As illustrated in Figure 1, throughout the years from 2011 to 2019, more than 40 percent of total income went to the 5th quintile, as compared to 3.8 percent that went to the 1st quintile in 2019. In the nine-year period, the top quintile's percentage share of disposable income declined by about 4 percentage points. By comparison, the share of disposable income held by those in the 1st quintile grew thanks to increased public transfers. This is to say that the increase in market-income inequality has in part been alleviated by public transfers. In the past 10 or so years, the redistributive role of the government has grown. In consequence, the percentage share of disposable income held by quintiles 1 to 4 has increased somewhat.

[Figure 1] Percentage share of household disposable income by quintile

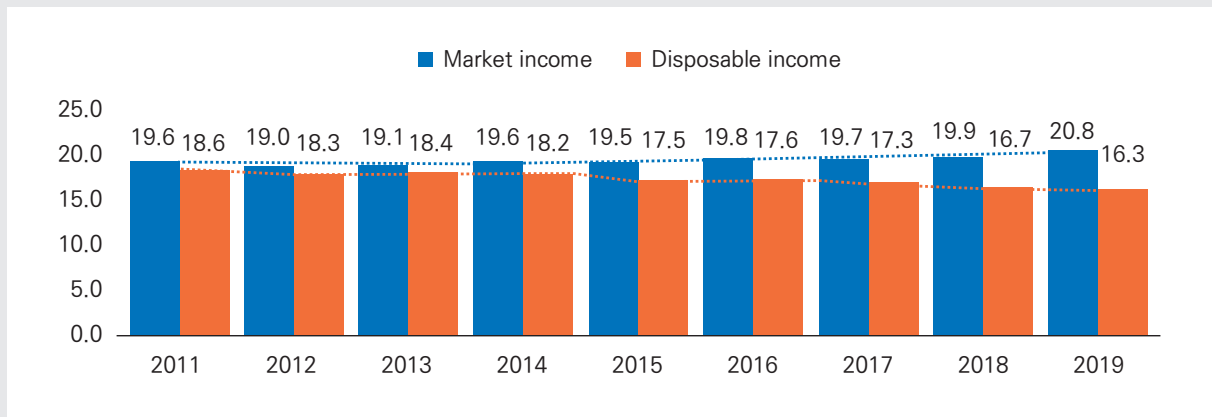


Note: The figures are drawn from Statistics Korea's Survey of Household Finances and Living Conditions.

Source: Statistics Korea. https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1HDLF05&conn_path=I3

The relative poverty rate based on market income has increased overall in the 2010s, as shown in Figure 2. In disposable income terms, however, the relative poverty rate has declined, an effect of taxes and public transfers. The redistributive effect as measured in terms of the difference in percentage between the market-income poverty rate and the disposable-income poverty rate, has grown from 5.1 percent in 2011 to 21.6 percent in 2019.

[Figure 2] Trends in relative poverty rate (2011~2019)

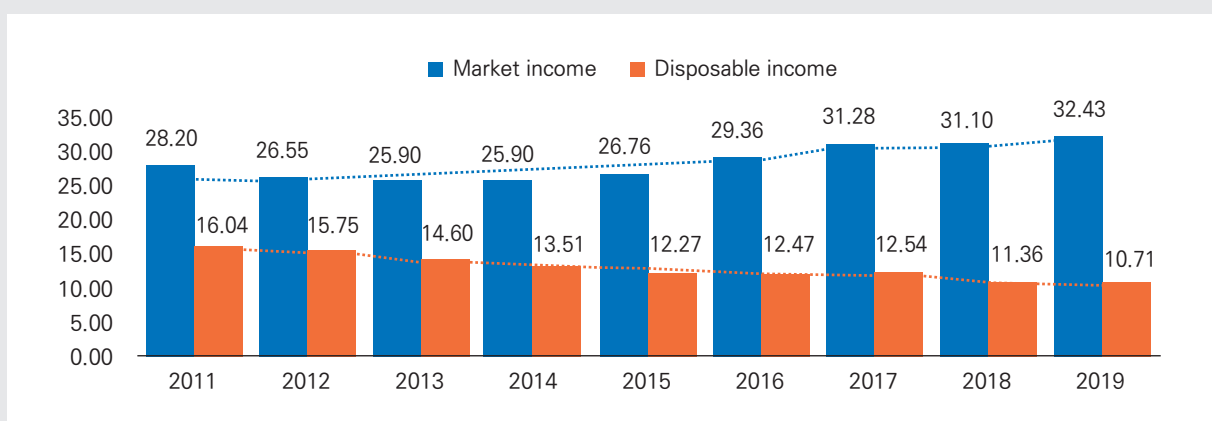


Note: The relative poverty is measured based on income less than 50 percent of the national median income. The figures are based on equivalized household income—a household's income divided by the square root of the number of members in the household.

Source: Statistics Korea. https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1HDLF05&conn_path=I3

The decile share ratio based on market income rose to 32.43 in 2019 from 28.2 in 2011. In disposable income terms, the decile share ratio declined from 16.04 in 2011 to 10.71 in 2019. The redistributive effect as manifested in the decile share ratio has grown over the 9-year period by 23.9 percentage points, from 43.1 percent in 2011 to 67.0 percent in 2019.

[Figure 3] Trends in the decile share ratio (2011~2019)

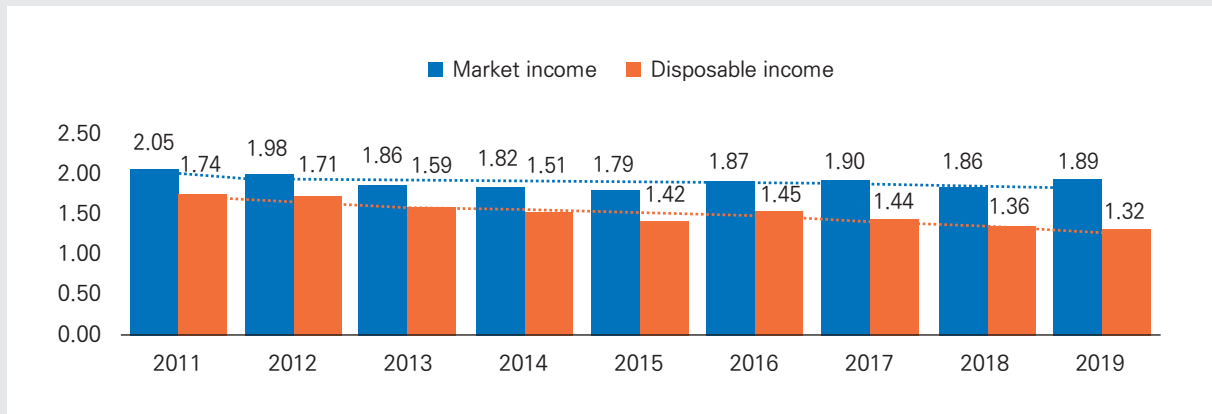


Note: The figures are based on equivalized income—a household's income divided by the square root of the number of members in the household.

Source: Statistics Korea. https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1HDLF05&conn_path=I3

The market-income Palma ratio declined from 2.05 in 2011 to 1.79 in 2015 and rose thereafter to reach 1.89 in 2019. In comparison, the disposable-income Palma ratio declined throughout, from 1.74 in 2011 to 1.32 in 2019. The income redistributive effect as manifested in the Palma ratio increased from 15.1 percent in 2011 to 30.2 percent in 2019.

[Figure 4] Trends in the Palma ratio, 2011~2019

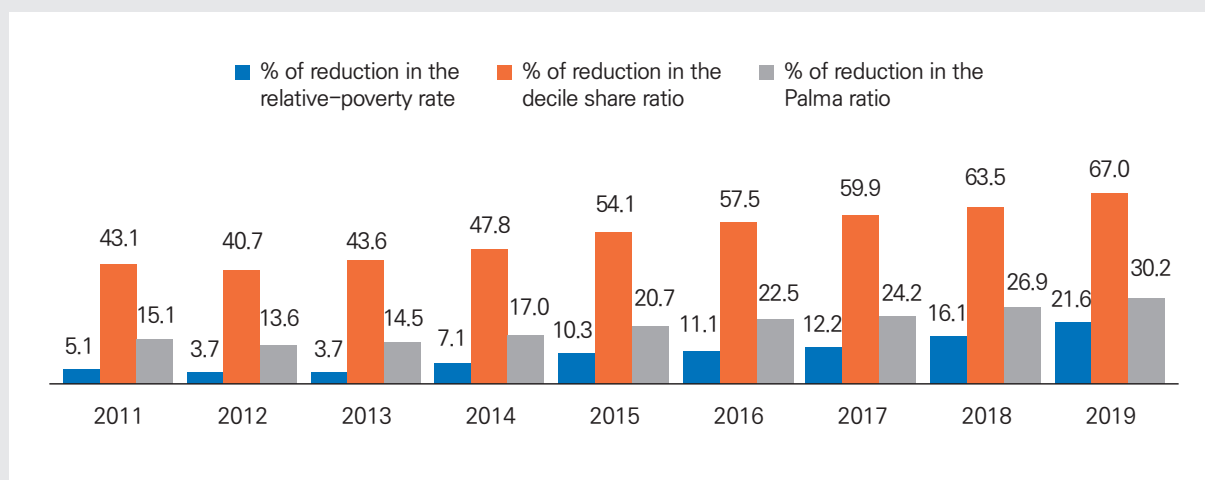


Note: The figures are based on equivalized household income—a household’s income divided by the square root of the number of members in the household.

Source: Statistics Korea. https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1HDLF05&conn_path=I3

Figure 5 illustrates the effect of redistributive policies as measured in terms of the relative poverty rate and income inequality indicators. The redistributive effect on the relative poverty rate, having dropped from 5.1 percent in 2011 to 3.7 percent in the years 2012 and 2013, rebounded thereafter, growing to 7.1 percent in 2014 and to 21.6 percent in 2019.

[Figure 5] Income-redistributive effects as measured in terms of poverty and inequality indicators (in %)



Note: Relative poverty is measured based on income less than 50 percent of the national median income. The figures are based on equivalized disposable income, i.e., a household's disposable income divided by the square root of the number of members in the household. "Income redistributive effect" is the difference between market-income inequality (and poverty) and disposable-income inequality (and poverty) divided by market-income inequality (and poverty). The figures are author's calculation based on indicators provided by Statistics Korea's Survey of Household Finances and Living Conditions

Source: Statistics Korea. https://kosis.kr/statHtml/statHtml.do?orgId=101&tblId=DT_1HDLF05&conn_path=I3

The redistributive effect of taxes and public transfers is even more salient on the decile share ratio. Having dipped from 43.1 percent in 2011 to 40.7 percent in 2012, the redistributive effect as manifested in the decile share ratio increased to 43.6 percent in 2013 and went on increasing, reaching 67.0 percent in 2019. The Palma ratio also demonstrated a similar trend in the redistributive effect on income inequality in the 2010s.

Throughout the 2010s, inequality in the primary distribution of income has either remained unchanging (as manifested in the Palma ratio) or worsened (as manifested in the relative poverty rate and the decile share ratio). Inequality in disposable income, however, has fallen, as shown in various indicators. In other words, the redistributive role of social security policies has grown throughout through taxes and public transfers, mitigating the inequality occurring in the market.



The spread of covid-19 and income inequality

With its first case reported in December 2019, the novel coronavirus has spread throughout the world. Declared as a pandemic by the WHO in March 2020, covid-19 remains a pandemic. Many countries around the world have locked down their cities. Social distancing has become routine in Korea. Yeo et al. (2021)¹⁾ have found that after the spread of covid-19, a larger percentage of wage workers have suffered reduced work hours, furloughs or job loss. Also, consequent to the covid-19 pandemic, a large percentage of self-employed people had to temporarily or permanently go out of business. As the pandemic and subsequent restrictions limited physical contact and movement, consumption contracted and, as a result, the income of self-employed people and “special contract” workers fell. These circumstances call for efforts to reduce inequalities that stem from the uneven economic consequences of covid-19, so as to minimize the scars the pandemic will leave behind on people of different income levels. In that regard, this study inquires also into inequality before and after the outbreak of covid-19, along with the redistributive effect of taxes and public transfers.

As shown in Figure 6, inequality in market income has increased in 2020 year-on-year. The quintile share ratio in the first quarter of 2020, when the spread of covid-19 started to become apparent, increased by 26.2 percent to 9.82 from 7.78 in the first quarter a year earlier. The quintile share ratio in the subsequent three quarters of 2020 increased year-on-year by 31.8 percent, 17.1 percent, and 2.6 percent, respectively. In the first quarter of 2021, the quintile share ratio fell by 0.3 percent relative to what it was in the first quarter a year earlier.

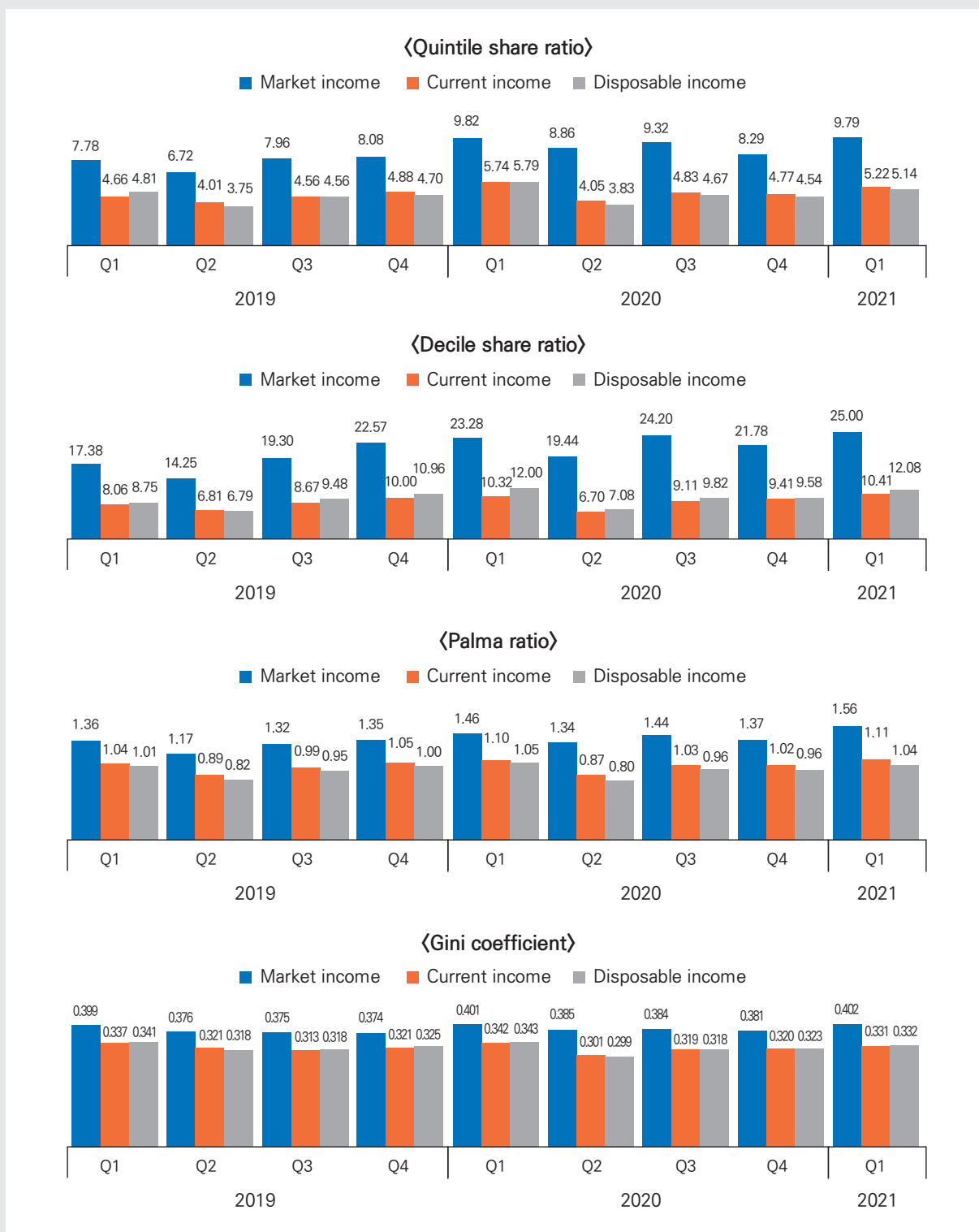
When measured in terms of current income, which includes public transfers, the quintile share ratio in the first quarter of 2020 was 5.74, up by 23.2 percent from 4.66 in the first quarter of 2019. In the second quarter, the figure was 4.05, coming close to the 4.01 of the second quarter of the previous year. The quintile share ratio rose in the third quarter by 5.9 percent year on year. In the last quarter of 2020 and the first quarter of 2021, the quintile share ratio dropped year-on-year by 2.2 percent and 9.0 percent, respectively.

In the period spanning 2020 and the first quarter of 2021, the government has implemented, through additional budget allocations, five rounds of emergency relief payments to help families and individuals affected by the spread of covid-19. From the second quarter of 2020 on, the decile share ratio, the Palma ratio and the Gini index, while having increased year-on-year in market income terms, remained more or less the same year-on-year as measured in terms of current income and disposable income. The redistributive effect of taxes and public transfers has been clearly manifested as inequality in current income and disposable income remained in 2020 at its level in the preceding year.

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1) Yeo, E. et al. A Study of the Socio-economic Impact of Covid-19 and the Effect Evaluation of Emergency Disaster Relief Funds. Korea Institute for Health and Social Affairs

[Figure 6] Inequality indicators by quarter, 2019~2021



Note: The figures, weighted with individual-level weights, are based on equivalized income—a household's income divided by the square root of the number of members in the household

Source: Statistics Korea. Household Income and Expenditure Survey, 2019~2021

Table 4 shows the redistributive effect of government transfers and taxes as manifested in inequality indicators. In the first quarter of 2020, when the spread of covid-19 began in earnest, the inequality-reducing effect of government transfers as manifested in the quintile share ratio rose to 41.5 percent, up by 1.4 percentage points year-on-year. In the second quarter, as the government began implementing emergency relief payments on a large scale, the inequality-reducing effect of government transfers rose by 13.9 percentage points year-on-year to 54.3 percent. The inequality-reducing effect of government transfers as manifested in the quintile share ratio was up year-on-year by 5.5 percentage points in the third quarter and by 2.8 percentage points in the fourth quarter. The effect of government transfers on poverty reduction was at its greatest in the second quarter of 2020, and remained, through the third and fourth quarters, to be considerably larger overall than it had been in the third and fourth quarters a year earlier, as manifested in the decile share ratio, the Palma ratio and the Gini index. The inequality-reducing effect of taxes and transfers represents the response of social security policies to market-income inequality that is a direct consequence of labor market conditions. The inequality-reducing effect has proved to be of a considerable extent as the government actively sought, with its financial support measures, especially public transfers, to tackle the growing inequality in the primary distribution of income in the wake of covid-19.

[Table 4] Inequality-reducing effect of public transfers and taxes

	2019				2020				2021
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
<Quintile share ratio>									
Effect of public transfers	40.1	40.4	42.7	39.7	41.5	54.3	48.2	42.5	46.6
Effect of income redistribution	38.2	44.2	42.6	41.9	41.1	56.7	49.9	45.2	47.5
<Decile share ratio>									
Effect of public transfers	53.6	52.3	55.1	55.7	55.7	65.5	62.4	56.8	58.4
Effect of income redistribution	49.6	52.4	50.9	51.4	48.5	63.6	59.4	56.0	51.7
<Palma ratio>									
Effect of public transfers	23.9	24.6	24.7	22.3	24.1	35.3	28.7	25.3	29.3
Effect of income redistribution	25.7	29.9	28.3	26.2	27.8	40.4	33.3	29.6	33.8
<Gini coefficient>									
Effect of public transfers	15.6	14.5	16.6	14.3	14.6	21.8	17.1	16.0	17.6
Effect of income redistribution	14.5	15.4	15.2	13.0	14.4	22.2	17.1	15.4	17.3

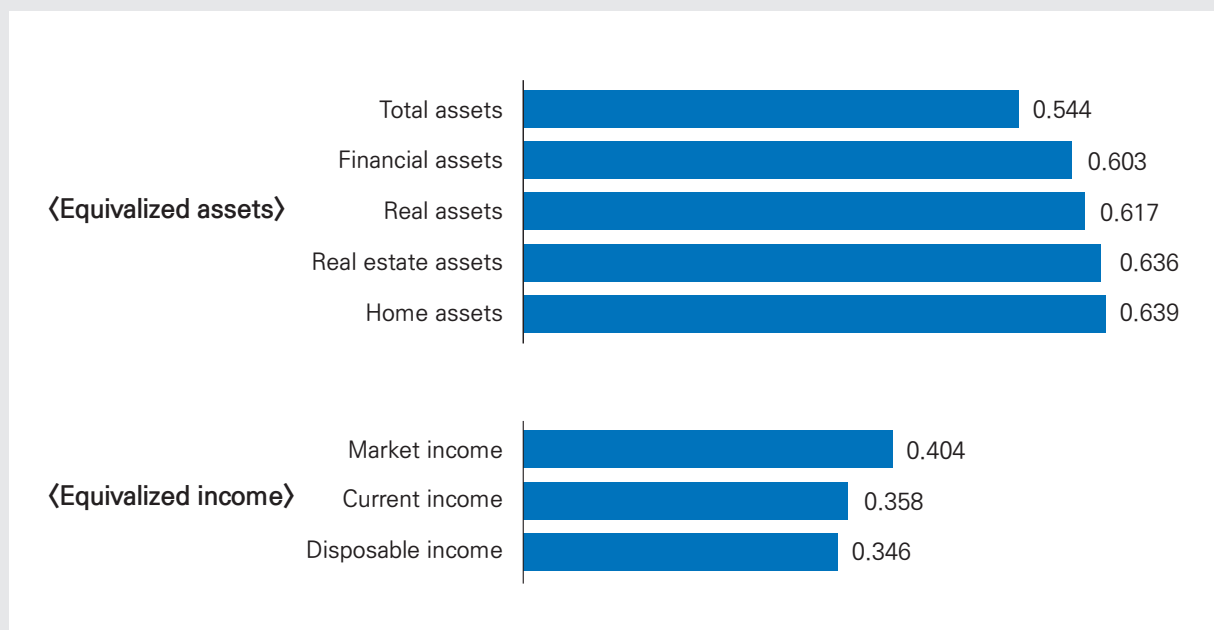
Note: The figures, weighted with individual-level weights, are based on equivalized income—a household's income divided by the square root of the number of members in the household. The effect of public transfers is the difference between market-income inequality and current-income inequality divided by market-income inequality. The income-redistributive effect is the difference between market-income inequality and disposable-income inequality divided by market-income inequality.

Source: Statistics Korea. Household Income and Expenditure Survey, 2019-2021

Asset inequality

Figure 7 presents asset inequality as manifested in the Gini index for 2019. The Gini coefficient for total assets—real and financial assets combined—was 0.544, higher by 52.1 percentage points than the current-income Gini coefficient. The Gini coefficient for financial assets was 0.603, substantially higher than the Gini coefficient for income. Real assets had a Gini coefficient of 0.617. Assets as a rule were more unequally distributed than was income. Among all the assets examined in this study, the most unequally distributed class of asset was home asset.

[Figure 7] Gini coefficients for assets and income for 2019



Note: The figures, weighted with individual-level weights, are of equivalized household assets, income and debt—assets, income and debt held by the household divided by the square root of the number of members in the household.

Note: Statistics Korea. Survey of Household Finances and Living Conditions

Concluding remarks

The findings of this study confirm that market-income distribution became increasingly unequal throughout the 2010s, while in the meantime there were increased efforts taken place for redistribution.

Covid-19 affected different socioeconomic groups disproportionately, as suggested by the various inequality indicators that point to a worsening of market income distribution in 2020, when the virus

began to spread in earnest. The covid-19 pandemic affected some socioeconomic groups more than others in terms of market income. A series of covid-19 emergency assistance packages, financed by supplementary budget resources, helped keep the inequalities in current and disposable income at their pre-covid-19 levels. This study found that the inequality-reducing effect as manifested in various indicators was due in most part to public transfers. Examined in this study as another realm of persisting inequality, assets, in all their categories—home assets, real estate assets, financial assets and total assets—were more unequally distributed than was income.

Social risks do not affect different socioeconomic groups in the same way. Their impact is disproportionate, more adverse to some groups than others, driving up the inequality in distribution taking place in the market. Given this, social support needs to be focused more on socially vulnerable groups. Filling in the gaps that the market process creates requires such fair support, and that will prove conducive to reducing the inequality of our society. To tackle the inequality embedded in Korea would require multi-faceted policy measures that attend to the distribution of assets, especially home assets, as well as income. Further analysis needs to be carried out beyond income inequality to address assets and their unequal distribution, from a policy perspective cognizant of the disparities between socially vulnerable groups and the income-and-asset-rich. It is also important to take a close look, above all, at the distribution taking place in the market, given how worsened the inequality has become in market-income distribution throughout the past decade. In particular, effective policy measures should be sought based on evidence from studies that look into, by means of decomposition analysis, the contributions of various income components (earned income, business income, and property income) to inequality.

Some of the inequality that has been left unaddressed by the primary income distribution in the labor market has been assuaged by public transfers and taxes. The social crisis that is covid-19 has compounded inequality. As most of the inequality-reducing effect achieved in response was achieved through public transfers, there is a need to further enhance the role of taxes in reducing inequality. Inequality has been pointed out in many advanced countries as leading to low growth, damaging to democracy, lowering, after all, the overall quality of life in people. This too points to the need for a formal income-redistributive mechanism focused on reducing inequalities in socioeconomic conditions.