THE EVOLUTION OF INCOME COMPOSITION INEQUALITY IN ITALY, 1989–2016

BY ROBERTO IACONO*

Norwegian University of Science and Technology (NTNU), University of South-Eastern Norway (USN)
AND

MARCO RANALDI

University College London, Stone Center on Socio-Economic Inequality, The Graduate Center, CUNY

We study the evolution of inequality in income composition in terms of capital and labor income in Italy between 1989 and 2016. We document a rise in the share of capital income accruing to the bottom of the distribution, while the top of the distribution increases its share of labor income. This implies a falling degree of income composition inequality in the period considered and a weaker relationship between the functional and personal distribution of income in Italy. This result is robust to various specifications of self-employment income; nonetheless, it hinges crucially on the treatment of rental incomes. While the dynamics of imputed rents has brought about a more equitable distribution of capital incomes across the income distribution, that of actual rents has led to higher concentration of capital incomes at the top in the decade preceding the outbreak of the financial crisis. Finally, we conceptualize a rule of thumb for policy makers seeking to reduce income inequality in the long run.

1. INTRODUCTION

In recent years, the dynamics of factor income shares and its potential effect on the level of personal income inequality has attracted considerable attention by economic scholars (Atkinson, 2009; Glyn, 2011; Piketty and Zucman, 2014). The documented rise of the capital income share in many advanced economies (Piketty and Zucman, 2014) has strengthened such debate. As Atkinson (2009) suggests, one of the main reasons to study factor shares is to establish *a link between incomes at the macroeconomic level (national accounts) and incomes at the level of the household* (p. 5).

The literature on the topic is, however, far from reaching a consensus on the shape of the relationship between the functional and personal income distributions. Bengtsson and Waldenström (2018) show that the link between the dynamics of the capital share and that of income inequality does not need to be constant over time and across countries. This link can be *contingent on the production technology, the structure of personal incomes or the institutional context, all of which may—and do indeed—change over time* (p. 713). The objective of this paper is to investigate this link, focusing on the case of Italy.

In a recent study, Gabbuti (2020) studies the dynamics of the labor share in Italy between 1895 and 1970 and shows that its link with the evolution of income inequality varies over time. According to Gabbuti (2020), *the Italian case reveals that factor shares offer great, complementary insights in the historical analysis of inequality, reflecting fundamental changes in the economy and society* (p. 2). To complement and expand such historical analysis, this paper studies this relationship in Italy over the past three decades. To this end, it focuses on a new inequality dimension recently introduced by Ranaldi (2021), called *income composition inequality*.

Income composition inequality describes how the composition of income in two sources, such as capital and labor income, varies across the income distribution. Income composition inequality is at its maximum when the two sources are separately earned by the top and the bottom of the income distribution, and minimum when all individuals have the same relative composition of capital and labor income. Under a high level of income composition inequality, the link between the functional and personal distribution of income is strong. The underlying intuition is the following: when income-rich individuals earn all capital income in the economy, an increase in the overall capital income share will raise the income of the rich and, therefore, hamper the level of income inequality in society. The contrary situation holds true under a low degree of income composition inequality: a change in the factor shares of income will not significantly influence the overall level of income inequality.

To measure the level of compositional inequality, we adopt the *income factor concentration* (IFC) index (Ranaldi, 2021). The IFC index is a non-rank-based measure of association and ranges between -1 and 1. It is equal to 1 when all capital income is concentrated at the top and all labor income at the bottom of the total income distribution, and to 0 when all individuals have the same composition of capital and labor income. Finally, it is equal to -1 when the capital income is concentrated at the bottom and the labor income at the top.

By studying the dynamics of the IFC index in Italy, we show that income composition inequality decreases steadily between 1989 and 2016. We show that this result is robust to different assumptions on the allocation of income across household members, different treatment of self-employment income, and different definitions of labor income. The main result is also robust to the exclusion of rental incomes from the definition of capital income. However, it is affected by the way rental incomes are treated. The exclusion of imputed rents from our baseline income definition leads to increasing income composition inequality—or to a higher concentration of capital income at the top and labor income at the bottom of the distribution—between 2000 and 2008. This is explained by the fact that actual rents have shifted toward the top in all years preceding the financial crisis.

On the contrary, the removal of actual rents from our definition of capital income does not alter the main trend. Imputed rents have, therefore, been moving toward the bottom of the income distribution throughout the period considered.

Our main result of a decreasing trend of compositional inequality in Italy over the past three decades has one major implication. Fluctuations in the total factor shares of income are having an increasingly weaker impact on income inequality in Italy. In other words, the fraction of the variance of the Gini coefficient explained by the change in factor shares has been decreasing.

In parallel with the empirical findings, this article conceptualizes a rule of thumb for policy makers seeking to effectively reduce income inequality in the long run. The degree of income composition inequality, as measured by the IFC index, becomes a key variable for the design of effective redistribution policies. When the policy maker's expectation regarding the sign of the variation in factor share z (be it the capital or labor share) coincides with her expectation regarding the sign of income composition inequality, it is preferable to redistribute source z to reduce inequality in the long run.

This paper is structured as follows: Section 2 presents the method we use and the data in more detail, and Section 3 shows the main results. Section 4 presents the relevance of our approach for policy, and Section 5 concludes the paper.

2. Method and Data

2.1. *Method*

To assess the link between the functional and personal distributions of income, we follow the method proposed by Ranaldi (2021), who also analytically defines the concept of *income composition inequality*. The income composition is unequal whenever two sources of income (e.g., capital and labor)[1] are separately earned by the top and bottom of the income distribution (or vice versa). On the contrary, there is equality of income composition whenever each individual earns the same population shares of the two income sources. The concept of income composition inequality allows us to analyze the extent to which changes in factor shares and aggregate income inequality are intertwined. Whenever the level of income composition inequality is high, capital income ends up in the hands of the wealthiest individuals. In this context, an increase in the capital share increases the level of overall income inequality by increasing the income of the wealthy. Therefore, under a high level of income composition inequality, the link between the functional and personal distributions of income is strong. The opposite situation holds when income composition inequality is low.

To measure income composition inequality, Ranaldi (2021) analytically defines the IFC index. The IFC index is constructed using the *concentration curves for each income source*. These curves are the cumulative distributions of income sources across the total income distribution. Individuals are therefore indexed by their total income rank and not by their capital or labor income ranks. These curves cumulate an income source up to the level of the total factor share and not to 1, as is the case for the standard concentration curves developed by Kakwani

---

[1]In what follows, we exclusively deal with these two sources, although the method can be applied to any pair of sources whose sum equals total income or, rather, total wealth.
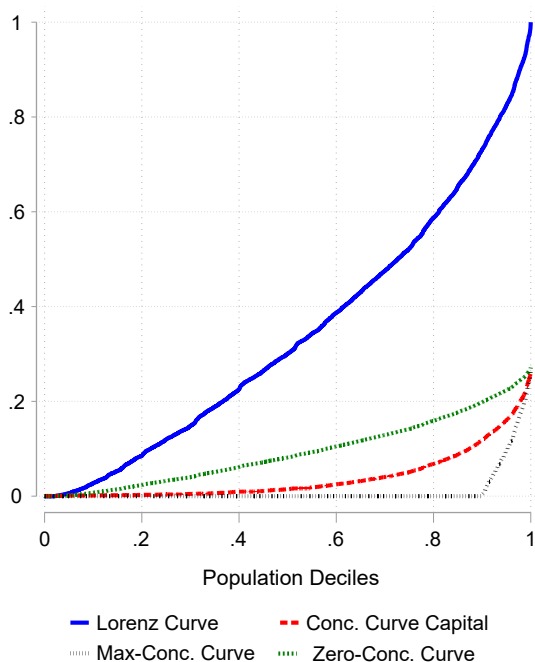
Figure 1. Concentration Curve for Capital—Italy 1989

Note: The concentration curves for capital (red line), the zero-concentration curve (green line), the Lorenz curve for income (blue line), and the maximum-concentration curve (black line) for Italy in 1989 are presented using data from the 1989 *Survey on Household Income and Wealth* (SHIW) carried out by the Bank of Italy. Capital income is defined as the sum of property income and the capital component of net self-employment income. Labor income is defined as the sum of payroll income and the labor component of mixed income. Both the capital and labor components of self-employment income are imputed following Glyn (2011). Pensioners are excluded from the analysis.

(1977a, 1977b). The area below the standard concentration curve for an income source can be considered as a proxy for the level of concentration of the specific income source at the top, or at the bottom, of the income distribution. When this area is large, the income source is concentrated primarily at the bottom of the income distribution, whereas when the area is small, the source is concentrated at the top. A graphical representation of the concentration curves for Italy in 1989 is illustrated in Figure 1.

Figure 1 shows the concentration curve for capital income and the related zero- and maximum-concentration curves.[2] Alternatively, one can plot the concentration curve for labor income with the related zero- and maximum-concentration curves. Recall that the sum of the two concentration curves results in the Lorenz curve for total income, which is the blue line in Figure 1. Although each

[2]The zero- and maximum-concentration curves reflect the conditions of *minimal* (each individual earns the same share of both income sources along the income distribution) and *maximal* income composition inequality (the income sources are separately earned at the top and bottom of the income distribution).

concentration curve is associated with a specific zero- and maximum-concentration curves, the choice of focusing on a single curve (the capital income curve), rather than another (the labor income curve), affects solely the narrative. In the following analysis, we will focus on the concentration curve for capital income.

The IFC index is defined as the area given by the difference between the concentration curve for the income source and the zero-concentration curve, suitably normalized. Formally, if we denote the area given by the difference between the zero-concentration curve and the concentration curve for capital by $\mathscr{A}$ and the area given by the difference between the zero-concentration curve and the maximum-concentration curve by $\mathscr{B}$, we can define the IFC index (labeled as $\mathscr{I}_f$) as follows:

$$(1) \qquad \mathscr{I}_f = \frac{\mathscr{A}}{\mathscr{B}}.$$

Another way of expressing this index is as follows[3]:

$$(2) \qquad \mathscr{I}_f = \frac{\pi w \left(\tilde{\mu}_w - \tilde{\mu}_\pi \right)}{\mathscr{B}},$$

where π and w are the capital and labor shares of income, respectively, and $\tilde{\mu}_w$ and $\tilde{\mu}_\pi$ are the areas of the *non-scaled* labor and capital concentration curves, respectively.[4]

Interestingly, simple algebra reveals that the derivative of the Gini coefficient, $\mathscr{G}$, with respect to changes in the capital share of income is as follows:

$$(3) \qquad \frac{\partial \mathscr{G}}{\partial \pi} = 2 \left(\tilde{\mu}_w - \tilde{\mu}_\pi \right).$$

Equation 3 states that the sign of the IFC index, which derives from the difference between the areas below the two concentration curves, determines whether an increase in the capital share of income positively or negatively affects the personal income distribution. Thus, the IFC index can be considered as a bridge between the functional and personal distributions of income. However, note that the overall change in the total income Gini coefficient is not solely determined by the dynamics of the factor shares. Changes in the structure of the labor market and the introduction of a new redistribution policy are only two of the forces that can influence its dynamics. It is also likely that two different surveys will sample a country's population in two different ways, thereby provoking possible artificial changes in the level of income composition inequality.

Apart from its technical nature, the IFC index also has value from the perspective of political economy. It can be considered as a stylized measure of the *type of capitalism* of a social system or economy. Following the framework proposed by Milanovic (2017), the two extreme values that the index can take (within its range

---

[3]Note that $\mathscr{A} = \pi(\tilde{\mu}_y - \tilde{\mu}_\pi)$, where $\tilde{\mu}_y$ is the area of the Lorenz curve. The area of the Lorenz curve can be broken down into the sum of the two areas below the concentration curves for capital and labor; therefore, $\tilde{\mu}_y = \pi \tilde{\mu}_\pi + w \tilde{\mu}_w$, and we can easily find that $\mathscr{A} = \pi w \left(\tilde{\mu}_w - \tilde{\mu}_\pi \right)$.

[4]The two areas $\tilde{\mu}_w$ and $\tilde{\mu}_\pi$ should be multiplied by w and π, respectively, to obtain the areas of the concentration curves as in Ranaldi (2021).

of positive values) coincide with two ideal-typical social systems. Specifically, under maximum income composition inequality, a society can be defined as an example of *classical capitalism* (Milanovic, 2017; Ranaldi and Milanovic, 2020) characterized by a class of wealthy capitalists and a class of poor workers. In contrast, under minimum inequality in income composition, a society can be defined as an example of *new capitalism*, in which there is no longer any clear mapping between social class and income source. We can therefore state that a particular trend in income composition inequality provides us with novel insights into the form of capitalism toward which a society converges.

As discussed in Ranaldi (2021), the IFC index fills a gap in the literature on the technical assessment of the relationship between the functional and personal distributions of income. Milanovic (2017) adopts the correlation coefficient between capital and total income to study the elasticity of the interpersonal income Gini coefficient to changes in the capital income share. This metric may act as an intuitive and simple measure of such link, although it does not formally determine the condition of the transmission of changes in the functional distribution into income inequality, as done by the sign of the IFC index.

From a different perspective, Atkinson and Bourguignon (2000); Atkinson (2009) approach the measurement of this link by decomposing the squared coefficient of the variation in income, here adopted as a measure of income inequality, into the marginal contributions of the labor and capital income. However, they do not provide summary statistics capable of precisely capturing the strength of the link. Instead, Atkinson and Lakner (2017) study the association of capital and labor income at the top by constructing a rank-based measure of association, which is a discrete approximation of the copula density. However, their statistic does not precisely address the issue of the relationship between the functional and personal distributions of income. Indeed, it is rather difficult to determine the joint distributions of capital and labor under which the strength of the link is minimal and maximal.

The IFC index is also different from the pseudo-Gini coefficient proposed by Fei *et al*. (1978); Pyatt *et al*. (1980). As discussed by Ranaldi (2021), the pseudo-Gini coefficient cannot act as a measure of the link between the functional and personal distributions of income. In fact, if we were to consider the pseudo-Gini coefficient of capital income, this metric would be zero when all of the individuals in the population earned the same amount of capital income. In such a scenario, an increase in the capital share of income would result in an equal increase in the absolute level of the capital incomes of all individuals. Such an increase would therefore reduce income inequality in the society instead of leaving it unaffected.

2.2. *Data*

In this section, we introduce the data used and the definitions of capital and labor that we adopt. To compute the IFC index, we use the Survey of Household Income and Wealth (*SHIW*) provided by the Bank of Italy (Bank of Italy, 2016). The survey covers 8274 households composed of 25, 150 individuals and 13, 864 income earners distributed over approximately 300 Italian municipalities. This survey has been carried out since the 1960s, although information concerning returns

on financial assess has only been available since 1989 (see Brandolini and Gambacorta (2018) for further information). Therefore, our analysis ranges from 1989 to 2016. The surveys are available every 2 years, with a 3-year gap between 1995 and 1998. The unit of analysis we adopt is the individual. As regards capital income, the SHIW is constructed in such a way that it equally splits capital income across household members.[5]

The type of income provided by the Bank of Italy is net disposable income,[6] including four sources: (i) payroll income, (ii) pensions and transfers, (iii) self-employment income, and (iv) property income. All these sources can be further decomposed. Payroll income is composed of net wages and salaries and fringe benefits, whereas pensions and net transfers comprise pensions, arrears, financial assistance scholarships, alimony payments, and gifts. Net self-employment income is computed as the sum of net self-employment income and net entrepreneurial income, whereas property income is the sum of income from real estate and financial assets. Income from real estate includes actual rents and imputed rents, whereas income from financial assets includes interest on deposits, interest on government securities, and income from other sources. Capital gains and dividends are not accounted for in our analysis, and negative values are included in the analysis. Below, we adopt a single definition of capital and labor income, whereas in Appendix A, we run the same analysis under different definitions of the two income sources.

Capital income is defined as the sum of property income (Y_{pr}) and the capital component of net self-employment income ($Y_{s\pi}$). Formally:

$$\Pi = Y_{pr} + Y_{s\pi}.$$

The main definition of labor income we adopt includes payroll income (Y_{pa}) and the labor component of self-employment income (Y_{sw}). As pensions and transfers are excluded in the baseline definition, we remove pensioners in the database. Formally, we can write:

$$W = Y_{pa} + Y_{sw}.$$

As the SHIW (Bank of Italy, 2016) does not furnish the capital and labor components of net self-employment income, we impute them. To this end, we adopt the imputation strategy proposed by Glyn (2011), which attributes the average payroll income $\overline{Y}_{pa}$ of the entire sample (in every year) to represent the maximum value that the labor income component can attain. If individual i's net self-employment income is less than $\overline{Y}_{pa}$ (i.e., $Y_s < \overline{Y}_{pa}$), then this quantity is considered the labor component of her net self-employment income. In contrast, if i's net self-employment income is greater than $\overline{Y}_{pa}$, then we regard the positive

---

[5]We also conduct a robustness check in which, for consistency, we split labor income equally among household members. The main result does not change under this different assumption, as shown in Figure 12.

[6]This is a limitation of our study. Using net disposable income, rather than gross market income, entails that we focus on the post-tax evolution of income composition inequality. A set of assumptions would have been necessary to impute gross income from microdata files with net disposable income reducing, however, the degree of accuracy of our analysis.
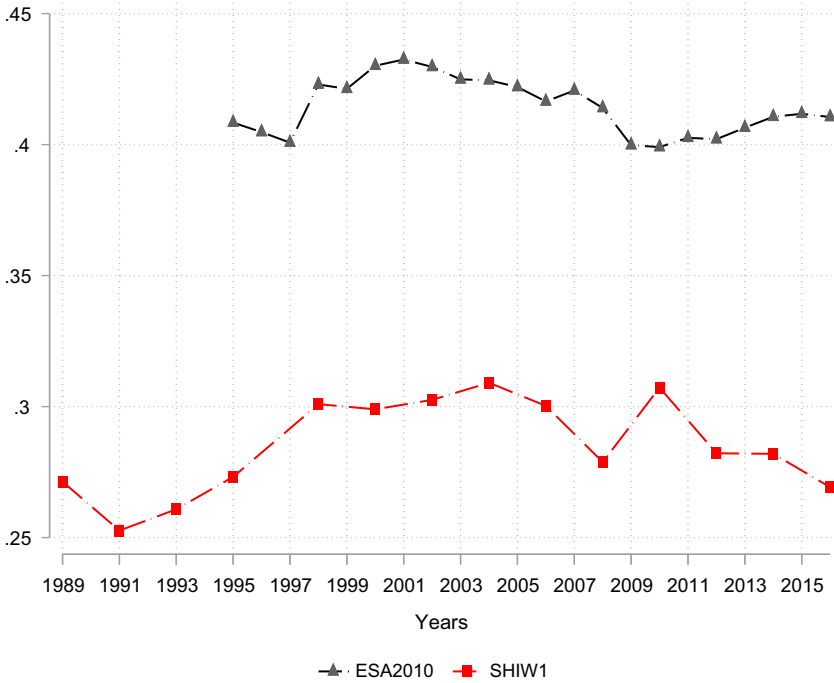
Figure 2. Capital Share of Income

Note: Two series of the capital income share in Italy are presented here. The first series (ESA 2010), which runs from 1995 to 2016, is constructed from the ESA 2010 National Accounts and is calculated as the difference between value added at factor prices minus employee compensation. To account for self-employed workers, we assume that they earn the same as waged employees in all sectors. The second (SHIW 1) series (red line), which covers the period between 1989 and 2016, is built from the Survey of Household Income and Wealth (SHIW) prepared by the Bank of Italy. Total income is the sum of payroll income, net self-employment income, and property income. Capital income equals property income plus the capital component of net self-employment income. The latter is imputed following Glyn (2011). Pensioners are excluded from the analysis.

amount ($Y_{s\pi} - \overline{Y}_{pa}$) as the capital component of her net self-employment income. This hypothesis will be confronted in Section 3.3 with the more standard assumption that attributes $\frac{1}{3}$ of self-employment income to capital income and $\frac{2}{3}$ to labor income, indistinctly of the individual's position along the income distribution (Alvaredo *et al.*, 2016, p. 31).

Regarding the functional distribution of income, we first derive the capital share of income series from the *SHIW* data (the red dashed line with squares in Figure 2).

This series is based on our definition of labor (and hence total) income excluding income from pensions and transfers, as explained above. This implies that the corresponding capital (labor) share of total income is higher (lower) than the capital income share that accounts for pensions and transfers in the denominator. The trend for the *SHIW* capital share series increases over the period 1991–2004 up to 0.31 and decreases thereafter, reaching in 2016 the levels of the capital share observed in the 1990s.

TABLE 1
CAPITAL INCOME SHARES BY INCOME GROUP

Income Group	1989	1995	2000	2004	2008	2012	2016
0–50%	5%	10%	10%	10%	9%	15%	16%
50–90%	39%	37%	37%	35%	39%	35%	36%
90–95%	16%	15%	14%	14%	15%	13%	13%
95–100%	40%	38%	38%	41%	36%	36%	34%
Aggregate capital share	27%	27%	30%	31%	28%	28%	27%
Gini coefficient (total income)	0.31	0.40	0.39	0.42	0.40	0.40	0.42

Note: The source for both raw data and sample weights is SHIW, Bank of Italy (2016). Both the aggregate capital share and the Gini coefficient for total income are authors' computations using SHIW data.

The series of capital share from the *SHIW* is compared with the series obtained from the European System of National and Regional Accounts (*ESA*) to identify possible discrepancies between the two data sources.[7] The ESA series is represented by the dark dashed line with triangles in Figure 2 (labeled *ESA 2010*). In line with the results obtained by Torrini (2016), the series from ESA confirms that the capital share increased in the 1990s, whereas it decreased from 2001 onward.

The relative proximity between the series in Figure 2 is explained by the fact that neither of the two series does include pensions or transfers in the denominator, which is a standard practice in the computation of the official measures of the capital share, normally calculated as one minus the share of employees' compensation in total value added. However, the discrepancy between the two series is mainly due to the fact that SHIW data solely focuses on the household sector of the economy (S14), whereas the ESA accounts also for non-household sectors. In addition, considerable differences between the capital and labor shares captured by the surveys and the national accounts can be recorded, as precisely discussed by Flores (2020). Specifically, household surveys tend to overestimate fluctuations in the labor income distribution and underestimate the dynamics of the capital income distribution across individuals (Flores, 2020).

3. MAIN RESULTS

To motivate our study of the evolution of income composition inequality in Italy, we first introduce several stylized facts about the dynamics of factor incomes over the period analyzed. Table 1 shows the concentration of capital income across the income distribution (using our baseline income definition, which excludes pensions and transfers) for Italy between 1989 and 2016. Four income groups (in terms of total income) are considered, namely, the poorest 50 percent, the middle 40 percent, and the richest 10 percent, which is further divided into the bottom half

---

[7]We consider the 2010 ESA release. Specifically, we consider the functional distribution of gross value added at factor costs. First, we define capital income as value added minus employee compensation. To account for self-employed workers, we assume, as in Torrini (2016), that their earnings are the same as those of waged employees in all sectors. Specifically, this definition relates to the second series of capital income built by Torrini (2016). In a second step, we split the two components of self-employment income in light of the estimates $Y_{s\pi}$ and Y_{sw} derived from the micro data.

TABLE 2

LABOR INCOME SHARES BY INCOME GROUP

Income Group	1989	1995	2000	2004	2008	2012	2016
0–50%	38%	28%	29%	29%	30%	25%	26%
50–90%	46%	52%	52%	52%	51%	54%	54%
90–95%	7%	8%	8%	8%	8%	9%	8%
95–100%	8%	11%	10%	10%	11%	11%	12%
Aggregate labor share	73%	73%	70%	69%	72%	72%	73%
Gini coefficient (total income)	0.31	0.40	0.39	0.42	0.40	0.40	0.42

Note: The source for both raw data and sample weights is SHIW, Bank of Italy (2016). Both the aggregate capital share and the Gini coefficient for total income are authors' computations using SHIW data.

(90–95 percent) and the top half (95–100 percent) of the decile. Recall that we consider capital income to be the sum of property income and the capital component of self-employment income.

In 1989, the bottom 50 percent in terms of total income earned approximately 5 percent of the capital income in the economy. The richest 10 percent earned approximately 56 percent of the share of capital income in the same year. A comparison of 1989 with the most recent year for which data are available, 2016, shows that the concentration of capital income increased at the bottom of the total income distribution. In 2016, the capital income accruing to the bottom 50 percent increased by 11 percentage points with respect to 1989, with a corresponding decrease in the share accruing to the top 50 percent. Overall, the capital share of income increased by 4 percentage points up to 2004, before it decreased in the post-crisis years back to the level of the early 1990s.

We next examine Table 2, which reports the concentration of labor income across the income distribution.

Table 2 shows that the bottom 50 percent went from earning 38 percent of labor income in 1989, to approximately 26 percent in 2016, whereas the richest 50 percent increased its fraction of labor income from 61 percent to 74 percent over the period. In other words, labor income dynamics followed the opposite pattern than that observed for capital income: a significant fraction of labor income shifted from the bottom 50 percent to the top 50 percent of the total income distribution from 1989 to 2016. Overall, the labor share of income fall by 4 percent points between 1989 and 2004, and then increased by 4 percent points in the past decade. Moreover, note that after a sudden increase in overall income inequality between 1989 and 1995, with a Gini coefficient increasing from 0.31 to 0.40, income inequality remained rather stable for approximately the entire period.[8]

Overall, the trends depicted in Tables 1 and 2 convey a lesson about the Italian economy: a gradual change in the *composition* of individuals' income has taken place over the past three decades. In other words, the poor became *less* of a laborer and more of a capital income earner in 2016 relatively to 1989, while the rich *less* of a capital income earner and more of a labor income receiver. More

[8]For a thorough analysis of income inequality in Italy over the past decades, see Brandolini and Gambacorta (2018) and Franzini and Raitano (2016).

precisely, the top 50 percent of the income distribution has seen its share of capital income decreasing and, at the same time, its share of labor income increasing. In 2016, the top 50 percent of the income distribution earned 83 percent of capital income, in contrast to 1989, when it earned approximately 95 percent. The opposite dynamics has taken place at the bottom 50 percent of the income distribution, where the share of capital income has increased and the share of labor income decreased.

In light of the evidence shown in Tables 1 and 2, several fundamental questions arise. What lies behind the evidence that the composition of factor incomes is becoming more equal across the income distribution in Italy? In the next sections, we address this question in detail.

3.1. *Income Composition Inequality*

We now estimate the degree of income composition inequality in Italy. As illustrated in Section 2, Figure 1 plots a 1-year (1989) snapshot of the decomposition of the Lorenz curve (blue) into the concentration curves for capital (red) and labor.[9] The concentration curve for capital lies below the zero-concentration curve, indicating that in 1989, capital income was concentrated relatively more at the top of the income distribution with respect to labor income.

For each year in the period 1989–2016, we then compute the level of the IFC index, previously described in Section 2. Figure 3 plots the 1989–2016 series of the IFC index.

Italy experienced a falling degree of income composition inequality throughout the period 1989–2016 from a level of 0.66 to approximately 0.3. As the Appendix A shows, this result is robust to different definitions of capital and labor income. As shown in Figure 3, income composition inequality follows a radically different trend than that followed by the Gini coefficient. This is not surprising because the IFC index sheds light on a different dimension of inequality than the one captured by the Gini coefficient. A *low* degree of income composition inequality indicates that the two sources of income are earned in relatively equal shares across the income distribution. In other words, the evidence in Figure 3 tells us that Italy is gradually becoming a society in which a larger share of individuals earns *multiple* sources of income.

We now turn to the implications for the linkage between the functional and personal income distributions in Italy.[10] To what extent have changes in the factor income shares (as plotted in Figure 2) been transmitted into the level of personal income inequality? Based on the decreasing series of the IFC index, we claim that the strength of the transmission mechanism from changes in factor incomes to changes in the level of personal income inequality weakened throughout the period 1989–2016.

To clarify this point, recall equation (3) from Section 2. For each percentage increase in the capital share of income, the right-hand side of equation (3) indicates

---

[9]The concentration curve for labor does not appear in Figure 1 because it can be derived from the other concentration curve, holding the Lorenz curve constant.

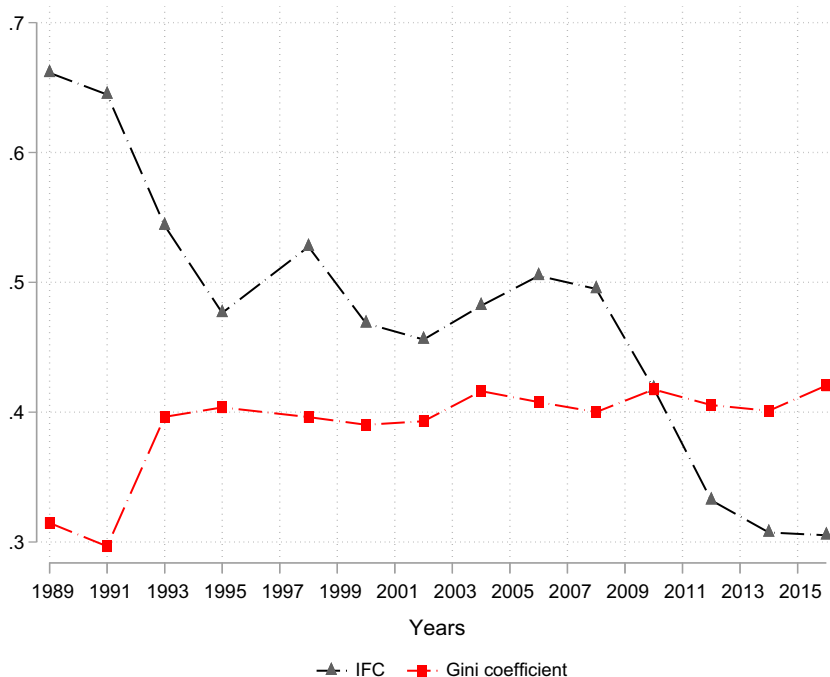[10]Some additional analysis of this aspect is provided in Appendix B.

Figure 3. Income Composition Inequality and Gini Coefficient
Note: Series of the IFC index and the Gini coefficient constructed using the SHIW data. Capital income is defined as the sum of property income and the capital component of net self-employment income. Labor income is defined as the sum of payroll income and the labor component of mixed income. Total income is the sum of capital and labor income. Both the capital and labor components of self-employment income are imputed following Glyn (2011). Pensioners are excluded from the analysis.

that the contribution to the change in personal income inequality will be given by twice the difference between the areas of the concentration curves.[11]

Focusing on the determinants of the series of the IFC index in Figure 3, Figures 4 and 5 separately show the series of the areas of the concentration curves for capital and labor income, respectively. As shown by equation (3), the sign of the IFC index depends uniquely from the difference between the areas below the two concentration curves.

The series of the area below the concentration curve for capital (Figure 4) shows an increase in their magnitude throughout the period, therefore confirming the structural change in the concentration of capital income across the income distribution (moving from the top 50 percent, to the bottom 50 percent), already shown in Table 1.

---

[11]Recall further that the actual series of the Gini coefficient is not determined solely by the dynamics of the factor shares; therefore, the evidence in Figure 3 (a stable level of income inequality from the early 1990s onward) might be a net effect of a set of different forces. Regardless of this limitation, we can safely argue that the degree to which changes in the capital income shares yield an increase in the level of income inequality has been steadily *decreasing* for the Italian economy.

Figure 4. Area of the Concentration Curve for Capital
Note: Series of the area of the concentration curve for capital constructed using the SHIW data. Total income is the sum of payroll income, net self-employment income, and property income. Capital income equals property income plus the capital component of net self-employment income. The latter is imputed following Glyn (2011). Pensioners are excluded from the analysis.

In contrast, the series of the area of the concentration curve for labor (Figure 5) decreased throughout the whole period, witnessing the structural change in the concentration of labor incomes across the income distribution (going from the bottom 50 percent, to the top 50 percent), as shown in Table 2.

The difference between these two areas (the term $\tilde{\mu}_w - \tilde{\mu}_\pi$ in equation (3)) steadily decreases throughout the period under analysis, explaining the falling degree of the IFC index shown in Figure 3.

3.2. *Factor Income Components*

Additional insights can be gained by examining the areas of the concentration curves for each of the factor income components.

To start with some descriptive statistics, Table 3 refers to the evolution of the distribution of the capital component of self-employment income. Clearly, this component has gradually moved from the bottom 90 percent to the top 5 percent of the income distribution.

Table 4 shows the distribution of rental income (capital income from real estate). Differently from the capital component of self-employment income, this income source has moved from the top 50 percent to the bottom 50 percent of the distribution.
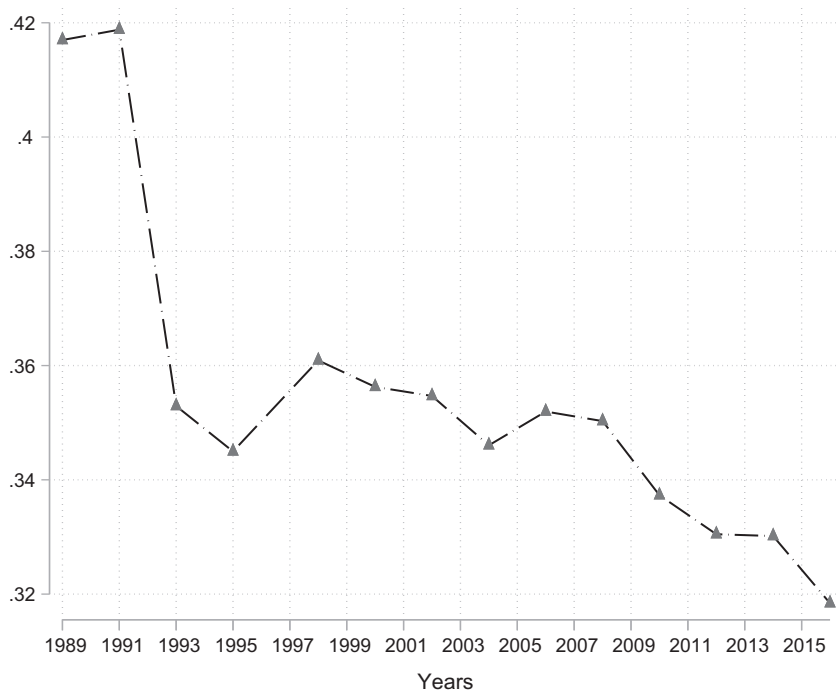
Figure 5. Area of the Concentration Curve for Labor

Note: Series of the area of the concentration curve for labor constructed using the SHIW data. Total income is the sum of payroll income, net self-employment income, and property income. Labor income equals payroll income plus the labor component of net self-employment income. The latter is imputed following Glyn (2011). Pensioners are excluded from the analysis.

TABLE 3
CAPITAL COMPONENT OF SELF-EMPLOYMENT INCOME

Income Group	*1989*	*1995*	*2000*	*2004*	*2008*	*2012*	*2016*
0–50%	3%	3%	3%	1%	2%	3%	3%
50–90%	33%	33%	33%	24%	31%	26%	25%
90–95%	15%	15%	13%	12%	15%	13%	14%
95–100%	48%	49%	50%	62%	51%	57%	57%

To synthesize the facts from Tables 3 and 4, Figure 6 plots the dynamics of the overall area of the concentration curve for capital from Figure 4 together with those of the two sub-components.[12]

It is straightforward to notice that the overall increasing area below the concentration curve for capital has been driven primarily by rental income (housing rents). This component led to a steady redistribution of capital income from the top 50 percent to the bottom 50 percent in Italy throughout the period. However, as it will be shown in the next sections, the treatment of rental income will be

[12]Notice that the capital incomes from financial assets are not shown as a stand-alone component in this subsection due to high volatility.

TABLE 4
CAPITAL INCOMES FROM REAL ESTATE

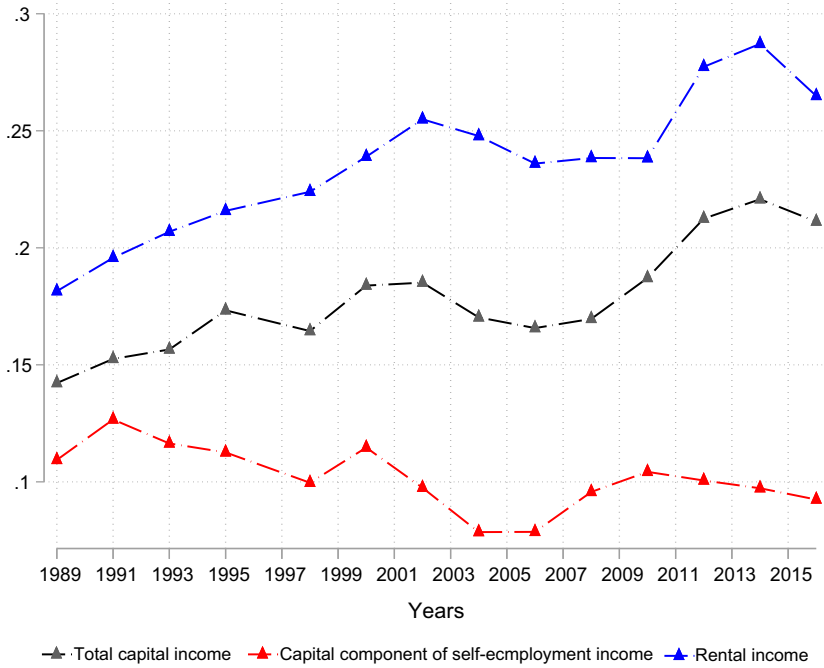| Income Group	1989	1995	2000	2004	2008	2012	2016
0–50%	8%	14%	15%	17%	16%	21%	21%
50–90%	44%	41%	42%	44%	45%	42%	41%
90–95%	15%	14%	15%	14%	14%	13%	13%
95–100%	32%	30%	26%	24%	24%	23%	24%

Figure 6. Area of the Concentration Curve for Capital—Decomposition by Type
Note: Series of the area of the concentration curve for capital income (black line), the areas of the concentration curves for the capital component of self-employment income (red line), and real estate (blue line) constructed using the SHIW data. Total income is the sum of payroll, self-employment income, and property income. Pensioners are excluded from the analysis.

crucial to understand the mechanisms behind the overall dynamics of compositional inequality in Italy.

We now analyze how the concentration of the two labor income components has evolved across the income distribution over the period considered. Table 5 describes the evolution of payroll income. The top 50 percent saw its share of payroll income increasing considerably at the expense of the bottom 50 percent, whose share decreased by 14 percentage points. This result is in line with previous findings showing that wage and self-employment incomes were mainly responsible for the increase in top income shares in Italy throughout the period (Alvaredo and Pisano, 2010).

TABLE 5
PAYROLL INCOME

Income Group	*1989*	*1995*	*2000*	*2004*	*2008*	*2012*	*2016*
0–50%	39%	26%	29%	30%	31%	24%	25%
50–90%	47%	54%	54%	53%	52%	56%	55%
90–95%	6%	8%	8%	8%	7%	9%	8%
95–100%	7%	11%	9%	9%	10%	11%	11%

TABLE 6
LABOR COMPONENT OF SELF-EMPLOYMENT INCOME

Income Group	*1989*	*1995*	*2000*	*2004*	*2008*	*2012*	*2016*
0–50%	32%	38%	31%	27%	27%	32%	33%
50–90%	44%	41%	44%	45%	45%	41%	40%
90–95%	10%	8%	9%	11%	11%	9%	11%
95–100%	13%	12%	14%	16%	15%	16%	15%

Finally, the concentration of the labor component of self-employment income remained stable at both the lower and higher ends of the income distribution, as shown in Table 6, with the exception of the middle class that lost a fraction of 4 percent of self-employment income.

Figure 7 plots the area of the concentration curve for labor (from Figure 5) together with that of its two components.

We observe similar decreasing trends for the three curves, confirming that labor incomes have shifted partially from the bottom to the top of the income distribution. In particular, it appears that payroll income has been the major driver of the decrease in the area of the concentration curve for labor, in line with the evidence from Table 5 of a significant shift in payroll income from the bottom 50 percent to the top 50 percent.

3.3. *Treatment of Self-employment Income*

The treatment of self-employment income deserves special attention. The share of self-employed individuals to the employed population gradually declines in Italy between 1989 and 2016 from 29 percent to 24 percent. It, however, remains strictly above the values displayed by most EU countries, with the notable exceptions of Portugal and Greece (OECD, 2021). D'Elia and Gabriele (2018) use data from INPS (Istituto Nazionale della Previdenza Sociale) to document that the share of self-employment income (at factor cost) in total value added in Italy remains close to 29 percent up to 1999, before declining to 22.3 percent in 2015. This dynamics can be explained by several factors. First, it is a direct consequence of the gradual fall in the share of self-employed in the total labor force, which started in 2004. Second, it is determined by a reduction in the hours worked following the outbreak of the financial crisis in 2007. Third, the average remuneration for the self-employed stagnated during 2000s, before steadily declining until 2015. Our data confirm the trends described above, as shown in Figure 9. Both the bottom and the top of the factor income distribution experienced a decline in real income
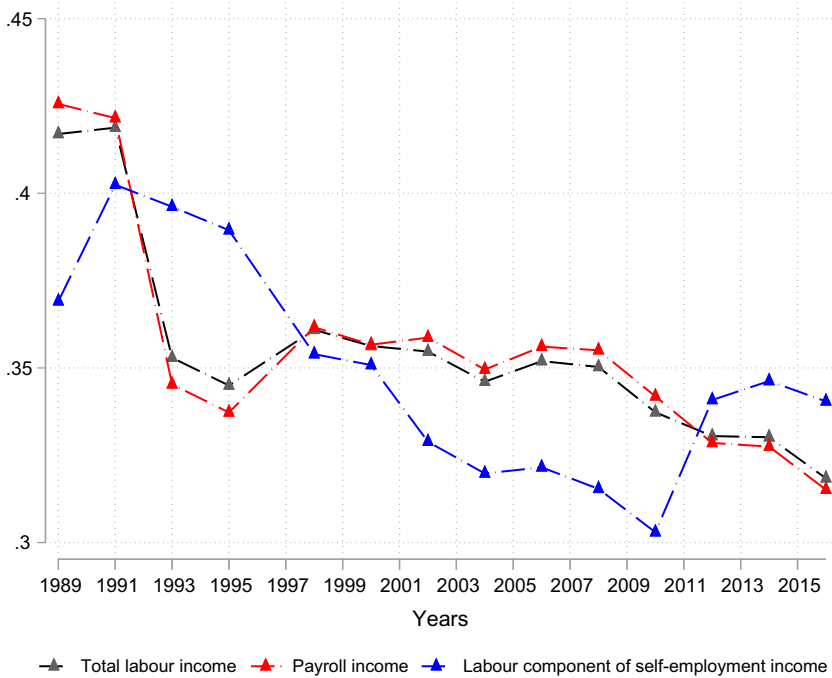
Figure 7. Area of the Concentration Curve for Labor—Decomposition by Type
Note: Series of the area of the concentration curve for labor income (black line), the areas of the concentration curves for payroll income (red line), and the labor component of self-employment income (blue line) constructed using the SHIW data. Total income is the sum of payroll, self-employment income, and property income. Pensioners are excluded from the analysis.

from self-employment, with most of the reduction occurring between 2000 and 2016.

Let us now analyze how the treatment of self-employment income is related to income composition inequality. Our baseline income definition imputes the capital and labor components of self-employment income using the method proposed by Glyn (2011). It is important to highlight what are the implications of this assumption. While this section will focus on the distributional implications of the adoption of different methods to decompose self-employment income into its capital and labor components, we recall that the determination of the aggregate level and trend of such a variable has also been the subject of an intensive debate (Boeri *et al.*, 2020; D'Elia and Gabriele, 2019). First, by considering the economy's average labor income as a threshold to determine the capital and labor components of self-employment income, we risk to underestimate (overestimate) the capital component for those sectors in which the sectorial average payroll income is lower (higher) than the economy's average. The agricultural sector is, for example, commonly characterized by an average labor income that is lower than the society's average. Second, this decomposition is usually adopted to decompose macroeconomic, rather than microeconomic variables.
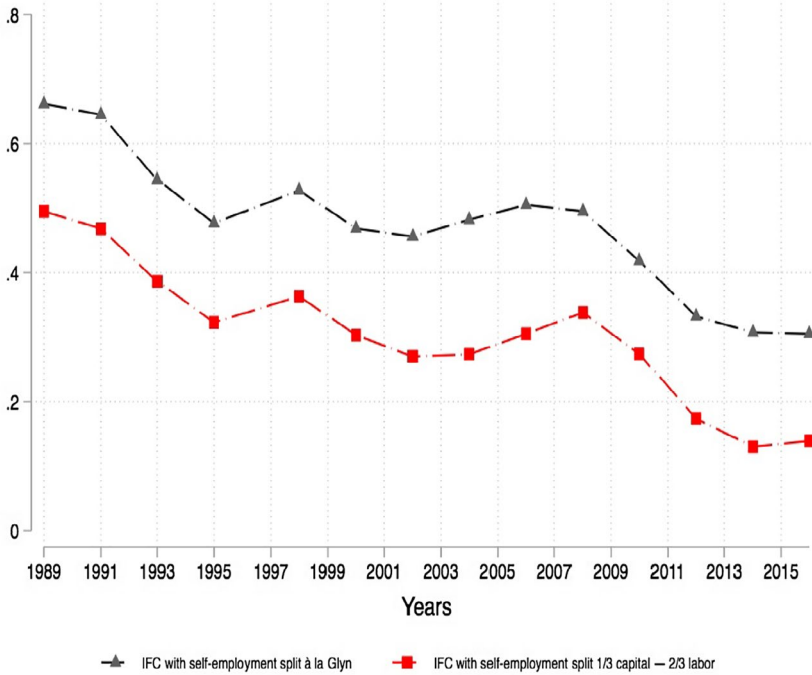
Figure 8. IFC Under Different Self-Employment Splits

Note: The series *IFC* with self-employment split à la Glyn attributes the average payroll income $\overline{Y}_{pa}$ of the entire sample (in every year) to represent the maximum value that the labor income component of the self-employment income can take. If individual i's net self-employment income is less than $\overline{Y}_{pa}$ (i.e., $Y_s < \overline{Y}_{pa}$), then this quantity is considered the labor component of her net self-employment income. In contrast, if i's net self-employment income is greater than $\overline{Y}_{pa}$, then we regard the amount $Y_{s\pi} - \overline{Y}_{pa}$ as the capital component of her net self-employment income. The second series *IFC* attributes $\frac{1}{3}$ to the capital component of self-employment income, and $\frac{2}{3}$ to the labor component, as it is a standard practice in the literature.

We also present the series for the IFC index under the more traditional self-employment income decomposition that attributes two-thirds of the self-employment income to its labor component and one-third to its capital component. The two series are compared in Figure 8.

Figure 8 shows that when self-employment income is decomposed as done in Glyn (2011) the level of the IFC index is higher than its level under the traditional split. The gap between the two series—the one adopting the Glyn decomposition and the other adopting the traditional decomposition—is constant throughout the entire period. To better understand what explains this discrepancy, we do the following exercise. Let us denote by y_i^{CSE1} the capital component of self-employment income obtained through the traditional split, and by y_i^{CSE2} the one obtained through the Glyn procedure. The two variables can therefore be expressed as follows:

(4)
$$\begin{cases} y_i^{CSE1} = \dfrac{1}{3} y_i^{SE} \\ y_i^{CSE2} = y_i^{SE} - \mathbb{E}(y^L), \end{cases}$$
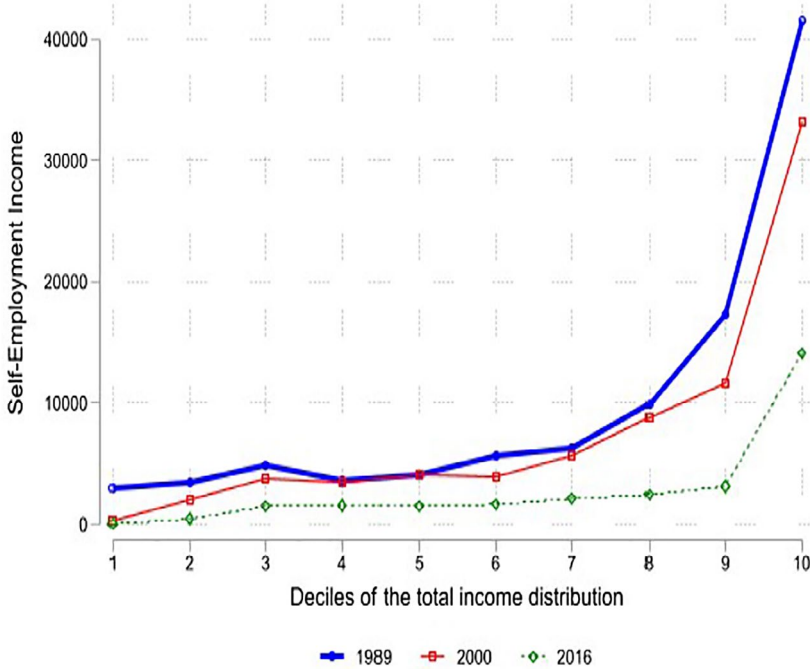
Figure 9. Self-Employment Across the Income Distribution
Note: This figure shows real income (CPI adjusted) for the self-employed across the total income distribution, in three given years: 1989, 2000, and 2016.

where y_i^{SE} is self-employment income of individual i and y^L is the average population payroll income. Further, we can define the difference between the two splitting techniques in the following way:

$$(5) \qquad \Delta = \mathbb{E}(y^L) - \frac{2}{3}y_i^{SE}.$$

Figure 10 shows the distribution of Δ in 2016 across the total income distribution. For each decile of the total income distribution, a positive Δ implies that our baseline income definition à la Glyn (2011) attributes a smaller (larger) portion of self-employment income to capital (labor) than the alternative split does, and vice versa.

Figure 10 shows the positive value of Δ up to the 7th decile of the total income distribution. In other words, using the method proposed by Glyn we tend to attribute a *smaller* fraction of self-employment income to capital than the more traditional 1/3–2/3 split would do. On the contrary, the Glyn procedure attributes a *larger* fraction of self-employment income to capital at the top 30 percent of the total income distribution than the 1/3–2/3 split does. All in all, Figure 10 shows that the main result of a decreasing trend for the IFC index is not altered by the way we split self-employment income into its components.
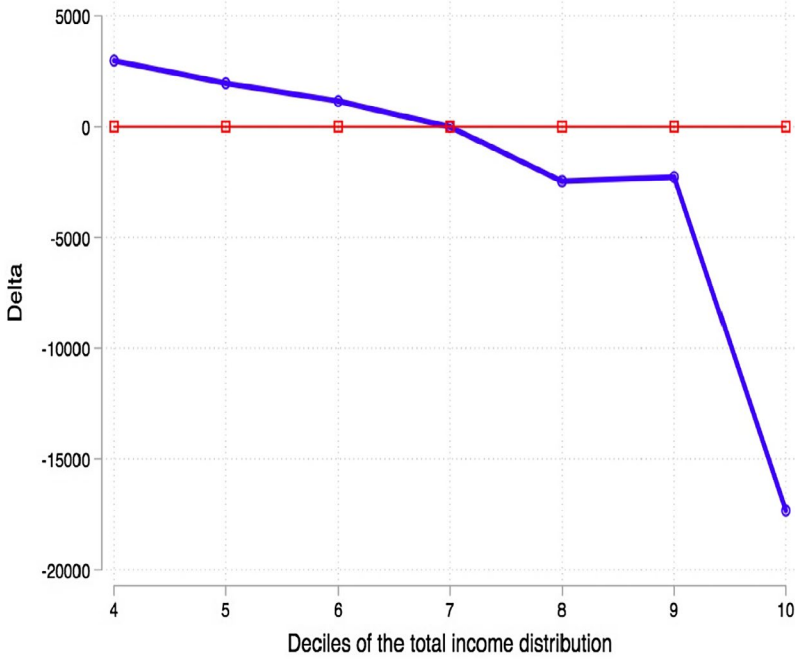
Figure 10. Comparison of the Two Self-Employment Splits—2016

Note: $\Delta = \mathbb{E}(y^L) - \frac{2}{3}y_i^{SE}$ is the difference between the two splitting techniques (i.e., $\frac{1}{3}/\frac{2}{3}$-split vs Glyn) evaluated in 2016. For each decile of the total income distribution, with the income concept being the one adopted in our benchmark definition, a positive Δ implies that the self-employment split à la Glyn (2011) attributes a smaller (larger) portion of self-employment income to capital (labor) than the alternative split does, and vice versa.

3.4. *Actual and Imputed Rents*

The allocation of actual and imputed rents constitutes a key issue for poverty and inequality measurement in advanced economies, as documented for the UK, West Germany, and the US by Frick and Grabka (2003). For Italy, to the best of our knowledge, a distributive assessment of the role of rental income has not yet been conducted. In this subsection, we study how the treatment of actual and imputed rents impacts the overall dynamics of income composition inequality in Italy, and show that actual and imputed rents tend to push compositional inequality in opposite directions. The data on rental income provided by the Bank of Italy (2016) include both (i) actual income effectively received by the households (*actual rent*) and (ii) imputed income (*imputed rent*). This latter income source reports the household's forecast of potential income from renting out owner-occupied housing.

Before digging deeper into our analysis, we provide here some information on the Italian housing market that can help to better grasp the trends in actual and imputed rents observed in our survey data. Variation in actual and imputed rents across the distribution can be driven (among other things) by changes in the rate of home ownership across income groups, and by changes in house prices. Andrews and Sánchez (2011) show a small increase in the aggregate rate of home-ownership

in Italy from around 64 percent in 1990 to 68 percent in 2004. From 2004 to 2016, instead, the EU-SILC data reveal that the aggregate rate of home-ownership has been mostly constant in Italy at around 72 percent. More interestingly, the rate of home-ownership has not changed substantially across the income distribution. For households lying below 60 percent of the median equivalized income, the average rate of home-ownership ranges from 58.8 percent in 2004 to 52.6 percent in 2016. For households lying instead above 60 percent of the median, the average rate of home-ownership ranges from 76 percent to 77.4 percent in the same period.[13] As regards housing prices, they increased by around 35 percent all the way from 1995 to the outbreak of the financial crisis in 2008, and then declined by a substantial 27 percent up to 2016 (Acciari *et al.*, 2021). This implies that we can at least expect the dynamics of rental income across the distribution to be substantially different when comparing the pre- with the post-crisis periods.

We now proceed to analyze the relationship between income composition inequality and rental income. Figure 11 compares the IFC trend without accounting for imputed rents in our definition of capital and hence total income, together with our benchmark series. While the series of the IFC without imputed rents displays a similar pattern to the benchmark series for the years 1989–1998 and 2008–2016, it however follows a completely different trajectory during the period 1998–2008. In fact, between 1998 and 2008, and hence before the outbreak of the financial crisis, the IFC series without imputed rents documents a significant upward trend of compositional inequality throughout the decade. This fact has two major implications. First, imputed rents have had a crucial role in determining the decreasing degree of compositional inequality throughout the period in question. This is because imputed rent is distributed less unequally than other sources of capital income. Second, *actual* rents have become increasingly more concentrated at the very top of the income distribution before the outbreak of the financial crisis. When actual rents are left out from the capital income definition, the IFC trend shows a similar dynamics as the benchmark one, although characterized by lower values of the indicator as shown in Figure 11. This is also explained by the fact that the overall share of actual rental income captured by the survey is much lower than the share of imputed rents.

Finally, when both actual and imputed rents are excluded from our capital income definition, the overall decreasing trend of compositional inequality is preserved, although characterized by lower values of the IFC index.[14] Therefore, we can claim that, in the aftermath of the financial crisis, all capital incomes other than actual rents have become less concentrated at the top, while the opposite has happened for labor incomes.

In sum, this section has shown that rental incomes played a crucial role in shaping the dynamics of income composition inequality, and its two components—actual and imputed rent—act as counteracting forces. Actual rents have pushed compositional inequality up in the decade preceding the outbreak of the financial crisis, while imputed rents qualify among the major drivers explaining the downward trend of the IFC index. That said, the removal of all rental incomes from the definition of capital income does not alter the general picture whereby Italy

---

[13]Source: EU-SILC survey [ilc-lvho02], 2021.
[14]Interestingly, the resulting IFC index reports even negative values for the years 2010–2016.
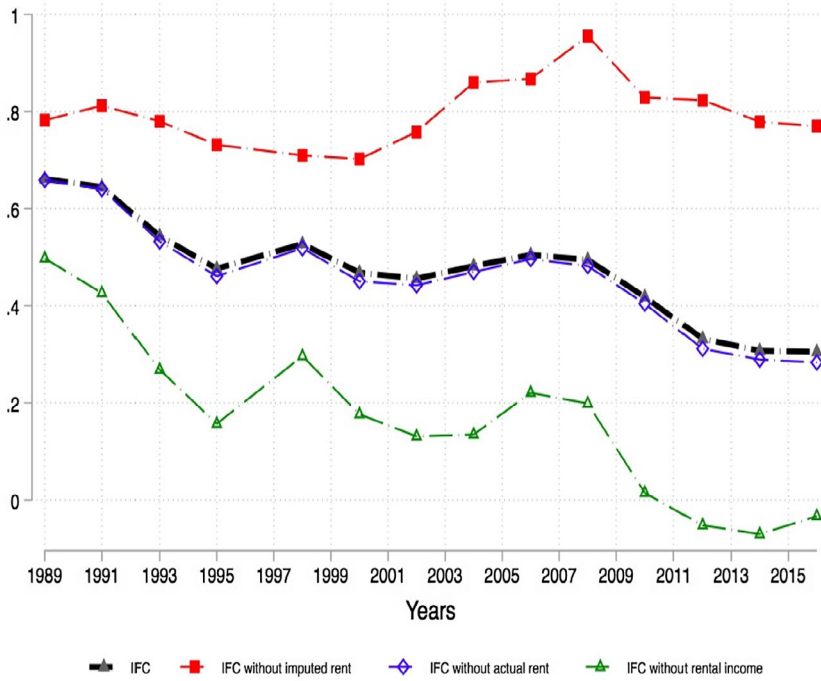
Figure 11. IFC and Rental Incomes

Note: The series *IFC* considers capital income to be the sum of the capital component of self-employment income ($Y_{s\pi}$) and property income (Y_{pr}), and it considers labor income to be the sum of payroll income (Y_{pa}) and the labor component of self-employment income (Y_{sw}). Pensioners are excluded from the analysis. In contrast, the series *IFC* without imputed rent excludes imputed rent from the definition of capital income. The series *IFC* without actual rent excludes actual rent from the definition of capital income and, finally, the series *IFC* without rental income excludes rental income from the definition of capital income.

has witnessed an important decreasing trend of compositional inequality in recent decades.

4. Income Composition Inequality and Redistribution

This section builds on the empirical analysis of the previous sections, to clarify how a better understanding of the linkage between the functional and personal distributions of income can enhance the effectiveness of redistribution policies. Imagine an economic policy maker seeking to reduce income inequality to maximize social welfare. To that end, she designs a classic redistribution (income taxation and transfer) policy. We argue that while a classical redistribution policy does not necessarily require the policy maker to know the current (and expected future) level of income composition inequality, the same is not necessarily true if the policy is intended to be effective in the longer run. The following proposition provides a simple *rule of thumb* that the policy maker should adopt:
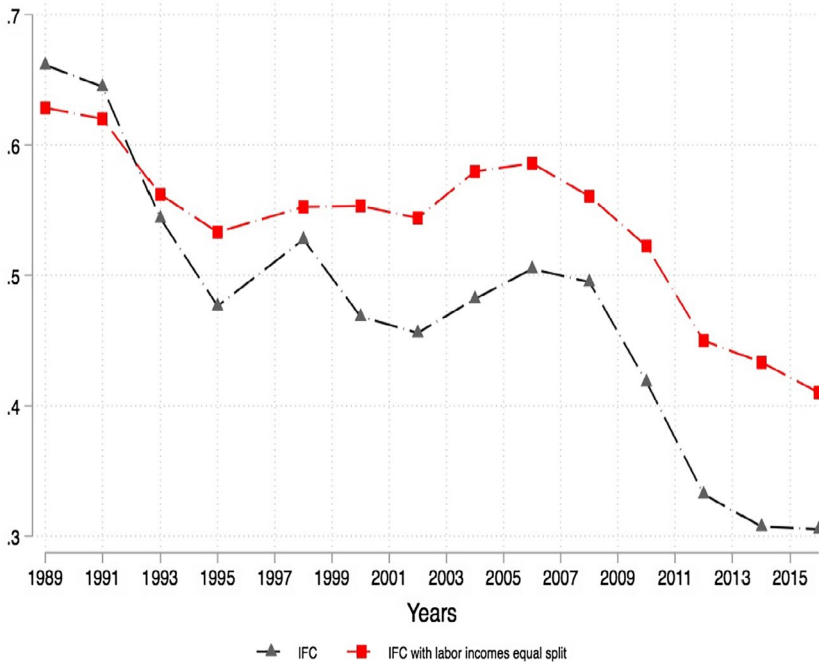
Figure 12. IFC and Labor Income Equal Split
Note: The series *IFC* considers capital income to be the sum of the capital component of self-employment income ($Y_{s\pi}$) and property income (Y_{pr}), and it considers labor income to be the sum of payroll income (Y_{pa}) and the labor component of self-employment income (Y_{sw}). Pensioners are excluded from the analysis. In contrast, the series of the IFC index labelled "labor income equal split" equally distributes the household's labor income between its members.

Proposition 1 If the expected sign of the factor share z's variation at $t + k$ coincides with the expected sign of $\mathcal{I}_f(\mathbf{z})$ over the interval $[t, t + k]$ (i.e., $\mathbb{E}(sign(z_{t+k} - z_t)) = \mathbb{E}(sign(\mathcal{I}_{f,[t,t+k]}(\mathbf{z})))$, with $z = \pi, w$), then it is preferable to re-distribute source z to reduce inequality in the long run.

The intuition behind this proposition is as follows. As long as the level of income composition inequality is positive at $t = 1$ (e.g., capital income being concentrated relatively more at the top of the distribution than labor income is) and the *capital* income share is expected to rise in the coming years up to $t = 2$, it is preferable to redistribute income in the form of *capital* (such as housing or financial assets, depending on their share of capital income) so that the expected increase in the capital income share will not have a strong impact on income inequality. The same will be true in the opposite case: for a negative level of income composition inequality (e.g., labor income being concentrated relatively more at the top of the distribution than capital income is), an expected increase in the *labor* share in the coming years will signal that *labor* income must be redistributed to reduce inequality in the longer run. For the sake of completeness, consider two additional scenarios that might arise. Specifically, when the two signs in this proposition differ, the expected change in income source z is already
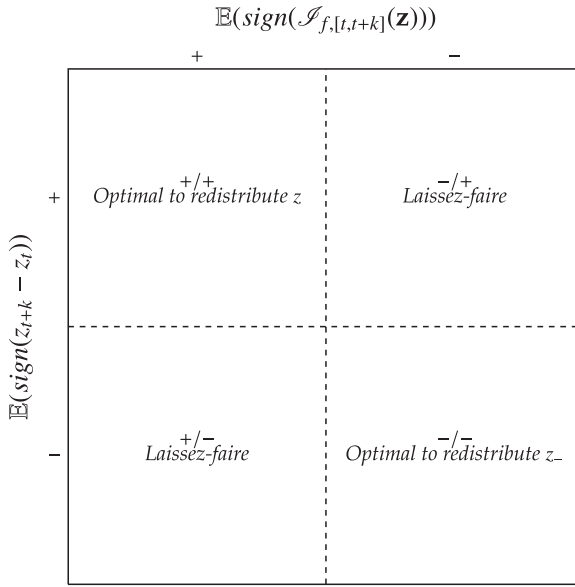
$$\mathbb{E}(sign(\mathscr{I}_{f,[t,t+k]}(\mathbf{z})))$$

Figure 13. Getting Redistribution Right

Note: This figure shows the four scenarios behind Proposition 1 in Section 4. **Scenario 1**: As long as the level of income composition inequality (top of the table) is expected to be positive (e.g., capital income is concentrated primarily at the top of the distribution, and labor income is concentrated at the bottom) and the *capital* income share (on the left of the table) is expected to rise, it is preferable to redistribute income in the form of *capital* (e.g., housing or financial assets), so that the expected increase in the capital income share will not have a strong impact on income inequality. **Scenario 2:** This scenario depicts the opposite case. For a negative level of income composition inequality (e.g., capital income mostly accruing at the bottom of the distribution, and labor income accruing at the top), an expected increase in the *labor* share in the upcoming years will indicate that *labor* income has to be redistributed to reduce inequality in the longer run. **Scenarios 3 and 4:** For the sake of completeness, we consider two other scenarios that might arise. When the two signs in the above proposition differ, the expected change in the income source z is already acting in favor of the redistribution of income in the long run.

acting in favor of the redistribution of income in the long run. In the latter case, then, knowledge of the degree of income composition inequality does not generate further insights for the policy maker. The four scenarios are summarized in Figure 13.

In summary, we argue that in the event of an expected variation in a given factor share of income, a policy maker should consider the sign of the degree of income composition inequality to design effective redistribution policies. Choosing to redistribute the *correct* factor share will efficiently and more permanently reduce the burden of income inequality in the economy. In Appendix C, we develop a model that shows that under incomplete information regarding changes in the functional income distribution and the level of income composition inequality, an inequality-averse social planner can choose a suboptimal vector of taxes to reduce income inequality in the society.

5. Concluding Remarks

This paper analyzes the evolution of inequality in income composition in terms of capital and labor income in Italy between 1989 and 2016. It starts by

highlighting the increasing share of capital incomes accruing to the bottom of the distribution, while in parallel the top of the distribution increased its share of labor income. To precisely capture this novel stylized fact, we focus on a novel measure of income composition inequality, the IFC index, introduced by Ranaldi (2021). A falling IFC index between the years 1989 and 2016 in Italy implies a falling degree of income composition inequality in the period considered, as well as the fact that Italy has been gradually moving in recent decades toward a *multiple sources of income* society. The lower (higher) the degree of income composition inequality is, the weaker (stronger) is the link between movements in factor income shares and personal income inequality. Therefore, a falling degree of income composition inequality implies a weaker link between the functional and personal distributions of income. Thereby, our results suggest that fluctuations in the total factor shares of income are having an increasingly *weaker* impact on income inequality in Italy. This result is robust to various specifications of self-employment income; nonetheless, it hinges crucially on the treatment of rental incomes. While the dynamics of imputed rents has brought about a more equitable distribution of capital incomes across the income distribution, that of actual rents has led to higher concentration of capital incomes at the top in the decade preceding the outbreak of the financial crisis. We also conceptualize a simple rule of thumb that relates fluctuations in the total factor shares and the level of income composition inequality to the specific income source to be redistributed. We argue that in the event of an expected variation in a given factor share of income, a policy maker should consider the sign of the degree of income composition inequality to design redistribution policies with long-term efficacy. We consider this article to be part of a broader research agenda on the issue of income composition inequality and specifically on the link between factor shares and income inequality. We believe that the technical assessment of this link introduces a novel dimension to the study of income distribution. Understanding the relationship between the macro-level dynamics of economic aggregates such as the capital and labor shares of income and the micro-level changes in the dispersion of income across the population can further emphasize the political economy character of economic inequality dynamics.

References

Acciari, P., F. Alvaredo, and S. Morelli, "The Concentration of Personal Wealth in Italy, 1995–2016," World Inequality Database WID.world, Working Paper No. 2021/14, 2021.

Alvaredo, F., A. B. Atkinson, L. Chancel, T. Piketty, E. Saez, and G. Zucman, "Distributional National Accounts (DINA)," Guidelines: Concepts and Methods used in WID.world. WID Working Paper, 2016.

Alvaredo, F., and E. Pisano, "Top Incomes in Italy, 1974–2004," in A. Atkinson and T. Piketty (eds), *Top Incomes: A Global Perspective-Volume II, Chapter 12*, Oxford University Press, 2010.

Andrews, D., and A. C. Sánchez, "The Evolution of Homeownership Rates in Selected OECD Countries: Demographic and Public Policy Influences," *Economic Studies, OECD Journal*, 1, 2011.

Atkinson, A., and F. Bourguignon, "Introduction: Income Distribution and Economics," *Handbook of Income Distribution*, vol. 1, Elsevier, 1–58, 2000.

Atkinson, A. B., "Factor Shares: The Principal Problem of Political Economy?" *Oxford Review of Economic Policy*, 25(1), 3–16, 2009.

Atkinson, A. B., and C. Lakner, "Capital and Labor: The Factor Income Composition of Top Incomes in the United States, 1962–2006," 1–43, 2017.

Bank of Italy, *Survey on Household Income and Wealth, Version 10.1*. 2016. Data retrieved from: https://www.bancaditalia.it/statistiche/tematiche/indagini-famiglie-imprese/bilanci-famiglie/index.html.

Bengtsson, E., and D. Waldenström, "Capital Shares and Income Inequality: Evidence from the Long Run," *The Journal of Economic History*, 78(3), 712–43, 2018.

Boeri, T., G. Giupponi, A. B. Krueger, and S. Machin, "Solo Self-Employment and Alternative Work Arrangements: A Cross-Country Perspective on the Changing Composition of Jobs," *Journal of Economic Perspectives*, 34(1), 170–95, 2020.

Brandolini, A., R. Gambacorta, and A. Rosolia, Inequality amid Stagnation: Italy over the Last Quarter of a Century. *Inequality and Inclusive Growth in Rich Countries: Shared Challenges and Contrasting Fortunes*, Oxford University Press, 2018. Chapter 8.

D'Elia, E., and S. Gabriele, "L'andamento della distribuzione funzionale dei redditi 1995–2016," in M. R. Franzini (ed), *Il mercato rende diseguali*. Il Mulino, Bologna, 15–36, 2018.

_____, "Self-Employed Income in the OECD Countries: Some Consequences for Functional Income," Ministry of Economy and Finance—Department of the Treasury—Working Paper no.1, 2019.

Fei, J. C. H., G. Ranis, and S. W. Y. Kuo, "Growth and the Family Distribution of Income by Factor Components," *The Quarterly Journal of Economics*, 92, 17–53, 1978.

Flores, I., "Measuring Capital-Labour Shares and Inequality: Increasing Gaps between National Accounts and Micro-data," *Mimeo*, 2020.

Franzini, M., and M. Raitano, "Income Inequality in Italy: Tendencies and Policy Implications," *Italy in a European Context: Research in Business, Economics, and the Environment*, Palgrave Macmillan, 50–74, 2016.

Frick, J. R., and M. M. Grabka, "Imputed Rent and Income Inequality: A Decomposition Analysis for Great Britain, West Germany and the U.S," *Review of Income and Wealth*, 49(4), 513–37, 2003.

Gabbuti, G., "Labor Shares and Inequality: Insights from Italian Economic History, 1895–1970," *European Review of Economic History*, 2020.

Glyn, A., "Functional Distribution and Inequality," *The Oxford Handbook of Economic Inequality*. 2011.

Kakwani, N. C., "Applications of Lorenz Curves in Economic Analysis," *Econometrica*, 45(3), 719–27, 1977a.

_____, "Measurement of Tax Progressivity: An International Comparison," *The Economic Journal*, 87(345), 71–80, 1977b.

Milanovic, B., "Increasing Capital Income Share and its Effect on Personal Income Inequality," in Boushey, H., B. de Long and M. Steinbaum (eds), *After Piketty: The Agenda for Economics and Inequality*, Harvard University Press, 235–239, 2017.

OECD, *Self-Employment Rate (Indicator)*, 2021. https://data.oecd.org/emp/self-employment-rate.htm. Accessed: 2021-06-26.

Piketty, T., and G. Zucman, "Capital is Back: Wealth-Income Ratios in Rich Countries 1700–2010*," *The Quarterly Journal of Economics*, 129(3), 1255–310, 2014.

Pyatt, G., C.-N. Chen, and J. Fei, "The Distribution of Income by Factor Components," *The Quarterly Journal of Economics*, 1980.

Ranaldi, M., *Income Composition Inequality: The Missing Dimension for Distributional Analysis*. Université Panthéon-Sorbonne -, Paris I, 2019.

_____, "Income Composition Inequality," *Review of Income and Wealth*, 2021.

Ranaldi, M., and B. Milanovic, "Capitalist Systems and Income Inequality," LIS Working Papers Series -, No. 803, 2020.

Torrini, R., Labour, Profit and Housing Rent Shares in Italian GDP: Long-Run Trends and Recent Patterns. Occasional Papers (Questioni di economia e finanza), No. 318, 2016.

SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article at the publisher's web site: