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Reconsidering social classes and functional income distribution in the 21st century. A theoretical and empirical assessment

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Reconsidering social classes and functional income distribution in the 21st century. A theoretical and empirical assessment

Marta Fana (Joint Research Centre, EC Seville), Davide Villani (Joint Research Centre, EC Seville)

Abstract

The original assumption behind the measurement of functional income distribution was that this measure would reflect uniquely the income allocated to different social classes. However, this straightforward dichotomy is more complicated today than it was 200 years ago for different reasons, such as the diversification of sources of income, and the role of managers. This paper proposes a new estimation of factors income distribution that is based not only on the source of income but also considers class belonging. We provide an empirical estimate for Italy (1991-2016) using the Survey on Households Income and Wealth (Bank of Italy). The revised labourers share is lower than the standard wage share. Moreover, we show that the size of the labour class is growing considerably due to the expansion of wage earners while at the same time they suffer a remarkable loss of income. Despite some labourers move towards the top of the distribution, most of the growing presence of wage income in the top of the distribution is imputable to managers.

Keywords: Social classes, Functional Income Distribution, Inequality.

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1 Introduction

The functional distribution of income (or factors' income distribution) is, perhaps, the most intuitive method to analyse how income distributes between social classes. Since the emergence of Classical political economy, economists have been widely concerned with this topic. David Ricardo considered that the determination of "the laws which regulate this distribution [between landowners, capitalists and labourers] is the principal problem in Political Economy" (Ricardo, 1951[1871], p. 5).

During the second half of the 20th century, the interest in the functional income distribution faded away. This situation, however, is rapidly changing and "factor shares are […] making a comeback" (Atkinson, 2009, p. 4). The standard classification of factors' shares which divides total income according to whether it represents profits or wages remains very useful. An increasing number of works have dealt with the functional income distribution as a relevant area of inquiry for economic analysis which embraces a wide range of topics.

The functional income distribution has the advantage that is quite straightforward, both theoretically and in terms of empirical estimations. The intuition behind its construction consists in measuring the income received by the labour class (wages) and the income received by the capitalists (profits and, we can add, rents). Nevertheless, in our times this neat distinction between wage and capital earners is not so straightforward anymore for different reasons. First, as evidenced by several authors (e.g. Atkinson, 2009; Piketty et al., 2018), the growth in mixed (from both profits and wages) incomes and the fact that an individual can earn multiple sources of income make it more difficult to clearly distinguish between capital earners and wage earners. This implies that the same person can contribute simultaneously to the capital and wage share, which confounds the conventional univocal division between wage earners and profit earners. This problem is also accentuated by the growth of financialisation as a growing number of individuals and households potentially receive financial income (van der Zwan, 2014). Another important aspect that is not considered in the standard estimations of functional income distributions involves the link between capitalists' interests spurring from ownership of capital and the management and control of the capitalist functions by wage earners. As it is well known, today part of the control and managing of the firm is mostly carried out by managers. Despite being formally wage earners, the interests of the managerial class are more closely aligned to those of the traditional capitalist class (Krueger, 1999; Glyn, 2009).

Considering these stylised facts, it can be immediately grasped that the standard definition of functional income distribution may not reflect so well anymore the purpose that was at its origin, i.e. the distribution of income according to different social groups with contrasting interests. The first objective of this paper is to address this issue, proposing an alternative classification of labourers and capitalists that accounts for the above mentioned elements that characterise contemporary capitalism. From these definitions, we provide a new estimation of the functional income distribution based on the class belonging of the individuals/households rather than uniquely the type of income.

This is not the first contribution that expressed the necessity of reviewing the conventional estimations of functional income distribution. The necessity of providing new estimations of the wage and capital share is probably best resumed in the words of Krueger (1999, p. 50), who argued that:

> with the rise of employee stock ownership and pension funds, and the increase in compensation for top executives, labor and capital no longer divide so neatly into mutually exclusive categories. These considerations suggest that there would be value from improving the measurement of labor's share, and from devising alternative categories for functional shares. The increase in the number and variety of available wage sources in recent decades should facilitate this endeavor.

Despite this renewed interest towards innovative ways of estimations of factors shares, to the best of our knowledge, there are only limited empirical attempts in this direction. One relevant exception is

Mohun (2006), who provides an assessment of the factors' income distribution according to class interests for the US. From this perspective, managers' income contributes to the capital share. Despite these antecedents, there are no contributions that try to undertake a similar analysis for European countries.

This paper fills these gaps, estimating revised factors' shares in Italy between 1991 and 2016 using data from the Survey of Households, Income and Wealth (SHIW) published by the Bank of Italy. From a theoretical perspective, it allows to revive the original scope of functional income distribution measurements, that is capturing how total income is divided between groups of individuals with contrasting interests and, at the same time, accounting for the fact that individuals/households can receive multiple sources of income.

We are aware that a dichotomous distinction between labourers and capitalists share has the drawback of smoothing the existing heterogeneity of class dynamics that are present in contemporary societies and that have been included in several class schema proposed by the (mostly sociological) literature (e.g. the contradictory class locations of Wright 1997). Nevertheless, on this occasion we want to preserve this dichotomy (labourers and capitalists) to remain within the traditional analysis of the standard functional income classification which is largely rooted in classical political economy. At the same time, this binary classification does not impede more granular analysis, focusing on subgroups of individuals who share similar characteristics.

This approach has also the advantage that it allows identifying the units of analysis (individual/household) that contribute to each share of income and their evolution over time. Therefore, contrary to the standard estimation of the functional income distribution, it is possible to study the composition and the evolution of different sets of indicators, such as the number of individuals in each class and how their mix of different incomes changes in time.

After this introduction, Section 2 discusses the reasons for providing an alternative classification, presenting some significant antecedents in the literature. Section 3 describes the practical criteria employed to classify each unit. Section 4 presents the empirical results and Section 5 concludes the paper by discussing some relevant implications deriving from our approach.

2 The case for revisited factors shares

The standard estimation of the functional income distribution reflects the objective of measuring the share of income received by different social classes. As Smith (1999, p. 356) puts it:

> The whole annual produce of the land and labour of every country, […] naturally divides itself […] into three parts: the rent of land, the wages of labour, and the profits of stock; and constitutes a revenue to three different orders of people: to those who live by rent, to those who live by wages, and to those who live by profit.

The idea that different sources of income would identify different social classes is also clear in Ricardo, who considered that the "the proportions of the whole produce of the earth which will be allotted to each of these classes, under the names of rents, profit, and wages" (Ricardo, 1951, p. 5). As it is well known, these classes have contrasting interests, so that the growth of one's share of income would affect the size of other classes' share.[1]

[1] Although from a perspective which focuses on the individual rather than the class analysis, also the standard neoclassical approach envisages a clear distinction between the source of income. Wages are the compensation

This classification has the merit of clearly identifying social classes based on their source of income. This view is directly materialised into the conventional estimation of factor shares, where the wage share is broadly conceived as the share of output appropriated by the labour class and the profit share is what is received by capitalists (and rentiers). This representation may offer a good approximation of reality and has the merit of being quite straightforward.

However, today things are more blurred than they used to be at Smith's times. There are at least two aspects that we should consider in this respect and that motivate the elaboration of new estimations of the functional income distribution: the diversification of the sources of income and the role of managers. The first aspect relates to the fact that nowadays individuals often receive multiple sources of income. A wage earner can also receive rents from properties such as buildings or financial assets, a self-employed can also be a part-time wage earner to complement his/her income and so on. While these aspects have characterised contemporary capitalism for decades, today several emerging factors contribute to deepening this phenomenon. For example, the growth of financialisation has led to a major involvement of households in financial products that can provide financial income (van der Zwan, 2014). Another relevant example has to do with the increasing number of workers whose income is mostly considered self-employment income. For example, professional who can have a primary dependent employment but complement her income with remunerations from self-employment, like in the case of extra activities (e.g. consultancies). These contexts contribute to the heterogeneity of the sources of income making it harder to distinguish exclusively "those who live by wages, and to those who live by profit" as in the traditional formulation of the functional income distribution.

We have the somehow paradoxical situation that an individual can contribute simultaneously to the wage share and the capital share. This scenario is close to what Milanovic (2017) labelled "New Capitalism", in which individuals receive both capital and wage incomes, as opposed to "Classical Capitalism" where there is a clear dichotomy between wage and capital earners. If a person can contribute to both the wage and capital share, then it is straightforward to see that the standard functional income distribution cannot reflect uniquely the class belonging of the individuals.

The second factor to consider is the role played by managers. The idea that the capitalist mode of production can create wage-earning positions for controlling the functioning of the firm without owning the means of production is not new and was already present in the 19th century. In Volume 3 of Capital, Marx highlighted that the rise of stock companies, which involved the "transformation of the actual functioning capitalist into a mere manager, in charge of other people's capital, and of the capital owner into a mere owner, a mere money capitalist" (Marx, 1991, p. 567). What is important is that despite being largely wage earners, managers assume and promote capitalists' interests. As Milios (2018, p. 100) puts it, managers exercise "certain functions belonging to the relation of possession of the means of production have been conferred on them". From this perspective, managers are the "functioning capitalist" that constitute, together with the formal proprietors, the "space of capital" (Sotiropoulos, Milios and Lapatsioras, 2013, pp. 51–52). The intensification of the division of labour and the sophistication of the production processes fuelled the process of separation between ownership and management and contributed to consolidating a managerial class in charge of guaranteeing the functioning of the capitalist firm (Braverman, 1974). This view regarding the role of managers is not unique to economists. Among sociologists, Wright (1997) places managers in a so-called contradictory class location, as they share characteristics of the capitalists (the control of the labour force and participate in decisions of investment) and workers (they receive wage income).

of labour, while profits are the compensation of capital, so that the standard labour share essentially captures the share of income received by salaried workers.

Although we agree on this ambivalence of the managerial occupations, in this paper we prioritise the functions, rather than the source of income, and place the managers together with the capitalist class.

Similar points of view are share by authors from very different backgrounds. The idea that there is a fundamental alignment of interests between managers and capitalists has been eloquently proposed by Friedman (1970), who argued that “the manager is the agent of the individuals who own the corporation …, and his primary responsibility is to them”. This implies that business owners commonly delegate important decisions regarding the enterprise to managers. Analogously, Chandler (1984, p. 473) maintained that the so-called “managerial capitalism” is characterised by the fact that “basic decisions concerning the production and distribution of goods and services were made by … salaried managers who had little or no equity ownership in the enterprise they operated”. More recently, Krueger claimed that “because corporate officers control the firm's capital and in many cases include the owners of the firm, one could argue that much of their compensation should be classified as capital income” (Krueger, 1999, p. 46).

Therefore, it is safe to maintain that there is a long tradition of authors, with very different backgrounds, who consider that the functions and interests of the managerial class are largely aligned with those of the business owners. This alignment has perhaps reinforced in the last decades with the consolidation of maximisation of shareholder values as a new form of governance of the firm (Lazonick and O’Sullivan, 2000), which is a fundamental pillar of the process of financialisation. This shift finds the theoretical background in the consolidation of the so-called “agency theory”, which emerged and consolidated in business studies between the 1970s and the 1980s. Agency theorists (see Ross, 1973; Fama and Jensen, 1983; Jensen, 1986) maintained that managers may be driven by personal interests and use their power to advance those interests in opposition with those of shareholders (Lazonick and O’Sullivan, 2000, p. 16). To contrast this selfish behaviour, market forces should have more power in governing the firms, and in influencing managers’ operations. Within this context, financial markets represent the instrument to discipline managers and to align their interests to those of shareholders. As stressed by Froud et al., agency theorists believe that “firms exists for the benefit of shareholders who own the firm and who should exercise control so that the interests of management are beneficially aligned with those of the owner shareholders around the pursuit of profit” (Froud et al., 2000, p. 5). This has crucial implications for the functions and objectives pursued by managers. Along these lines, Glyn argues that “many of those at the top of the pay distribution are more akin to entrepreneurs” (Glyn, 2009, p. 112).

This discussion is relevant for the measurement of factors’ shares. In the standard factors’ share estimations, the wages of managers contribute to the wage share. However, for the reasons depicted in the previous paragraphs, there is a long tradition of authors who argue that some group of wage earners deploy functions that are comparable with those of the traditional capitalists. In this respect, managers can be regarded as delegated of the traditional capitalists to run the production process and preserve their interests. Like capitalists, managers appropriate part of the surplus generated by workers. Furthermore, they can hold part of the surplus precisely because they have control over their corporations. In that sense, their function is analogous to that of capitalists, with the difference that their source of power is managerial control instead of capital ownership. For this reason, it seems appropriate to consider the wage earned by the capitalists as part of the capital share.

The standard measurement of functional income distribution offers a straightforward and intuitive way to estimate the distribution of income between social classes, broadly defined. However, for the reasons mentioned in this section, it has the drawback of not fully reflecting anymore the original purpose, that is estimate the amount of the pie that goes to different social groups with contrasting interests.

2.1 Functional income distribution revisited: Relevant antecedents

Before presenting the criteria followed in this paper, it is important to revise the existing studies which deal with alternative class classifications. These works represent relevant antecedents because, like in this paper, they consider that class location is not uniquely determined by the type of income. Only some of the studies mentioned in this section are interested in estimating revised factor shares, while most of them redefine social classes to meet other purposes, generally associated with the study of inequality. Nevertheless, we believe this literature offers valuable insights to employ when proposing a revised definition of capitalist and labour class.

A first alternative criterion to define the capitalist class is to look at the top distribution of income within labour earners. Using data from Piketty and Saez (2007), Glyn (2009) estimates the American factor shares subtracting the top 1% of employment income from the labour share. These estimations lead to a much sharper reduction of the labour share in the last decades compared to aggregate official figures. Building on this works, Duenhaupt (2011) applies this methodology to the German economy, showing that significant changes in the factor shares estimation can take place also in a country that has not been so heavily involved in the process of financialisation like in the US. The assumption behind this methodology is that the class interests of top earners are more aligned with those of the capitalist class, rather than the working class. This observation is undoubtedly true, as the top 1% usually comprises top managers whose interests, as discussed in the previous section, are more aligned with capital earners. However, this classification has the limitation that does not consider explicitly the functions that individuals have in the division of labour. For example, it can be safely argued that there are managers that despite being part of the bottom 99% of the labour income distribution perform functions that are more aligned with those of the traditional capitalist class.

Other authors do not rely on the level of income as a guiding criterion but on that of wealth. Studying the relationship between class structure and economic inequality in the United States, Wolff and Zacharias (2013) consider a household to be capitalist if its non-home wealth is at least $4 million or if business equity is worth at least $2 million (in 2000 dollars). This approach is motivated by the fact that holding a big amount of wealth allows the capitalist class not to engage in wage labour and, at the same time, to potentially influence the political process. Hence, from this perspective, it is not only the source or level of income that determines the belonging to the capitalist class, but it is rather the capacity of abstracting from wage labour and the potential to actively influence the political processes. While we believe that wealth is an important aspect to define class location, wealth should not be the only criterion to define who is capitalist. Such a narrow definition of the capitalist class may leave out a significant number of individuals/households whose main source of income is profit and whose interests can be thought to be reasonably more aligned with those of other capitalists rather than with the workers.

Other studies combine the standard definition of capitalist (i.e. those earning profits) with the functional interests embedded in the individual. From this perspective, class interests do not depend uniquely on the type of income received, but also on the functions deployed within the workplace and, more generally, the society. In this respect, Mohun (2006, p. 362) acknowledges that "the separation of ownership and control made the functions of control the prerogative of an increasingly 'professionalised' management. Companies are managed by employees in a hierarchical pyramidical structure, at the apex of which, 'management' has to deliver a performance satisfactory to shareholder-owners". Hence, Mohun provides a definition of capitalist that does not consider only the business owners. Rather, capitalists are the bearers of capitalists' interests. This includes business owners (profit earners) and those wage earners "above the shopfloor level who exercise functions of supervision and control" (Mohun, 2006, p. 362).

Finally, some scholars provide a mix of the above approaches. Rehm et al. (2016) study how income, wealth and perception and behaviour change across social classes. To do so, they allocate individuals in the capitalist class according to three criteria. First, when capital income exceeds the average labour or self-employment income. The second criterion involves the holders of the top1% net wealth. The third one concerns business owners with at least five employees.

Table 1. Alternative capitalist class categorisation existing in the literature.

	Alternative criteria to define the capitalist class	Criteria
Glyn (2009) Duenhaupt (2011)	Capitalists are: Profit earners or Top 1% of employment income	Income level
Wolf and Zacharias (2013)	Households are considered to be capitalists when: Non-home wealth is at least $4 million (in 2000 dollars) or Business equity is worth at least $2 million (in 2000 dollars)	Wealth level
Mohun (2006)	Capitalists are: Profit earners or Workers above the shopfloor level who exercise functions of supervision and control	Task-based: Authority and control
Rehm et al. (2016)	Individuals are considered capitalists when: Capital income exceeds the average labour or self-employment income or Belong to the top1% net wealth or Business owners with at least five employees.	Mixed

Source: Authors' elaboration

3 Our approach

Building on the discussion presented in Section 2, three main criteria drive our classification for the construction of a revisited factor share. First, we recognise that the ownership of the means of production is not the only factor to determine class interests. As in Mohun (2006), we include managers among the capitalist class, in line with the idea that managers´ interests are aligned with those of the capitalists, despite being wage earners. The second criterion concerns rentiers and proprietors, echoing what was proposed by Wolff and Zacharias (2013). Owning a large stock of wealth relieves one from the compulsion of engaging in salaried labour. A similar argument applies to those receiving a significant income from real or financial assets. It seems reasonable to assume that these groups of people will have interests to defend their sources of wealth and rents. Finally, our classification considers that individuals may receive their incomes from a variety of sources. This obliges us to decide how to allocate individuals who receive different sources of income. The main rationale employed to define who contributes to the revised capital share and the revised labour share is observing the main source of income. We assume that an individual/household will be more interested in their main source of income, and this in our scheme determines their class location. For example, a salaried worker who also receives property or entrepreneurial income that is greater than their labour income will be more interested in preserving the property and entrepreneurial income rather than labour income. Therefore, in this case the worker will be considered part of the capitalist class. On the other hand, workers who receive a relatively small rent on top of their salary will depend more on the labour income and therefore will be counted as part of the labourer's class.

3.1 Capitalists

We divide the units of analysis (i.e. individuals or households) that contribute to the revisited capitalist income into five groups:

1. *Traditional capitalists*. This category reflects closely the conventional idea of the capitalist. It comprises all units whose main source income is represented by profit.
2. *Managers*. This group includes managers and senior officials.[2] This category mirrors the discussion presented by different authors (e.g. Krueger, 1999; Mohun, 2006) that corporate officers control the capital of the firm and should therefore be viewed as part of the capitalist class rather than the labour class.
3. *Rentiers*, which incorporate those units of analysis whose property incomes (rents from properties plus financial income) represent the main source of income and are above the average income. In this way, we capture those individuals whose income is mostly dependent on assets while they may also have other sources of income. For example, a schoolteacher who also receives property incomes that are superior to his/her labour income (and are above the national average income) is considered a rentier.
4. *Wealthies*. This category consists of the wealthiest 10% of the individuals and are not included in the previous groups of capitalists.[3] Owning a large amount of wealth can, in principle, eliminate the economic compulsion to work (Wolff and Zacharias, 2013). Of course, a traditional capitalist (as defined above) may well be part of the top 10% in terms of wealth. Therefore, we include in this group only those individuals whose wealth is in the top ten percent and who are not part of the previous categories of capitalists. Hence, according to our classification, Wealthies are those individuals who may have labour income but that, in a given moment, could decide to realise a consistent flow of income (whether selling or investing) from their stock of wealth.
5. *Self-employed (top 1/3)*. A crucial discussion in the estimation of functional income distribution involves the treatment of self-employment earners. The classification of self-employment income is not straightforward and it is an object of debate also for the estimation of standard functional shares (for a discussion, see Gollin, 2002; OECD, 2015). We include among the capitalists those households whose main source of income is self-employment income and belong to the top one-third of the distribution of self-employment income. This criterion mirrors one of the most conventional one employed to estimate the standard adjusted factor shares (OECD, 2015). This classification does not impede that self-employed could also receive other sources of income (such as labour income, reflecting the fact that self-employed can perform a variety of jobs at the same time).

3.2 Labourers

The revisited labour class is comprised of two categories of workers:

1. *Traditional labour class*. This group includes those units whose main source of income is labour income. In line with what was argued in this paper, individuals of this group could also receive

[2] In this occasion we include public managers among capitalists. However, it could be argued that managers in the public sector responds to a different logic from those working in the private sector and for this reason should not be included among capitalists. On the other hand, it could be also maintained that the logic of private firms has affected the way the public sector operates. A manager of public companies may be subject to the same logic of private firms, being subject to the same market rules of private companies, cost reduction policies, antitrust and competitiveness frameworks that substantially make them similar to managers operating in the private sector. For the sake of simplicity, we leave public managers among capitalists.

[3] Net wealth is equal to the sum of real assets and financial assets minus financial liabilities.

sources of income different from wages as long as they do not represent the main source of income.

2. *Self-employed (bottom 2/3)*. This group includes the bottom 2/3 of the distribution of income of those individuals/households whose main source of income is self-employment income.

4 Empirical analysis

4.1 The SHIW database and the accounting framework

To perform the empirical analysis, we employ the Survey of Households Income and Wealth (SHIW) realised by the Bank of Italy. Since the 1960s, this database collects data on income and wealth of Italian households with a frequency of approximately two years. Every wave of the survey is representative of the Italian population, and it covers around 8,000 households. Since some relevant data for our analysis (such as information on financial assets and wealth data) are only available since the beginning of the 1990s, our analysis is restricted to the period between 1991 and 2016.

The SHIW database has been employed in numerous studies to address a variety of subjects. Among the relevant antecedents that deal with the distribution of income in Italy, Barba (2013) uses this database to look at the link between functional and personal income distribution between 1989 and 2008. Along similar lines, Iacono and Ranaldi (2020) show that there is a growing participation of income from labour (capital) in the top (bottom) of the distribution of income. These studies have the merit of documenting the growth of the heterogeneity of the sources of incomes among different percentiles of the income distribution, but they do not provide revisited factors shares along the line proposed in this paper.

Using the empirical figures derived from the SHIW database, total income (Y) is equal to:

$$Y = Y_l + Y_e + Y_s + Y_p \qquad 1$$

Where Y_l is the income from labour, Y_e is entrepreneurial income, Y_s is self-employment and Y_p is the income from properties, which includes income from rents (Y_r), imputed rents (Y_i), and income from financial assets (Y_f) that is composed of Interest on bank and postal deposits plus Interest on government securities plus Income from other securities minus Interest payable.[4] This is:

$$Y_p = Y_r + Y_i + Y_f \qquad 2$$

Total income can be split between the income received by capitalists (Y^K) and labourers (Y^L), as defined in the previous section. The revised capitalists and labourers' shares of income can be consequently estimated as follows:

$$k = \frac{Y^K}{Y} \qquad 3$$

[4] As in other studies (e.g. Iacono and Ranaldi, 2020), we exclude pensions and other transfers from the analysis because our interest lies in defining how the income deriving from the production process is distributed among those that actively contribute to create it.

$$l = \frac{Y^L}{Y} \quad (4)$$

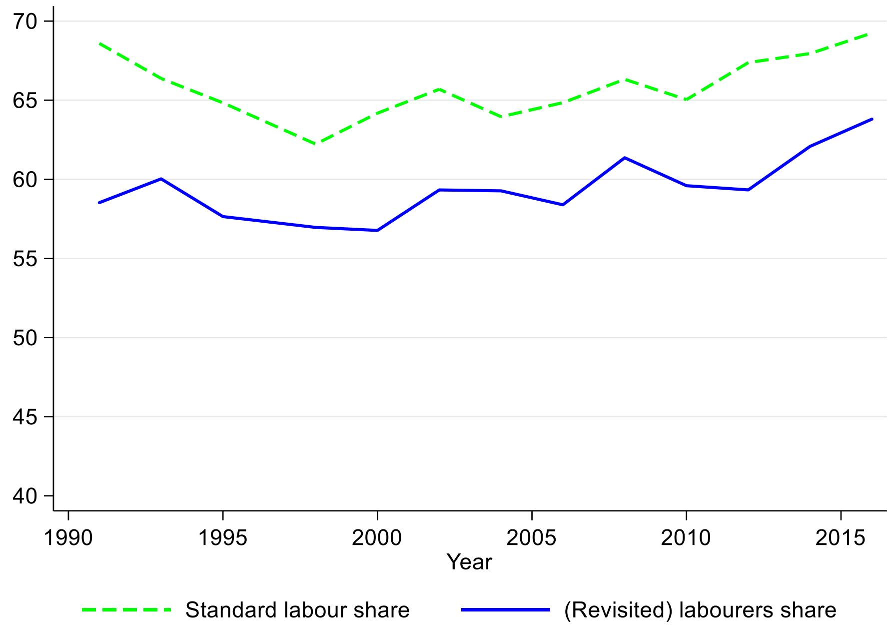
Given our classification, capitalists' income and labourers' income, their respective shares can include all components of equation 1 although, of course, the proportions will vary considerably across each group. Y^K will be equal to the sum of the income of the five subgroups that constitute the capitalist class, while Y^L will be equal to the sum of the two subgroups of labourers, wage earners and Self-employed labourers. In a similar fashion to Equations 3 and 4, it is possible to calculate the share of income received by each of the seven subgroups detailed in the previous section.

Using this methodology every unit of analysis will contribute uniquely to one of the two shares, avoiding the possibility of individuals contributing simultaneously to the wage and capital share, which is common in the standard estimations of functional distribution of income.

4.2 Results

Figure 1 shows the evolution of the revised functional income distribution between 1991 and 2016 and compares it to the standard measurement of the functional income distribution obtained from SHIW data. The first striking difference between the two series is that the revised labourers' share lies constantly below the standard labour share by approximately between 4-7 percentages points. This indicates that, following our classification, labourers receive a lower share than with the standard estimation.

Figure 1. Revised and standard functional income distribution (% of total income).

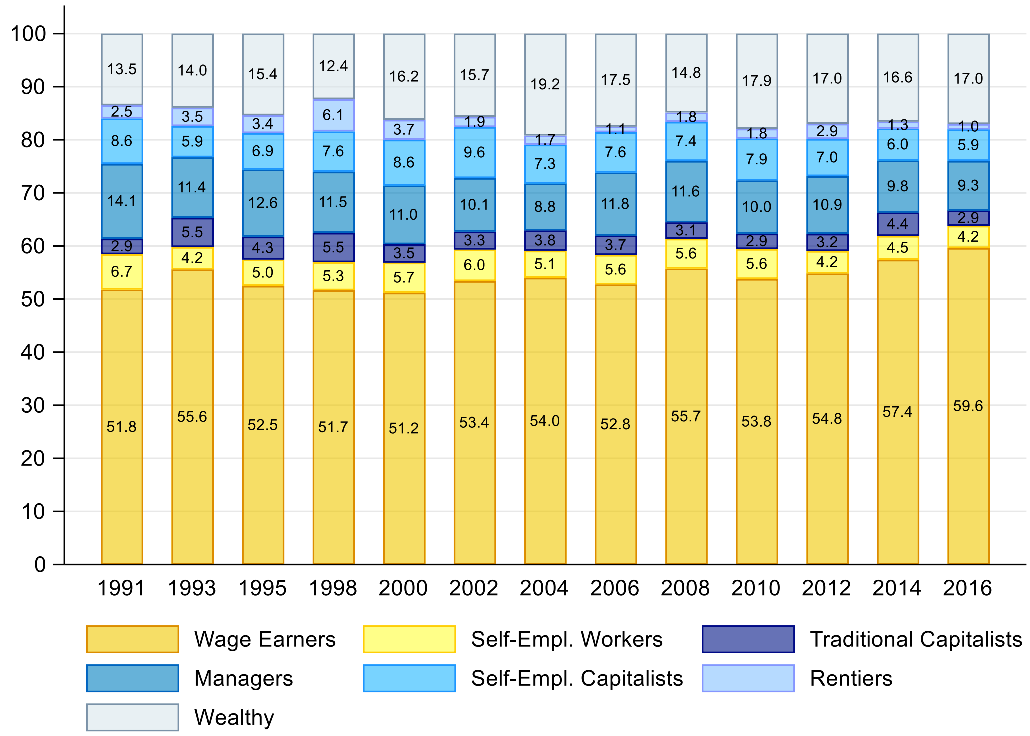


Source: Authors' elaboration using SHIW data.

There are no major changes in the level of the standard labour and (revisited) labourers' share of income. Both lines show a 'U' pattern (reduction until 1998 and slight increase afterwards) which is more evident for the standard labour share. This trend is in line with that of the labour share deriving from official statistics, which show a reduction in the labour share until the end of the century and a mild increase afterwards.[5] After 2010, the revised labourers' share of income becomes steeper so that, as result, in 2016 it is four percentages points higher than it was in 1990.

As presented in Section 3, capitalists and labourers can be differentiated into further subgroups. Accordingly, it is possible to distribute total income across groups within our classification (Figure 2). It can be appreciated that, among labourers, there is a slight increase of the share of income received by wage earners which is compensated by a slight reduction in the income received by self-employed. Within the capitalist class, we witness a slight decline in the share of income accruing to Managers, Self-employed capitalists and Traditional capitalists in favour of the Wealthies.

Figure 2. Distribution of total income across classes (% of total income).



Source: Source: Authors' elaboration using SHIW data.

Changes in the shares of income received by each (sub)group do not tell anything regarding the determinants of these changes. Something that is usually overlooked when using the standard approach of functional income is that the composition of the individuals/households contributing to each share may be changing significantly. For example, the increase (reduction) in the standard labour share may hide an even higher increase in the number of wage earners. Since we can identify each unit of analysis contributing to each share, we can study the composition and the evolution of the households contributing to them.

[5] For example, see OECD data, https://stats.oecd.org/index.aspx?queryname=345&querytype=view

We perform a shift-share analysis to investigate whether the changing levels in the total income of each subgroup are determined by changes in income or the size of the population of each subgroup. Specifically, we decompose the change in the total income between 1991 and 2016 for each subgroup *i* (ΔY_t^i) in the *between* effect capturing the reallocation of households across subgroups and the *within* effect which grasps the role of changes in the level of income within each subgroup. Formally:

$$\Delta Y_t^i = \bar{Y}^i \Delta E_t^i + \bar{E}^i \, \Delta Y_t^i + \varepsilon^i = Y^{iB} + Y^{iW} + \varepsilon^i \qquad 5$$

Where E^i is the share of households of subgroup *i* in period *t*. The terms $\bar{Y}^i$ is the average income and $\bar{E}^i$ is the average share of households of subgroup *i.* The symbol Δ is the difference operator between 2016 and 1991 values. The resulting Y^{iB} and Y^{iW} refer, respectively, to the resulting between and within component. The between component indicates how much the change in presence of subgroup *i* affects the change in total income Y_t^i while the within component shows the role played by the evolution in the level of income of subgroup *i*. Finally, ε_i captures the correlation between the two components which can be computed as residual.

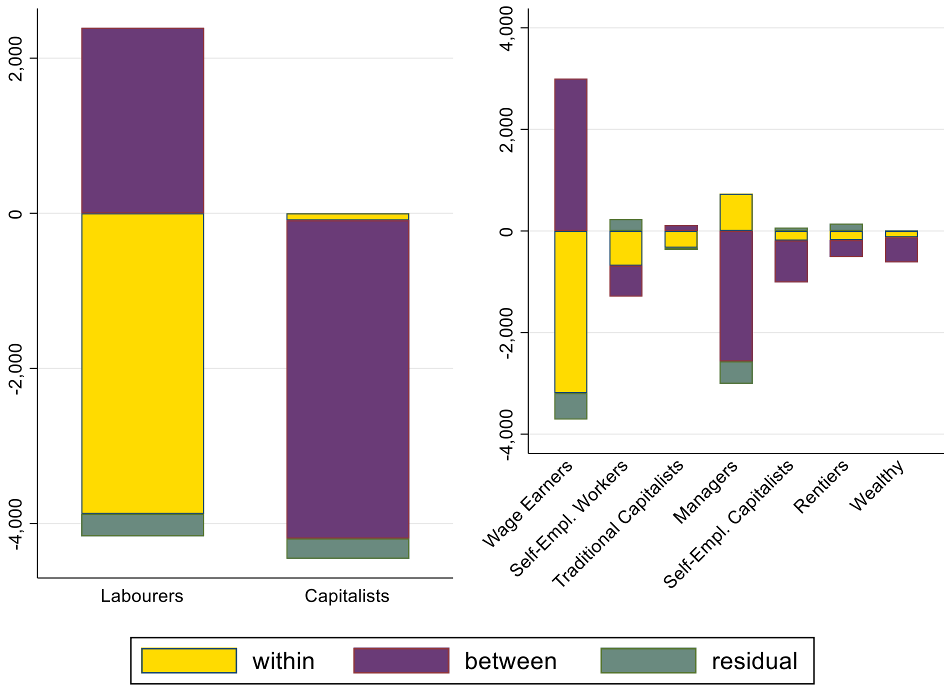
This exercise shows that there is a reduction in average income for both labourers and capitalists, which denotes a generalised impoverishment of the active population. However, the loss in income is not evenly distributed. Despite the within component being negative in both groups, the decline in average income is much more evident for labourer households. On the other hand, there is a marked growth in the between component for labourers that is mirrored by a sustained decline of capitalist households. An increase in average income due to compositional effect highlights a pattern of a downgrade of Italian society.

The graph also shows that the growth of labourers is the result of the considerable expansion of wage earners. On the other hand, the negative contribution of the between component mainly drives change in average income across the capitalist class. This reduction is especially evident for Managers and Self-employed. Managers also stand out as the only subgroup that is better off in 2016 than in 1991, as they show an increase in their compensation.

Overall, these data suggest a general worsening of Italian income in line with macroeconomic trends of a chronic stagnating income during the last decades. The loss of income has been more profound among labourer households while, at the same time, the presence of wage earners has increased notably among Italian society.[6] This implies that the stability and mild increase of the labourers' share observed in Figure 1 shows the evolution of the revised functional income distribution between 1991 and 2016 and compares it to the standard measurement of the functional income distribution obtained from SHIW data. The first striking difference between the two series is that the revised labourers' share lies constantly below the standard labour share by approximately between 4-7 percentages points. This indicates that, following our classification, labourers receive a lower share than with the standard estimation. Moreover, the evolution of this aggregate trend is the result of a significant change in the subgroup composition, with a marked expansion of (worse off) labourer households. With the similar share of labourer households of 1991, we would have observed rapid growth of the capitalists' share.

[6] For a more detailed look at the relative composition of the sample and the evolution of their incomes, see Table A1 and A2 in the Appendix.

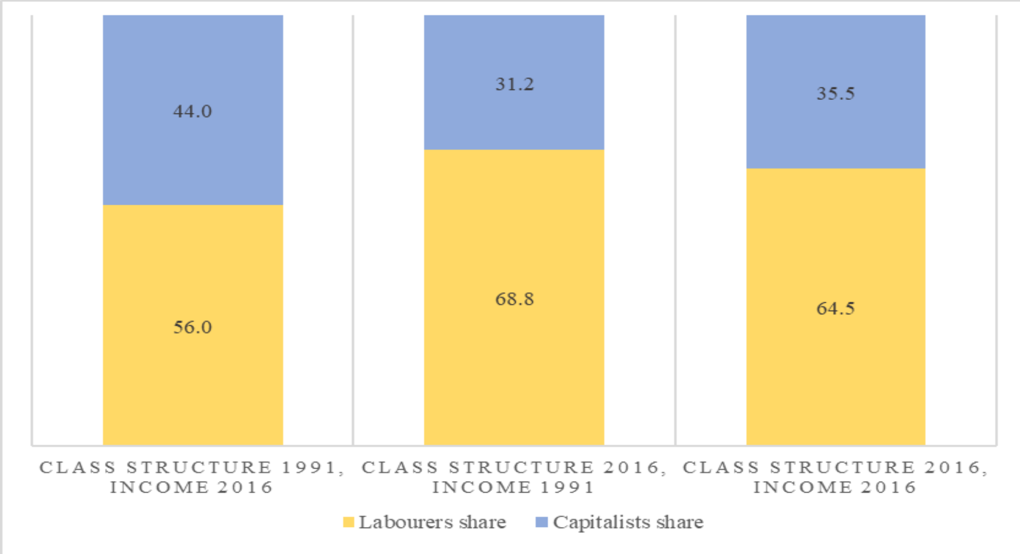
Figure 3. Shift share analysis, 1991 to 2016.



Source: Source: Authors' elaboration using SHIW data.

A similar way to illustrate this concept is proposed in Figure 3, which shows the hypothetical distribution of income if (1) the class structure (with changing levels of income) and (2) the income levels was the same than in 1991 (with changing class composition). It can be appreciated that with the same class structure of 1991, the labourers share would be considerably lower than it is in 2016 because of the lower relative number of labourers in 1991 and the lower level of earnings in 2016. On the other hand, should the compensation to labourers stayed the same, Italy would have a higher labourers share of income (68.8%) than it actually did.

Figure 4. Income distribution (%) under different hypothetical scenarios.

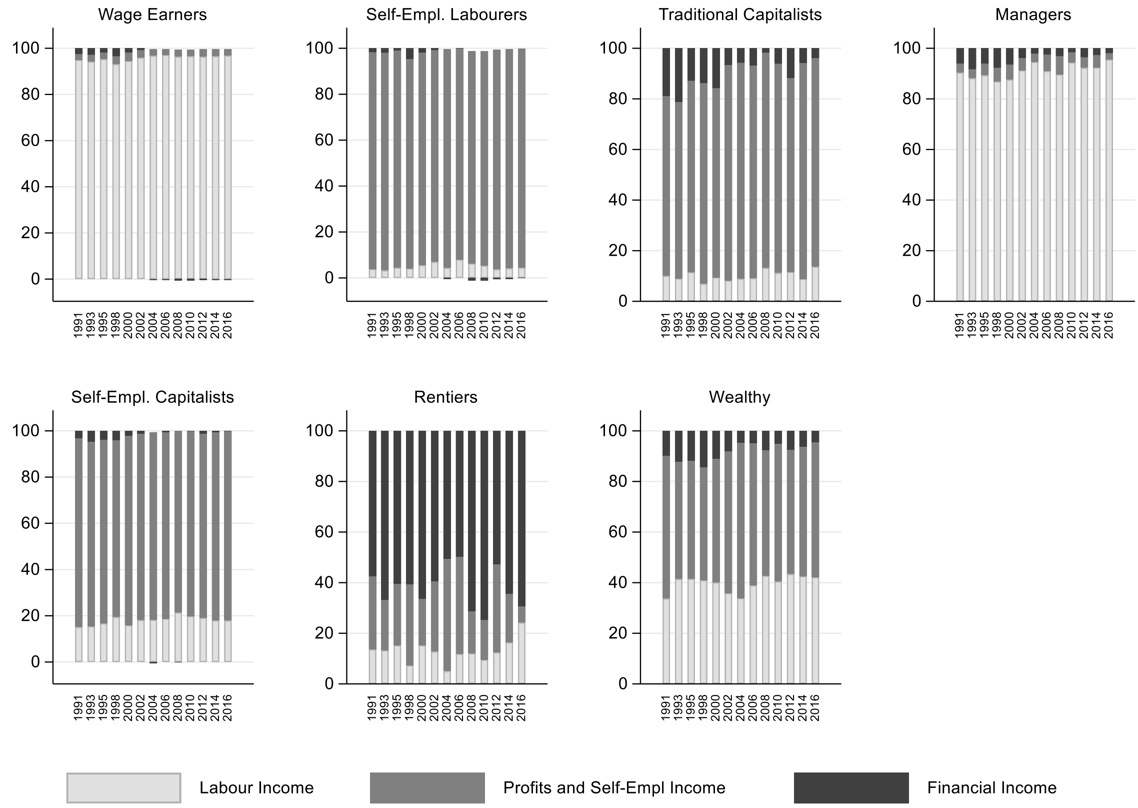


Source: Source: Authors' elaboration using SHIW data.

As stressed above, one of the motivations of this study is to account for the role played by different sources of income of households. We assess how the composition of income changed during the period (Figure 5). As expected, there is a certain mix of incomes across types of households. However, we also find that the sources of income among subgroups do not vary considerably. If anything, we witness a slight increase in the share of labour income during the new century (e.g. among Self-employed and Wealthy). At the same time, it is interesting to observe that financial income does not play a significant role and it reduced its importance across all groups, even among capitalist households. Importantly, this pattern had important implications for labourers who, since 2004, record a negative average net financial income (barely visible in the graph).

The reduction in financial incomes can partly be imputed to the reduction of returns from government bonds, which has historically represented a relevant type of asset for Italian households, in line with what has been suggested by other authors (Brunetti and Torricelli, 2010). These figures also indicate that Italian households, on average, do not seem to have benefited from the financialisation period. The income derived from financial assets is lower today than it was thirty years ago.

Figure 5. Average composition of total income by income type (% of the total). Note: Financial income is the sum of actual rents and net financial income. It does not include imputed rents.



Source: Authors' elaboration using SHIW data.

Wealth distribution is more uneven than income inequality as highlighted by other studies (e.g. Acciari et al., 2021). Despite the labourer households representing the vast majority of the Italian households, they only own between 41 and 45% of total wealth (Table 2). The growth in their share of total wealth is lower than the growth regarding their presence among Italian households, indicating a relative worsening of the distribution of wealth accruing to this group.[7] With no surprise, the Wealthies hold a consistent share of wealth which is on the rise despite Wealthies becoming less numerous (Table A1 in the Appendix).

[7] An additional element of the higher vulnerability of labourers is represented by ratio of liabilities over total wealth (Figure A1 in the Appendix), which is higher for labourers.

Table 2. Wealth by group of households (% of total wealth).

	Labourers			Capitalists					
	Wage Earners	Self-Empl.	**Total Lab.**	Trad. Capitalists	Managers	Self Empl.	Rentiers	Wealthies	**Total Cap.**
1991	32.5	7.0	39.5	4.6	13.2	5.9	5.8	30.9	60.5
1993	33.7	5.4	39.1	9.8	9.7	4.7	9.1	27.6	60.9
1995	32.2	5.3	37.5	6.6	10.4	4.7	8.8	32.0	62.5
1998	31.6	5.4	37.0	8.0	9.2	4.7	13.6	27.4	63.0
2000	31.0	5.3	36.3	8.0	9.1	4.7	10.6	31.3	63.7
2002	34.5	6.0	40.5	6.1	8.6	5.4	5.1	34.3	59.5
2004	34.8	5.3	40.1	5.2	7.7	4.9	4.5	37.6	59.9
2006	33.9	5.0	38.8	6.7	11.0	4.5	4.9	34.0	61.2
2008	35.7	5.3	41.0	5.3	9.6	4.4	5.3	34.4	59.0
2010	34.2	5.3	39.5	5.0	8.8	4.5	5.3	36.9	60.5
2012	34.1	4.6	38.7	6.6	8.9	4.5	7.4	33.8	61.3
2014	36.1	5.1	41.2	7.4	8.9	4.2	3.8	34.6	58.8
2016	37.7	5.4	43.1	5.1	8.5	4.2	4.1	35.0	56.9

Source: Authors' elaboration using SHIW data.

To conclude the empirical analysis, Table 5 and 6 report, respectively, the distribution of classes across income and wealth quintiles at the beginning and end of the period. As expected, labourers mostly concentrate on the bottom three quintiles while capitalists belong mostly to the richest two. This difference is persistent over the entire period, although the distance between labourers and capitalists slightly reduces in time. Among labourers, there is a slight upgrading of the wage earners (that move towards the top quintiles) while self-employed workers move towards the bottom of the distribution. Within the capitalist class, Managers and Self-employed capitalists increase their presence at the top of the income distribution while Traditional capitalists and Wealthy households experience a polarisation of income.

Furthermore, the distribution of groups across wealth quintiles is also strongly asymmetric (Table 4). However, it is interesting to observe that, contrary to income distribution, wealth distribution becomes more uneven during the period. Wage-earners and self-employed labourers are more likely to fall into the lowest quintiles in 2016 compared to 1991. For what concern the capitalist class, there is evidence of a downgrade for Traditional capitalists, while the opposite holds for Self-employed capitalists and Managers.

To sum up, revising the functional income distribution according to our theoretical perspective, outlined in Section 2, contributes to the understanding of societal dynamics over the past thirty years in Italy. From the empirical standpoint, the descriptive analysis confirms that Managers tend not to be aligned with the rest of the labourer class but rather with the well-off of the Italian society. During this period, the share of Managers over total population decreased while the economic condition improved substantially. Overall, a smaller share of households experienced a relevant enhancement of their economic status well beyond the dynamics characterising traditional and self-employment capitalists. Furthermore, Traditional capitalists have lost ground coherently with the stagnant dynamics of the Italian economy hit by a long period of socio-economic crisis. Conversely, Self-employed capitalists got richer both in terms of income and wealth similarly to Managers regardless of the stagnant or negative phases of the business cycle.

Table 3. Distribution of detailed classes across income quintiles, 1991 and 2016.

	1991					2016				
	1	*2*	*3*	*4*	*5*	*1*	*2*	*3*	*4*	*5*
Wage Earners	24.7	22.6	22.0	19.3	11.4	22.9	22.7	22.4	19.2	12.8
Self-Employed Lab.	33.5	33.0	33.6	0.0	0.0	49.7	26.0	20.9	3.4	0.0
Total Labourers	**26.1**	**24.2**	**23.7**	**16.4**	**9.7**	**25.5**	**23.0**	**22.3**	**17.7**	**11.6**
Traditional Capitalists	3.8	6.7	18.7	15.1	55.7	9.5	14.1	5.6	32.4	38.4
Managers	3.8	10.1	17.7	21.3	47.1	0.0	7.3	9.6	14.3	68.9
Self Employed Cap.	0.0	0.0	6.0	50.8	43.2	0.0	0.0	0.0	48.7	51.3
Rentiers	0.0	0.0	4.7	3.7	91.6	0.0	0.0	0.0	47.0	53.0
Wealthies	2.0	7.2	13.4	30.5	47.0	3.7	6.6	13.7	20.9	55.1
Total Capitalists	**2.3**	**6.6**	**13.5**	**29.8**	**47.8**	**2.4**	**6.0**	**8.9**	**26.1**	**56.7**

Source: Authors' elaboration using SHIW data.

Table 4. Distribution of detailed classes across wealth quintiles, 1991 and 2016.

	1991					2016				
	1	*2*	*3*	*4*	*5*	*1*	*2*	*3*	*4*	*5*
Wage Earners	24.2	24.8	24.8	19.0	7.1	28.6	25.1	22.1	17.9	6.5
Self-Employed Lab.	13.9	24.7	26.5	25.3	9.6	13.2	30.8	25.5	23.8	6.7
Total Labourers	**22.7**	**24.8**	**25.1**	**20.0**	**7.5**	**27.1**	**25.6**	**22.4**	**18.4**	**6.5**
Traditional Capitalist	0.0	3.3	17.0	24.6	55.1	3.5	18.3	6.1	19.2	52.8
Managers	12.1	15.2	15.1	23.1	34.6	5.8	18.6	12.3	22.2	41.1
Self-Employed Cap.	10.3	12.6	19.9	34.1	23.1	0.4	11.4	14.0	39.7	34.5
Rentiers	0.0	0.0	0.0	3.6	96.4	0.0	0.0	0.0	3.0	97.0
Wealthies	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Total Capitalists	6.7	8.5	10.8	17.2	56.7	2.0	9.1	6.8	16.0	66.2

Source: Authors' elaboration using SHIW data.

5 Conclusions and discussion

The original objective of functional income distribution estimations is to capture how income is divided between the two social classes, workers and capitalists. However, the emergence of multiple sources of income and the increasing importance of managers make the dichotomic distinction between workers and capitalists more blurred than it was in the 18th century. This paper revised the concept of social classes and functional income distribution, proposing a new estimation that accounts for these elements. Grounding the analysis on the contributions of from authors of different backgrounds, we argued that given their functions, managers are closer to capitalists than labourers, despite their income being largely constituted of wages. Then, we considered that individuals/households can receive multiple sources of income at the same time.

On the theoretical ground, this method allows studying social classes and the distribution of income from an innovative perspective, withholding the original intuition behind the construction of the standard factors' shares. Empirically, this methodology provides a fresh look at the literature on inequality and political economy. First, we find that in Italy the revised labourer share of income is steadily below the standard estimations of the labour share. Moreover, there is evidence of a substantial impoverishment of Italian households, especially labourers. Interestingly, the presence of

Wage earners increased rapidly, at the expense of Self-employed and Managers. These changes determined a relevant modification of the class composition of the Italian households. We observe an increase in the standard salaried working relations which is, by far, the main type of income for most Italian households. A predominant and growing share of Italians has wages as its almost exclusive source of income, holding only a reduced amount of financial assets and properties. What is more, Italian labourers move towards a more vulnerable position. While their average income declined constantly during the period, their financial incomes became negative. These findings are noticeable as they highlight that, despite an evolving labour market, employer/employee relations have become more predominant in Italian society during the last decades. The discourse according to which "standard" employment relations are disappearing in favour of "new-forms" of self-employment, do not find support in the Italian case.

At the same time, the composition of capitalist households sees a partial erosion of the figure of Traditional capitalists in favour of Managers. Notwithstanding their diminishing presence, Managers are the only subgroup that increases their income and move towards the top quintiles of the distribution. Furthermore, there are signs of erosion of uniformity for some subgroups of capitalists. As shown, Traditional capitalists and Wealthies underwent a process of polarisation of income and wealth that moved them towards the lowest and highest quintiles of the distribution. These shifts, however, should not be overemphasised when we look at the overall picture. The distance between labourers and capitalists continues to be sizeable throughout the period, and in some cases even increased. In this respect, these findings also contribute to the debate regarding the growth of wage income at the top of the distribution (e.g. Piketty and Saez, 2013; Aaberge, Atkinson and Königs, 2018; Berman and Milanovic, 2020). Indeed, there is an increase in wage incomes at the top of the distribution. However, this growth of top wage incomes is largely determined by managers who are part of the capitalist class and move massively to the top quintile of income. The growth in presence of labourers in the top quintile is much more contained.

Before concluding, it should be noted that the figures presented in this paper are likely to be underestimated, especially for top percentiles of income and wealth distribution. On this occasion, we opted not to perform any adjustment which would introduce an additional degree of arbitrariness (see D'Alessio and Neri, 2015). In light of this fact, we should view our findings as conservative estimations of the labourers' share. Nevertheless, it is striking to observe that even without adjustments clear diverging patterns emerge.

Of course, the classification proposed here is not exempt from criticisms. First, there is some degree of arbitrariness associated with the use of thresholds to determine class location, such as in the case of the wealthies. It could be argued that a different percentile of wealth would be more adequate to identify wealthy households, which eventually would impact the estimation of the labourers/capitalists' shares of income. These are certainly valid points. Despite the empirical issue of determining the more adequate threshold to employ, what we believe is more relevant is the theoretical reasons behind this classification, that is the inclusion of the wealth sphere into the picture, as done by other authors (Wolff and Zacharias, 2013).

From a broader perspective, we believe that our methodology helps retrieve the spirit that originally motivated the study of functional income distribution, that is measuring the income received by different social classes with contrasting interests. This paper was mainly concerned in discussing the theoretical foundation of our approach and provided some initial empirical applications of the framework to study the Italian society. The flexibility provided by this framework potentially allows expanding the empirical analysis towards different areas of interest (e.g. the relationship with income inequality, causes of the evolution of factors' shares, etc.) that go beyond those presented in this paper. This is a pending task for future analysis.

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7 Annexes

Table A1. Distribution of households (% of the total).

	Labourers			Capitalists					
	Wage Earners	Self-Empl.	**Total**	Trad. Capitalists	Managers	Self-Empl.	Rentiers	Wealthy	**Total**
1991	61.2	11.0	72.2	1.5	10.4	5.9	0.7	9.3	27.8
1993	67.3	9.6	76.9	2.7	5.5	5.1	1.2	8.6	23.1
1995	64.2	10.1	74.3	2.7	7.2	5.4	1.1	9.3	25.7
1998	65.0	10.1	75.1	2.7	6.3	5.5	1.9	8.6	24.9
2000	64.2	11.0	75.2	2.4	6.8	5.9	1.5	8.3	24.8
2002	66.5	10.4	76.9	2.2	5.5	5.6	0.6	9.3	23.1
2004	69.4	9.3	78.6	2.0	5.0	5.0	0.4	9.0	21.4
2006	68.0	9.6	77.6	1.9	6.8	5.1	0.3	8.4	22.5
2008	69.4	8.9	78.2	2.0	5.9	4.8	0.7	8.4	21.8
2010	69.0	9.5	78.6	1.5	5.6	5.1	0.4	8.8	21.4
2012	71.6	7.6	79.1	1.7	6.0	3.9	0.5	8.8	20.9
2014	71.1	7.9	78.9	2.0	5.9	4.2	0.3	8.7	21.1
2016	72.1	7.8	79.9	1.7	5.6	4.1	0.3	8.4	20.1

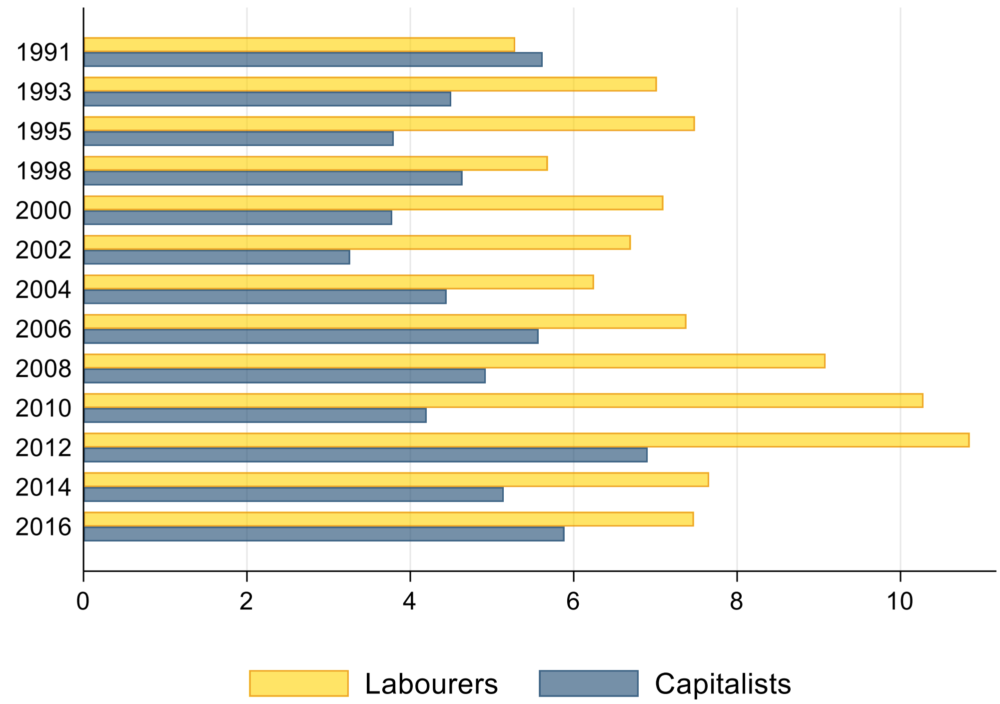
Source: Authors' elaboration using SHIW data.

Table A2. Average total income by group (in 2010 thousand €).

	Labourers			Capitalists					
	Wage Earners	Self-Empl.	**Total Lab.**	Trad. Capitalists	Managers	Self-Empl.	Rentiers	Wealthy	**Total Cap.**
1991	29.4	22.6	28.4	67.7	49.2	48.8	95.9	55.8	53.7
1993	29.2	15.1	27.4	65.1	64.1	42.9	89.4	54.8	58.0
1995	27.3	15.7	25.7	474	55.3	44.6	87.7	52.6	53.0
1998	29.1	19.0	27.8	60.0	59.4	49.7	111.7	51.3	58.5
2000	28.9	19.0	27.5	60.1	56.5	53.3	90.6	59.2	58.9
2002	28.8	21.3	27.8	55.8	58.7	58.4	101.5	59.2	59.7
2004	28.8	20.2	27.8	64.5	55.9	53.9	117.5	65.1	61.7
2006	29.0	22.0	28.2	53.4	60.4	57.5	107.8	63.3	61.0
2008	27.8	21.7	27.1	53.4	61.9	52.9	80.7	55.4	57.4
2010	28.1	19.9	27.1	48.4	58.6	51.9	101.7	62.5	59.1
2012	25.4	16.3	24.5	59.2	53.7	43.8	106.0	51.8	53.0
2014	25.4	16.2	24.4	59.3	55.8	42.2	83.4	49.8	51.5
2016	25.2	16.2	24.2	44.8	55.1	45.9	61.2	51.2	50.7

Source: Authors' elaboration using SHIW data.

Figure A1. Average ratio of liabilities over total wealth (% of total wealth).



Source: Authors' elaboration using SHIW data.

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