Labour Shares and Income Inequality: Insights from Italian Economic History, 1895-2015

by

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Abstract

This paper develops theoretical and practical motivations for studying the functional distribution of income in the past. Italy is adopted as a case study, by reason of the availability of long-run estimates on personal income inequality. The historical importance of self-employment and the recent increase in labour's share make the Italian historical experience of further general interest. New estimates from 1895 show Italian workers accruing a low share of national income until 1945. By the end of the 1950s and the economic miracle, shares had rapidly converged to the European average. Italian history shows that studying the functional distribution of income deepens our understanding of long run distributional trends, as well as of key distributive episodes, and makes a compelling case for approaching income inequality by combining diverse sources and methodologies.

Keywords: factor shares; labour share; functional distribution; economic inequality; Italy.
JEL classification: B12, D63, J31, N14, N34.

1   Bringing Factor Shares in Economic History

A few years ago, Atkinson (2009) argued for a renewed focus on the functional distribution of income. To make 'a link between incomes at the macroeconomic level (national accounts) and incomes at the level of the household', factor shares should be considered the 'principal problem of political economy' (Atkinson, 2009, p. 3). After assuming their stability as a 'stylized fact' (Kaldor, 1961) for decades, macroeconomists have been paying attention to the topic since the late 1990s, focusing increasingly on the decline of the labour share experienced by most advanced economies (see, for instance, Elsby et al. 2013). In the last years of his life, the doyen of inequality measurement research could see his plea finally being addressed. While the debate on the fall of the American and European labour shares is increasingly intense (e.g. Autor et al 2017), works such as Piketty (2014) and Piketty and Zucman (2014) brought capital and capital shares back to the centre of scholarly and public debate, and economists are attempting to build a bridge connecting the functional distribution of income with the personal distribution, a 'major gap in modern economic theory' according to both Atkinson and Milton Friedman (Soci and Alacevich 2018, 52). Economic history has contributed to this research agenda (most notably, Bengtsson and Waldenström 2018), but with a few exceptions, factor shares cannot be said to be yet back in the toolkit of the economic historian. They tend to be used as a 'proxy of last resort' in the absence of favoured indicators, rather than as an autonomous, complementary measure of inequality.

The aim of this paper is double. On one hand, it contributes to the literature on historical income inequality by presenting new yearly estimates of labour shares for Italy from 1890 to 1970, explicitly devised for the sake of distributive analysis and international comparisons. Combined with existing series, available from 1951, the figures presented in this paper offer the reader an overview of the evolution of labour shares over almost twelve decades – a period in which Italy evolved from a rural, poor, peripheral country to a fully-fledged industrial economy. Factor shares are the only continuous series on inequality for the country before the late 1960s, and in fact, the only one available in crucial periods such as the 'Economic Miracle' of the 1950s. The peculiar, long-lasting prominence of self-employment, as well as the anomalous increase in the labour share since the 2000s (in contrast with the general trend in OECD economies) make the Italian case of great general interest.

Italy is also the perfect case study for discussing the historical relationships between factor shares and other indicators of economic inequality. Top income shares are available only from the 1970s (Alvaredo and Pisano 2010), but recently estimated wealth/income ratios (Cannari et al. 2017), and most notably, consistent Gini indices of household income distribution (Amendola and Vecchi 2017) are available from the unification of the country in 1861. In this paper, I take advantage of these works to compare long run trends in the personal and functional income distributions. While these relationships varied over time, 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.

The paper is organised as follows: in Section 2, I discuss the adoption of factor shares in economic history. After a survey of the evidence on long run inequality in Italy, and of the debate on Italian factor shares after 1951 (Section 3), Section 4 documents the construction of the new historical series of factor shares (1893-1950). Continuous, annual data offer the unique possibility of a bird's-eye view of Italy's distributive trends (Section 5), and to discuss the relationship between labour shares and other forms of income inequality. In Section 6, a short-term approach provides new perspectives on some of the more contested episodes of Italian distributional history. Section 7 concludes.

2   Functional Shares and Economic History

As discussed by Bengtsson and Waldenström (2018), recent research on income inequality has increasingly addressed the relationship between capital shares and personal income inequality. Authors such Piketty (2014) considered capital income to be positively correlated with concentration of personal distribution, as captured by top income shares. Lindert (2014), on the contrary, stressed that wage and capital shares 'have never proved to be good predictors of inequality, and continue to be poorly correlated with it over time and space'. However, economic historians have often relied on the assumption that 'labor income tends to be more equally distributed than capital income'; and therefore, the labour share is a good 'proxy for changes in the secular income inequality trend' (Frankema 2010, 344-345). Agrarian, and traditional industrial

societies, at least until mid-20th century, are not commonly believed to have experienced much heterogeneity *within* labour income (often the main component of inequality in contemporary, advanced economies). The lower level of dispersion in rural incomes is at the very basis of Kuznets' (1955, 7-8) assumptions on the long-run evolution of income inequality. Class membership (even defined as a simple dichotomy between labour and capital), might have explained most of the relative position of individuals. Economic historians should look at functional distribution, therefore, any time reliable sources on income inequality are not available – a sensible maxim, given the difficulty of estimating inequality in the past (and not only then). As surveyed by A'Hearn et al. (2016), research on the history of inequality can be divided into three 'schools': after the first pioneering work on eclectic proxies, most authors have been working with either social tables (e.g. Milanovic et al. 2011), or with fiscal sources, as Piketty and his co-authors. Neither of these sources are methodologically perfect: even today analysts disagree on the reliability of randomised surveys (affected by non-response at the top) relative to contemporary fiscal micro-data (that raise issues such as evasion, definition of taxed incomes, and coverage of bottom strata). On top of this, one should consider the usual issues of data quality affecting historical sources – most notably, the fact that most of the data is now available only in tabular form. Compared to indicators of personal income inequality, factor shares are based on widely available, yearly, and generally reliable sources. As will be discussed in Section 4, the main ingredients are national accounts – among the most practiced fields of quantitative economic history (Bolt and Van Zanden 2014), often benefitting from the financial and scientific contributions of national institutions[1]. If Atkinson (2009, 5) himself pointed to the establishment of a link between distributional trends and macroeconomic aggregates as one of the most promising features of factor shares[2], in economic history this means relying on some of the most reliable statistical material available.

Pursuing this idea, Williamson (1997) devised an index, defined as the ratio between GDP per worker and the unskilled wage rate. When most of the labour force is employed in a single sector, with limited wage dispersion within it, the Williamson index captures the idea that personal inequality is reduced, whenever the average wage

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[1] In the Italian case, both Istat and the Bank of Italy had been involved in estimating long-run national accounts. See Fenoaltea (2011, 10-48) for a critical review of earlier attempts.

[2] Recent efforts by Piketty et al. (2018) have been indeed devoted to estimate 'distributional national accounts'.

of daily labourers converges to mean income. Prados de la Escosura (2008, 290) found evidence of this for Spain, between 1850 and 1954: the Williamson and Gini indices were highly correlated, and 'between-group inequality' explained most of inequality[3]. Bengtsson and Waldenström (2018), by assembling the available evidence into a novel *Historical Capital Shares Database*, covering 21 countries, tested this relationship empirically. With few exceptions, they found a strong and positive correlation between capital shares and top income concentration, proving the relevance of factor shares for historical research on inequality.

The finding is not surprising, in the light of the history of economic thought: functional theories of income distribution were the main theoretical framework for economists, at least until the half of 20th century. Famously, for Ricardo, the main object of political economy was to 'determine the laws' which regulated the distribution of the 'produce of the earth' between three 'classes of the community' – landowners, capitalists, and workers. Lindert dismissed factor shares as 'antiquated' for this reason; however, from a historical point of view, this is a further reason for interest. Factor shares cannot be used to address issues such as within-labour dispersion of income, or the position of top income earners in society; nonetheless, they reflected precise concerns not only in 19th-century, but also in post-WWII advanced economies, when organised labour and social democratic policies had a crucial role crucial in reducing within-labour differences. According to Goldfarb and Leonard (2005), this was still the case, for Anglophone economists, until at least the 1970s. Factor shares did not offer the historian the indicator a modern inequality expert would like to see, but probably the indicator that people living at times had in mind. In fact, this is also the case for historical debates: in Italy, the so-called 'anti-fascist' paradigm on the rise of Mussolini's regime embodied intrinsically functional concepts, such as Hilferding's 'financial capital' (Togliatti 1976). In this case, factor shares would be a more appropriate 'answer' to the historiographical debate than indicators of personal distribution[4].

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[3] For Frankema (2010, 345), this can be 'safely assumed' for Latin America 'until 1914, or perhaps even until 1929'.

[4] In fact, Italy is also an interesting case study in the history of economic thought on inequality. As recognised by Dalton (1920), from late the 19th century, Italian scholars (most notably, Gini and Pareto) pioneered the measurement of personal inequality. Functional distributive concepts were adopted, in the fascist period, by economists embracing *corporativismo* (Faucci 2014, 164-166), which stressed the importance of 'cooperation' between classes, and talked of a 'third way' between capitalism and

In fact, Bengtsson and Waldenström (2018) stress that 'the link between factor shares and inequality is not stable but instead contingent on a multitude of factors that can change along with the rest of society'. According to their findings, correlation is stronger in the decades after 1980, and in Nordic and Anglo-Saxon countries. Economists have very recently started to discuss theoretically the reasons of these differences. A seminal contribution is Milanovic (2017), that started by stressing that 'the increase in capital share is not, by itself, an inequality "problem"; that is, it does not necessarily lead to an increase in interpersonal inequality'. Neither Piketty nor Lindert are necessarily right: what matters is the 'elasticity of transmission' between the 'change in capital share and change in personal income inequality'. Economists tend to assume that rising capital shares will translate into increasing personal inequality because, in contemporary economies, capital income is more unequally distributed than labour income, and generally accrued by rich individuals[5]. But it is not always the case: Milanovic theorises and discusses the case of three ideal societies – 'socialism', where 'returns from capital are distributed equally per capita' (either as a result of state-ownership or capital, or because of redistribution)[6]; 'classical capitalism', where 'owner ship of capital and labour is totally separated, in the sense that workers draw their entire income from labour and have no income from the ownership of assets, while the situation for the capitalists is the reverse'; finally, a 'new capitalism', in which 'all individuals receive income from both capital and labour' (Milanovic 2017, pp. 241-245). The elasticity of transmission would be equal to 0 in a socialist society, where all the capital is owned by the state; between 0 and 1 in classical capitalism, where 'ownership of capital and labour is totally separated'; and under some assumptions could even reach 1 in the 'new capitalism', where 'all individuals receive income from both capital and labour'. Milanovic estimates this elasticity empirically, and finds differences both across countries (notably, Italy shows the highest average elasticity in recent decades, above 0.6) and across time (Milanovic 2017, pp. 248-251). In a similar vein, Ranaldi (2018) proposed a framework to measure what he defines as 'inequality in income composition'. This inequality is high 'when two different sources of income are separately earned by the top and the bottom of the income distribution', while it is low

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socialism, in line with fascist propaganda; however, functional approaches became dominant only after WWII.
[5] See, for instance, Glyn (2009, 103).
[6] Milanovic (2017, 241) includes on this second case proposals such as the 'social dividend proposed by James Meade in the 1970s and 1980s' and the 'minimum inheritance idea proposed by Tony Aktinson'.

'when each individual has the same population share of the two sources'. Interestingly, Ranaldi uses Italy to test empirically his framework, concluding that inequality in income composition, as well as elasticity of transmission between capital shares and overall income inequality, have been decreasing since 1989. The replication of similar empirical exercise by economic historians is severely limited by data availability, but both Milanovic's stylised societies, and Ranaldi's definition of composition income inequality, are relevant in historical perspective. On the other hand, a better scrutiny of historical dynamics in capital and labour shares and of their relationship with personal income inequality can inform the current debate. All in all, if 'capital is back', as argued by Piketty and Zucman (2014), we need to know more about its past.

Finally, both economists and historians have pointed out that there are reasons for being interested in factor shares *per se*, irrespective of their relationship with personal income inequality. For both Atkinson (2009, 12-14) and Glyn (2009, 103), income source 'enters social judgements': the distinction between earned and unearned incomes is still mentioned in public debates and affects practical decisions, as in the case of collective bargaining. On the other hand, Prados de la Escosura (2008, 299) argued that 'changes in the distribution of income between workers and proprietors should not be neglected if we want to keep the political dimension in the study of inequality'. For economists outside the neoclassical approach, 'the distribution of income between profits and wages should thus be regarded as the outcome of power relations rather than technology' (Stockhammer et al. 2018, 4). As stressed by Bengtsson (2014, 291-292) in his discussion of post-WWI Sweden, factor shares help us understand the distributive role of 'political and social factors, such as union organisation and union actions'. Understood in this way, factor shares can *explain* personal income inequality, but also highlight other aspects of economic inequality, such as power relations, and influence on the political process, generally associated with wealth concentration (Scheve and Stasavage 2017).

Summing up, factor shares should be back at the centre of historical research on economic inequality for several, interlinked reasons. Their estimation is easier, and could offer a valuable proxy of trends in personal income inequality. Even when Gini indices or top income shares are available, factor shares provide a useful complement, more closely related to industrial relations and political processes, and to historical

conceptions of inequality. Moreover, the historical relationships between personal and functional measures of distribution are of great interest for understanding present trends in inequality. In the rest of this paper, this will be made clear by investigating the case of Italy.

3   Existing Evidence and Debates on Inequality and Labour Shares in Italy

In their survey, Bengtsson and Waldenström (2018) could not include any available historical series for modern Italy. An objective reason was the absence of some basic 'ingredients' for estimating historical labour shares. Modern estimates rely on the employee compensation component of the national accounts. In Italy, a first notable attempt of a long-run series was that by the President of the national statistical office (Istat), Giuseppe De Meo (1973), that summarises the available evidence on income, occupation, wages and labour shares in the twenty years for which his institution was able to provide some reliable data. For those periods of time in which similar sources are not available, historians must approximate them by means of: i) estimates of total factor inputs; ii) wages and benefits for the main sectors of the economy; the product of i) and ii) has then to be expressed as a share of iii) total value added. Zamagni estimated most of the wage series still available for Giolittian and interwar Italy[7], and some official, historical series of national accounts had been previously issued, but the first labour input series came only with Rossi et al. (1993). By this time, as discussed, factor shares were no longer mainstream. The first historical series of Italian functional distribution are those estimated by Glyn (2009). History lay outside the scope of his work, but in his overview of industrial economies, Italian labour shares emerged both for their low absolute values, and for the marked difference of the pre- and post-WWII levels. A few years later, together with revised national accounts (Baffigi 2015), new series for capital and labour inputs had been published (Giordano and Zollino 2015). Giordano and Zollino constructed also series of capital shares from 1861 to present, to show the potential of the new dataset. As Glyn, they stressed the great volatility of the series during both World Wars; however, over the period 1861-2013, they found that

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[7] For instance, see Zamagni (1975, 1984).

capital shares were constant in the long run, 'quite stable' around an average of 0.34 (Giordano and Zollino 2015, 190).

Italian historians have not explored, so far, the possibility of any useful application of fiscal sources for estimating income and wealth concentration[8]. To address the debate on fascism, Zamagni (1975, 1983) estimated wage series for workers in major sectors, without combining them into either a personal, or a functional inequality indicator. Long-run trends in personal income distribution have recently been reconstructed adopting a pioneering methodology. After assembling a large database of 'historical household budgets', Amendola and Vecchi (2017) provided decennial Gini indices of income inequality, from 1861 to 1931, comparable with modern surveys, and found a secular decrease in inequality. From an Italian perspective, they leave uncharted the distributive consequence of the 'Economic Miracle' of the 1950s, and their frequency does not make possible the study of shorter-term dynamics around crucial events, such as the Great War. Moreover, as they are unique, these estimates do not allow us to place Italy in international perspective.

Greater debates have been raised by the 'modern' labour share series, some of which are reproduced in **Figure 1**, together with Glyn's. The series from the Annual Macro-Economic database (AMECO 2017), available from 1960, are those generally adopted in comparative studies, such as ILO and OECD (2015). Other series have been constructed by Italian economists to address the issue of self-employed workers. In classic terms, their incomes were defined as 'mixed', because they represent a hybrid item in a simple labour/capital dichotomy; this poses serious methodological problems when estimating factor shares. Given the significant differences in the incidence of self-employment, and its strong, negative correlation with per capita income levels, the point affects cross-country comparability (Gollin 2002). The most authoritative series could be considered those developed in a series of papers by Torrini (2015). As most authors, it relies on Istat official national accounts from 1970, and for the 1951-1969 period relies on the reconstruction by Golinelli and Monterastelli (1990). Torrini estimate both a paid-employment (or wage) share, and a second series, corrected for self-employment. By 'imputing to self-employed the average compensation of employees in the same industry', no less than 20 percentage points are added to the paid-employment share

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[8] For early modern Italy, Alfani (2015) pioneered the adoption of property tax registers. In Gabbuti (2018), I present top income shares for interwar Italy.

(Torrini 2015, 282-283). Despite the great increase in the paid-employment share, therefore, the resulting series is flat in the 1950s (**Figure 1**), confirming both De Meo (1973) and Glyn (2009) results.

Figure 1 – Italian Labour Shares, 1950-2017.
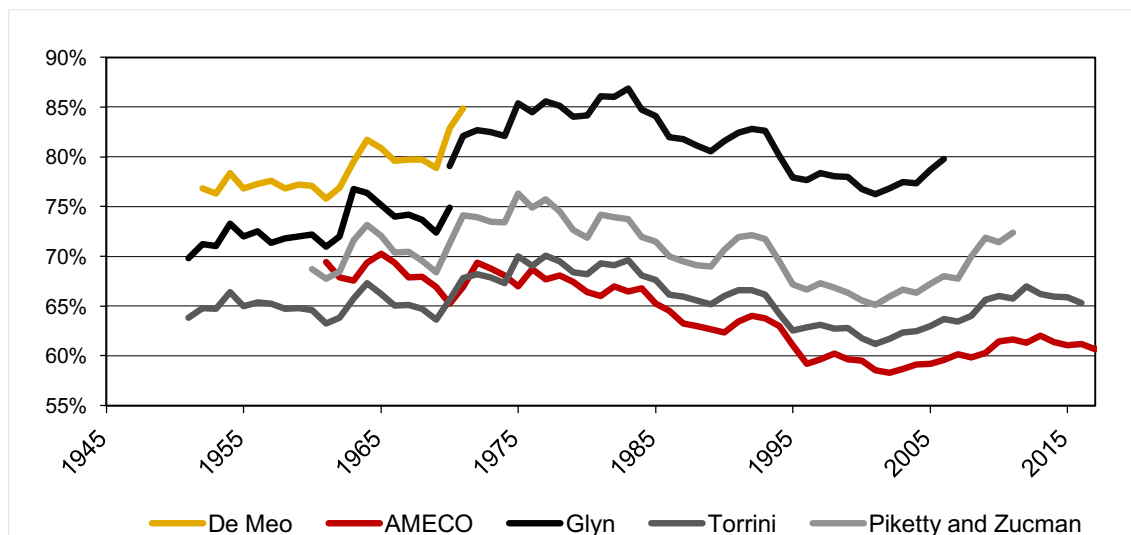
All series are shown at factor costs. The discontinuity in Glyn's series is explained by different underlying sources - historical reconstructions by Rossi et al. (1993) until 1970; modern Istat data since then. Piketty and Zucman report labour shares net of depreciation. Sources: De Meo (1973); European Commission (2017); Glyn (2009); Torrini (2015); Piketty and Zucman (2014).

Italian labour shares increased in the 1970s and, more puzzlingly, since the 2000s, in contrast with the experience of most OECD economies. Also in this case, different corrections of the self-employment share lead to different trends. While the issue attracted even the interest of social partner organisations such as *Confindustria* (CSC 2015), in a recent contribution D'Elia and Gabriele (2017) proposed alternative estimates from 1995, using a more disaggregated version of the national accounts to estimate the incomes of self-employed. The authors argue that self-employment increasingly 'conceals' precarious contracts: therefore, estimating independent workers' incomes using sectoral averages overestimates the labour share. In their series, Italian labour shares declined by 3% from 1995 to 2016[9].

The last series reproduced in the graph comes from Piketty and Zucman (2014). Their series is net of capital depreciation, an issue that will be discussed in the next section.

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[9] According to Elsby et al. (2013, 5-16), also the decline observed in the US would be partly spurious because of self-employment treatment.

Despite a rougher treatment of income from self-employment, their trend substantially confirms Torrini's, whose series will be adopted in the rest of the paper as the baseline for the period 1951-2016. In the next section, I contribute to the literature on Italian labour shares, by estimating comparable, historical factor shares from 1895.

## 4   Estimating Historical Factor Shares for Italy (1895-1970)

In his estimates, Glyn had to make use of the ingredients available at the time: Rossi et al. (1993) had estimated full-time equivalent (FTE) labour inputs for the four sectors of the economy (agriculture, industrial workers, public sector, and private services), and two series of workers' incomes from 1893, both expressed in terms of the same FTE figures. The paper did not provide extensive detail on the methodology behind these figures, but a series of 'gross remuneration' (*retribuzioni lorde*), should reflect only the direct remuneration of labour, while 'dependent workers' incomes' (*redditi da lavoro dipendente*) should capture some workers' benefits, given that from the end of WWI it is slightly higher than the *retribuzioni*. Glyn obtained the total remuneration of labour by summing up the products of each sector's labour input dependent workers' incomes, and then expressed it as a share of the value-added series, also provided by Rossi et al. (1993). As mentioned, Giordano and Zollino (2015) estimated series from 1861: to cover this longer period, they estimated new ad hoc compensation series. Despite a detailed description of the methodology and sources adopted, these have not been made available due to their 'experimental' nature (Giordano and Zollino 2015, 191). In this work, therefore, I will use the series provided by Rossi et al. (1993), reproduced in **Figure 2**, largely based on the same material underlying Giordano and Zollino's remuneration[10].

As discussed above, the treatment of self-employment is a cause for concern. These workers have always represented a large share of the Italian labour force. According to sociologists, 'what specifically characterizes the class-structure of Italy (…) is the

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[10] Giordano and Zollino (2015, 194-196). In fact, the main sources for primary and secondary sectors are Zamagni's series. For services, Giordano and Zollino (2015, 196) adopt 'two series of annual staff expenditure for railways and for post and telegraphs', based on wages published in the statistical yearbooks adopted by Rossi et al. (1993, 18).

stratification inside the classes involved in the production sphere, and especially the strong presence of an industrial and artisan petty-bourgeoisie' (Paci 1979, 53-54).

Figure 2 – Total Annual Compensation by Sector of Employment, 1893-1970.
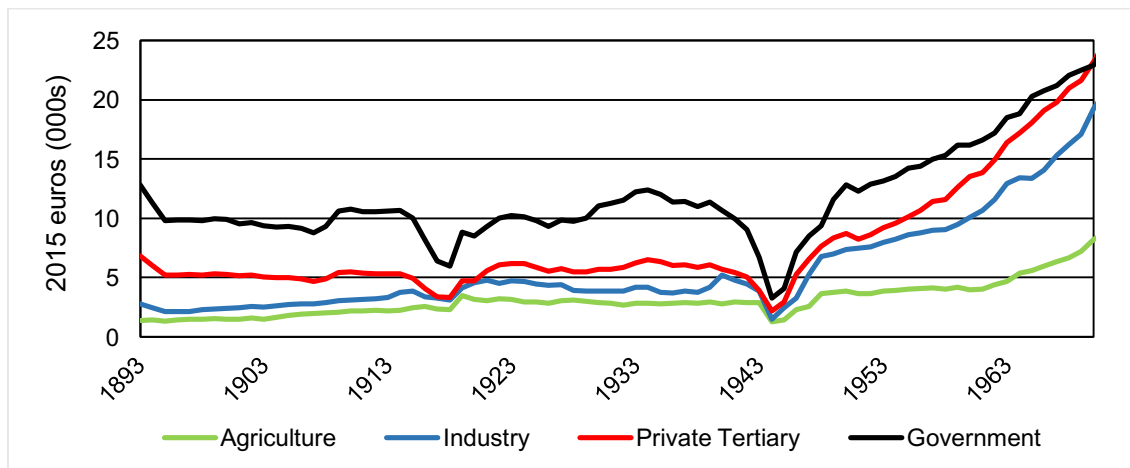
Source: author's elaboration on Rossi et al. (1993). All series expressed in 2015€, using coefficients from Istat (2011).

Table 1 offers an order of magnitude, based on census data; however, as argued by Frascani (1978, 1064-1065), classification of self-employment had been inconsistent across census years, making these figures not entirely comparable. In the absence of reliable sources, labour input estimates do not distinguish between self-employed and dependent workers[11]. In fact, the sources make it inevitable to attribute to the self-employed workers the average wages of their sector of activity; this approach, the so-called 'labour method of adjustment', is the most common in the historical literature (Bengtsson and Waldenström 2015, 42-44), and in line with Torrini's approach (albeit with less detail)[12].

Table 1 shows, at least, that the series are not affected by the problem recently highlighted by Trapp (2015). In modern developing economies, self-employment 'coincides with informality', and hence is 'statistically unobserved' (Trapp 2015, 6-7), leading to underestimation of the labour share. Italian self-employed workers were

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[11] In any case, continuous series of incomes would not be available. Even the household budgets database does not stratify for self-employed workers. The issue is particularly relevant in services, mainly covered by public employees (Chianese and Vecchi 2017).
[12] Attributing the same wage to all workers in a given sector is highly unsatisfactory also because of regional heterogeneity - especially in agriculture, where differences in employment conditions were extreme. At the moment, however, neither wages nor labour inputs are continuously available at the regional level.

surely recorded by censuses; assigning them the mean sectoral wage is unsatisfactory, but could actually overestimate their earnings, whenever these were below the Rossi et al. (1993) compensation figures[13]. In fact, dealing with historical societies rather than modern developing economies, it is not clear whether the distortion would necessarily lead to underestimate the labour share: the argument by D'Elia and Gabriele (2017) for modern precarious workers could well apply to farmers or street vendors in late 19th and early 20th century Italy, when unemployment and precarious working conditions were also widespread (Alberti 2016).

Table 1 – Social Classes in Italy (%), 1881-1971

| Social Groups	1881	1901	1921	1936	1951	1961	1971
Upper Class (Borghesia)	**1.9**	**1.7**	**1.7**	**1.6**	**1.9**	**2.0**	**2.6**
Middle Classes	**45.9**	**51.1**	**53.3**	**54.8**	**56.9**	**53.4**	**49.5**
White-Collar Workers	2.1	2.7	3.2	5.0	9.8	12.1	17.1
Independent Farmers *	22.5	35.1	37.0	35.6	30.3	21.6	12.1
Shop-keepers & Artisans *	18.7	10.8	10.3	11.5	14.1	15.6	17.0
Other (soldiers, priests, …)	2.6	2.5	2.8	2.7	2.7	3.1	3.4
Working Class	**52.2**	**47.1**	**45.0**	**43.6**	**41.2**	**44.6**	**47.8**
Agricultural	35.6	24.2	21.8	16.2	11.8	8.4	6.2
Industrial	13.2	18.7	19.6	21.4	22.9	29.0	33.0
Other (trade, transports, servants, …)	3.4	4.2	3.6	6.0	6.5	7.2	8.6

Note: Author's elaboration from Sylos Labini (1975), tab.1.2. Groups identifiable as independent workers are marked with an asterisk (*).

For the inputs of labour, I rely on the new estimates documented in Giordano and Zollino (2015), reported in **Figure 3**. Headcount labour input series are based on population censuses series; these numbers are then transformed, relying on several assumptions, into FTE figures, with one important exception. For converting the industrial figures, as Rossi et al. (1993), Giordano and Zollino (2015, 170) took advantage of the industrial censuses, available from 1911; reliable series for single categories of workers, obtained from alternative sources, were used to infer the sectoral trends in the inter-census years (Giordano and Zollino 2015, 166-167), and to retropolate the series before 1911. Fenoaltea (2015) strongly criticised use of the 1911 industrial census: given its focus on what could be defined as 'true industry', it missed a good deal of relevant information – and came to list only 2.3 million workers, versus the

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[13] This is not implausible, given that wage data is disproportionately more available for bigger and more advanced firms (Zamagni 1984, 60).

4.3 captured by the population census. In estimating labour shares, what matters is not the absolute number of people at work, but the number of 'full wages' earned in remuneration of work. As mentioned above, the correction is not necessarily implausible in a structurally over-populated labour market. Still, if one agrees with Fenoaltea, it would have been preferable to estimate the earlier FTE figures starting from the population censuses, as for agriculture.

**Figure 3 – Labour Inputs, 1891-1971: Headcount (left) and FTE (right).**
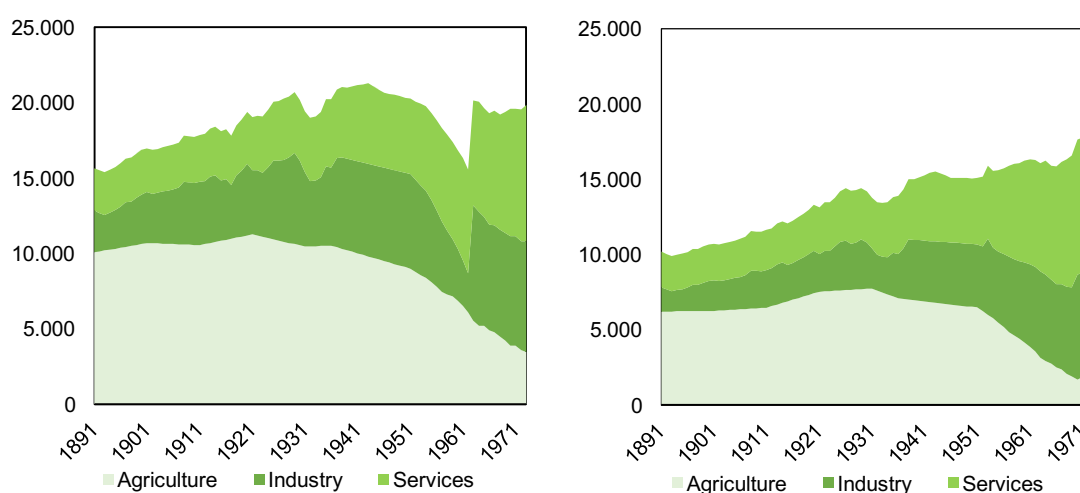
Source: author's author's elaboration on Giordano and Zollino (2015). Both figures in thousands of workers.

Input series are reassuringly elastic to the major events of the period (notably, the Great Depression) and to fluctuations in unemployment, except for agriculture – the only sector for which Giordano and Zollino, for the pre-1951 period, linearly interpolated census data. In any case, the series do not reflect, as we might have feared, the conscription of 'some 2.6 million peasants' during the Great War (Toniolo 1990, 204). After WWII, FTE figures tackle some clear inconsistencies in the censuses - the sharp decline and even more sudden jump in the 1960s in the left panel. With these caveats in mind, the series make possible to consistently estimate labour shares over the period[14].

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[14] Given the discussion of the sources, it seems straightforward to combine series expressed in the same standard units of labour, rather than adopting the headcount series, as in Giordano and Zollino (2015, 190) estimation of capital shares. Inconsistencies between the FTE assumptions of Rossi et al. (1993) series should be excluded, given that Giordano and Zollino attribute the (relatively small) differences only to the more detailed sources adopted. 'Slightly different assumptions' are mentioned only with respect to the agricultural series, but the results 'roughly coincide' (Giordano and Zollino 2015, 171-172). The assumptions underlying the wage series are also not so different (Giordano and Zollino 2015, 194-196), that leads to exclude they were meant to match the raw, heterogeneous figures from population censuses.

Finally, to construct the denominator, I start from the new national accounts, documented in Baffigi (2015): the result is shown in **Figure 4**, in several alternatives[15].

Figure 4 – Historical Labour Shares: Alternative Definitions, 1893-1945.
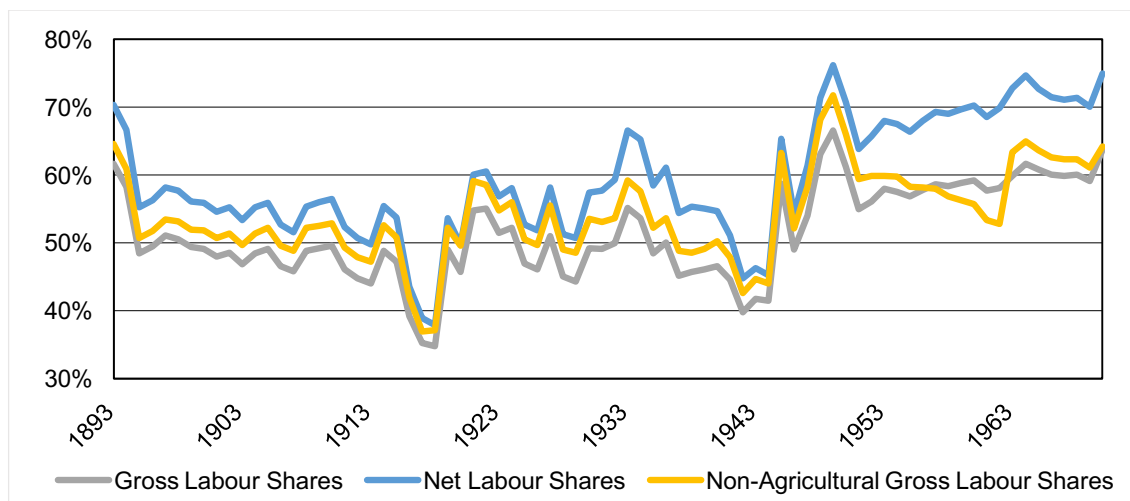
Sources: gross labour shares are obtained by multiplying, separately for agriculture, industry, private services and government sector, FTE labour inputs, at present boundaries, from Giordano and Zollino (2015) by nominal compensation series from Rossi et al. (1993). Net shares are obtained by subtracting capital depreciation, from Rossi et al. (1993), from the denominator; non-agriculture shares are obtained as normal shares at factor prices, but referring only to the inputs, incomes, and value added, of the other three sectors. All series are expressed as a percentage of GDP, net of indirect taxation, from Baffigi (2015)..

Following the current consensus, I express the series at factor costs, that means adopting a denominator that does not include items (mainly indirect taxes and subsidies to firms) that 'do not represent a return to property ownership' (Glyn 2009, 108)[16]. While consistent series for subsidies are not available, I subtract indirect taxes from GDP. A second series is expressed net of capital depreciation. From a theoretical standpoint, this cannot be interpreted as capital remuneration; therefore Glyn (2009, 105-113) considers net shares 'the appropriate measure where the focus is on 'who gets what''[17]. Their practical estimation raises, however, concerns of cross-country, and intertemporal

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[15] Note that GDP is taken at present boundaries, consistently with the fact that labour inputs had not been estimated at historical boundaries. The series, therefore, are not affected by the annexation, at the end of the Great War, of Trentino, South Tyrol, Trieste (already considered), Rijeka and Dalmatia (never included).

[16] Authors interested in productivity analysis, sometimes, subtract also housing income. Fig. A 1 in the appendix shows that trends are stable, by using GDP at market prices, or subtracting this component.

[17] See also Krueger (1999) and Piketty and Zucman (2014, 1270); on the contrary, Torrini (2015, 281) argues that 'the actual output of the production process is gross value added'; capital depreciation should be considered as 'one of the factors affecting the user cost of capital and, thus, the distribution of gross income'.

consistency, making gross shares often preferred in historical applications (Bengtsson and Waldenström 2018, 719). Finally, a third series, following Brandolini (2000), reports the gross labour share for non-agricultural sectors only. This series provides a further validation of the long-run trend, very similar in both gross and net shares.

**Figure 5 –Labour Shares (above) and Value Added (below) by Sector, 1890-1970**
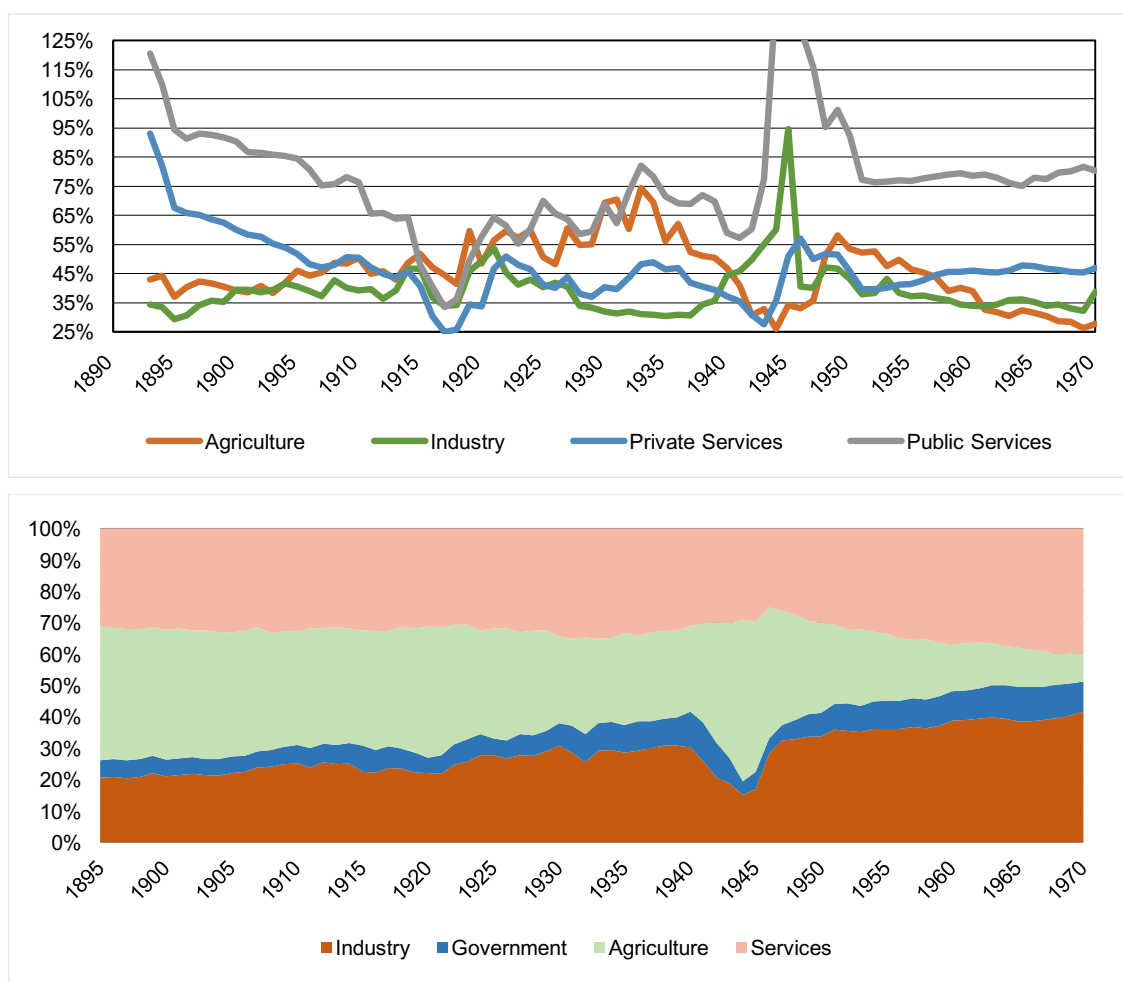
Source: labour shares computed separately for each sector as in **Error! Reference source not found.**; value added data from Baffigi (2015).

Figure 5 reports sectoral labour shares, to offer more fine-grained evidence. These series should not be interpreted as an indicator of the relative position of these workers. Rather, they tell whether wages kept the pace with productivity. The aggregate labour share should be imagined as a weighted average of these sectoral shares, with the weights given by the share of the total value added accrued by each sector. Thus, it is important to consider it together with the sectoral decomposition of total value added.

For instance, the small, and relatively stable, share of value added contributed by the government sector explains the limited impact of high wages of public employees; the 'median' performance of agriculture explains the differences between aggregate and non-agriculture labour shares. On the other hand, the high labour shares in 1893-1894 reflect abnormally high shares in the services; in the rest of the paper, these years will be ignored.

The last, non-trivial issue is the treatment of transfers: to ensure comparability, they should be added to historical series. ISTAT historical time series provide yearly estimates of the overall expenditure of welfare bodies from 1921, and only from 1951, every five years the amounts transferred in the form of retirement benefits (*pensioni*). **Figure 6** compares the baseline series presented above with two alternatives, obtained by summing these two estimates of transfers to the numerator of the labour share. Both corrections bring historical series very close to Torrini's shares: the overall expenditure series (clearly an overestimation) already in 1951; the other, by the end of the 1960s. In the next section, these series will be used to discuss the long-run evolution of labour shares in Italy from 1895.

**Figure 6 - The Role of Pensions and Transfers, 1921-1970**
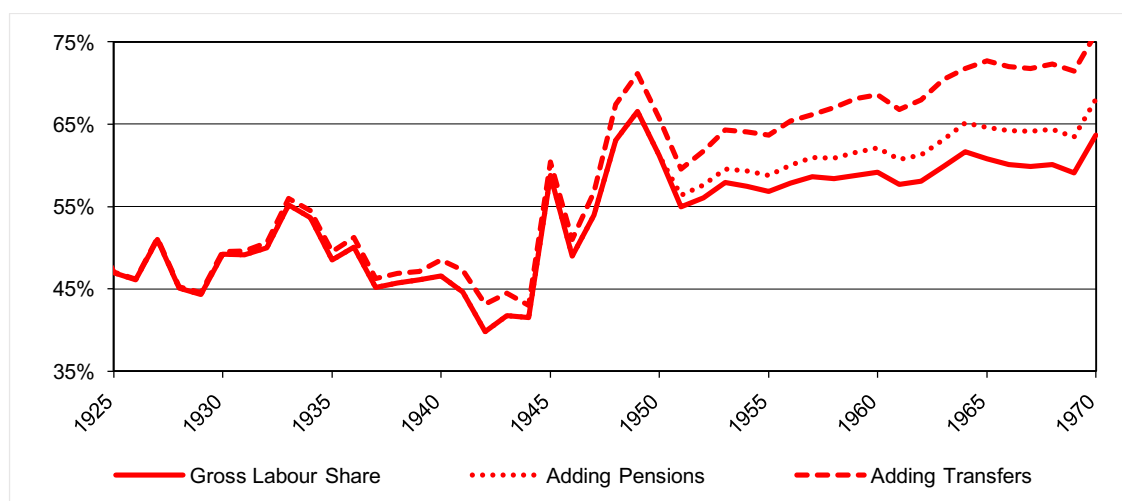
Source: for the gross series, see Figure 4; 'Adding Pensions' is obtained by adding to the numerator the amounts corresponded as retirement benefits, from Istat (2011), Tab. 5.3; 'Adding Transfers' with overall transfers from welfare bodies (Istat 2011, Tab. 5.1).

This section provided the reader with a detailed discussion on all potential sources of bias in the series. Rather than perfect estimates, they should be considered an acceptable

compromise subject to available evidence (largely recent and in the need of 'user feedback'). Before concluding this section, therefore, it seems worthwhile to discuss how new research could improve the precision and the depth of our knowledge. **Figure 7** compares the gross labour shares to an alternative series estimated by using headcount labour inputs, as in Giordano and Zollino (2015). Leaving aside the inconsistent trend induced by the headcount figures in 1955-1963, this single difference explains most of the gap between their series and those in **Figure 4**. As in Giordano and Zollino (2015), labour shares estimated in this way would fluctuate around 65-70% for most of Italian history (above Torrini's figures, even before adding transfers). The reasons why FTE figures should be preferred have just been discussed, but could the resulting series still be too low? One reason could be that the estimates of workers' incomes are excessively low. I am not aware of similar criticisms on Zamagni's series, but in the dashed series, Rossi et al. (1993) incomes for these workers are multiplied by an arbitrary 1.25. Even admitting such a 25% increase in worker incomes would raise labour shares by only 7 percentage points, on average over 1895-1950, leaving both short- and long-run dynamics unaffected. Of course, more granular evidence on differences within sectors, between regions, independent vs. autonomous, and most of all, by gender would be greatly insightful: but there are no reasons to believe that national averages wages, and gender-specific factors of conversion of labour units, are especially inaccurate.

**Figure 7 - Are Italian Labour Shares Too Low? Alternative Assumptions**
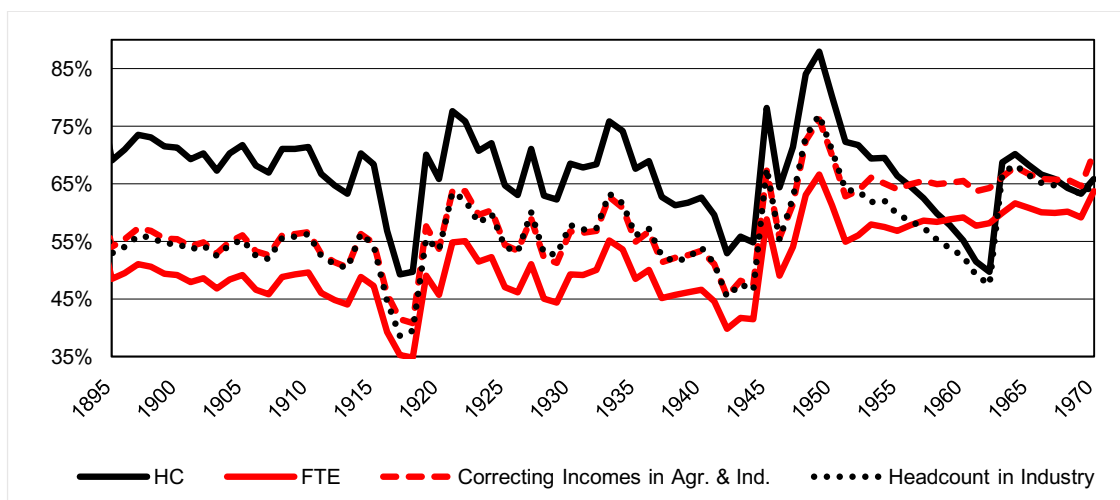
Source: the continuous black series reproduce gross labour shares from Figure 4; the continuous red is estimated identically but using headcount rather than FTE labour inputs; in the dashed red, incomes of agriculture and industry workers are multiplied by 1.25; the dotted black line is based on headcount figures for industry only.

Very similar results are obtained using headcount figures for industry only, following Fenoaltea's criticism. Industrial censuses could have entirely missed many workers in this sector. However, even giving a full-time wage to all the workers captured in the population censuses does not greatly change the figures. It is reasonable to assume that revised FTE figures for industry based on population censuses could raise the labour share by some 3-5 percentage points in the period before WWII, reducing the magnitude of the post-WWII increase, but this would leave most of the results of the next two sections unaffected.

5   Italian Factor Shares and Income Inequality in The Long Run

We are finally ready to discuss the new picture offered by factor shares of the evolution of inequality in Italy from 1895 to present. In **Figure 8**, I propose a long run series based on gross labour compensation at factor costs, for the period 1895-1920. To consider the increase in pensions, from 1921 to 1950, the series follow the correction in **Figure 6**. Finally, from 1951 to 2015, I adopt Torrini's series.

Figure 8 - Italian Labour Shares: The New Long Run Picture (1895-2015)
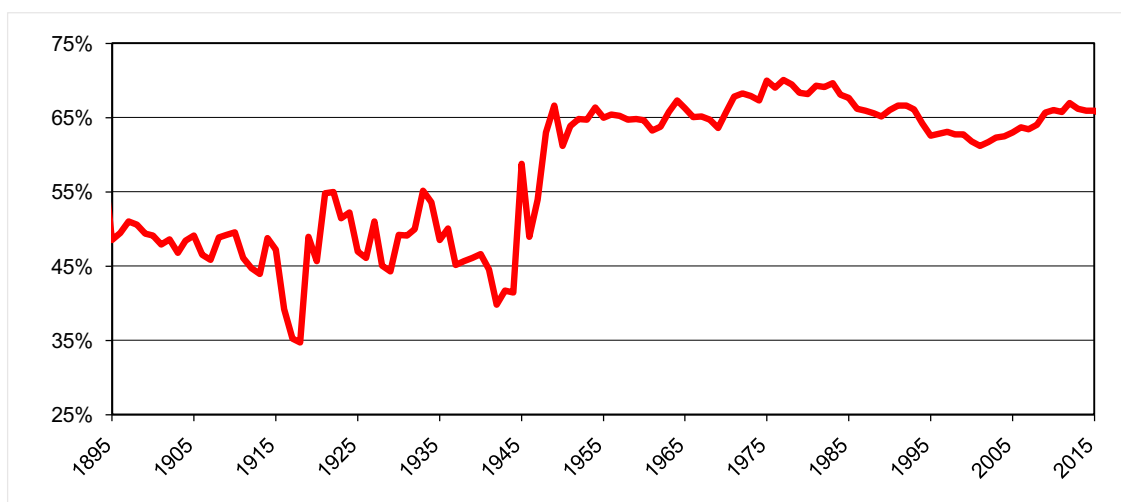
Gross labour shares, at factor costs. For 1895-1920, historical series reproduce those in Figure 4; for 1921-1950, they follow 'Adding Pensions' series in Figure 6; from 1951-on, Torrini's series in Figure 1.

The first, impressive result of this long-run view is to reveal a striking increase (nearly 20 percentage points!), taking place between the late 1940s and the 1950s. As shown in **Figure 6**, my estimates would imply a gradual rise during the Italian economic miracle,

compared to the flat trend in Torrini. In any case, the radical discontinuity represented by the Second World War, already evident and even larger in Glyn (2009), is confirmed by all the alternative discussed above, apart from the one based on headcount labour inputs, that would imply higher labour shares in Giolittian Italy than in most of post-WWII period. The precise dynamics of the mid-1940s should not be taken at the face value; still, a substantial, significant increase, took place between the 1940s and 1950s. It is important to note that this is not the result of alternative sources and methodologies, and it comes neither from the inconsistent account of self-employment, nor from its sudden reduction. According to Torrini (2015), self-employment still represented 50% of the labour force in 1951, and fell to some 30% in 1970, to fluctuate around the same level since then[18].

As is clear from an international comparison (**Figure 9**), Italian labour shares are not exceptional in the extent of the increase: economic historians already recognised that, contrary to Kaldor's 'stylised fact', 'the share of employee compensation has shown a tendency to grow over the last one and a half centuries' (Prados de la Escosura and Rosés 2003, 49-50).

What is surprising, however, is the brief period in which this development took place. Arithmetically, the fact is explained by the sustained rise in real wages, shown in **Figure 2**, which was faster than the increase in real GDP. Economic, social, and political developments of the 1940s and 1950s offer several plausible explanations. World War II was a catastrophe for Italy, but it marked the transition from fascism to democracy. The country was totally rebuilt, in a radically changed international environment: after years of 'forced' autarky, Italy quickly dismantled Fascist controls, and returned very early to free trade (Boltho 2013, 112).

This could fit two of the main narratives on long-run increases in labour shares, as surveyed by Gollin (2002, 461-462): at least in some key industries, Italy became able to adopt more modern technologies, while the increased international competition could have reduced the market power of capital owners. The immediate increase in real compensation would reflect an increased marginal product of labour. At the same time, the reopening of international trade promoted an increase of export sectors,

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[18] The results in Figures 8-10 are not affected by the choice between Torrini's and Ameco series: see Fig. A2.

characterised by higher productivity and remuneration, at the expense of sectors where labour accrued a lower share, generating a positive composition effect, as the one described in Fenoaltea (2011, 255-257).

Figure 9 - Gross Labour Shares. Italy vs. the 'Core', 'European Periphery', and 'The Rest', 1890-2015
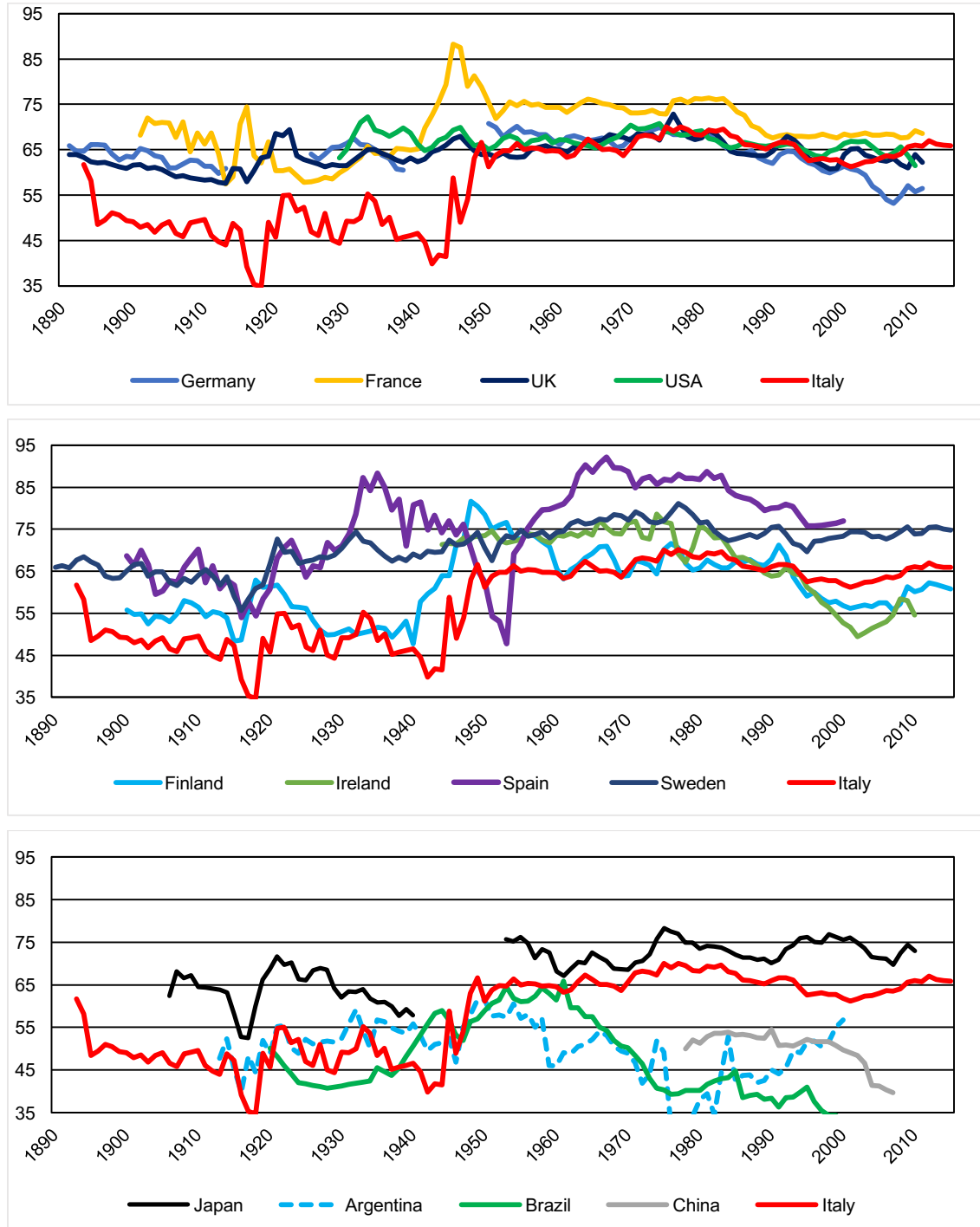
Sources: Italy as in Figure 8; China from Bai and Qian (2010); others from Bengtsson and Waldenström (2018).

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An alternative, complementary explanation is based on institutional factors. Scholars working on the history of Italian institutions stressed that the Republican Constitution represented a fundamental break, not only with fascism, but also with the 'liberal' period, especially in terms of workers' protection (Cassese 2010, Rodotà 2011). After the end of Fascism, Italian workers enjoyed new political and civil rights, as captured by indices of freedom (Amendola et al. 2017, 475-479). The increase in wages and labour shares would reflect the improved ability of Italian workers to claim their part, consequence of the radically different political environment, and Italy would join the number of countries in which democratic transitions led to a sudden increase of the labour share (Drautzburg 2017, 8-11).

It goes beyond the scope of this paper to test these alternative explanations, but arithmetically wages account at least for the 7-point difference between the low of 1942 and the pre-WWII average. The Republic also represented a dramatic turn in the provision of public welfare: as shown in **Figure 6**, transfers account for at least 3 further points at 1950. Public employment (characterised by higher labour shares) also increased, but more gradually: in the same year, it had stabilised to one million (some 7% of the FTE labour force) from c.750,000 (5%) before the war.

As discussed in the next section, it is hard to justify the exact timing of the increase; still, a combination economic and institutional causes can account for the increase of the labour share. While cross-country comparisons should be taken with a grain of salt, one of the objectives of my work was to ensure the greatest consistency with Bengtsson and Waldenström (2018). That said, the graph shows that Italian labour shares before WWII are extremely low, compared to most European economies of the times; but far from implausible, these levels match those of other developing countries, such as Finland in the same period, or contemporary China. This result, which is not evident in measures of personal income inequality, such as Gini indices or top income shares, is in line with the evidence from wages[19]. According to Federico et al. (2017), unskilled Italian workers from all provinces earned wages at subsistence levels, for the whole period 1861-1913; welfare ratios were in line with those of coeval Chilean or Bengalese workers, well behind European standards.

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[19] By international standards, Italian top income shares are relatively low (Alvaredo and Pisano 2010; Gabbuti 2018), possibly due to substantial tax evasion at the top. As mentioned in Section 3, the lack of comparable estimates makes more difficult to compare the results by Amendola and Vecchi (2017).

Equivalent results emerge from the *Clio-infra* database of real wages (de Zwart et al. 2015). These wages were probably quite representative in Italy: according to Zamagni (1984, 75-76), the country's labour force in the late 19th century was characterised 'by a strong dichotomy' between 'skilled male labor (…) relatively costly', while 'female, youth and unskilled labor show rather low levels of remuneration'.

As mentioned in Section 3, Gini indices from Amendola and Vecchi (2017) enable us to compare long run trends in personal and functional income distribution. **Figure 10** reproduces their estimates of the Gini index for household income distribution from 1901, the first year for which they are provided in the time frame of my series. An annual series is obtained by imposing the percentage variation in the capital share (arithmetically equal to 100 minus the labour share). This amounts to assuming an extreme case, that the elasticity of transmission between capital's share and the Gini is not only positive (consistent with Bengtsson and Waldenström 2018) but constant and equal to 1. The figure shows that, before World War II, the swings observed in factor shares are fully compatible with the decennial estimates of personal income inequality, and may even allow us to interpolate between them. As for Spain, discussed by Prados de la Escosura (2008), and interwar Germany and Britain, objects of a recent work by Goméz Léon and Jong (2017, 17-20), in Italy the functional distribution of income arguably represented a key determinant of the evolution of the personal income distribution.

In the period from mid-1940s to early 1980s, however, functional and personal distribution did not go hand in hand. The Gini index declined from 44.9 to 41.6 between 1931 and 1948, and then to only 39.1 in 1967, when regular surveys started[20]. In fact, in Italy, the increase of the labour share was much preceding the reduction in personal income inequality. It is only in the 1970s and 1980s that a sustained reduction in the latter can be observed, from a Gini index of 40 registered in 1973, to a minimum of 29.5 in 1982[21]. As observed by Brandolini (2000, 218-221), the trend in these two decades is driven by a drastic reduction of within-labour inequality (captured by the distribution of wages). This is the period in which, according to Boltho (2013, 115-116), Italian politicians 'over-reacted' to the social tensions of the country, with 'the hasty adoption

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[20] The very limited evidence available on top income shares discussed in Gabbuti (2017) points towards some increase of income concentration at the very top (0.1%) during the miracle period.
[21] According to Bartels (2017), also in Germany this is the period in which correlation between top income shares and capital share is the lowest.

of generous welfare provision'. The shift from self- to paid-employment could have magnified the parallel reduction in personal income inequality, 'insofar as wages are more equally distributed than incomes from self-employment' (Brandolini 2000, 220-221). The trend in the factors shares, however, does not reflect this egalitarian trend. The labour share fluctuated below 70% of national income, and declined only from 1984.

Figure 10 - Capital Shares and Personal Income Inequality, 1901-2015
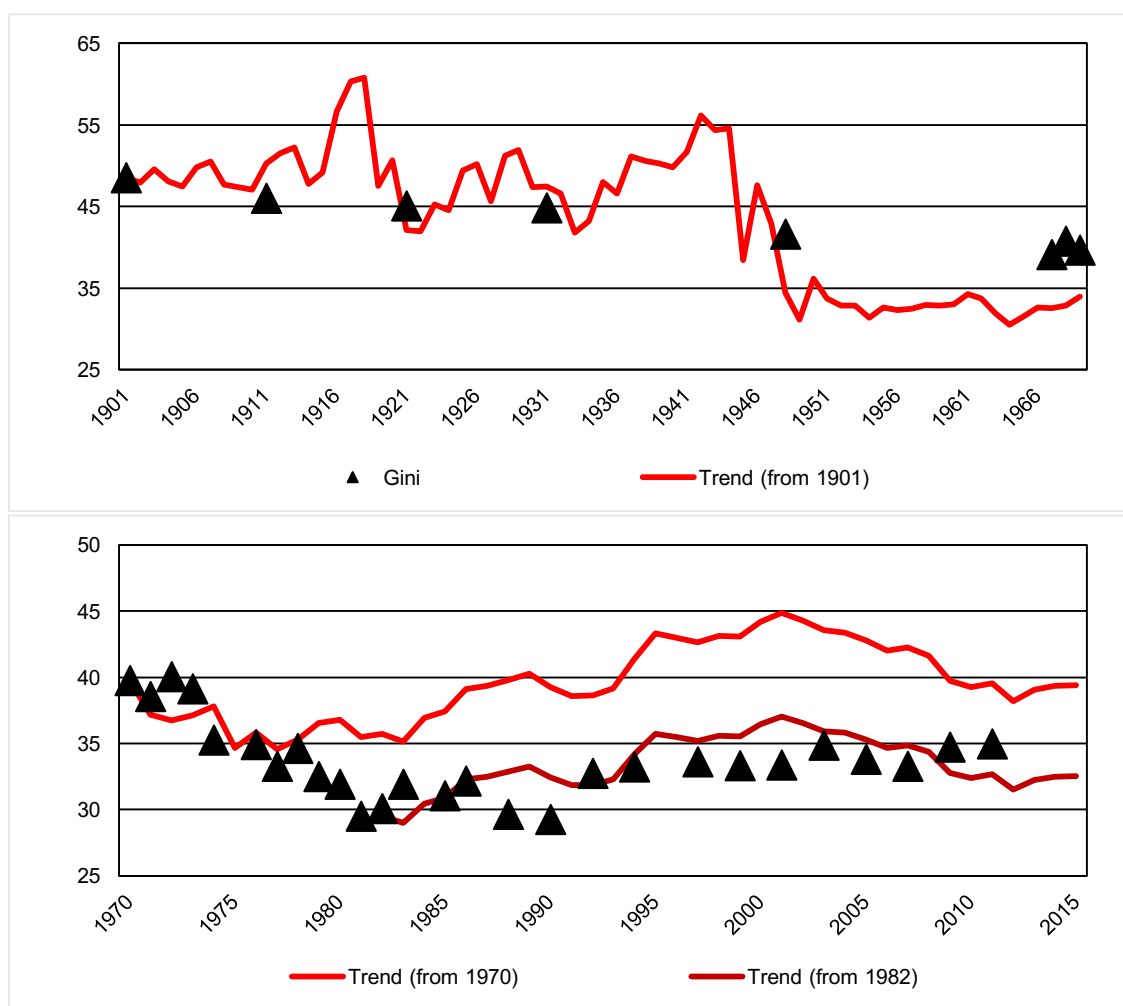

Sources: Gini indices of household income inequality from Amendola and Vecchi (2017). Trend series projects those estimates by mean of the variation in the capital share series, obtained as complement to the labour share series in Figure 8. In the upper graph, the trend is imposed from 1901; in the bottom one, from 1970 and from 1982.

While the Gini index fluctuated around 29 for the whole 1980s, top income shares, estimated by Alvaredo and Pisano (2010) from 1974, started to increase from the early 1980s. As for most advanced economies, personal income inequality in Italy increased

more sharply in the period, when looking at this indicator. As a result, until 2001 top incomes are more correlated with the increasing capital shares, consistently with the high elasticity computed for Italy by Milanovic (2017). More puzzling is the trend after 2008, when labour shares increased, but income inequality slightly increased (Brandolini et al. 2018); this could reflect the mismeasurement suggested by D'Elia and Gabriele (2017), but also be due to the falling income composition inequality captured by Ranaldi (2018).

Interestingly, Alvaredo and Pisano report also the composition of top incomes by source. Contrary to the US case, where the decline in the labour share is exacerbated by an increasing component of compensation to top incomes (Giovannoni 2014, p. 34-35), in Italy the wage share of top decile was relatively stable. From 1982 to 2004, top 10% shares rose from 26.04 to 32.9, but their wage component declined from 69.3 to 62. The story is slightly different for the top percentile, whose wage component declined from 1976 (43.6%) to 1999 (35.6%) and rose after (39.2 in 2004): still, as mentioned, the share accrued by the top percentile in Italy is relatively low (9.23% in 2003). As a result, the trend in labour shares is not greatly affected by the dynamics of the top percentiles (**Figure 11**).

**Figure 11 - Contribution of Top Incomes to the Aggregate Labour Share, 1976-2004**
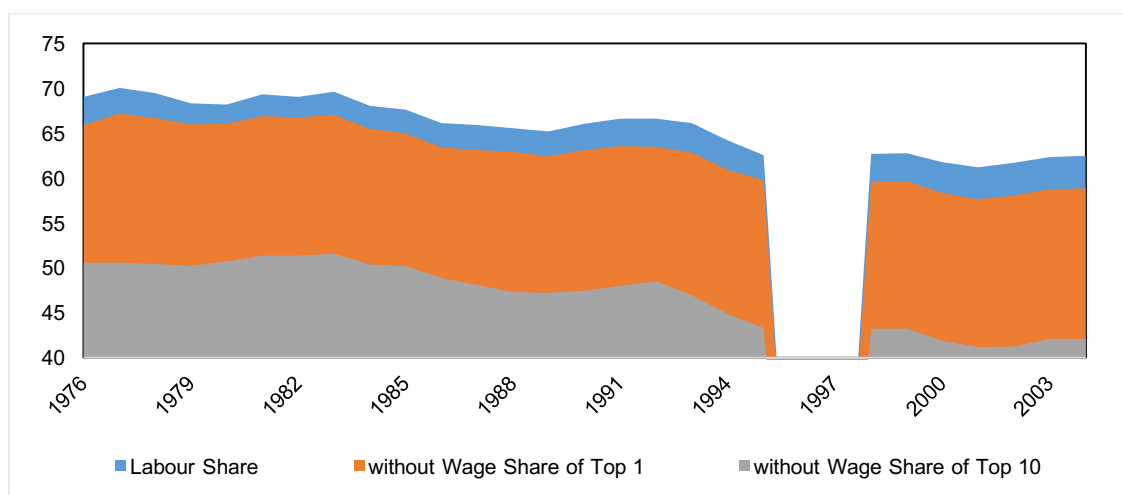
Source: Torrini (2015) and Alvaredo and Pisano (2010), tab.12.A4.

A final comparison is allowed by the recent estimation of the stock of wealth for Italy since unification, by Cannari et al. (2017). In **Figure 12**, the wealth-to-income ratio

(W/Y) for the Italian economy, from 1895 to present, is compared to the other countries for which both W/Y and capital shares are available for a sufficiently extended period[22]. In Piketty and Zucman (2014, 1275), Italy stood out for the rapid rise of the wealth-income ratio since 1970. The long-run series allow us to put these recent developments in perspective. At the beginning of the period, W/Y is at 7, as in the advanced economies of North-Western Europe; the steady decline during the first period of Italian industrialisation, and the surprising fall of the ratio during the Great War, led the ratio to reach an absolute minimum of 3.15 in 1918[23]; the interwar years marked a recovery, up to a peak of 4.6 in 1935; in the late 1930s, the ratio declined, apparently as in most other countries; but when new data become available, in 1951, the ratio is almost at 4.9. It took two decades of high GDP growth to reach a W/Y ratio of 3.5, the low point from which the increase described by Piketty and Zucman (2014) started.

Figure 12 - Wealth-to-Income Ratios, 1895-2015
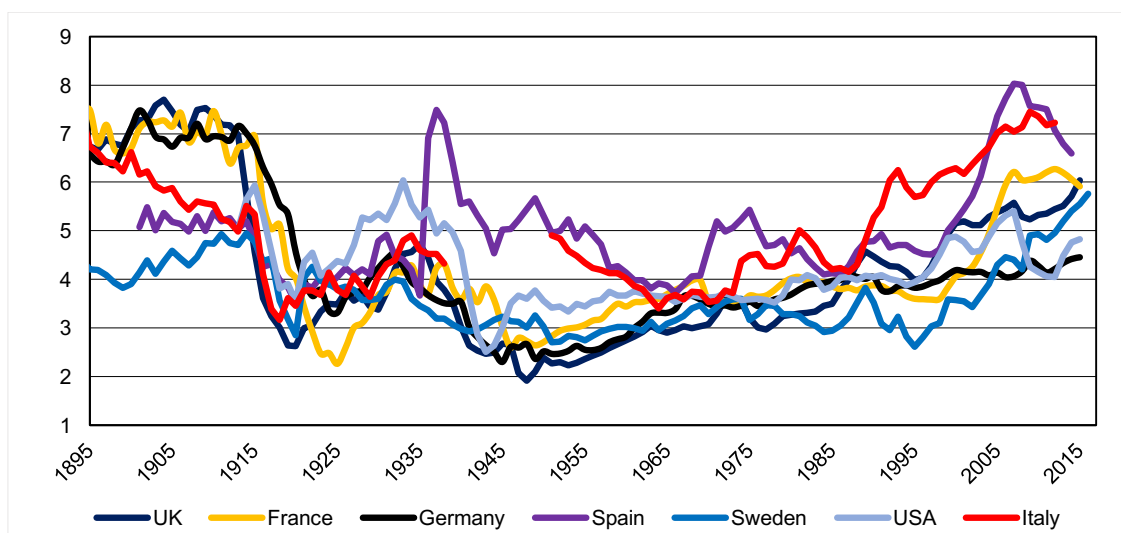
Source: for Italy, W from Cannari et al. (2017); Y is obtained by subtracting capital depreciation from Rossi et al. (1993) and Istat to GDP from Baffigi (2015); for other countries, Alvaredo et al. (2018).

As discussed by Piketty (2014, 52-55), if we consider the stock of wealth W to be equivalent to the total amount of capital K, the rate of return on capital is arithmetically

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[22] Compared to the ratios in Cannari et al. (2017), my series for Italy is obtained subtracting capital depreciation from Y, consistently with Piketty and Zucman (2014).
[23] Italy did not lose territories, nor experience disruptions of FDI. Together with the decline in the early industrialisation period, the ratio suggests that the increasing capital of Italian firms, not reflected in stock exchange capitalisation as it was elsewhere, could have been overlooked by the historical sources behind the private wealth stock estimates.

obtained as r = α / β, where α = rK / Y, and the ratio β = K / Y. Making use of the ratios just presented above, and the capital shares from Bengtsson and Waldenström (2018), **Figure 13** shows the level of the average return on assets, r, in the same subset of countries. For consistency with the definition of income adopted in β, capital shares must be taken net of capital depreciation. To this purpose, I combine my historical net estimates, with the series also provided by Piketty and Zucman (2014). Because of the high W/Y, despite the high capital shares, the return to Italian capital at the end of the first globalisation is substantially in line with those of other peripheral economies, such as Spain and Sweden. The sharp increase in capital shares during the Great War, and the contemporary decline of W/Y, implies an abrupt rise, possibly overestimated, but not implausible. Rates remained above 10% during the twenties (a period in which also French rates increased sharply), before a decline started by the Great Depression. In 1950s and 1960s, rates went down, in line with those of economies such as Germany and UK, and with those registered in the first industrialisation period. They declined again, from 8 to some 5%, in the early 1970s, to fluctuate around that level since. From 1929, comparison with available series on returns on shares (Mediobanca 2014) and preliminary estimates on return on housing by Baffigi and Piselli (2017, 11) support the magnitude of the results – especially if an upward revision of the pre-WWII FTE labour inputs, suggested at the end of Section 4, is accepted. In line with Jordà et al. (2017), shows that the return on capital has constantly been above the real rate of growth of the Italian economy.

Figure 13 - Average Return of Capital, 1895-2015
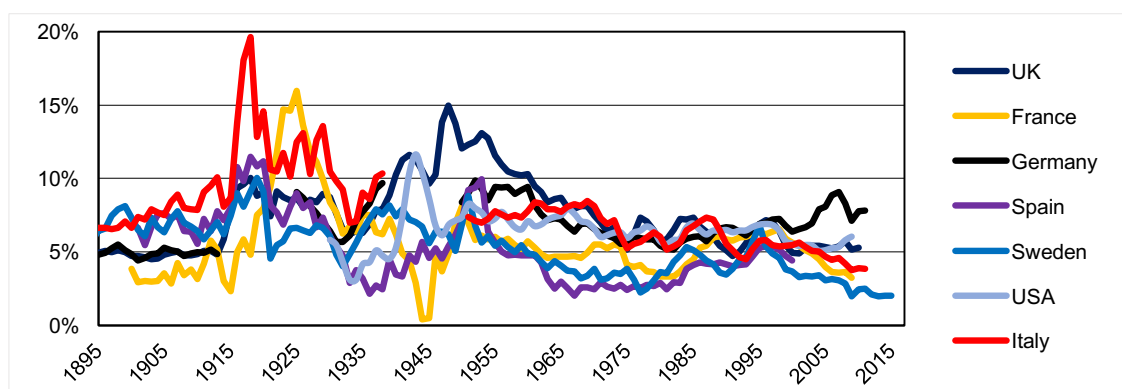
Source: r is obtained as the ratio between net capital shares, from Bengtsson and Waldenström (2018), and the W/Y ratios of Figure 12. For Italy, the net series is computed as in Figure 4 (with the correction for transfers, as in Figure 6) from 1895 to 1959; from 1960, net capital shares from Piketty and Zucman (2014).

Overall, in this section Italy emerged as an interesting historical case: in line with evidence on real wages, but somehow at odds with that on other indicators of wellbeing (Vecchi 2017), the country's workers accrued a relatively low, constant share of national income from the early industrialisation in the Giolittian period to the WWII. Only after 1945, and very abruptly, did Italy converge to the European average; this occurred at the same time as (and I argue, because of) radical economic, social, and institutional transformations. Labour's share peaked in the early 1980s, and as in the other OECD countries it fell in the 1980s and 1990s; but from the 2000s, it has been on the rise. These developments have been only partially in line with the long-run evolution of personal inequality; together with wealth-to-income ratios, they trace the story of an economy with high returns to capital, substantially above the rate of growth of real incomes, even in the period of more sustained industrialisation. What can we learn from labour shares about shorter-term dynamics? The issue will be addressed in Section 6. The advance of what we might call a 'non-noble élite' is so acute that some families were able to overcome the spending power of a growing number of aristocratic families. Considering the distribution of households based on expenditures and examining the composition at the top (say the upper 30 percent), in the 1670s non-noble families were 30 percent of the total, while in the 1770s they were 50 percent.

Figure 14 - Difference between Average Return of Capital and Real Growth of GDP, Italy 1895-2015
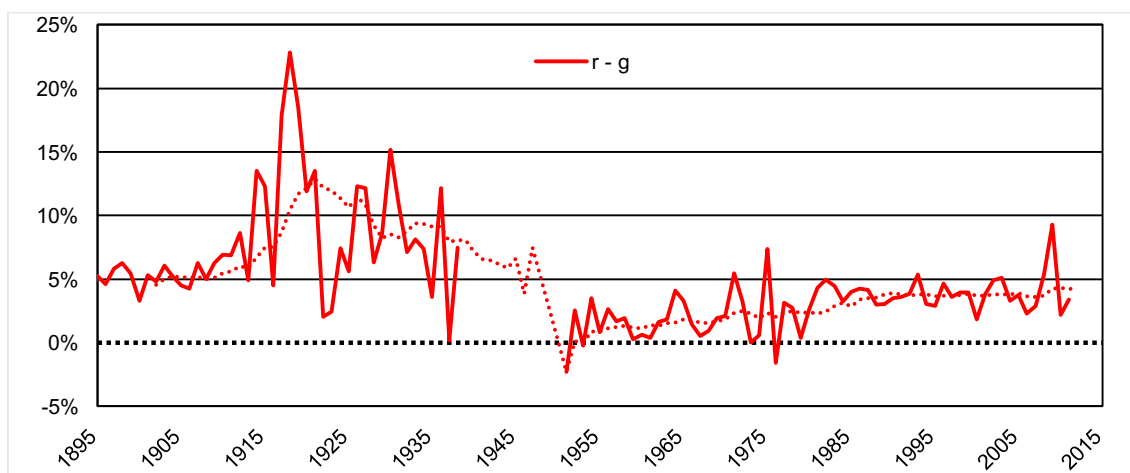

The dotted line is the 10-year moving average. Source: r for Italy computed as in Figure 13; g is the growth rate of the series of GDP at constant values (2005€) from Baffigi (2015).

6   The Short Run: Filling the Dots

In **Figure 15**, gross labour shares are plotted against the natural logarithm of per capita GDP. In the long run, the graph describes a positive correlation between per capita income and labour shares. As discussed, this correlation does not appear to be spuriously determined by inconsistent treatment of self-employment, contrary to the case discussed by Gollin (2002). Still, the Italian case offers an interesting case of the importance of medium run, historically-based analysis. Once considered separately, of the major periods of Italian modern history, only the Republican, post-WWII decades show positive correlation. Before, income and labour shares were negatively correlated; this has been again the case in the last decades of economic stagnation (Brandolini et al. 2018).

**Figure 15 - Gross Labour Shares and GDP p.c.**
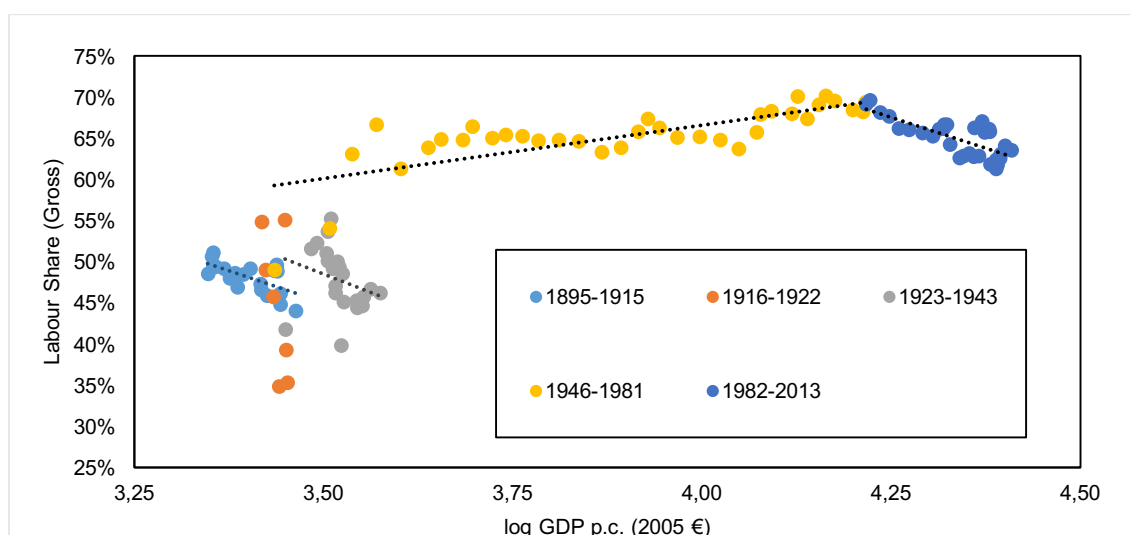
Sources: labour shares as in Figure 8; per capita GDP, in 2005 euros, from Baffigi (2015).

This negative correlation is at odds with economic historians' view of the early Italian industrialisation. Looking at the rosier results of indicators, such as personal income inequality from historical household budgets, Toniolo (2003) stressed the 'benevolent' aspects of an industrialisation that had benefitted most of Italians. The argument was based also on theoretical considerations, notably the wage convergence process discussed by O'Rourke and Williamson (2001, 55-76) for the Atlantic economy during the first globalisation. In fact, neither wages nor labour shares followed the trend

predicted for a labour-abundant, emigration country such as Italy. According to Zamagni (1984, 73-75), 'the shift of the distribution of income in favour of profits is quite obvious' in the so-called Giolittian period (1895-1915). Italian real wages in industry were on the rise, and grew faster than British, US, French, German, and Swedish ones; however, they were not keeping the pace of productivity, implying 'an accelerated accumulation of profits'. Factor shares in particular offer a 'balanced' view, in between the optimistic reading based on personal income distribution, and the pessimistic evidence on industrial wages; Italian workers enjoyed a low, constant share of national income, negatively correlated to per-capita GDP. Even an admittedly imperfect attempt to include emigrants' remittances (Figure 16) does not change the picture. By adding the flow of remittances, from Gomellini and Ó Gráda (2013), to both the numerator and denominator of the gross labour shares, the trend is only marginally improved.

**Figure 16 - Proxying the Role of Italian Remittances, 1895-1935**
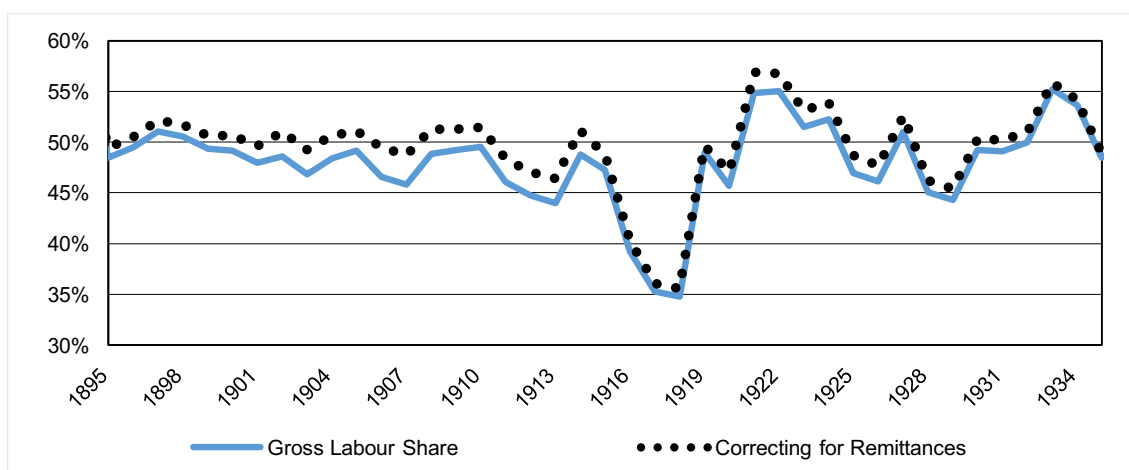
Source: 'Gross Labour Share' as in Figure 4; the corrected series is obtained by adding, both at the numerator and denominator, the series of remittances from Gomellini and Ó Gráda (2013).

In 1913, Italy was hit by recession: together with a temporary increase in agricultural and industrial wages, this led to a peak of labour shares. What followed, however, is striking: labour share collapsed during the Great War, to an extent unknown by most countries[24]. In the first two years of war, the labour share lost almost twelve percentage

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[24] The result, already in Glyn (2009), withstood the revision of labour inputs and national accounts for the WWI period, which previously depicted an implausible boom (Galassi and Harrison 2005). Also for Giordano and Zollino (2015, 190) World Wars 'were remarkably destabilizing events in terms of income

point – a dynamics similar, but less pronounced, is observed in Japan. Capital shares increased also in some non-belligerent countries, such as Argentina, Denmark, Sweden, Spain and Norway. In France, where labour accrued a much higher share, capital shares declined by some 4 points in 1914-1915, to suddenly rise by ten in 1916, and fall again by 1918 to 4 points above 1914 levels. In the UK, despite profits in war-related industries also were '50% above those of the pre-war period 1910-1914' (Arnold 2014, 74), capital shares remained relatively stable at 39%, apart for a one-year increase of 3 points in 1916, and a fall to 36 in 1918. For Germany, Bengtsson and Waldenström (2018) do not have factor shares for the war years, but top income shares constructed by Bartels (2017, 11) show that 'World War I did not act as the great leveller', but rather 'brought a large-scale redistribution from labor to capital which the November revolution of 1918 intended to reverse', as also argued by Gómez León and de Jong (2018) by means of dynamic social tables.

Figure 17 - Private Consumption in Italy, 1910-1945
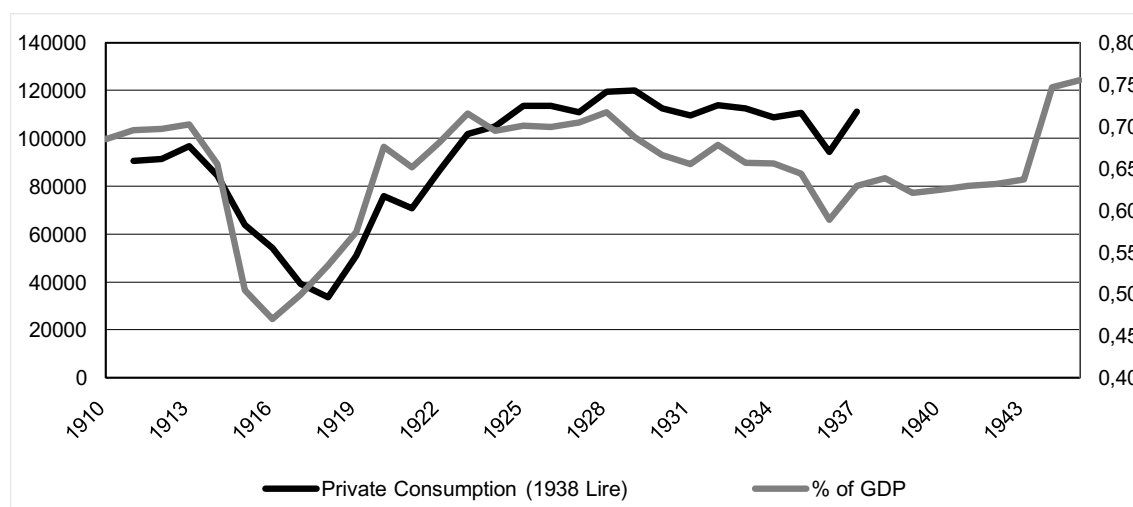
Source: author's elaboration on Baffigi (2015).

It could be tempting to attribute the Italian dynamics to the relatively high war-inflation; however, several factors point towards a real interpretation of the findings. According to Dogliani (2014, 14), 'during the Great War, Italy, more than other countries, experimented an authoritarian system of control, that forced civil society to military discipline without effective parliamentary control'. Wages declined until the end of the

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distribution'. As shown in Fig. A 4, the result does not vary when excluding the government sector, whose value added could have been exaggerated by including soldiers' pay (Battilani et al. 2014, 52-54).

war, even if mass conscription made the economy almost 'fully employed' (Galassi and Harrison 2005, 287), possibly because trade unions were not involved in the 'Mobilisation Committees'. The war effort was managed in an extremely disappointing way: inspectors were recruited 'mainly from the limited population of managers, engineers, and industrialists'; procurement was managed 'in arbitrary and mysterious ways' (even orally!) and left 'few accounts'; this inevitably created 'favouritism, cronyism and corruption', as testified by several scandals (Galassi and Harrison 2005, 279-286)[25]. According to Martinelli (2015, 2-3), 'the year 1917 was the truly critical year of the whole war for the Italian society', and 'unrest seemed to gain momentum'. To provide incentive for agricultural producers, the government increased 'requisition prices for agrarian products' and 'froze in 1917 all agrarian contracts by law until the end of the war'. This implied a 'significant shift in the distribution of income from landowners to tenants and workers with yearly contracts'[26]. The definite evidence on the real nature of the shock comes, however, from private consumption, that collapsed even more abruptly than labour shares from 1914 to 1919, according to the new series in Baffigi (2015) (**Figure 18**). The slowdown in industrial production (peaking in 1917, before the military disaster of Caporetto) reflected the 'physical' impossibility of expanding it further. This resounds in the words of the same Italians soldiers, whose letters referred obsessively to the lack of food, and the hunger experienced in the trenches (ADN 2017).

Rather than a monetary phenomenon, therefore, labour shares capture the distributive consequences of an absolute, sharp decline in living standards of Italian workers, and reveal that the Great War did not translate into greater equality. This major distributive shock, not captured by other sources on income inequality, could have actually ignited the period of intense labour unrest that followed, traditionally referred to as the biennio rosso ('two red years'). Labour shares capture accurately the dynamics of this period. According to Zamagni (1991), from late 1919 (when the series recovered pre-war levels), labour unrest became properly 'political'; demands shifted from wage increases to industrial relation matters. Workers obtained concessions in term of 'work discipline,

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[25] As discussed in Gabbuti (2018), fiscal sources provide support to the popular resentment against war profiteers, but do not allow the estimation of top income shares.
[26] Similar shifts could explain a decline in the Gini, but would not be reflected by the labour share, because self-employed workers are attributed the same average wage, and all exceeding incomes would go to the capital share.

factory councils, right to dismiss workers and the like', such as the national agreement on the 8-hour day in February 1919 (Zamagni 1991, 148-153)[27]. The actual application of the agreement was limited, and did not cause a wide, lasting shift in real wages, as in the Swedish case (Bengtsson and Molinder 2017). Still, in 1921-22, labour shares reached 55% - a peak for the pre-WWII period. Despite the limitations, the series reveal, as stressed by Dowie (1975), the 'need of attention' for the troubled years 1919-1921, and their distributive consequences.

Compared to the previous series by Glyn, the new labour shares show the very negative effect of the fascist regime on the working class[28]. Gross labour shares fell throughout the 1920s, reaching a low point of 44% in 1929. The subsequent fall of GDP from 1930 led to a 'mechanical' increase, due to the greater elasticity of profits in response to business conditions, compared to wages. The same can be observed in the Great Recession, when however, it reinforced a pre-existing trend (Figure 18). As shown in Figure 6, welfare provision was modest in the period, and the increase is just a consequence of the abrupt fall in profits (and in fact, experienced by many countries, as shown in Figure 9). Labour shares peaked in 1933, when GDP reached its minimum; the recovery, reinforced by military expenditure for the aggression to Ethiopia, was again disproportionately accrued by profits, in line with the negative correlation of Figure 15. In 1942-44, the series show a new minimum since the Great War (41%). Various fascist economic policies arguably contributed to this prolonged decline, but radical, 'corporatist' transformation of the labour market reforms deserve a special mention. According to Mattesini and Quintieri (2006, 418-422), contrary to the rest of Europe, in the interwar the Italian labour market became 'effectively close to the competitive model': corporatist trade unions (whose officials were appointed by the Government) became the only representatives of the workers and acted 'as a transmission mechanism of government policy decisions'. Generalised wages cuts and forced reduction working hours (the so-called 'work sharing') were the major weapons in the 'battle' for revaluing the Lira in the late-1920s, and also to fight unemployment in the 1930s. As in the case of Pinochet's Chile, discussed by Girardi and Bowles (2018), the regime-change of 1922 had a generalised effect on the prospects of profits of Italian

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[27] Martinelli (2015, 3-5) documents a similarly impressive wave of agrarian strikes, achieving important concessions on remuneration, labour market regulation, and land redistribution.
[28] Inequality during the interwar is discussed in greater length in Gabbuti (2018).

firms. Moreover, throughout the whole period, fascist economic policies provoked a fall in the labour share, consistent with the increase in inequality experienced Germany after 1933 (Gómez León and de Jong 2018, Bartels 2017), but only partly detected by household budgets (Amendola and Vecchi 2018). As discussed for the Great War, dramatic shocks such as those experienced in the interwar decades did not necessarily imply a levelling; in fact, comparative research on the fascist regimes would be needed to assess whether they can be systematically associated to increasing inequality.

Figure 18 – Labour Shares during Crises: Great Depression and Great Recession in Comparison
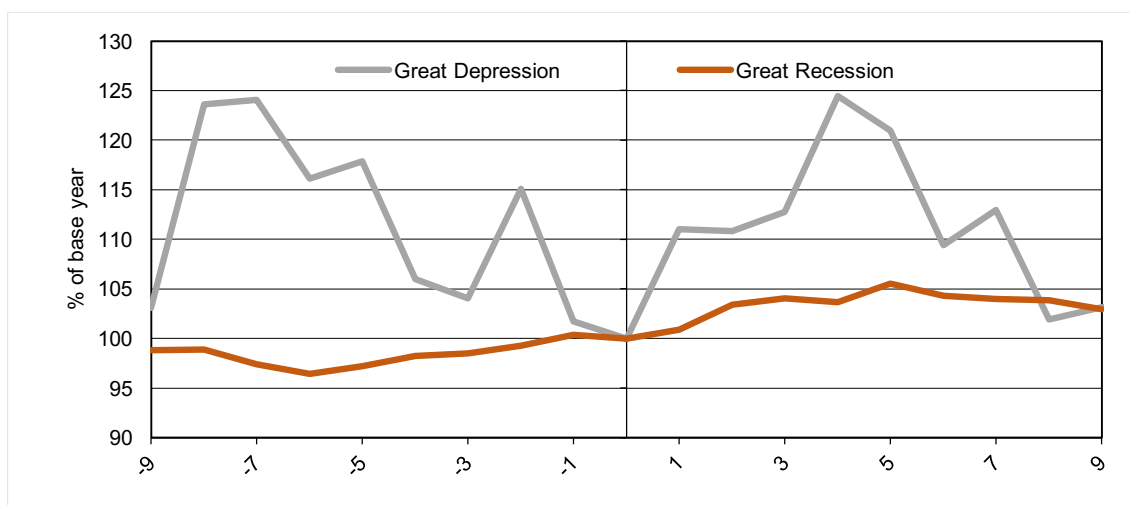
Source: Torrini (2015) and Figure 8. Series are indexed to 100 in year 0, 1929 and 2007 respectively, and reproduce labour shares in the 9-year interval before and during the Great Depression and Great Recession.

As discussed in the previous section, the sudden increase after WWII was not a short-term disturbance. In the same years, Italy 'returned to the pre-war levels of output', despite the pessimistic expectations of the times (Boltho 2013, 109). The dramatic dynamics of inflation and the monetary stabilization of 1947 could explain at least partially the fluctuations of the late 1940s. Italian labour historians consider the 1950s some 'hard years' for the trade unions, despite they intensified their activity (Musso 2011). A unitary national union, the CGIL, had been reconstituted clandestinely already in 1944; but the socialist, republican and Christian-democratic components split off in 1948, to create the UIL and CISL. This division cost the workers most of their bargaining power at the national level. 1955 is traditionally seen as a watershed: the communist FIOM lost the internal elections at FIAT, leading to a radical

reconsideration of union strategies. The first success arrived in 1960, with the first successful strike in the electromechanical industries.

As discussed, Torrini (2015) confirms the account of De Meo (1973), according to which the increase in the dependent workers' share (caused by massive flows of workers from agriculture to industry and services) did not cause the overall labour share to grow, because of the contemporary reduction in the self-employment share, especially in agriculture[29]. As shown in **Figure 19**, contrasting with this flat trend, my new estimates attribute part of the increase to this period, consistently with earlier estimates by Brandolini (2000). This account would be consistent with the extension of pensions and benefits to most workers (Ferrera et al. 2012, 119-154); in fact, the growth of this component explains most of the growth in my series during these decades. Still, Antonelli and Barbiellini Amidei (2011, 141-145) show also a sustained increase in the manufacturing sectors (especially the 'modern' ones booming during the economic miracle, such as 'chemicals, rubber and transportation equipment'), and attribute this increase to the introduction of labour-intensive technological innovations. While both Brandolini (2000) and Antonelli and Barbiellini Amidei (2011) relied on the same sources of Torrini[30], my new series (based on much less sectoral detail) could benefit from the new, consistent national accounts by Baffigi (2015). While the scope of this work was to establish comparable estimates for the pre-1950 period, the trend in 1950s and 1960s is worth more in-depth research, also given the absence of reliable information on personal inequality.

In all series, labour shares increased in 1970, driven by a record improvement in industrial workers' remuneration. Then, Torrini's labour share reached a secular peak in 1977 (**Figure 8**), a year marked by several 'iconic' riots, that could be taken as the zenith of a decade of social unrest. In the following decades, together with the labour share, employment in large firms and public enterprises, responsible for most technological innovation and demand of qualified labour, declined.

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[29] De Meo (1973, 37-38) also compared Italian figures with series for the other European countries; according to his computations, as in Figure 9, by 1952 Italy had reached the level of Western Europe.
[30] Brandolini (2000), in particular, followed a very similar methodology, and estimated very similar paid-employment shares; however, after the correction for self-employment, his overall labour shares showed some increase in the 1950s and early 1960s.

Figure 19 – Whose Miracle? Alternative Labour Share Dynamics, 1951-1970
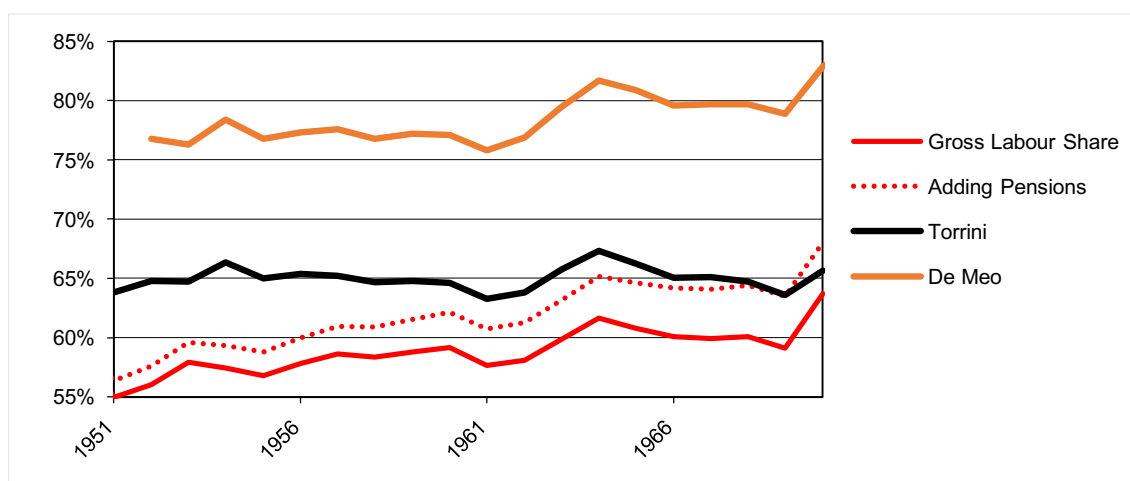
Source: Torrini (2015) and Figure 6.

Antonelli and Barbiellini Amidei (2011, 143) attribute this trend to the introduction of new, capital-intensive technology – partly consequence of the new endowment of factors, after the country's successful industrialisation, and partly due to the peculiar nature of the Italian innovation system. Important developments took place also outside the sphere of production: Torrini (2015, 305) highlighted the increasing share of housing rents in capital income (from 20 to 37%). At the same time, the evolution of public debt represented an important driver of income distribution. Between 1979 and 1981, Italy joined the European Monetary System, and the Bank of Italy was made independent from the Treasury. In the following decade, the interest paid on public debt spiralled, especially in real terms. The ratio public debt/GDP almost doubled in few decades, from some 60% in 1981, to reach 120% in the mid-1990s (Francese and Pace 2008, 20). As a result, the sums paid as interest to bond holders had an impressive growth, as shown in **Figure 20**, that compares them with the capital share. The consequences of these developments on the personal distribution of income and wealth are worth further investigation[31]. Brandolini et al. (2018) show, from the currency crisis of 1992, a widening gap between Italian GDP and 1990s, real gross household disposable income, consequence of both the fiscal consolidation imposed by the

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[31] Of course, public debt is held also by foreign investors. As documented by Francese and Pace (2008, 21), the share of Italian debt held abroad increased in this period, the clear majority remained in Italian hands.

Maastricht Treaty, and the fall in bond yields (evident also from the figure), that 'led to a shift of resources from households to the general government sector'[32].

According to Torrini (2015, 306), the main cause of the increase of the labour share in the 2000s has been 'a compression of mark-ups on marginal costs, and the difficulty for Italian firms to be rewarded for their innovation efforts related to product quality upgrading'. As mentioned, D'Elia and Gabriele (2017) propose a different treatment of the incomes of self-employed, that would be consistent with the observed decline of 'truly' independent work (Reyneri 2017) and would make Italian trends consistent with the fall in the labour share experienced by other advanced economies.

Figure 20 – Net Government Interest Payments and Capital Share, 1960-2015
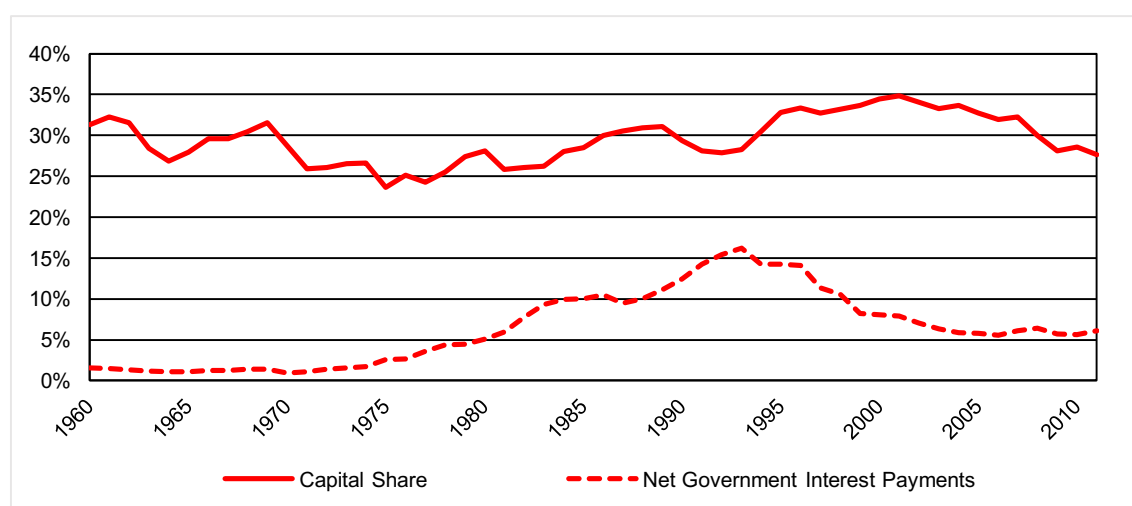
Source: author's elaboration on Piketty and Zucman (2014). Shares are net of capital depreciation.

7   Conclusions

The Italian case shows how the study of labour shares can inform the historical debate on economic inequality. Series of national accounts and labour inputs recently made available allowed us to estimate labour shares from 1895 to 1970 in a manner consistent with existing estimates from 1950 and international evidence. In historical perspective, Italy emerges as a country where workers accrued a relatively small share of the national income, from the unification of the country in 1861 to World War II. By the

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[32] The contemporary increase in personal income inequality is consistent with the decreasing polarisation in capital ownership found by Ranaldi (2018) over the same period.

end of the 1950s, labour shares had converged to the European average. The estimates available so far do not allow for detailed, causal, analysis, but they seem the plausible consequence of the radically new political, social, and economic environment. In the post-WWII decades, reconstruction, the 'economic miracle', and the re-engagement with the international economy, took place alongside the building of a democratic country, the enlargement of citizens' and workers' rights; as a result, the increase in labour shares was concentrated in just a few years, contrary to the experience of other countries. Future research will hopefully scrutinise the exact timing of these developments, and investigate the sectoral, regional, and gender detail of the evolution of labour shares.

Estimates based on historical household budgets made it possible for the first time to compare long-run trends in functional and personal income distribution. As in the case of Spain (Prados de la Escosura 2008), factor shares arguably capture most of the changes in income inequality in Italy before 1945. After that, the rise of the labour share preceded by several decades the fall in personal income inequality. In line with Bengtsson and Waldenström (2018), the later increase of the capital share started in the 1980s coincided with the rise of top income shares; however, the two diverged since 2000, when Italian labour shares have increased. The combined analysis of capital shares and the wealth-to-income ratios made available by Cannari et al. (2017), allowed us to explore the long-term dynamics of the return on capital, with findings in line with Jordà et al. (2017).

Compared to long-run estimates of personal income inequality, labour shares reveal the occurrence of 'key distributive episodes', in the sense of Atkinson (1997): most notably in the aftermaths of major shocks, such as the Great War, the March on Rome, and the Great Depression. In line with the argument of Franzini and Pianta (2015, 71), the functional distribution of income is 'the most immediate indicator of the balance of forces between labour and capital'. Historically, Italian labour shares have been elastic to the evolution of capital-labour relationships, from unionisation to reduction in worked hours, to the expansion of labour and social rights. Applied to medium-run analysis, such as those attempted in Section 6, labour shares reveal the impact of changes in labour market institutions and bargaining – that is, a fundamental political dimension of inequality. At the same time, a historical decomposition of non-labour

share into proper capital income and rental income, as discussed in Torrini (2015), could offer insights on the political economy of the growing share accrued by this source of income in advanced economies.

In conclusion, factor shares should be adopted alongside other indicators in historical research on inequality. As stressed by Brandolini (2000), even in more recent periods, when better data are available, a single statistical source is rarely free from bias. Comparison of alternative sources and concepts, more than discussion of the single, preferred indicator, puts economists and economic historians in a better position to distinguish 'true' and 'spurious' distributive trends. Moreover, writing the history of multi-faceted phenomena, such as economic inequality, requires observing different dimensions, concepts, indicators. Far from replacing the analysis of personal income distribution, the labour-capital split provides, in history as well as in current economies, a complementary, insightful perspective on the dynamics of inequality, the links between macro and micro developments, and between wealth and income distribution.

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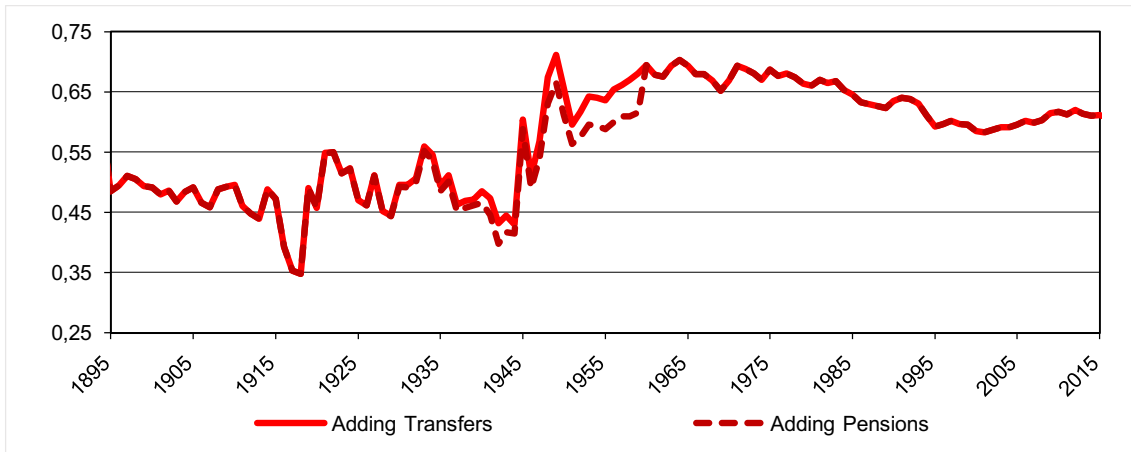
Appendix

**Fig. A 1 - Italian Historical Labour Shares: Alternative Denominators**
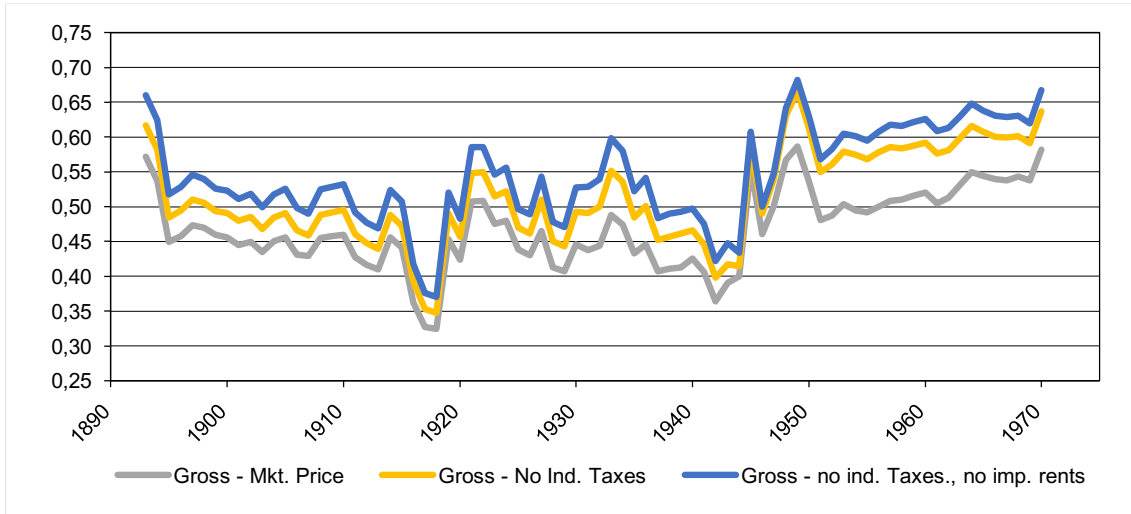
The graph reproduces the baseline gross factor share series, from Figure 4, using different denominators. The first adopts GDP at market price. In the other series, indirect taxes and imputed rents are subtracted from the GDP.

Fig. A 2 - Long Run Picture with AMECO series (1895-2015)
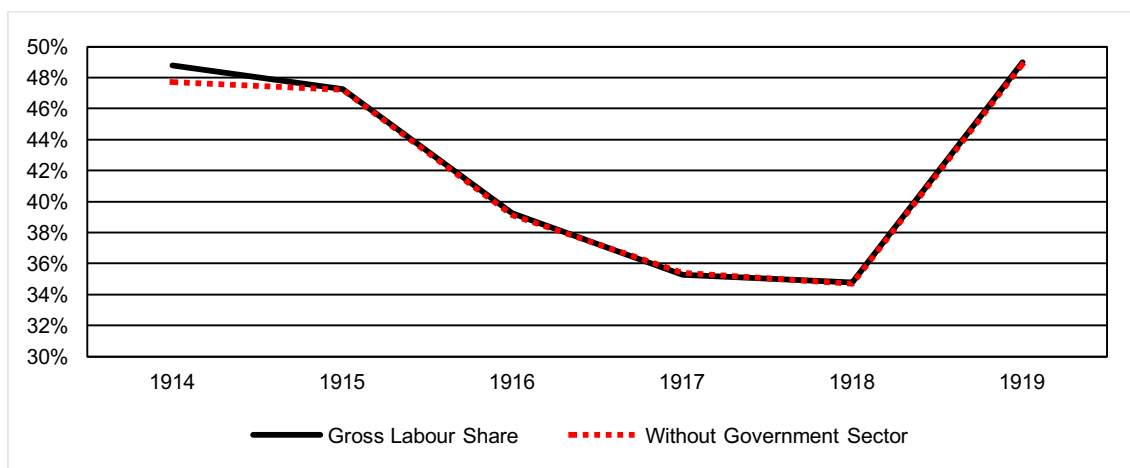

Source: from 1895 to 1959, Figure 6; from 1960 on, AMECO as in Figure 1. Both series are gross and at factor costs.

Fig. A 3 - Long-run trend figures, based on AMECO database (1960-2015)
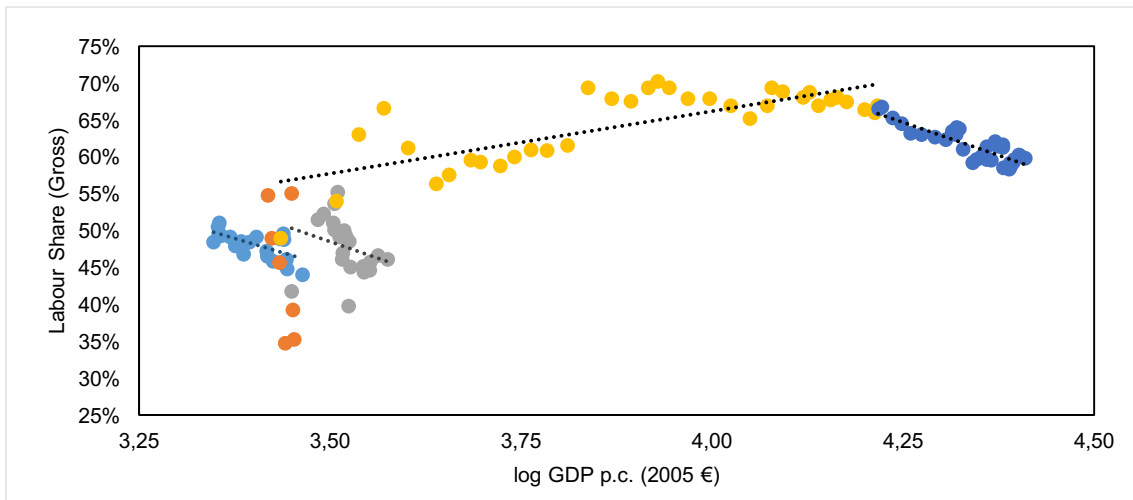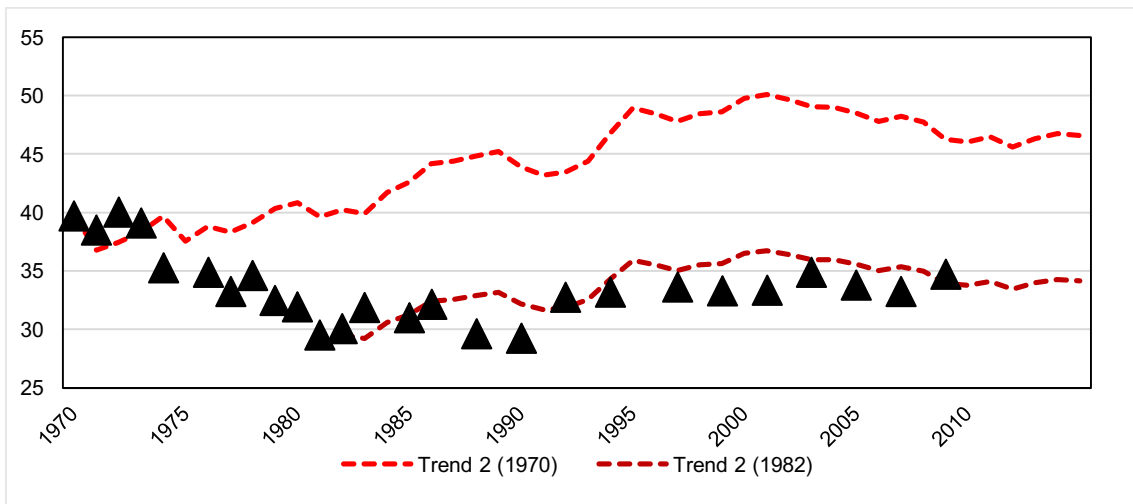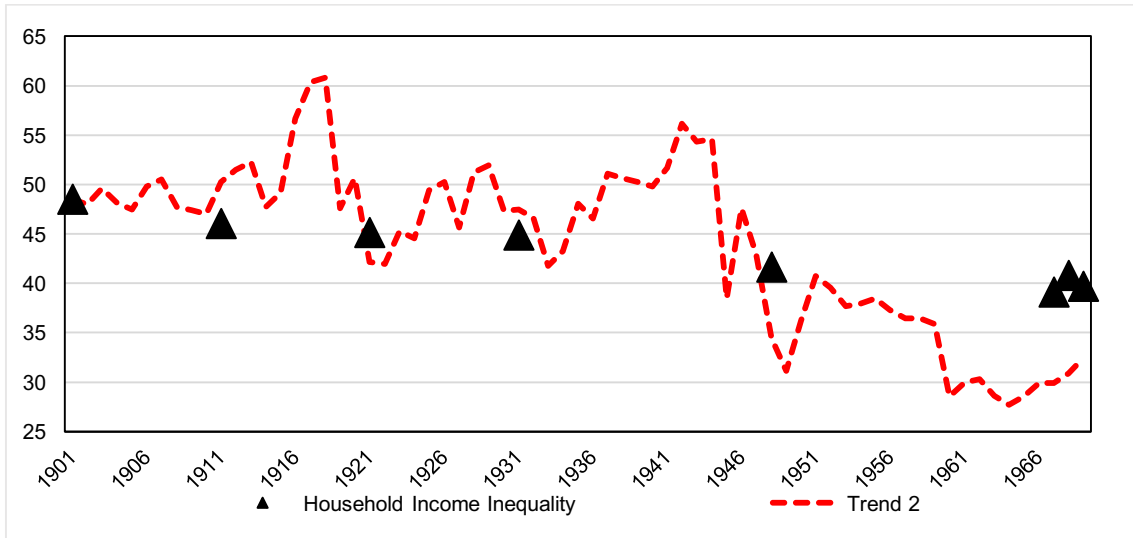
Sources: as in Figure 11 and Figure 16, with Ameco series, as in Figure 1, instead of Torrini (2015).

Fig. A 4 - WWI

Sources: gross labour share as in Figure 4; 'Without Government Sector' is computed by excluding public employees from the numerator, and the value added of the government sector from the denominator.