



BANCA D'ITALIA  
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(Occasional Papers)

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a comparison between euro area countries

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# LABOUR INCOME INEQUALITY AND IN-WORK POVERTY: A COMPARISON BETWEEN EURO AREA COUNTRIES

by Giulia Bovini\*, Emanuele Ciani\*, Marta De Philippis\* and Stefania Romano\*

## Abstract

We study inequality in gross labour income among the working-age population, comparing Italy to the other main euro area countries. We use EU-SILC data between 2008 and 2018, the longest period without time breaks. We show that inequality in individual labour income is higher in Italy than in France and Germany. This is mainly a consequence of the lower employment rate, i.e. of the higher share of working-age individuals with no labour income, rather than of wider earnings disparities among workers. Inequality in equivalised household labour income is also higher in Italy than in France in Germany because a lower employment rate translates into a larger share of single or no-earner households. In line with these findings, while in Italy low-earning workers are relatively few, they face a greater risk of poverty than in France or Germany, since they more often live in households where other members are not employed or have low-work-intensity jobs. These results stress the importance of jointly considering earnings and employment dynamics when analysing labour income inequality, low-pay work, and in-work poverty.

**JEL classification:** J21, J30, J82.

**Keywords:** working-age population, employment rate, inequality, in-work poverty.

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## 1. Introduction<sup>1</sup>

Real average earnings per employee have decreased in Italy since the mid-90s, while they have grown in other important euro area countries such as France and Germany (Torrini, 2023). In the private sector, this reduction has been particularly pronounced among low-paid employees, resulting in higher annual earnings inequality (Hoffmann et al., 2022; Depalo and Lattanzio, 2023).

Yet, for a comprehensive understanding of trends in labour income levels and inequality in Italy, it is essential to move beyond employees and observe the entire working-age population and their households (Atkinson and Brandolini, 2006; OECD, 2011; Salverda and Checchi, 2015; Garnero et al., 2022). This allows us to consider three specific features of the Italian context: a high share of self-employed; a low employment rate; and a large number of single-earner households. These three factors need to be analysed jointly with developments in employee earnings because these factors strongly affect the level and dispersion of labour income at the household level. Indeed, for most families, in turn, labour earnings are the prevalent source of total disposable income (Carta, 2020), which is what ultimately matters for analysing well-being.

To address these issues, this paper examines recent trends in the levels and dispersion of gross annual labour income among the working-age population using data from the EU-SILC survey for Italy and the other three main euro area countries: France, Germany, and Spain. We consider the period between 2008 and 2018 to avoid breaks in the series. Although the survey's time span is limited compared to other data sources, EU-SILC is the EU-wide reference household survey for calculating poverty and inequality indices across countries. Relative to social security administrative data on private sector employees that are increasingly used in the literature (e.g., Hoffmann et al. 2022; Depalo and Lattanzio, 2023; Bianchi and Paradisi, 2023), the advantage of EU-SILC is that it covers all workers (including public employees, the self-employed and, to some extent, irregular workers), besides including all working-age persons, regardless of their employment status, and their households. We can therefore provide comparable cross-country evidence taking into account all workers, the non-employed, and the household dimension. This allows us to assess the contribution to inequality in individual and equivalised household labour income of (i) the dispersion of earnings among workers, (ii) the employment rate, which determines the share of persons with zero earnings, and (iii) the family structure (i.e., how individuals group into households).

In what follows we consider as the working-age population *all* individuals aged 15-64 and we define workers as those with a strictly positive labour income and who have worked for more than one month in full-time equivalent (FTE) terms.<sup>2</sup> When not otherwise specified, we focus on real

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<sup>1</sup> We thank for their comments Andrea Brandolini, Roberto Torrini, Federico Cingano, Eliana Viviano, Francesca Carta, Domenico Depalo, Salvatore Lattanzio, Michael Förster, Sebastian Königs and Stefano Filauero; we also thank the Inequality team at the OECD Centre on Well-being, Inclusion, Sustainability and Equal Opportunity for help with the data. All errors are our own. The opinions expressed in this note do not necessarily represent the view of the Bank of Italy and the Eurosystem.

<sup>2</sup> Months of FTE employment are computed by combining self-reported information about the number of months spent in employment and about the type of employment (full-time or part-time) in each month. This measure has some limitations, as it fails to consider periods of non-employment shorter than one month and other margins of variations in hours worked, such as overtime and intensity of part-time work. This is particularly problematic for the

*annual* gross labour income calculated as the sum of employees' wages and self-employment cash income in the year.<sup>3</sup> We refer to it interchangeably as earnings or labour income. All values are adjusted for purchasing power parity.<sup>4</sup> When studying households, total income is equalised to take into account differences in the family structure.

Section 2 discusses the trends in average real labour income, highlighting how the self-employed contributed to the overall dynamics. In Italy, average labour income decreased between 2008 and 2018, as the drop observed during the double-dip recession (2008-2013) was only partially compensated by rising income levels during the subsequent recovery. The contraction was larger among workers (-8 per cent) than in the working-age population (-5 per cent), where it was cushioned by the positive contribution of employment growth from 2015. Trends were similar in Spain, while average income grew in France and Germany. As a result, disparities across countries widened, mirroring what happened to GDP. In Italy, the dynamics of average labour income were more strongly affected by trends among the self-employed, who account for a larger share of employment and experienced a more pronounced contraction in earnings.

Section 3 analyses cross-country differences in labour income inequality. In Italy, inequality among workers, as measured by the Gini index, increased between 2008 and 2018 driven by the stronger income drop for low earners. Inequality among working-age individuals had instead returned, by 2018, to the pre-crisis level, after temporarily rising during the double-dip recession. This decoupling reflects the fact that during the recovery employment growth was skewed toward low-paying jobs: while this increased the dispersion in earnings among workers, the rise in the number of earners simultaneously reduced inequality among the working-age population.

Overall, data on the year 2018 (the latest available) indicate that inequality among workers in Italy, despite being on the rise, remains not particularly high in international comparison: it is higher than in France, but similar to the level of Germany and well below that of Spain. This is true also when looking at the dispersion of FTE earnings, hence netting out disparities in work intensity among workers. However, inequality among working-age individuals is much higher in Italy than in France and Germany: this is mainly because the share of working-age individuals who do not earn any income remains higher in Italy than in the other two countries. Indeed, a

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self-employed, whose hours worked are more likely to vary over the business cycle, but who are not likely to report part-time work even during downturns. Nonetheless, this measure still captures important margins of variation of the extensive and intensive margin of work.

<sup>3</sup> As discussed by Brandolini et al. (2011) and Filauro and Fulvimari (2021), we focus on gross labour income because it is the only variable collected across all countries and over the entire period. Gross labour income includes gross employees' earnings (cash income, py010g, plus sickness benefits, py120g, and in-kind benefits in the form of company car, py021g) and self-employed' cash income (py050g), and it is gross of the personal income tax and social contributions paid by the employee. We include sickness benefits because some countries, noticeably Italy, do not report them separately but include them in the employee's cash income variable. We include also the availability of a company car, which is the only in-kind component that Eurostat also includes in household disposable income. Negative incomes are recoded to zero. The year refers to the period when income was earned (the calendar year before that of the survey). Self-employment earnings are typically reported less accurately, because of a higher tendency to under-reporting and an intrinsic difficulty in estimating these incomes (Brandolini, 2000).

<sup>4</sup> Absolute values are first deflated using the all-items HICP, base 2015 (Eurostat PRC\_HICP\_AIND table, extracted on 09/02/2023) and then for PPP, with EU27 2020 definition = 100 (Eurostat PRC\_PPP\_IND table, extracted on 09/02/2023).



decomposition of the Gini index reveals that in Italy the contribution of zero-earners to inequality in the working-age population is the largest among the four countries.

The dynamics of the employment rate hence play an important role in explaining both the within-country evolution of individual labour income inequality over time and the cross-country disparities. They also strongly affect the dispersion of equivalised household labour income, which is also higher in Italy than in France and Germany. This stems from dissimilarities in household work intensity, measured as the fraction of available time that working-age household members spend in employment. Italy has a larger share of medium-low work intensity families, largely consisting of single-earner households where the female adult partner or adult children are not employed.

Section 4 concludes with a focus on low-earning workers and individuals at risk of in-work poverty. In 2018, the share of Italian workers with earnings below 60 per cent of the median was relatively low (24 per cent, only larger than in France). The share of low earners, however, cannot be analysed separately from the employment rate: if employment mostly grows by adding lower-paid jobs, a country could at the same time have a higher share of low-earners but also a higher employment rate. This emerges when comparing Italy and Germany. The latter has a higher share of workers with low earnings than the former, because of the larger share of low-work-intensity jobs (in particular, the so-called “mini-jobs”). However, this comes together with a much higher employment rate in Germany.

The poverty risks associated with being a low earner are exacerbated when other household members do not work or are on a low-pay job, too. In Italy the share of employed individuals who are in-work poor because they live in households with low (less than 60 per cent of the median) total equivalised disposable income is higher than in France and Germany. This is again due to the larger incidence of single-earner and lower-work intensity households.

Overall, our findings uncover two important messages on the sources of labour income inequality among the working-age population in Italy, relative to other comparable European countries. At the individual level, work intensity has a strong impact on earnings inequality and on the probability of being a low earner. At the household level, the higher prevalence of single-earner households increases equivalised labour income inequality and implies that having low earnings exposes a larger fraction of workers to the risk of being in poverty. All in all, this note stresses that looking at workers’ earnings developments without taking into account the dynamics of the employment rate provides only a limited picture of inequality and poverty, particularly so in a country – like Italy – with a low employment rate in international comparison.

## **2. Trends in annual average labour income**

This section briefly describes the evolution of average real labour income in the four largest euro area countries between 2008 and 2018. We separately explore the earnings dynamics of employees and self-employed, assessing their relative roles.

Earnings developments need to be analysed against the backdrop of macroeconomic conditions and together with employment rates. The period 2008-2018 was an eventful decade that started with the onset of the Great Recession and ended shortly before the Covid-19 pandemic. When the financial crisis spread from the U.S. to Europe, all four European countries were in a positive

phase of their business cycle.<sup>5</sup> The Great Recession resulted in a contraction of GDP in all countries (Appendix Figure C.1, panel a), but the severity and persistence of the downturn were heterogeneous. In Germany and France, GDP returned to its pre-crisis level by 2011 and then continued to grow: in 2018 it was 13 and 10 per cent higher than in 2008, respectively, in the two countries. In Italy and Spain, on the other hand, the sovereign debt crisis that started in 2011 fuelled a double-dip recession: the cumulative fall of GDP was larger and the recovery started later, from 2014-15. As a result, in 2018 the Spanish GDP hovered at only 5 per cent above its pre-crisis level; in Italy, in 2018 it still stood at 3 per cent below its 2008 level.

Despite the partial recovery of GDP, in Italy the employment headcount bounced back to the pre-crisis level in 2018, a pattern that has been referred to as an “employment-rich recovery” (Bovini and Viviano, 2018; Appendix Figure C.1, panel b). During the recovery, employment growth was skewed towards low-skilled jobs (Adamopoulou et al., 2019; Basso, 2019) and the service sector, particularly in the Southern regions (Aimone Gigio and Camussi, 2022). In comparison, in 2018 the employment headcount in Spain had not yet reached its pre-crisis level, despite the full recovery of GDP. Employment in France and Germany grew throughout the decade. The Italian 15-64 employment rate, however, remains by far the lowest among the four countries: in 2018 it was 58.5 per cent in Italy, against 74.9 per cent, 66.1 per cent, and 62.4 per cent in Germany, France, and Spain, respectively. This holds also when looking at the share of individuals working more than one FTE month in the year, which is the concept of employment used in our analysis.

With these developments in mind, panel a of Figure 1 shows that during the double-dip recession the disparities between countries in average labour income among workers widened, mirroring what happened to GDP. In Italy and Spain average earnings decreased, whereas in France and Germany they modestly increased. The subsequent recovery phase only partially mitigated these differences. In 2018, the annual average income for Italian and Spanish workers had not recovered to the pre-crisis level (-8 per cent and -5 per cent, respectively), while in France and Germany it stood at 8 per cent and 13 per cent above the 2008 level, respectively.<sup>6</sup>

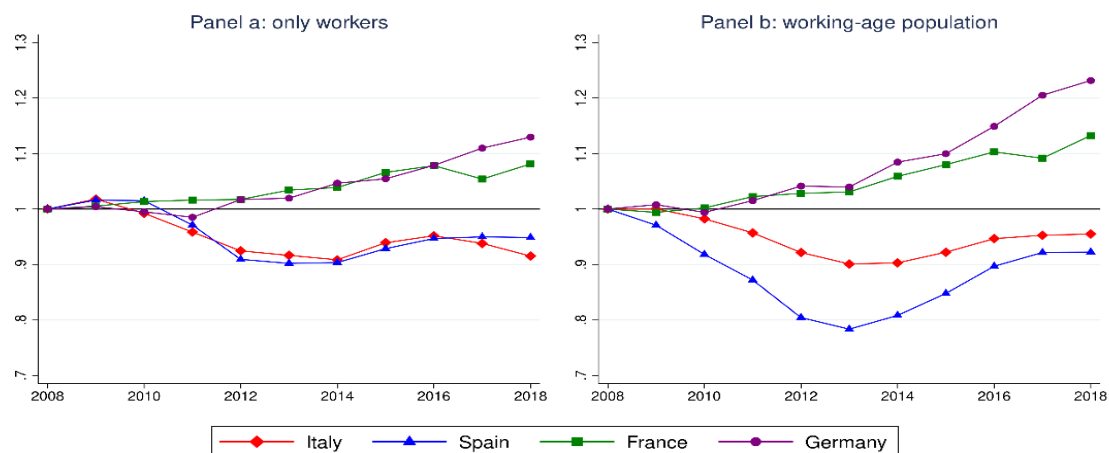
The patterns are similar if we consider the entire working-age population, but some differences emerge due to the underlying employment dynamics (Figure 1, panel b). In Italy, employment growth during the recovery translated into a stronger bouncing back of average income levels, which in 2018 stood 5 per cent below the pre-crisis level (as opposed to -8 per cent among workers). In Spain, the contraction during the double-dip recession was larger, as the employment rate fell sharply. In the same period, employment growth also made positive trends in France and Germany more pronounced.

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<sup>5</sup> In 2007 year-on-year GDP growth ranged from 1.5 per cent in Italy to 3.6 per cent in Spain. In Italy, the employment rate reached its record-high level in 2008, although it remained lower than that of Germany, France, and Spain.

<sup>6</sup> All in all, average earnings among workers broadly followed the same pattern observed for employees in the National Accounts (Torrini, 2023).

**Figure 1 Average annual labour income among workers and the working-age population (population 15-64; index, 2008=1)**



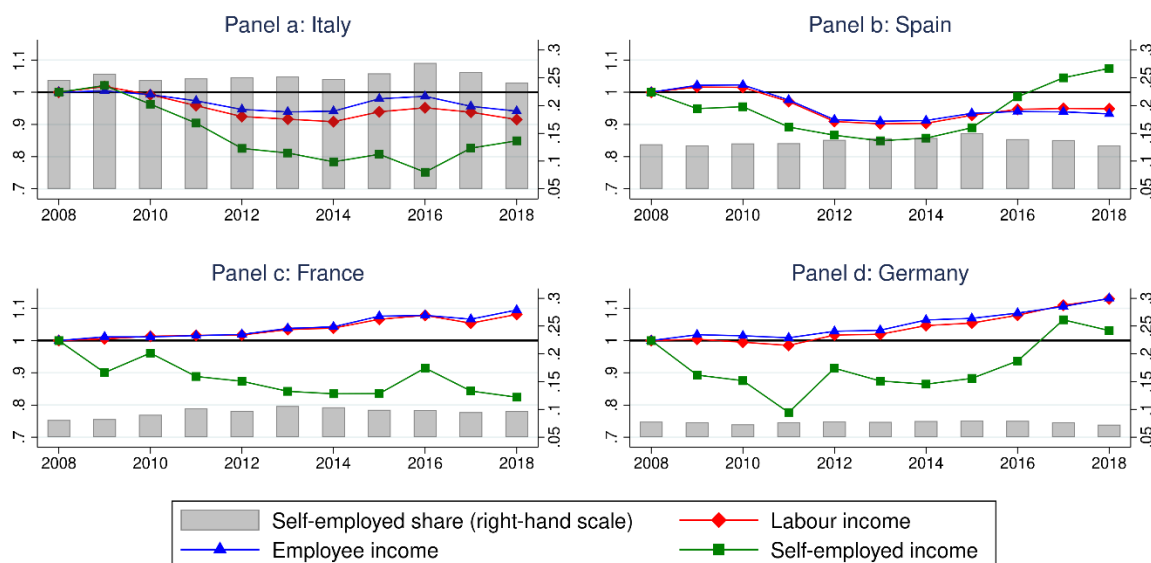
Note: Labour income includes gross employees’ earnings (including sickness benefits and in-kind benefits in the form of company car) and self-employed cash income. Negative incomes are recoded to zero. The year refers to the period when income was earned (the calendar year before that of the survey). Absolute values are first deflated using the all-items HICP, base 2015 (Eurostat PRC\_HICP\_AIND table, extracted on 09/02/2023) and then for PPP, with EU27 2020 definition = 100 (Eurostat PRC\_PPP\_IND table, extracted on 09/02/2023). We consider as workers the individuals with a strictly positive labour income and who have worked more than one month in full-time equivalent terms (i.e. taking into account the incidence of part-time work). All the tables and figures follow the same definitions unless stated otherwise.

Source: own calculations on EU-SILC.

In Italy, trends are strongly affected by the high-level of self-employment (Figure 2): while falling in number, self-employed workers still account for approximately one-fourth of total employment, much more than in France, Germany and Spain (where they consist of approximately one-tenth of workers on average).<sup>7</sup> Moreover, self-employed workers in Italy experienced a particularly strong negative income shock during the double-dip recession, and the following recovery was very modest: their average labour income was down by 15 per cent in 2018 relative to 2008. The trend in self-employed income was similar in France, but mattered less for the overall labour income dynamics because of its much lower weight. Conversely, in Spain and Germany income from self-employment fell during the recession but later grew and surpassed its pre-crisis level by 2018.

<sup>7</sup> The debate about why self-employment is so widespread in Italy is still open. Torrini (2002) indicates that countries with tight regulation, heavy taxation, and a high corruption index, like Italy, have higher than average self-employment rates. Also Parker and Robson (2004) and Aidis et al. (2012) stress the relevant role of the tax and transfer system, of the government size, and of the extent of corruption.

**Figure 2 Average annual labour income among all workers and by employment type (population 15-64; index, 2008=1 on the left axis and shares on the right axis)**



Note: The definition of labour income and of employed individuals is the same as that reported in the footnote of Figure 1.

Source: own calculations on EU-SILC.

### 3. Labour income inequality

In this section, we first describe trends at different percentiles of individual labour income across workers. We then compute a synthetic measure of dispersion – the Gini index – both for workers only and for the entire working-age population. Last, we explore disparities in equivalised household labour income.

#### 3.1. Inequality in individual labour income

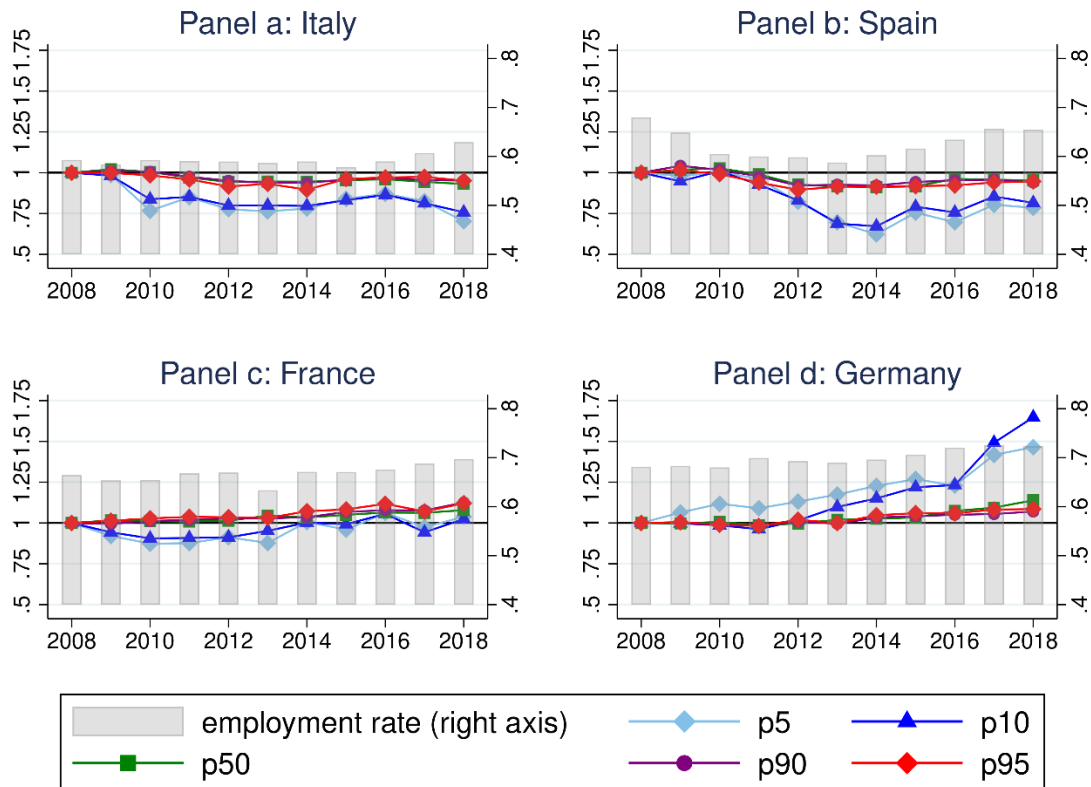
##### *Trends in the percentiles of labour income among workers*

Going beyond the average, trends were markedly different for low- and high-income earners.<sup>8</sup> In Italy and Spain, the drop was larger in the lower part of the income distribution than in the middle and upper part (Figure 3, panels a and b). In Italy, the contraction in labour income for low-earners was less marked than in Spain during the double-dip recession<sup>9</sup>, in line with the less severe macroeconomic downturn, but the subsequent bouncing back was more moderate and the recovery of the lowest income percentiles halted in 2016, since the employment growth was driven by an increase in low-paid jobs, typically those with lower work intensity such as fixed-term and part-time contracts (Depalo and Lattanzio, 2023).

<sup>8</sup> See Filaurio and Fulvimari (2021) and Raitano (2016) for a broader analysis of the contribution of labour income to overall inequality in EU countries during and after the Great Recession.

<sup>9</sup> Results from Arellano et al. (2022), based on administrative archives for employees only, display a similar marked drop in Spain. Moreover, both in our analysis and in theirs, the contraction was much larger among men.

**Figure 3 Labour income trends at different percentiles of the distribution among workers, and share of workers in the population (population 15-64; index, 2008=1 on the left axis and shares on the right axis)**



Note: The definition of labour income and of employed individuals is the same as that reported in the footnote of Figure 1.

Source: own calculations on EU-SILC.

Conversely, in France and Germany, the trends were less adverse for low-paid workers. In France, lower percentiles initially bore a small negative shock, but they recovered quite steadily afterward. Consequently, the overall trend from 2008 to 2018 was relatively similar across percentiles (Figure 3, panel c). In Germany, low-pay workers experienced stronger earnings growth, in particular since the introduction of the minimum wage in 2015 (Figure 3, panel d).<sup>10</sup> In contrast, the highest percentiles exhibited only a modest increase. In both countries, the more favourable dynamics of the lowest percentiles in comparison to Italy are partly due to a smaller increase in part-time and fixed-term contracts over the decade.<sup>11</sup>

<sup>10</sup> Results from Drechsel-Grau et al. (2022), using administrative data on the universe of private sector employees in Germany, also show a marked increase in the 10<sup>th</sup> percentile of the earnings distribution between 2008 and 2018, albeit in their case it initially slightly dropped (see the Appendix of their work for the results pooling males and females). They show that the positive trend was driven by women, who displayed a more positive and pro-low-income dynamic during the period. EU-SILC data also confirm a more positive performance for women.

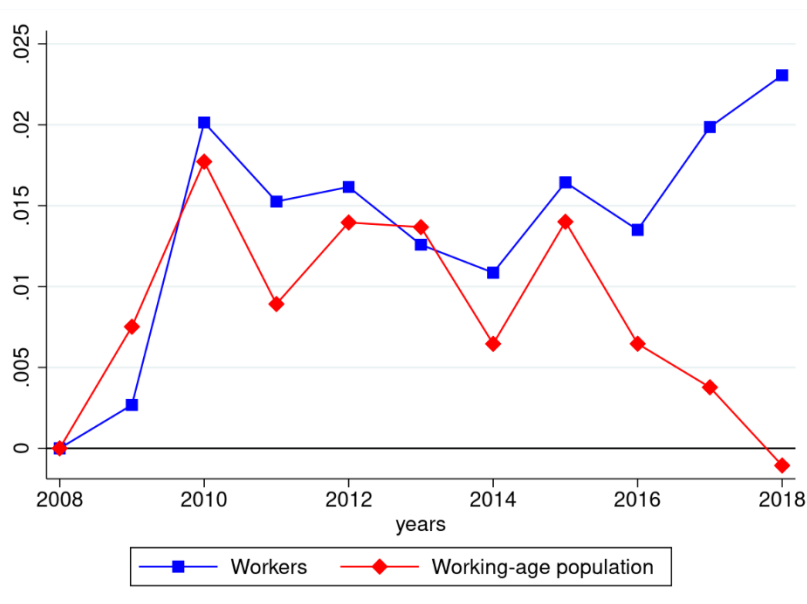
<sup>11</sup> According to Eurostat Labour Force Survey data, in France the share of part-time on total employment increased by 1.5 p.p. between 2008 and 2018; the share of temporary employees increased by 1.3 p.p.. Part-time contracts were already a large share of total employment in 2008 in Germany (25.8 per cent of total employment according to Eurostat Labour Force Survey data), and the increase was relatively small in 2018 (2.3 p.p.); the share of fixed-term

### *Trends in the Gini index among workers and the working-age population*

In Italy, the drop in the lowest percentiles of labour income between 2008 and 2018 led to an overall increase in inequality across workers, as captured by the Gini index. The index spiked in 2010 and then hovered around 1.5 p.p. above the pre-crisis level (blue line, Figure 4).<sup>12</sup> Since 2016 it started rising again, and in 2018 it exceeded the 2008 level by 2 p.p.. These results are in line with findings from Depalo and Lattanzio (2023) on the universe of private sector employees.

Inequality among working-age individuals, by contrast, returned to the pre-crisis levels in 2018 (red line, Figure 4). This is yet another consequence of the growing employment rate, which lowered the fraction of individuals with no labour income. This result stresses the importance of jointly considering inequality among workers and the employment rate, as the latter is usually a very relevant determinant of overall inequality in the working-age population (Carta, 2020).

**Figure 4 Inequality in individual labour income, Italy (population 15-64; Gini index, difference from the 2008 level)**



Note: The definition of labour income and of employed individuals is the same as that reported in the footnote of Figure 1.

Source: own calculations on EU-SILC.

Figure 5, panel a extends the analysis of the dynamics of inequality in the working-age population to the other three countries. Spain followed a pattern similar to Italy: inequality increased during the double-dip recession and returned to the pre-crisis level in 2018; however, the spike during the recession was much larger in Spain due to the steeper decline in the employment rate. Conversely, because of the differences in the macroeconomic conditions and the institutional setting discussed above, inequality decreased in Germany and, to a smaller extent, in France,

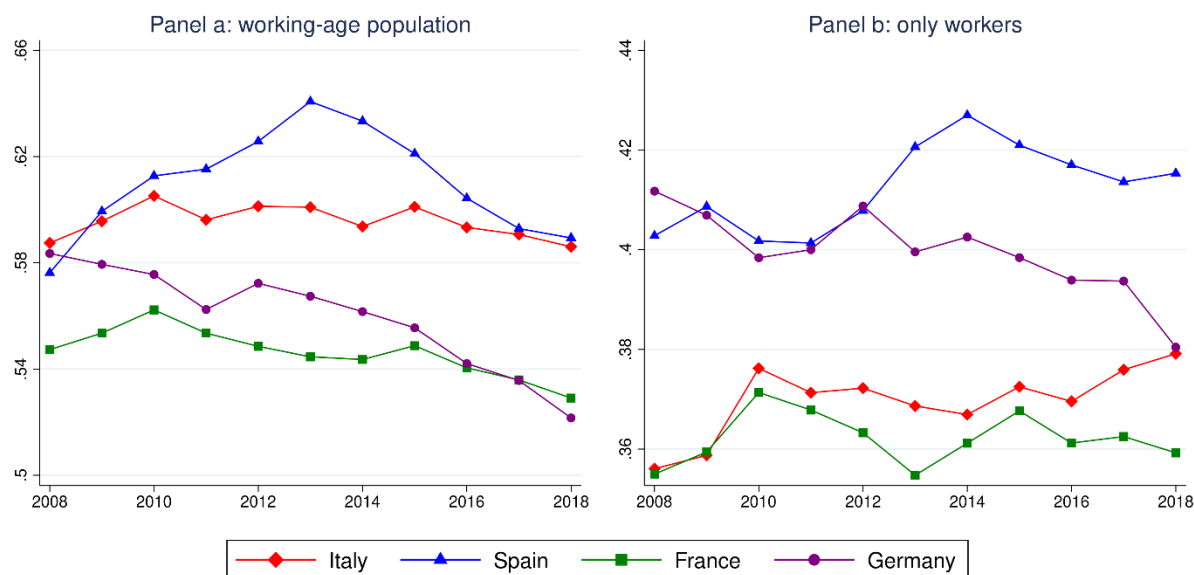
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contracts decreased from 13.0 to 11.3 per cent. Over the same period, in Italy part-time and fixed-term contracts increased by 4.2 and 3.2 p.p., respectively.

<sup>12</sup> The Gini index ranges from 0 (perfect equality) to 1 (a single unit earns all the national income).

where it was already the lowest. As a result, in 2018 the Gini index was 6 p.p. higher in Italy and Spain than in France and Germany (see also Figure 6, panel e).<sup>13</sup>

**Figure 5 Inequality in individual labour income among workers and in the working-age population, main euro area countries (population 15-64; Gini index)**



Note: The definition of labour income and of employed individuals is the same as that reported in the footnote of Figure 1.

Source: own calculations on EU-SILC.

For Italy, the greater inequality is largely traceable to the larger incidence of non-employed individuals. Indeed, when looking at the dispersion of earnings among workers only (Figure 5, panel b and Figure 6, panel a), in 2018 the Gini index in Italy – despite having increased – was much lower than in Spain, similar to Germany (see also OECD, 2011, and Brandolini et al., 2011)<sup>14</sup> and only slightly higher than in France.<sup>15</sup>

<sup>13</sup> The distance with France increases if we focus only on individuals aged 18-59 because in France many individuals retire from age 60 and therefore have zero labour income (see Figure 6, panel f).

<sup>14</sup> Brandolini et al. (2011), focusing on employees only in 2007, show that the dispersion of both annual earnings and FTE monthly earnings is not particularly strong in Italy compared to other EU countries. They find a similar level of inequality in Italy compared to France, but this is consistent with our findings because the inclusion of the self-employed increases earnings dispersion in Italy (see Appendix B).

<sup>15</sup> The more compressed annual labour income distribution in France is also due to a smaller difference between the FTE earnings of full-time, full-year workers and those working less than full-year, full-time. Indeed, in all countries, those working more also tend to earn higher FTE income (see Table C.1; see also Depalo and Lattanzio, 2023, for an analysis of Italian data). This positive correlation between work intensity and FTE labour income exacerbates inequality in annual labour income because it widens the disparity associated with working less time (Checchi et al., 2022). However, the ratio between FTE earnings of full-time, full-year workers and the others is smaller in France than in the other three countries. This is consistent with findings from Checchi et al. (2022), who highlight how the positive and stronger correlation between hours of work and hourly wage increases inequality in annual earnings in Germany versus France. The authors, instead, find that the correlation between hours of work and hourly wage is close to zero in France at the end of 2010s, rather than positive. It is beyond the scope of the present work to

The differences across countries in income inequality are even more nuanced, and the relative position of Italy further improves, when focusing on employees only (Figure 6, panel b): in 2018 Italy and France were the two countries with the lowest Gini index (0.35), slightly smaller than in Germany (0.36) and much more contained than in Spain (0.42). In Italy, self-employed workers matter more for the overall level of earnings dispersion than in the other considered economies: while in all four countries self-employment increases the overall earnings dispersion, as these workers usually display a more dispersed earnings distribution, in Italy their role is more relevant as they represent a larger share of overall employment. Appendix B provides further details on the contribution of employees and self-employed to inequality among workers.

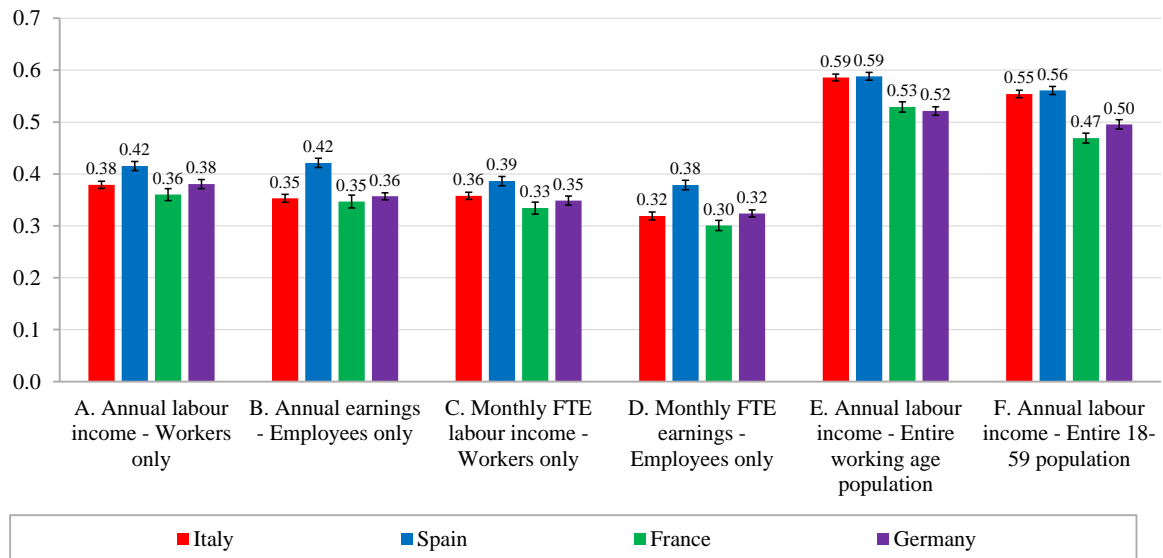
Inequality among workers in Italy in 2018 was not particularly high in international comparison even when looking at FTE labour income, which also accounts for differences in work intensity (Figure 6, panel c and d). Both for all workers and for employees only, the Gini index for FTE labour income for Italy is similar to that of Germany and below that of Spain. Only France has a more compressed distribution, probably because of the institutional setting: a strong bargaining system (Du Caju et al., 2008; Banque de France, 2018); and a more generous minimum wage than in the average of OECD countries (OECD, 2022; Grünberger et al., 2022). Notice however that, in a comparison with a broader set (24) of European countries (see Brandolini et al., 2011), the dispersion of FTE earnings in France is one of the lowest. The cross-country comparison of FTE earnings has to be interpreted with some caution, as our measure of work intensity in some cases displays different dynamics than those observed in National Accounts data (see Appendix A). For this reason, we refer to Depalo and Lattanzio (2023) for an extensive account of the importance of the intensive margin for inequality among private sector employees in Italy: their analysis is based on administrative records from INPS, which better capture hours worked. Nonetheless, this evidence corroborates that the dispersion of workers' earnings is not the main driver behind the higher level of inequality among the working-age population recorded in Italy.

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understand the different results, which is likely because our measure of work intensity only captures a part of the variability in hours of work (see Section 1).



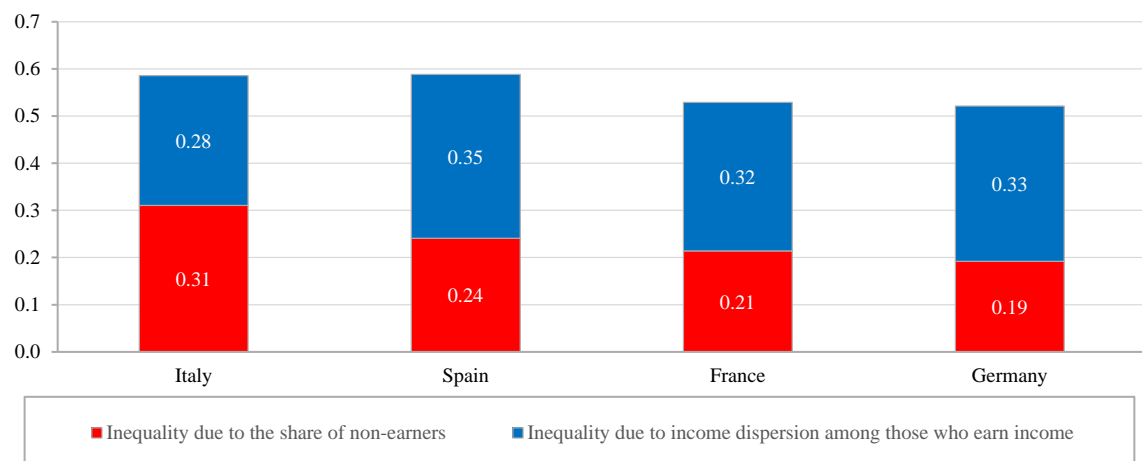
**Figure 6 Inequality in individual labour income (Gini index, population 15-64, year 2018)**



Note: The definition of labour income and of employed individuals is the same as that reported in the footnote of Figure 1. The black bands are 95% confidence intervals, calculated using the Jackknife estimator proposed by Karagiannis and Kovacevic (2000) as implemented by Sajaia (2007).  
 Source: own calculations on EU-SILC.

To sum up, Figure 7 decomposes the Gini index into the part explained by the dispersion of earnings among workers and the part explained by disparities in the share of individuals with no income. In Italy, the latter component provides the highest contribution to overall inequality (31 p.p.) among the four countries (24 in Spain, 21 in France, and 19 in Germany).<sup>16</sup>

**Figure 7 Contribution of non-employment to individual labour income inequality (population 15-64; year 2018, Gini index)**



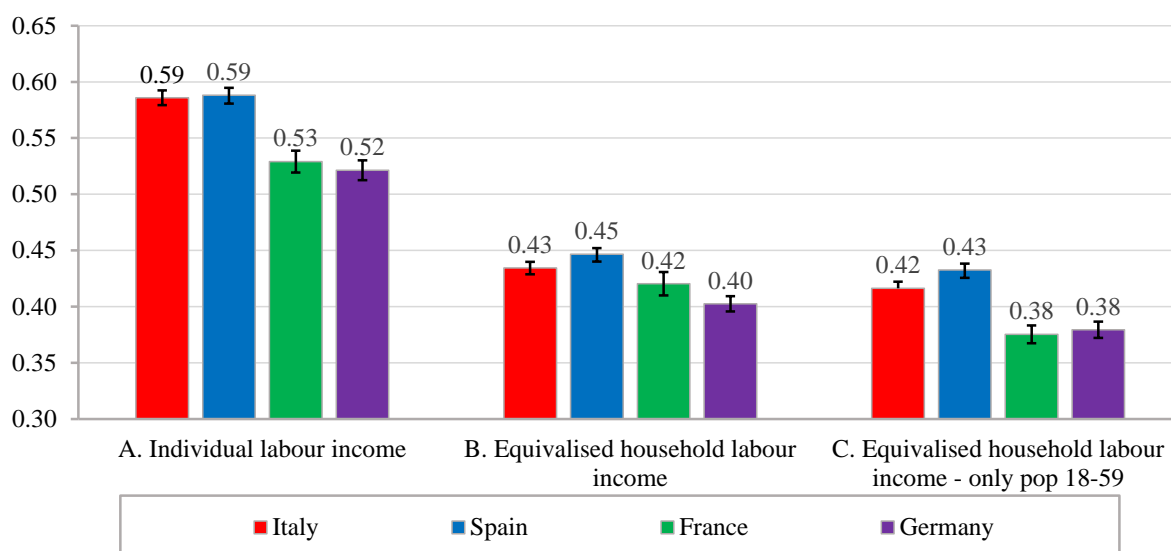
<sup>16</sup> The fraction of non-earners in EU-SILC is not equivalent to the complement of the employment rate usually calculated based on the European Labour Force Surveys (LFS). The reason is that the fraction of non-earners in EU-SILC is calculated with reference to the entire year, while the employment rate in the LFS refers to the fraction of people who have worked during the reference week (plus those who had a job but were temporarily absent for a short period), averaged across the entire year.

Note: The definition of labour income and of employed individuals is the same as that reported in the footnote of Figure 1. The Gini index is decomposed as  $(1 - e) + e \times Gini_{\text{earners}}$  where  $e$  is the share of earners and  $Gini_{\text{earners}}$  is the Gini calculated only among earners (Atkinson and Brandolini, 2006; Carta, 2020).  
Source: own calculations on EU-SILC.

### 3.2. Inequality in equivalised household labour income

For a comprehensive assessment of cross-country disparities in labour income inequality among working-age individuals, it is also important to take into account differences in family structure. Moving from individual to household income, the Gini index decreases in all countries, due to income pooling among family members (Figure 8).<sup>17</sup> Income pooling is especially relevant for non-earners in households where someone else works, as their earnings are zero but their pooled household labour income is positive.

**Figure 8 Inequality in individual and equivalised household labour income (population 15-64, year 2018; Gini index)**



Note: The definition of labour income is the same as that reported in the footnote of Figure 1. Equivalised household labour income is the sum of individual labour incomes of all household members (of any age), expressed in equivalised terms using the OECD modified equivalence scale. The reference is always the individual. The black bands are 95% confidence intervals, calculated using the Jackknife estimator proposed by Karagiannis and Kovacevic (2000) as implemented by Sajaia (2007).  
Source: own calculations on EU-SILC.

The household structure and the relevance of income pooling differ across countries (Table 1). Italy and Spain have a higher share of working-age individuals living in households composed of two or more adults, and a lower share of single-person households without children (panel a). In these countries, it is more likely to find adult children living with their parents, due to a delayed

<sup>17</sup> Equivalised household labour income is the sum of individual income of household members of any age, adjusted for the OECD modified scale of equivalence. The analysis, however, focuses only on the households of working-age individuals, consistently with the rest of the chapter.

exit from the nest compared to France and Germany (Eurostat, 2018).<sup>18</sup> Furthermore, among households with at least two adults, Italy has the highest share of individuals living in families with only one or zero earners (45 per cent in Italy, against 38 in Spain, 35 in France, and 29 in Germany; panel b): the difference stems predominantly from the share of single-earner households. Non-earners living in single-earner households are predominantly women and, particularly in Italy and Spain, adult children still living with their parents (panel c).<sup>19</sup> These findings are in line with the existing literature; see for instance Mocetti et al. (2011).

Even if cross-country differences are milder when disparities are assessed on equivalised household labour income, inequality in the working-age population remains higher in Italy (0.43) and Spain (0.45) compared to France (0.42) and Germany (0.40).<sup>20</sup> The differences between the two groups of countries are greater when focusing only on individuals aged 18-59, because in France a substantial group of individuals aged 60-64 are retired, and therefore do not earn any labour income.

In line with the results of Table 1, in Italy the higher inequality in equivalised household labour income is driven by middle-to-low-income households rather than by the very low-income ones (Figure 9). Adjusting for purchasing power, the 10<sup>th</sup> percentile of the equivalised household labour income distribution in Italy is comparable to that of the other countries. However, in France and Germany, there is a sharp increase in household labour income starting from the 20<sup>th</sup> percentile, whereas income levels remain relatively low in Italy. Hence, although the ratio between the 90<sup>th</sup> and the 10<sup>th</sup> percentile is lower in Italy (26.0 times) than in France and Germany (42.6 and 40.7, respectively), the opposite is true for the ratio between the 90<sup>th</sup> and the 20<sup>th</sup> percentile (5.7 in Italy versus 5.2 e 4.7 in the other two countries) and between the 90<sup>th</sup> and 50<sup>th</sup> percentile (2.3 versus 2.1).

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<sup>18</sup> This delayed nest leaving depends on multiple factors, including worse outside options in terms of labour market and housing prospects, better standard of living in multi-generation households (Mencarini, Pailhé, Solaz, & Tanturri, 2017), and stronger preferences for co-residence (Manacorda & Moretti, 2010).

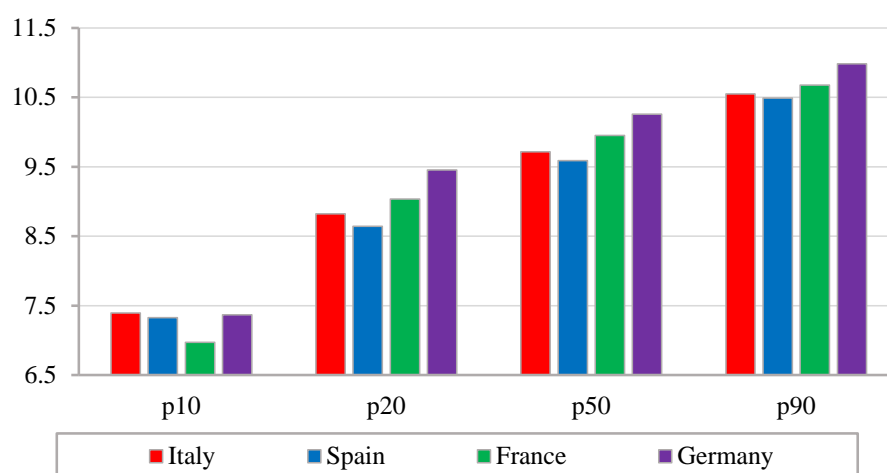
<sup>19</sup> Since this analysis is based on labour income, we do not consider pension income in the table. These older individuals are likely in any case to receive a pension benefit, and to have a non-zero disposable income.

<sup>20</sup> The dynamic of total household income inequality over time in Italy has been analysed by Brandolini et al. (2018). They document that it increased during the double-dip recession but to a much lower extent than what was observed in the aftermath of the 1992 currency crisis. The increase in the absolute poverty rate over 2008-2014 was however more marked. They conclude that the modest increase in inequality therefore reflects a general fall of household income along the entire distribution. Carta (2020) shows that equivalised household labour income inequality increased between 2008 and 2014, and decreased afterwards. The pattern in SILC, not shown in this paper, is similar.

**Table 1 Population 15-64 by household characteristics (year 2018; percentages)**

	Italy	Spain	France	Germany
<i>Panel a. Distribution of population 15-64 by household (hh) type</i>				
Single person hh without dependent children	12	9	17	20
2 adults without dependent children	17	20	25	29
2+ adults without dependent children	21	20	6	8
Single person hh with dependent children	4	3	7	5
2 adults with dependent children	34	34	40	32
2+ adults with dependent children	12	14	4	5
Other types	0	0	2	1
Total	100	100	100	100
<i>Panel b. Distribution of population 15-64 by number of earners (households with 2+ adults only)</i>				
0	10	10	9	6
1	35	28	24	23
2+	55	62	66	71
Total	100	100	100	100
<i>Panel c. Characteristics of non-earners in single-earners households (15-49; households with 2+ adults only)</i>				
Share of women	72	67	64	69
Share who are children of other hh members	48	49	37	30
<i>Panel d. Characteristics of non-earners in single-earners households (50-64; households with 2+ adults only)</i>				
Share of women	76	63	47	60
Share who are children of other hh members	3	4	1	0

Source: own calculations on EU-SILC.

**Figure 9 Percentiles of the logarithm of equivalised household labour income (year 2018; log of euro PPP 2015)**

Note: The definition of labour income is the same as that reported in the footnote of Figure 1. The logarithm is used to facilitate proportional comparisons because the difference in logarithms is approximately equivalent to the percentage difference (the exact percentage difference is the exponential of the logarithmic difference minus 1; for instance, a difference of 0.5 in logarithms is equivalent to a 65% difference).

Source: own calculations on EU-SILC

In turn, the lower level of labour income for middle-to-low-income households in Italy can be mainly attributed to the higher share of individuals living in households with medium-low work

intensity, because of the high presence of single-earner families (as emerges from Table 2).<sup>21</sup> As expected given the low female employment rate, the strongest difference is in the work intensity of women. A counterfactual simulation shows that if the Italian SILC sample aged 18-59 is re-weighted so that the distribution of household work intensity equals the one observed in the German SILC sample, the Gini index would drop by 2.9 p.p., closing more than 80 per cent of the distance with Germany and 70 per cent of that with France.<sup>22</sup> This is driven by female underemployment: if the reweighting is done only to bring female work intensity to the German levels, the result is virtually the same.<sup>23</sup> The same mechanism also explains why Italian Southern regions, where single-earner families are more prevalent, show a much higher equalised household income inequality than Northern regions (Ciani and Torrini, 2019).

**Table 2 Share of individuals by household work intensity (population aged 18-59, year 2018; percentages)**

	IT	ES	FR	DE
<i>Panel a. Work intensity of all 18-59 household (hh) members (all population)</i>				
Very low household work intensity (less than 20% of available time)	11	11	8	8
Medium-low household work intensity (between 20 and 50% of available time)	27	24	16	17
Medium-high household work intensity (more than 50% of available time)	62	65	76	75
<i>Panel b. Work intensity of female 18-59 hh members (only those living in hh with at least one woman 18-59)</i>				
Very low household work intensity (less than 20% of available time)	31	25	15	15
Medium-low household work intensity (between 20 and 50% of available time)	7	7	4	4
Medium-high household work intensity (more than 50% of available time)	62	68	80	80
	100	100	100	100
<i>Panel c. Work intensity of male 18-59 hh members (only those living in hhs with at least one man 18-59)</i>				
Very low household work intensity (less than 20% of available time)	10	12	8	7
Medium-low household work intensity (between 20 and 50% of available time)	6	7	5	3

<sup>21</sup> Italy has a significantly larger fraction than Germany and France of individuals living in households where working-age members are employed for 20-50 per cent of their total available time during the year. The share of individuals living in households with very low work intensity (less than 20 per cent of available time) is also higher in Italy, but the difference with France and Germany is much smaller.

<sup>22</sup> The reweighting is done by calculating a propensity score for being in the German sample through a Probit regression including dummies for working intensity (defined by Eurostat and calculated as the fraction of total combined work-time potential that adult members spent working during the year) corresponding to the values 0, (0,1], (0.1,0.2],...,(0.9,1), 1. This simple reweighting exercise does not keep other household characteristics fixed and therefore should be interpreted mostly as an accounting exercise to evaluate the role of a specific variable.

<sup>23</sup> The reweighting is done through a Probit regression including dummies for the work intensity (defined by Eurostat and calculated as the fraction of total combined work-time potential that adult members spent working during the year) of female household members corresponding to the values 0, (0,1], (0.1,0.2],...,(0.9,1), 1; the work intensity of female household members is calculated as the FTE months in employment divided by 12 and averaged across the individuals aged 18-59, excluding students up to age 24 (students are those who, during the income reference year, studied at least one month and more months than they spent in employment). This simple reweighting exercise does not keep other household characteristics fixed; however, the reweighting has only minimal effects on the distribution of male components' work intensity.

Medium-high household work intensity (more than 50% of available time)	85	81	87	91
	100	100	100	100

Note: Household work intensity is defined by Eurostat and calculated as the fraction of total combined work-time potential that adult members (those aged 18-59, but excluding students aged 18-24) spent working during the income reference year. The calculation considers the number of months worked and adjusts for part-time by imputing the number of part-time (those recorded in the survey for those still working part-time; calculated as average by sex and age cells for those who do not) and dividing by 35. See [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Persons\\_living\\_in\\_households\\_with\\_low\\_work\\_intensity](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Persons_living_in_households_with_low_work_intensity). Source: own calculation on EU-SILC.

#### 4. Low-earning workers and in-work poverty

Lastly, we focus on workers in the bottom part of the labour income distribution (low-earnings workers), which we define as those earning less than 60 per cent of the median individual annual labour income in a given year. Our measure of low-earners is based on annual labour earnings among all workers rather than on hourly wages among employees only. Similarly to Garnero et al. (2022), we opt for a measure similar to the one used to define in-work poverty, which we will discuss afterward.<sup>24</sup> We nevertheless show how the distribution of work intensity affects the incidence of low-paid workers in the different countries.

Being low-earners poses a threat to well-being if income pooling from other members of the household is insufficient to ensure adequate standards of living and the tax-benefit system does not provide an adequate safety net.<sup>25</sup> The risk of in-work poverty – defined as working and still living in a household with equivalised disposable income below 60 per cent of the median<sup>26</sup> – therefore materializes when individuals with low earnings live in poor families.<sup>27</sup> In this section, we discuss differences across countries in these measures and we link the results to the distribution

<sup>24</sup> As discussed by Boushey et al. (2007, p. 2), “[...] there is no precise, universally accepted definition of low-wage work.” One of the most common approaches (the “social-inclusion approach”) is to identify a threshold, based on the overall distribution of earnings, below which workers are defined as low earners; this is similar to the approach used to measure relative poverty. However, while we aim at studying the determinants of annual labour income across all workers, most available measures focus on hourly, or full-time equivalent, wages for subgroups of employees. For instance, the measures developed by Eurostat and the OECD only consider employees in the private sector and use as the reference threshold two-thirds of the median hourly wage (Eurostat) and of the median monthly wages (OECD). Moreover, Eurostat considers the hourly wages of all employees in firms with at least 10 employees, while the OECD refers to full-time employees only. Overall, these definitions of low-wage employees adjusted for hours worked rank Italy as one of the countries in Europe with the lowest share of low-paid workers, consistent with our findings.

<sup>25</sup> Disposable income includes all sources of income, not only that earned in the labour market, and is affected by the progressivity of the system of taxes and transfers. Raitano (2016) shows however that labour income (employment and self-employment) has by far the largest contribution to inequality in total disposable income; in 2011 it amounted to 90 per cent of total inequality in the Nordic countries, 63 per cent in the Continental countries and 87 per cent in the Southern countries. Similarly, Carta (2020) shows that, for households without retirees and where the reference person is between 15 and 64 years old, labour income represents in Italy 80 per cent of disposable income.

<sup>26</sup> The 60 per cent of the median of equivalised disposable income corresponds to the poverty line used by Eurostat.

<sup>27</sup> Household disposable income is considered low if it is below 60 per cent of the median, as per the definition of in-work poverty used by Eurostat in official statistics. While the Eurostat definition includes only workers with at least 7 months of employment in the year, consistently with the rest of the chapter we consider workers with more than 1 month of FTE employment in the year. We prefer to include also workers with lower work intensity because as discussed work intensity is a main determinant of the risk of being low earner (see also Garnero et al., 2022).

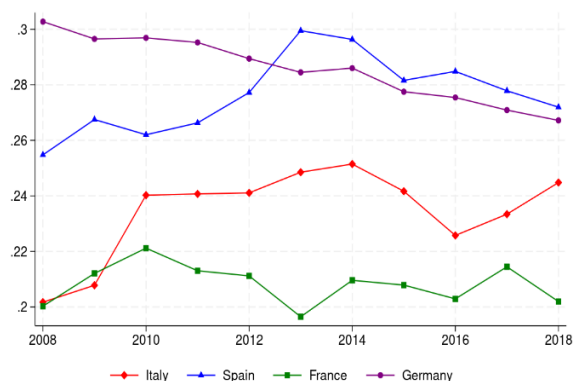
of employment rates, or more in general to work intensity, both at the individual and at the household level.

#### 4.1. Low-earning workers

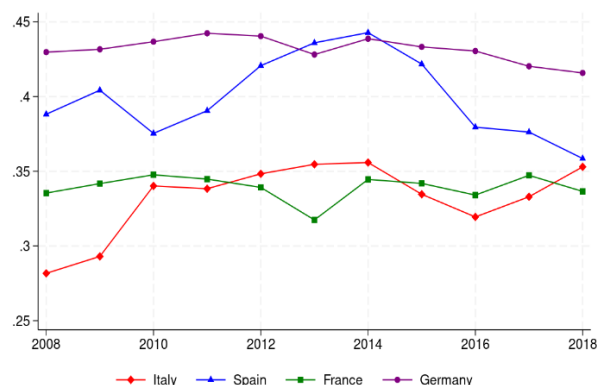
Relatively to the other main euro area countries, Italy does not have a particularly high share of low-earning workers (see also D’Amuri, 2017, and Lucifora et al. 2005), though it grew by about 5 p.p. between 2008 and 2018 (Figure 10, panel a, and Garnero et al. 2022). In 2018 the share of workers earning less than 60 per cent of the median annual labour income in Italy was 24 per cent, lower than in Germany and Spain (27 per cent), but higher than in France (20 per cent). The growth observed in Italy is slightly stronger (by 7 p.p.) if the threshold for defining a low-earning worker is calculated only on full-time, full-year workers. Furthermore, with this definition, the share is similar in Italy and France because the latter has a larger share of workers who are employed part-time or less than the entire year.

**Figure 10 Share of low-earning workers (population aged 15-64)**

Panel a. Main definition: Workers with annual labour income below 60% of the median calculated across all workers



Panel b. Alternative definition: Workers with annual labour income below 60% of the median calculated across full-time, full-year workers



Note: Low-earning workers are those with individual annual labour income below 60% of the country-specific median, calculated only among workers (defined as reported in the footnote of Figure 1).

Source: own calculations on EU-SILC.

Table 3 describes the characteristics of low-earning workers in the four countries considered. Their incidence is higher among women (because of the gender wage gap and a higher share of part-time contracts), among young individuals aged 15-34, and among immigrants, because of their lower seniority and their more discontinuous careers. On average, university graduates have a much lower risk of being low earners, although in Italy this gradient is weaker than in the other countries.

Employees on fixed-term contracts are much more likely to be low earners (55 per cent in Italy) than those on permanent contracts (17 per cent), while the self-employed stand in the middle (27 per cent). Across sectors, the highest share of low earners is in agriculture and in “other services”, which is mostly composed of domestic workers. Low earners are more prevalent in low-skill occupations.

**Table 3 Incidence of low-earning workers, by individual characteristics (population aged 15-64; year 2018; percentages)**

	Italy	Germany	Spain	France
All	24	27	27	20
<i>Panel a. Socio-demographic characteristics</i>				
Men	19	16	22	16
Women	32	38	33	25
34 years old or younger	38	40	44	29
35-44 years old	21	23	23	14
45-54 years old	21	20	20	15
55-64 years old	19	22	21	21
Native	22	26	24	19
Immigrant	38	31	46	31
Lower secondary school or less	33	63	38	34
Upper secondary school	23	32	29	23
Tertiary degree or more	16	14	18	12
<i>Panel b. Job and contract's characteristics</i>				
Self-employed	27	36	29	34
Employee	24	26	27	19
Permanent contract	17	20	15	12
Temporary contract	55	68	56	48
<i>Panel c. Sector</i>				
Agriculture	49	35	45	30
Manufacturing	14	14	14	10
Construction	19	20	23	16
Retail, transportation, hospitality	26	36	27	20
Finance and real estate	22	23	18	13
P.A., education, health services	14	24	15	19
Other services	47	42	45	23
<i>Panel d. Occupation</i>				
Armed forces	3	-	5	8
Manager	10	-	4	3
Professionals	16	-	13	9
Technicians	15	-	16	12
Clerks	20	-	18	16
Sales workers	36	-	38	32
Agricultural workers	50	-	33	34
Artisans	20	-	25	22
Plant and machinery operators	16	-	19	22
Unskilled occupations	47	-	56	47
<i>Panel e. Work intensity</i>				
1 month worked	93	94	96	96
2-4 months worked	91	90	92	87
5-6 months worked	83	85	72	65
7-9 months worked	55	56	63	48
10-11 months worked	37	29	34	28
12 months worked	15	13	18	8

Note: Low-earning workers are those with annual labour income below 60% of the country-specific median, calculated only among workers (defined as that reported in the footnote of Figure 1). Occupations are not available for Germany. Months worked are rounded at the closest integer and then grouped in categories.

Source: own calculations on EU-SILC.



The risk of being a low earner steeply declines as work intensity (FTE months of employment) increases. Nonetheless, having low annual earnings is also strongly correlated with the probability of having low (lower than 60 per cent of the median) FTE earnings. For instance, in Italy, approximately 75 per cent of low earners (defined based on annual earnings) have also low FTE earnings. One reason is that precarious workers, with temporary jobs and very discontinuous careers, are also likely to earn low hourly wages (see Checchi et al., 2022, and Section 3.1), making the two phenomena highly correlated.

Differences across countries in the share of low-paid workers depend both on the dispersion of FTE earnings and on differences in work intensity and employment rates.<sup>28</sup> Considering all these aspects is crucial for an overall assessment of disparities because a higher employment rate – which reduces overall inequalities in the working-age population – might come together with a higher share of low-earning workers if jobs created have low work intensity (see also D’Amuri, 2017). In a country with a low employment rate, a small share of low earners is not necessarily a positive indicator.

The comparison of Italy with other countries highlights the relevance of both factors. The higher proportion of low earners in Germany reflects the fact that its higher employment rate (76 per cent in 2018 against 64 per cent in Italy) is mostly due to a greater number of workers who do not work full-time, year-round (22 per cent in Germany against 13 per cent in Italy, Figure 11). Indeed, the German labour market reforms of the early 2000s incentivized low-work intensity jobs – the so-called “mini-jobs” – to encourage the labour supply of marginal workers and increase the employment rate (OECD, 2021). Furthermore, although the female employment rate is much higher in Germany than in Italy, it tends to be more often part-time, also because income splitting<sup>29</sup> for tax purposes is allowed for married couples and this increases the marginal taxation on second earners. Interestingly, the risk of being a low earner is higher in Italy than in Germany among those with high work intensity (at least 10 FTE months of employment). Thus, if the Italian SILC data were re-weighted to mimic the work intensity of the German SILC data, the share of low-earners in Italy would indeed increase to a level higher than that of Germany (Figure 12).

Differences in work intensity, however, do not explain all the cross-country disparities. France, for instance, has a lower share of low earners than Italy because of a more compressed FTE earnings distribution (see Section 3.1); indeed both the share of low-intensity workers and the employment rates are higher in France than in Italy.<sup>30</sup> Finally, Spain and Italy have a similar

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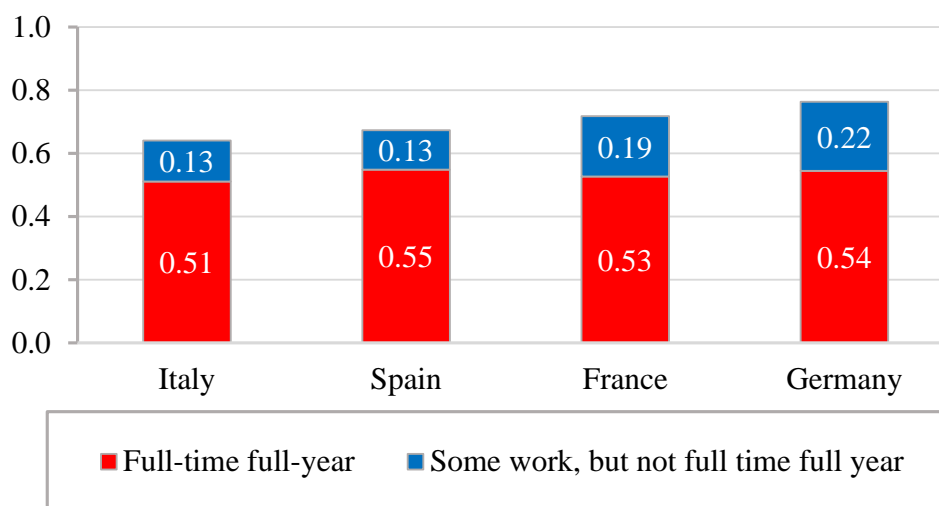
<sup>28</sup> Brandolini and Viviano (2016) also stress the importance of jointly analysing employment rates and measures of work intensity among employed individuals for cross-country comparisons. They point out for instance that when accounting for work intensity, the gap between the North and the South of Europe in the amount of labour supplied by people narrows substantially.

<sup>29</sup> Income splitting refers to the possibility for each partner (in married couples) to pay (individual) taxes based on half of the couple’s total income rather than based on their own income. Given the progressivity of (individual) taxation, opting for income-splitting allows couples to pay lower taxes, but it leads to a higher marginal tax rate on the secondary earner.

<sup>30</sup> Indeed, changing the distribution of work intensity in the Italian SILC to reflect that of France increases the proportion of low-earning workers, widening the difference from France.

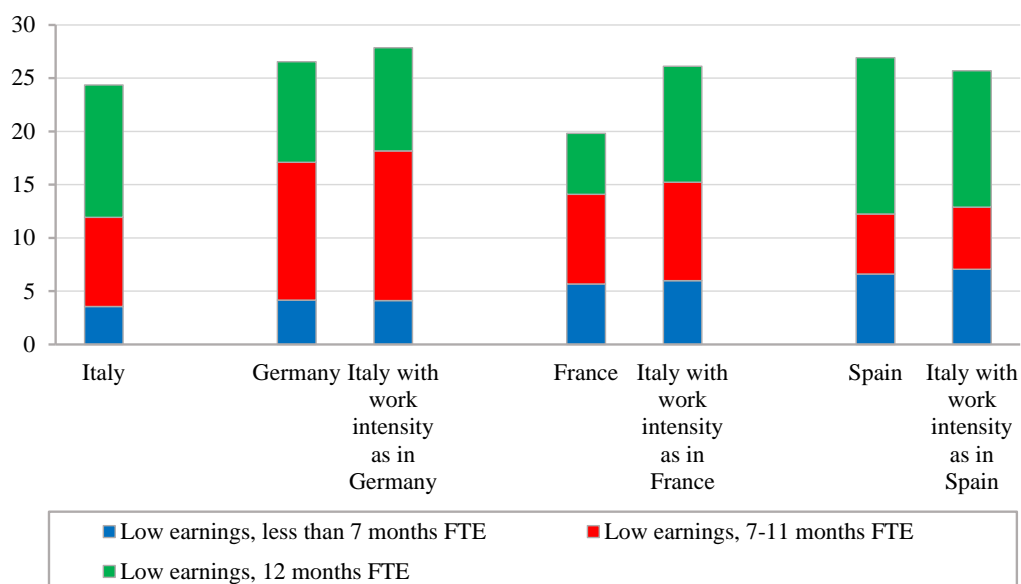
distribution of work intensity, but low-earning workers are more numerous in Spain than in Italy. This happens because FTE earnings are more dispersed in Spain (Figure 6, panel a).<sup>31</sup>

**Figure 11 Share of working-age individuals who are employed by work intensity, year 2018 (population aged 15-64)**



Source: own calculations on EU-SILC.

**Figure 12 Contribution of workers with high or low work intensity to the share of low-earners and simulations assuming Italy has the same work intensity as each considered country (year 2018; shares)**



Note: The definition of labour income and that of low-earning workers are the same as those reported in the notes of Figures 1 and 12. The simulations are conducted by reweighting the Italian SILC sample using a propensity score for the probability of being in the other country sample conditional on dummies for FTE months of work intensity. Source: own calculations on EU-SILC.

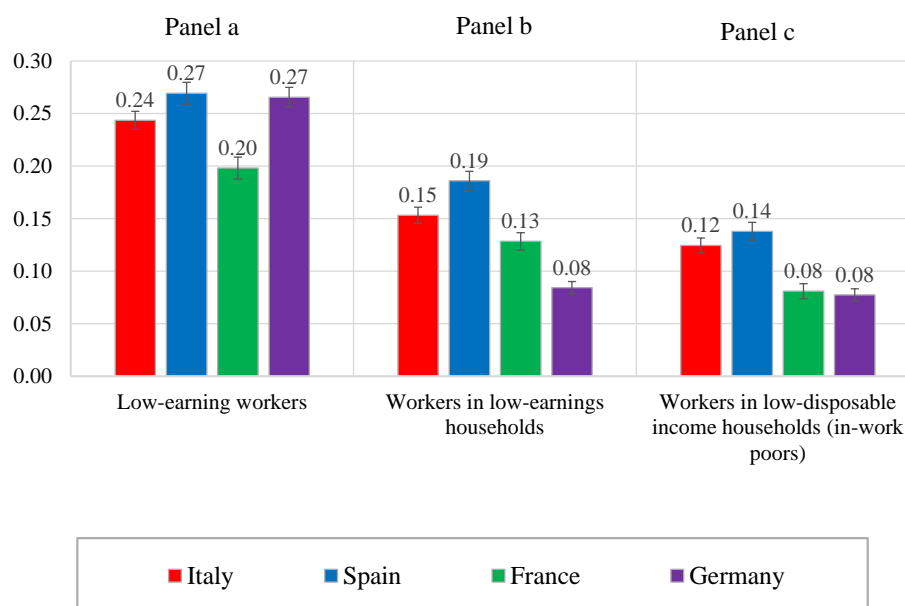
<sup>31</sup> Given the similarity of work intensity between the two countries, re-weighting the Italian SILC to mimic Spanish work intensity has only limited effect on the share of low-earnings workers.

## 4.2. In-work poverty

The risk of in-work poverty differs from the risk of being a low earner because it takes into consideration the household dimension.<sup>32</sup> A worker with a low labour income does not necessarily live in a poor family. Conversely, workers who are not low earners could still be poor if other members of the household bring null or insufficient economic resources. Figure 13 illustrates the differences between these two measures. Panel a looks at the share of low-earning workers, defined as before. Panel b and c report the share of workers living in households with either total labour (panel b) or disposable (panel c) equivalised income below the national poverty line, defined as 60 per cent of the median disposable equivalised income.

In all countries, the incidence of in-work poverty is smaller than that of low-paid workers, since low earners tend to cohabit with higher-earning household members. For Italy, however, income pooling at the household level is less effective than in other countries in reducing the risk of in-work poverty. The comparison with Germany is striking. While in Italy low-earning workers are slightly less than in Germany, the opposite holds for the share of workers at risk of poverty: thanks to the higher employment rate, in Germany more low-paid workers are not poor because they live in households with high work intensity (Table 4).

**Figure 13 From the risk of low earnings to the risk of in-work poverty (share of population 15-64, year 2018)**



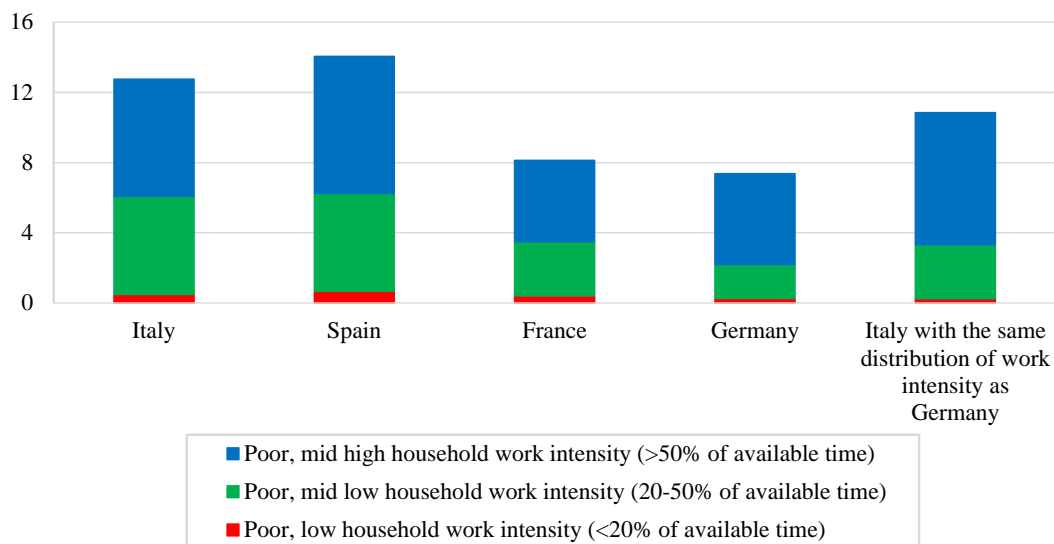
Note: Black bands are 95% confidence intervals, calculated using heteroscedasticity robust standard errors. Workers in low-earning households are those whose household equivalised labour income is below the national poverty line (60% of median disposable equivalised income across the entire population). Workers at risk of poverty are those whose equivalised disposable income is below the national poverty line.

Source: own calculations on EU-SILC.

<sup>32</sup> Household income includes income from all household members, including those aged 65 or older. When household income is equivalised, the equivalence scale considers the overall household dimension, including children and the elderly. Disposable income includes non-labour income sources and deducts income taxes and social contributions.

The higher share of workers at risk of poverty in Italy depends on the higher incidence of families with medium-low work intensity, especially single-earner households (see Section 3.2). Keeping the poverty line fixed, if Italy had the same distribution of work intensity as Germany, in-work poverty would decrease by 2.0 p.p. (40 per cent of the distance from Germany), mostly because of the contraction in the number of poor workers living in households with medium-low work intensity (Figure 14).

**Figure 14 Share of workers at risk of poverty (population 18-59, year 2018)**



Note: The definition of labour income is the same as that reported in the footnote of Figure 1. Differently from Figure 13, only individuals aged 18-59 are considered in line with the Eurostat definition of work intensity, which is calculated only for this population. The simulation in the last bar holds the poverty line fixed, as it is measured on the entire population.

Source: own calculations on EU-SILC.

This is in line with earlier findings from the literature. Brandolini et al. (2001), using data from the Bank of Italy Survey on Household Income and Wealth, find that the number of earners other than the household head matters more than being a low-pay worker vis-a-vis the risk of being poor. Del Boca and Pasqua (2003) show how the increase in female labour market participation between the 1980s and the early 2000s partially offset the increase in household income inequality. Finally, Garnerio et al. (2022) observe that the number of income earners in the household is the main factor affecting the in-work poverty indicator.

**Table 4 Workers with low individual and household labour income, population 18-59, year 2018**

Italy					Germany				
Share of individuals	Low household disposable income			Tot	Share of individuals	Low household disposable income			Tot
	No	Yes				No	Yes		
Low earnings	No	0.71	0.04	0.75	Low earnings	No	0.73	0.01	0.73
	Yes	0.13	0.11	0.25		Yes	0.20	0.06	0.26
	Tot	0.85	0.16	1.00		Tot	0.86	0.14	1.00
Average household work intensity	Low household labour income			Tot	Average household work intensity	Low household labour income			Tot
	No	Yes				No	Yes		
Low earnings	No	0.86	0.56	0.85	Low earnings	No	0.87	0.60	0.87
	Yes	0.81	0.68	0.75		Yes	0.79	0.59	0.74
	Tot	0.86	0.65	0.82		Tot	0.85	0.59	0.83

Note: The definition of labour income and of employed individuals is the same as that reported in the footnote of Figure 1. The definition of low income is the one used in Figure 13.

Source: own calculations on EU-SILC.

## 5. Conclusions

According to the most recent comparable wave of EU-SILC data, referring to the year 2018, Italy exhibits higher inequality in annual labour income among the working-age population compared to France and Germany, both in terms of individual and equivalised household income. Only Spain has a similar level of inequality.

This paper shows that the main driver of Italy's greater inequality is not a higher dispersion of earnings among workers, whether or not adjusted for differences in work intensity. In fact, Italy has a relatively small share of low-earning workers compared to the other countries considered (except France). The higher inequality in Italy primarily stems from a larger share of individuals who do not earn any labour income. Although this fraction has decreased in recent decades, it remains large when compared to other countries.

Furthermore, the low employment rate in Italy contributes to higher inequality in equivalised household labour income because it results in a larger number of households where at most one adult member is employed. The presence of single-earner households exacerbates the problems associated with individual low pay, as income pooling within households only partially mitigates the risk of poverty, as measured by the probability of living in a household with disposable income below 60 per cent of the median.

These findings have important implications for the debate on labour market inequality, low earnings, and in-work poverty, as they indicate that a comprehensive analysis and interpretation of these phenomena should (i) consider all workers, while administrative microdata on earnings are typically available only for private sector employees, and (ii) take into account the dynamics of the employment rate. This is especially important for Italy, a country that in international comparison features a high share of self-employed and irregular workers as well as a low employment rate. True, high employment rates can be associated with greater inequality and a

higher share of low earners *among the employed*. This could occur because marginal workers usually hold part-time or temporary jobs, which often combine limited work intensity with low hourly earnings. However, higher employment rates also significantly reduce inequality *in the working-age population*, by decreasing the share of individuals with zero earnings. Moreover, high employment rates help alleviate inequality in *equivalised household labour income* and mitigate the risk of in-work poverty *for low earners*, by reducing the incidence of single-earner households.

The comparison with Germany highlights the benefits gained from increasing the share of employed people to reduce inequality and the risk of in-work poverty. Germany has a similar dispersion of workers' earnings and an even larger share of low earners among workers than Italy, due to the high incidence of jobs that are not full-time and full-year.<sup>33</sup> However, in Germany these factors combine with a much higher employment rate, which translates into less inequality among the working-age population and lower in-work poverty risk.

Nevertheless, it is crucial not to discount the role played by a more compressed distribution of hourly earnings, and of the labour market institutions that may contribute to such compression, on inequality. The comparisons with France and Spain are instructive. Despite having a greater share of low-work-intensity jobs, France exhibits a more compressed FTE earnings distribution among workers, which contributes making it the country with the lowest inequality among the four observed. Spain, on the other hand, has a higher employment rate than Italy but a similar level of inequality among the working-age population, because of the high dispersion of FTE earnings among Spanish workers.

## References

- Adamopoulou, E., Bobbio, E., De Philippis, M., & Giorgi, F. (2019). Reallocation and the Role of Firm Composition Effects on Aggregate Wage Dynamics. *IZA Journal of Labor Economics*, 8(1), 5-22.
- Aidis, R., Estrin, S., & Mickiewicz, T. (2012). Size matters: entrepreneurial entry and government. *Small Business Economics*, 39, 119-139.
- Aimone Gigio, L., & Camussi, S. (2022). Cambiamenti nella struttura qualitativa dell'occupazione. *Questioni di Economia e Finanza*, 705.
- Arellano, M., Bonhomme, S., De Vera, M., Hospido, L., & Wei, S. (2022). Income risk inequality: Evidence from Spanish administrative records. *Quantitative Economics*, 13(4), 1319-1945.
- Atkinson, A. B., & Brandolini, A. (2006). From earnings dispersion to income inequality, in F. Farina, & E. Savaglio, *Inequality and Economic Integration* (Vol. 2, pp. 35-62). Routledge.
- Banque de France. (2018). Wage bargaining in Europe: a wide range of increasingly decentralised models since the crisis. *Banque de France Bulletin*, 217.

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<sup>33</sup> The debate on inequality in Germany stresses the risks associated with the diffusion of mini-jobs (OECD, 2021), which tend to be associated with limited hourly wages and do not often represent a stepping stone towards full-time jobs.

- Basso, G. (2019). The evolution of the occupational structure in Italy in the last decade. *Questioni di Economia e Finanza*, 478.
- Bianchi, N., & Paradisi, M. (2023). Countries for old men: an analysis of the age-wage gap. *mimeo*.
- Boushey, H., Fremstad, S., Gragg, R., & Waller, M. (2007). Understanding Low-Wage Work in the United States. *The Mobility Agenda*, march 2007.
- Bovini, G., & Viviano, E. (2018). Italy's employment-rich recovery: A closer look. *Questioni di Economia e Finanza*, 461.
- Brandolini, A. (2000). The problematic measure of income from self-employment: a comment. *Note prepared for the Seminar on Household Income Statistics organised by Eurostat, Luxembourg, 13-14 December 1999*.
- Brandolini, A., & Viviano, E. (2016). Behind and Beyond the (Head Count) Employment Rate. *Journal of the Royal Statistical Society Series A: Statistics in Society*, 179(3), 657-681.
- Brandolini, A., Cipollone, P., & Sestito, P. (2001). Earnings Dispersion, Low Pay and Household Poverty in Italy, 1977-1998. *Temi di discussione*, 427.
- Brandolini, A., Gambacorta, R., & Rosolia, A. (2018). Inequality amid income stagnation: Italy over the last quarter of century. *Bank of Italy, Questioni di Economia e Finanza*, 442.
- Brandolini, A., Rosolia, A., & Torrini, R. (2011). The distribution of employees' labour earnings in the European Union: Data, concepts and first results. *Working Papers*, 198.
- Carta, F. (2020). Timely Indicators for Inequality and Poverty Using the Italian Labour Force Survey. *Social Indicators Research: An International and Interdisciplinary Journal for Quality-of-Life Measurement*, 149(1).
- Checchi, D., García-Peñalosa, C., & Vivian, L. (2022). Hours Inequality. *CESifo Working Paper, No. 10128*.
- Ciani, E., & Torrini, R. (2019). The Geography of Italian Income Inequality: Recent Trends and the Role of Employment. *Politica economica, Journal of Economic Policy*, 2/2019, 173-208.
- D'Amuri, F. (2017). I lavoratori a bassa retribuzione in Italia: evidenze descrittive e indicazioni di policy. Dans C. dell'Aringa, C. Lucifora, & T. Treu, *Salari, produttività, disuguaglianze. Verso un nuovo modello contrattuale?*
- Del Boca, D., & Pasqua, S. (2003). Employment patterns of husbands and wives and family income distribution in Italy (1977-98). *Review of Income and Wealth*, 49(2).
- Depalo, D., & Lattanzio, S. (2023). The increase in earnings inequality and volatility in Italy: The role and persistence of atypical contracts. *Bank of Italy, Questioni di Economia e Finanza*, 801.
- Drechsel-Grau, M., Peichl, A., D. Schmid, K., Schmieider, J. F., Walz, H., & Wolter, S. (2022). Inequality and income dynamics in Germany. *Quantitative Economics*, 13(4), 1593-1635.
- Du Caju, P., Gautier, E., Momferatou, D., & Ward-Warmedinger, M. (2008). Institutional features of wage bargaining in 23 European countries, the US and Japan. *ECB working paper*, 974.

- Eurostat. (2018). Bye bye parents: when do young Europeans flee the nest? Récupéré sur <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/edn-20180515-1>
- Filauro, S., & Fulvimari, A. (2021). Exploring inequality decomposition by income source at the EU level. Dans A.-C. Guio, E. Marlier, & B. Nolan, *Improving the understanding of poverty and social inclusion in Europe*. Luxembourg: Publications Office of the European Union.
- Garnero, A., Ciucciiovino, S., de Camillis, R., Magnani, M., Naticchioni, P., Raitano, M., . . . Struffolino, E. (2022). Relazione del gruppo di lavoro sugli interventi e le misure di contrasto alla povertà lavorativa in Italia. Récupéré sur <https://www.lavoro.gov.it/priorita/Pagine/Contrasto-alla-poverta-lavorativa-in-Italia-presentata-la-Relazione-del-Gruppo-di-lavoro.aspx>
- Grünberger, K., Narazani, E., Filauro, S., & Kiss, Á. (2022). Social and fiscal impacts of statutory minimum wages in EU countries: a microsimulation analysis with EUROMOD. *IZA Journal of Labor Policy*, 12(1).
- Hamilton, B. (2000). Does Entrepreneurship Pay? An Empirical Analysis of the Returns to Self-Employment. *Journal of Political Economy*, 108, 604-631.
- Hoffmann, E., Malacrino, D., & Pistaferri, L. (2022). Earnings dynamics and labor market reforms: The Italian case. *Quantitative Economics*, 13, 1637-1667.
- Karagiannis, E., & Kovacevic, M. (2000). A Method to Calculate the Jackknife Variance Estimator For the Gini Coefficient. *Oxford Bulletin of Economics and Statistics*, 62, 119-122. doi:<https://doi.org/10.1111/1468-0084.00163>
- Lerman, R. I., & Yitzhaki, S. (1985). Income Inequality Effects by Income Source: A New Approach and Applications to the United States. *The Review of Economics and Statistics*, 67(1), 151-156.
- Lucifora, C., McKnight, A., & Salverda, W. (2005). Low-wage employment in Europe: A review of the evidence. *Socio-Economic Review*, 3, 259-292.
- Manacorda, M., & Moretti, E. (2010). Why do most Italians live with their parents? Intergenerational transfers and household structure. *Journal of the European Economic Association*, 4(4), pp. 800-829.
- Mencarini, L., Pailhé, A., Solaz, A., & Tanturri, M. L. (2017). The time benefits of young adult home stayers in France and Italy: a new perspective on the transition to adulthood? *Genus*, 73(1).
- Mocetti, S., Olivieri, E., & Viviano, E. (2011). Le famiglie italiane e il lavoro: caratteristiche strutturali e effetti della crisi. *Stato e Mercato*, 92(2).
- OECD. (2011). *Divided we stand*. Paris: OECD publishing.
- OECD. (2021). *Is the German Middle Class Crumbling? Risks and Opportunities*. Paris: OECD Publishing.
- OECD. (2022). Minimum wages in times of rising inflation. *OECD Policy Briefs*. Récupéré sur <https://www.oecd.org/employment/Minimum-wages-in-times-of-rising-inflation.pdf>
- Parker, S. C., & Robson, M. T. (2004). Explaining International Variations in Self-Employment: Evidence from a Panel of OECD Countries. *Southern Economic Journal*, 71(2), 287-301.



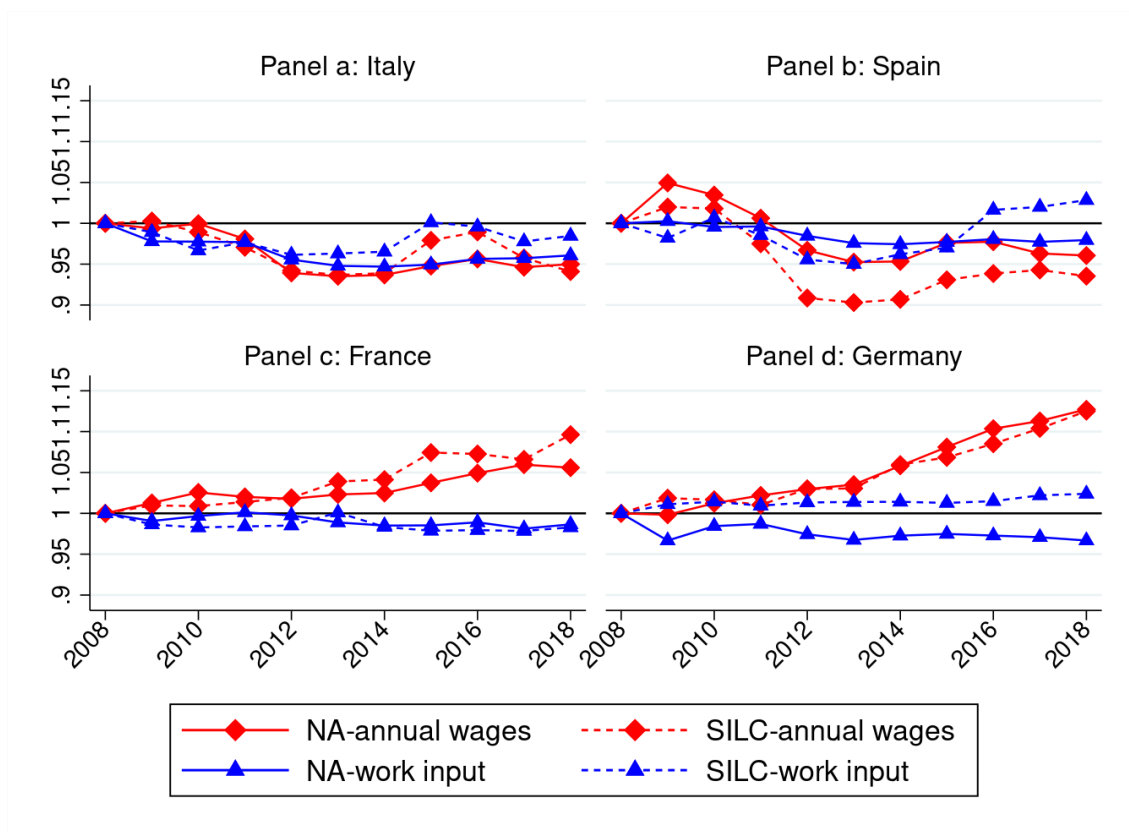
- Raitano, M. (2016). Income inequality in Europe since the crisis. *Intereconomics - Review of European Economic Policy*, 51(2), 67-72.
- Sajaia, Z. (2007). FASTGINI: Stata module to calculate Gini coefficient with jackknife standard errors. *Statistical Software Components*, S456814.
- Salverda, W., & Checchi, D. (2015). Labour-Market Institutions and the Dispersion of Wage Earnings. Dans A. B. Atkinson, & F. Bourguignon, *Handbook of Income Distribution* (Vol. 2, pp. 1535-1727).
- Shorrocks, A. F. (1983). The Impact of Income Components on the Distribution of Family Incomes. *Quarterly Journal of Economics*, 98, 311-326.
- Torrini, R. (2002). Cross-country differences in self-employment rates: the role of institutions. *Temi di discussione*, 459.
- Torrini, R. (2023). Redditi da lavoro e quote distributive in Italia e nei principali paesi dell'area euro. *mimeo*.

## Appendix A: Comparison of EU-SILC with National Account data

Figure A compares the dynamics of annual earnings among employees and hours worked per employee between EU-SILC and National Accounts (NA) in the four countries considered for the analysis. Hours worked in EU-SILC data are proxied with FTE months of employment. Annual wages (red lines) seem to behave quite similarly in the two data sources. In Spain, EU-SILC data display slightly worse dynamics during the Great Recession; in Italy, EU-SILC data suggest a slight recovery in 2014 and 2015, which is not observed in the NA data.

Instead, the dynamics of the work intensity variables (blue lines) seem to be more divergent in the two data sources starting from 2014. In particular, the message would be different for Spain and Italy. While NA data indicate that hours per worker in 2018 did not recover the 2008 level for both countries, EU-SILC data show that in Italy they reached the 2008 level in 2015 and remained rather constant afterwards and in Spain they even exceeded the 2008 starting from 2016.

**Figure A: Comparison between National Accounts and EU-SILC data (index 2008=1)**



Note: employees only. Work intensity is equal to hours per worker in the NA data and to FTE months of employment in EU-SILC data.

Source: own calculations on National Account (Eurostat) and EU-SILC data.

For this reason, throughout the chapter, we mainly focus on the dynamics of annual earnings and we consider less the dynamics of FTE earnings, which for Italy are extensively discussed in Depalo and Lattanzio (2023). Their work is based on INPS administrative data on the universe of employees, which better align with NA data when looking at the evolution of hours worked by employees during 2008-2018.

As for what concerns income levels, Brandolini et al. (2011) show that EU-SILC estimates are generally close to NA data, once adjusting for PPP and inflation. France is an exception, as labour

income is below NA data. For this reason, we avoid direct comparisons between income levels across countries and we rather focus on trends or the within-country dispersion.

## Appendix B: Dispersion of employees ‘earnings and self-employment income

In Italy, the Gini index of annual employees’ earnings is virtually the same than that of France, and lower than that of Germany and Spain (Table B.1).<sup>34</sup> The Gini index for self-employed income (calculated only among the self-employed) is the lowest in Italy and Spain, while it is much larger in France and Germany. In all countries, inequality in self-employment income is higher than inequality in employees’ earnings because self-employment income is more volatile (see Section 2 and Hamilton, 2000). In Italy, self-employment income is a much larger share of total labour income than in other countries. As a result, even if inequality among the self-employed is not high in international comparison, it provides a larger contribution to increasing overall inequality than in other countries.

**Table B.1 Decomposition of inequality in annual labour income by income source (workers aged 18-64), year 2018**

		Italy	Spain	France	Germany
Gini in annual labour income among workers		0.38	0.42	0.36	0.38
Employees’ earnings	Gini only among employees	0.35	0.42	0.35	0.36
	Absolute contribution to overall inequality	0.25	0.38	0.31	0.32
	Factor share	0.75	0.89	0.91	0.92
	Factor correlation	0.69	0.89	0.90	0.91
	Factor inequality	0.48	0.47	0.38	0.39
Self employment income	Gini only among self-employed	0.50	0.51	0.56	0.70
	Absolute contribution to overall inequality	0.13	0.04	0.05	0.06
	Factor share	0.25	0.11	0.09	0.08
	Factor correlation	0.61	0.43	0.59	0.72
	Factor inequality	0.87	0.93	0.95	0.98

Note: the decomposition by income source follows Lerman and Yitzhaki (1985). The inequality only among employees (self-employed) refers to the inequality of employees’ earnings (self-employment income) calculated only among those who earn that income. The absolute contribution is the contribution to the overall inequality in annual labour income across workers. The factor correlation is the correlation between employees’ earnings and overall labour income. Factor inequality is the inequality in employees’ earnings calculated among all workers (i.e. including the self-employed, for which employees’ earnings are set to 0).

Source: own calculations on SILC

<sup>34</sup> The table follows the decomposition of the Gini index by income source proposed by Lerman and Yitzhaki (1985). Note, however, that the decomposition of the Gini is criticized by Shorrocks (1983).

**Table B.2 Characteristics of self-employed individuals (population 15-64), year 2018**

	Italy		Spain		France		Germany	
	self-empl.	employee	self-empl.	employee	self-empl.	employee	self-empl.	employee
<i>Panel a. Socio-demographic characteristics</i>								
Female	30.7	45.0	33.4	47.8	38.9	50.7	38.6	50.0
Age	46.1	43.2	45.9	42.1	44.7	41.7	48.8	42.8
Less than upper sec. school	27.7	31.0	38.2	31.8	11.0	15.2	1.5	6.48
Upper sec. school	43.1	47.6	24.3	24.1	42.1	43.3	38.0	54.6
University	29.2	21.4	37.5	44.1	46.9	41.5	60.5	38.9
<i>Panel b. Type of self-employed</i>								
With employees	33.1		25.6		25.7		39.4	
Without employees	62.8		73.6		74.2		60.2	
Family workers	4.1		0.8		0.1		0.4	
<i>Panel c. Sector</i>								
Agriculture	6.2		12.7		12.6		4.9	
Industry	26.3		16.8		17.8		9.6	
Services	67.6		70.5		69.6		85.5	
<i>Panel d. % difference relative to employees' earnings</i>								
p10	-32.3		27.2		-72.1		-44.0	
p50	-4.6		-10.5		-26.8		-9.4	
p90	46.1		-5.1		15.9		110.3	

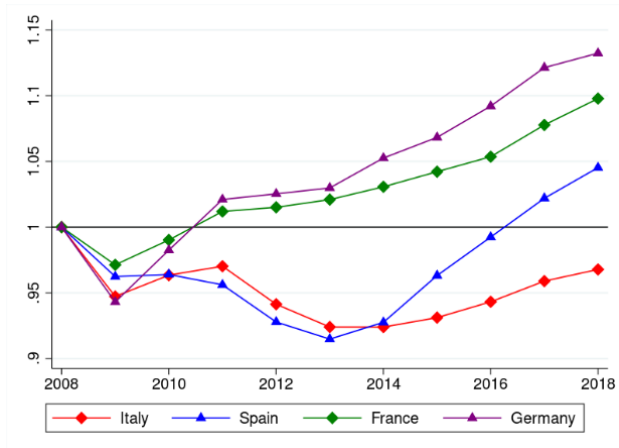
Note: individuals whose main occupation is self-employed (i.e., whose earnings from self-employment are larger than earnings from payroll employment) or employee (i.e., whose earnings from payroll employment are larger than earnings from self-employment). Statistics refer to 2018. The definition of labour income is the same as that reported in the footnote of Figure 1.

Source: own calculations on EU-SILC

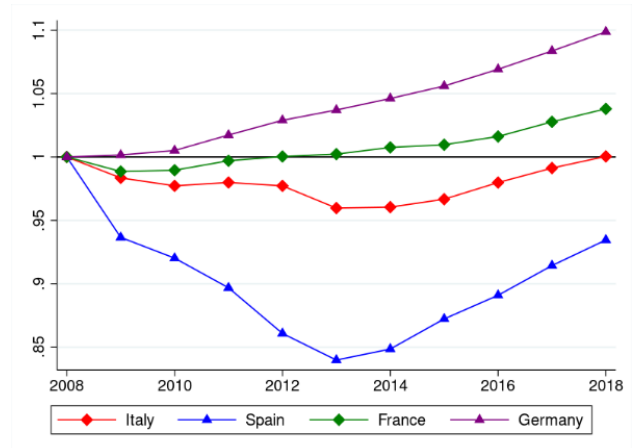
## Appendix C: Supplementary Figures and Tables

**Figure C.1. GDP and employment (index, 2008=1)**

Panel a: GDP (chain linked)



Panel b: Employment (headcount)



Source: own elaborations based on National Account data, Eurostat.

**Table C.1. Ratio of FTE labour income with respect to average income, by work intensity (index, average labour income=1; only workers, year 2018)**

	Ratio compared to the average earnings across all workers:	
	Working less than full-time full-year	Full time full year
Italy	0.79	1.05
Spain	0.74	1.06
France	0.89	1.04
Germany	0.79	1.09