Ministry of Economy and Finance
Department of the Treasury
Economic and Financial Analysis and Planning
Economic Focus
N°2 - November 2019
ISSN 1972-4128

# LABOUR PRODUCTIVITY AND INEQUALITY IN ITALY: SOME EVIDENCE

R. De Santis [*], V. Ferroni [**]

**ABSTRACT**

In the past two decades, Italy experienced a deceleration in labour productivity growth accompanied by persistently high income inequality. One possibility is that slower productivity growth has prevented inequality to fall but the direction of causation might be also the opposite. There is, in fact, the risk of a vicious cycle setting in, with individuals with fewer skills and poorer access to education and "technological" opportunities confined to work in low productivity jobs. This situation would reduce aggregate productivity and prevent inequality from decreasing. In this paper, we survey the literature on the relationship between slowing productivity gains and high inequality in Italy. In particular, we analyze five main empirical evidences at the macro level indicating possible common determinants and linkages. According to our preliminary exploration of the data, in Italy, the association between productivity and income inequality in the period 1995-2018 has been mostly negative. This evidence suggests that the gloomy dynamics of productivity might have been an obstacle to the income inequality reduction. There is also the possibility that income inequality itself was among the causes of the gloomy productivity growth. After 2012, however, both productivity and income inequality has displayed a substantial stagnation. In the period under observation, wage developments did not diverge much from those of productivity but the weak performance of the former determined a very moderate growth of real wages that might have contributed to keep income inequality high. Overall, our visual inspection of figures evidences the presence in Italy of a vicious circle "low productivity – high income inequality – low productivity". Moreover, the possibility to break the vicious circle is prevented by the fact that Italy is among the worst performing developed countries with regard to intergenerational mobility. Intergenerational effects generate persistence in the negative feedback loop low education-low productivity-wage inequality with negative spillovers at aggregate level on productivity and income inequality.

JEL:
D63, O15, O47, O52
Keywords:
Income Inequality, Economic Growth, Italy

Economic Focus:

The "Economic Focus" series promotes the dissemination of thematic notes produced in the Department of the Treasury (DT) of the Italian Ministry of Economy and Finance (MEF).
The views expressed in the Economic Focus are those of the authors and do not necessarily reflect those of the MEF and the DT.

[*] Istat - Luiss.
[**] Sogei S.p.A.

## CONTENTES

## 1 INTRODUCTION

In the past two decades, Italy experienced a deceleration in labour productivity growth accompanied by persistently high income inequality, suggesting somehow that there might be an association between the two trends. One possibility is that slower productivity growth has prevented inequality from falling but the direction of causation might be the opposite. There is, in fact, the risk of a vicious cycle setting in, with individuals with fewer skills and poorer access to education and "technological" opportunities confined to work in low productivity jobs. This situation would reduce aggregate productivity and further increase inequality.

This issue might be framed in one of the most fundamental and controversial issues in economics which is the relationship between economic performance and equality. The original theory on the association between inequality and productivity growth relies on the formulation of the Kuznets curve (Kuznets 1955). This theory implies that the relationship between income inequality and growth changes according to the stage of economic development.

During the early stage of development, high inequality promotes growth, while at the later stage high inequality is associated with falling growth. The same argument is presented in Barro (2000) who suggests that the link between falling inequality and growth is negative among poor countries, but positive or insignificant among rich countries.

In this paper, we survey the existing literature on the association between slowing productivity gains and persistent high inequality in Italy, which is very scarce. In particular, we analyze five main empirical evidences at the macro level indicating possible common determinants and linkages.

The paper is organized as follows: in the second paragraph, we present a survey of the literature on the potential linkages between productivity and inequality. In the third paragraph, we describe the trend of income inequality and labour productivity in Italy and in the main European partners and in the fourth paragraph, we present five stylized evidences, obtained through the visual inspection of figures, related to labour productivity and income inequality in Italy, in the period 1995-2017, taking a European comparative perspective. Concluding remarks follow.

## 2 HUMAN CAPITAL AND TECHNOLOGICAL CHANGES AS POTENTIAL LINKAGES BETWEEN LABOUR PRODUCTIVITY AND INEQUALITY

The literature on the relationship between productivity and inequality following Kuznets and Barro is far from conclusive and can be roughly clustered into three categories of studies: i) papers which found a positive relationship, ii) papers which found a negative relationship and iii) paper which are inconclusive or found no relationship. What is univocally accepted in the literature, however, is that productivity/growth and income inequality have as common determinants the quantity and the quality of human capital and technological change and its diffusion (e.g. through globalization).

As for the studies in the first group, one explanation for the positive association between increasing productivity and rising inequality lies on

the fact that an increased demand for skills - due to a skill-biased technological change, which increases productivity - is accompanied by increasing relative wages of skilled workers (Goldin and Katz 2008). In fact, slower productivity growth would result in less skill biased technological change and thus in a reduction in income inequality.

Differently, the second group of studies suggests that technological innovations and human capital accumulation might foster productivity growth and create new jobs determining a fall in income inequality. The direction of causation, however, might be the opposite. For example, there might be a negative impact of income inequality on the ability of potential innovators to fully express their talent since having low income, they are not able to take an adequate education path with negative spillover on productivity at aggregate level (Cingano 2014; Bell et al. 2017).

Recent analyses (Berg et al., 2018; OECD, 2015) have found a positive link between a reduction in inequality and a higher income growth, acting through many channel (e.g., investment in human capital of the poor, lower level of indebtedness, higher aggregate demand). Furthermore, in contrast with the previous wisdom, Berg et al. (2018) have found that also redistribution is positive for growth, to the extent that the amount of redistribution is not too large.

Eventually, there are papers which are inconclusive: they find that growth and productivity are associated equally to a reduction or an increase in inequality (Dollar and Kraay 2002), or even question the existence of an inequality-growth/productivity relationship (Halter et al., 2014, Ravallion 2012).

Human capital accumulation and technological change and diffusion, which affect both income inequality and productivity, might determine a virtuous or vicious circle between income inequality and labour productivity. For example, higher inequality determines under-investment in human capital by the poorer segments of the society, increasing further income inequality[1] and affecting negatively productivity growth at aggregate level. This loop (income inequality-low education-low productivity-low wages) might be strengthened by technological change (OECD 2015 a, b)[2] and by a high elasticity of intergenerational income.

The nature of technological progress might shape the slowdown in productivity growth and its impact on income inequality. For example, technological frontier firms may earn excess returns that have negative effects on productivity diffusion. These firms will be able to pay persistently higher wages to their workforce, contributing to widening wage and income inequalities.

In Italy, even as access to digital technologies has increased strongly, skills to effectively use ICT and drive associated wage increases have

[1] Evidence from a number of European countries including Italy suggests that the demand for labour is polarising at the two extremes – high, abstract skills and low, manual skills with a 'hollowing out' of the middle-skilled jobs dominated by intermediate, routine skills. Technological progress could lead to a further hollowing out of employment and wages OECD (2015b).

[2] OECD (2015b) shows that "*the distribution of skills within a population affects the extent of wage inequality, with differences in wages tending to be lower in countries where skills are more equally distributed. At the same time, countries that make better use of their workforce's skills tend to exhibit lower wage inequality and higher productivity growth*".

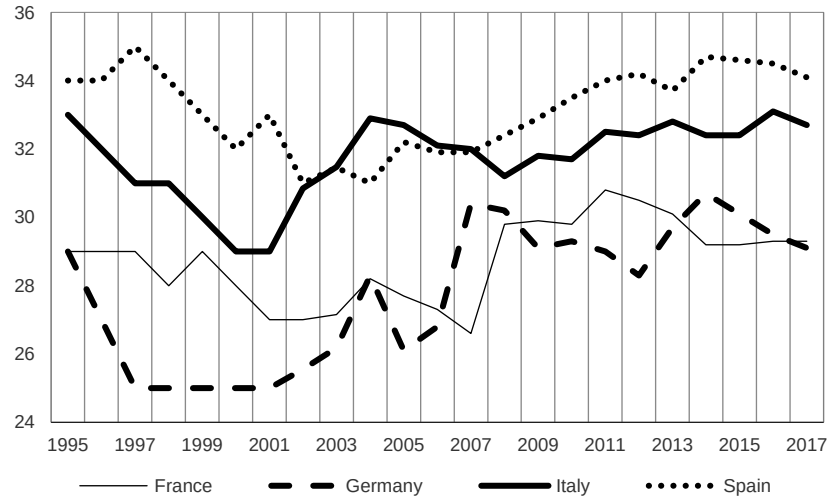
both lagged. Similarly, the uptake of ICT by smaller firms (which constitute a large part of the Italian productive sector) has also lagged, thus contributing to a lagging diffusion of technology from firms at the frontier, making income inequality persist or worsen.
Goldin and Katz (2007), however, argue that rising labour income inequality in the late twentieth century has not been caused by technology alone. Non-technological explanations of rising income inequality include declining unionization (Freeman et al 2016), lower top marginal tax rates (Piketty et al 2014), globalization (Autor 2015) and increased low-skill immigration (Borjas 2003).

## 3 INCOME INEQUALITY AND PRODUCTIVITY IN ITALY: VIRTUOUS OR VICIOUS CIRCLE?

### 3.1. *Income inequality and labour productivity in Italy and in the European context*

Income inequality, according to Eurostat data, has increased in many European countries over the past two decades. The net Gini index[3] computed on disposable income (income after taxes and benefits) has been increasing on average in EU countries since the early 1980s from around 28 to 31, with a subdued dynamics since 1995 (Chart 1).

**Chart 1. Net Gini index (after taxes and transfers)**[4]




*Source: Eurostat.*

[3] The benchmark for the Gini index is the equidistribution of income among the individuals that could differ from the social preferences about income inequality. Thus, an increase of the index could reflect also a change in the attitude toward income disparity. Despite presenting some limits, the Gini index is used to measure inequality in empirical estimates.

[4] In this paper, we use the GINI coefficient from EUROSTAT (EU-SILC). The Gini coefficient of equivalised disposable income measures the extent to which the distribution of equivalised disposable income after social transfers deviates from an equal distribution. It is a summary measure of the cumulative share of equivalised income accounted for by the cumulative percentages of the number of individuals. Its value ranges from 0 (complete equality) to 100 (complete inequality).

This picture, however, masks high heterogeneity across countries within the European Union. Moreover, the global financial and sovereign debt crises hindered the European convergence process with adverse effects on income distribution between and within countries[5].

In Italy, the level of income inequality, measured by the net Gini index, was high during the late 1960s and the early 1970s. As the economy developed, and in line with the Kuznets curve's predictions, it gradually decreased from 0.38 in 1970 to 0.33 in 1980 and 0.31 in 1990.

Since the 1990s, income inequality started to rise moderately reaching 0.32 in 2008 and then increased further to about 0.33 in 2012, primarily due to the financial and sovereign debt crises. In fact, the crises, which strongly hit Portugal, Italy, Greece and Spain, contributed to reduce the income levels of residents of peripheral European countries especially with respect to the core countries[6]. Afterwards, income inequality (measured by the Gini index) in Italy remained persistently higher than that of France and Germany and lower, with few exceptions, than that of Spain.

Starting with Brandolini (1999), different studies analyzed various aspects of inequality in Italy. Manacorda (2004), using the Survey of Households' Income and Wealth microdata, found that the rise in inequality since the mid-1980s was the result of the compression of wage differentials operated over the previous years by the Scala Mobile mechanism. Lilla and Staffolani (2009), analysing with the INPS-ISFOL database the evolution of inequality in yearly and daily wages between and within groups of blue- and white-collar workers, found that between-group inequality increased in the 1990s as clerical wages grew slowly, whereas blue collars' wages remained nearly constant.

Checchi and Peragine (2010) using a new methodology for measuring the inequality in opportunities and for decomposing overall income inequality found that the former accounts for about 20% of the overall income inequality in Italy.

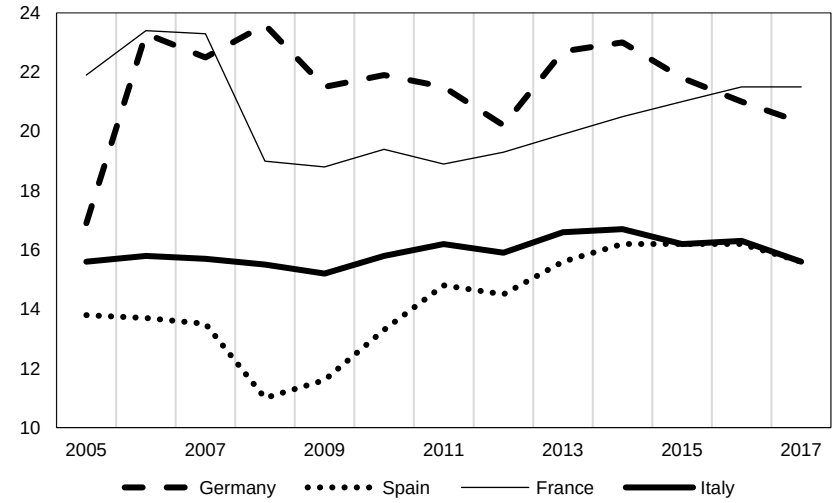
Eventually, Jappelli and Pistaferri (2010) found that most of the increase in income inequality in Italy was earning-related owing to earnings instability rather than to shifts in the wage structure. They attributed the rising income inequality in Italy mainly to the changes in labour market institutions such as the abolition of the wage indexation system and the extensive market reforms during the 1990s and 2000s.

It is worth to underline that also the tax and transfer systems (e.g. redistributive policies) played a key role in affecting the overall degree of income inequality. In particular, the Government propensity to reduce income inequality appears to have been diverse among the four main European countries we consider.

[5] Among the main drivers of increasing inequalities in European countries, especially after the creation of the EMU, there are: i) low labour force participation rates, ii) persistently high unemployment, iii) fading of social protection and iv) uneven diffusion of productivity improving technologies (Bengtsson and Waldenström 2018 and Bourguignon 2017).

[6] See Cesaroni et al (2019).

**Chart 2. Difference between Gini index pre and post taxes and social contributions**




*Source: Eurostat.*

Looking at the difference between the pre and post taxes and social contribution Gini index, we notice (Chart 2) that the redistributive policies seems to have been more effective in reducing income inequality in France and Germany rather than in Italy and Spain. Moreover, in Italy, the difference between the pre and post taxes Gini indexes (which is a measure of the effectiveness of redistributive policies) despite the financial and sovereign debt crises remained almost steady over the entire period 2005-2017.

In that period, fiscal and welfare systems in Italy (and Spain) were constrained by reduced fiscal space available and thus the room for redistributive policies was limited.

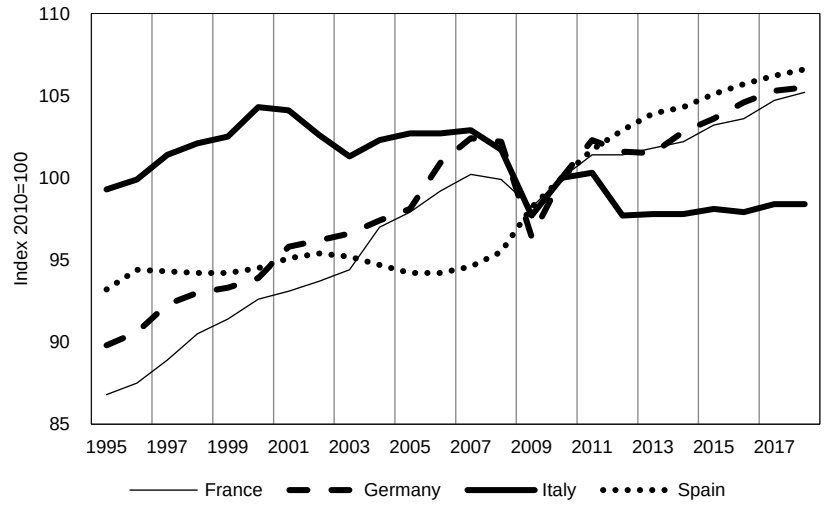
The importance of redistribution, through taxes and social contribution should not be undervalued also for its impact on growth. Conventional wisdom suggests that redistribution would in itself be bad for growth (e.g. trade off equity/efficiency). The literature on this issue remains controversial. Some papers (Benabou, 2000) point out that policies that are redistributive – e.g. spending on health and education, and social insurance provision – may be both pro-growth and pro-equality. Others are more supportive of a fundamental tradeoff between redistribution and growth, as argued by Okun (1975) when he referred to the efficiency 'leaks' that come with the efforts to reduce inequality.

Recently, Berg et al. (2018) in their cross-country study find that, in general, redistribution is not harmful for growth. As we underlined, redistribution might be limited by available fiscal space and political economy mechanisms and might be ineffective in contrasting super-earnings also because of the fear of a high top-job international worker mobility if a single country increases top marginal tax rates. Empirical evidence on the impact of redistributive policies on productivity and growth is controversial.

Also Berg et al. (2018), Cingano (2014), Ostroy et al. (2014), and Brueckner and Lederman (2015) found that redistribution is positive for growth against the original Okun's (1975) hypothesis of "Big tradeoff"

and “Leacky bucket”. Eventually Brueckner, Dabla Norris, Gradstein (2015) evidenced that increases in national income have a significant moderating effect on income inequality (reverse causation/virtuous circle hypothesis).
As for the other side of the coin, in the period 1995-2017, Italian labour productivity growth was sluggish, both in historical terms and in comparison to its main European partners especially starting from the second half of the nineties. Immediately after the crisis, the level of Italian labour productivity showed a temporary reduction (chart 3) in line with its European partners apart from few exceptions (e.g. Spain). Since 2009, however, the other main European countries have showed a solid rebound that cannot be seen in the Italian data.

**Chart 3. Labour productivity (GDP per person employed)**




*Source: Eurostat.*

The literature provides several different explanations to the Italian productivity slowdown[7]. As convincingly underlined by Bugamelli et al. (2018), to explain the Italian productivity “puzzle” it is necessary to consider all the alternative explanations/determinants that are “internal” (i.e. lack of innovation, skills mismatch of human capital, misallocation of talents and old age of managers) and “external” (i.e. capital misallocation, labour market, competition and regulation, insolvency regime and business environment) [8].
In the next paragraph, we provide some evidence on the association between productivity and income inequality in Italy in the European context.

[7] For an extensive survey, see Bugamelli et al., 2018.

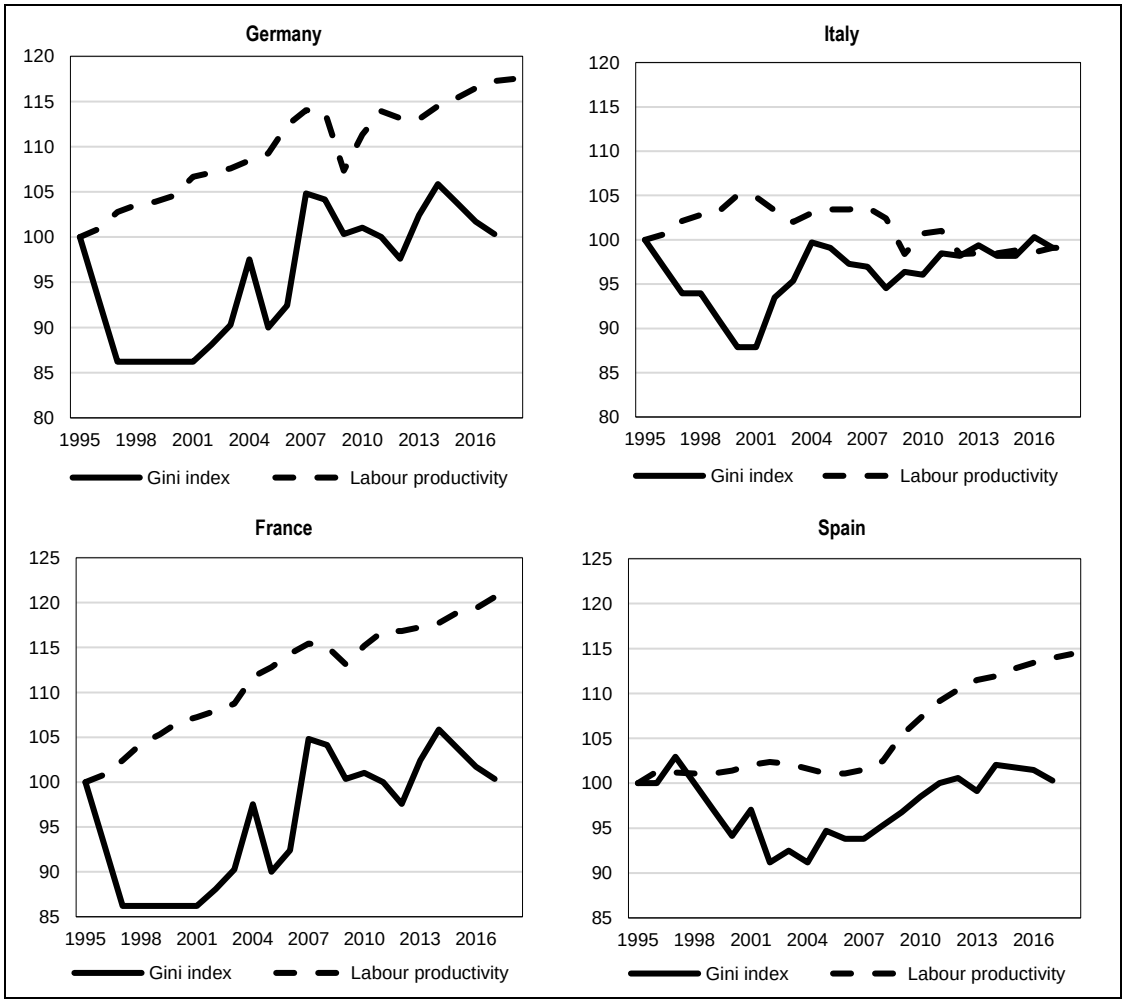
[8] See De Santis and Ferroni (2019) for a survey of literature.

### 3.2. *A tale of five evidences at macro level on labour productivity and inequality in Italy*

**Evidence 1.** *In the period 1995-2018 the association between labour productivity and income inequality has been negative in Italy*

Looking at the trends of labour productivity and net Gini index in the main European countries, it seems that in Italy the association between productivity and income inequality in the period 1995-2018 was mostly negative as in Germany and France (Chart 4 and 5).

**Chart 4. Labour productivity and net Gini coefficient (after taxes and transfers, index, 1995=100)**



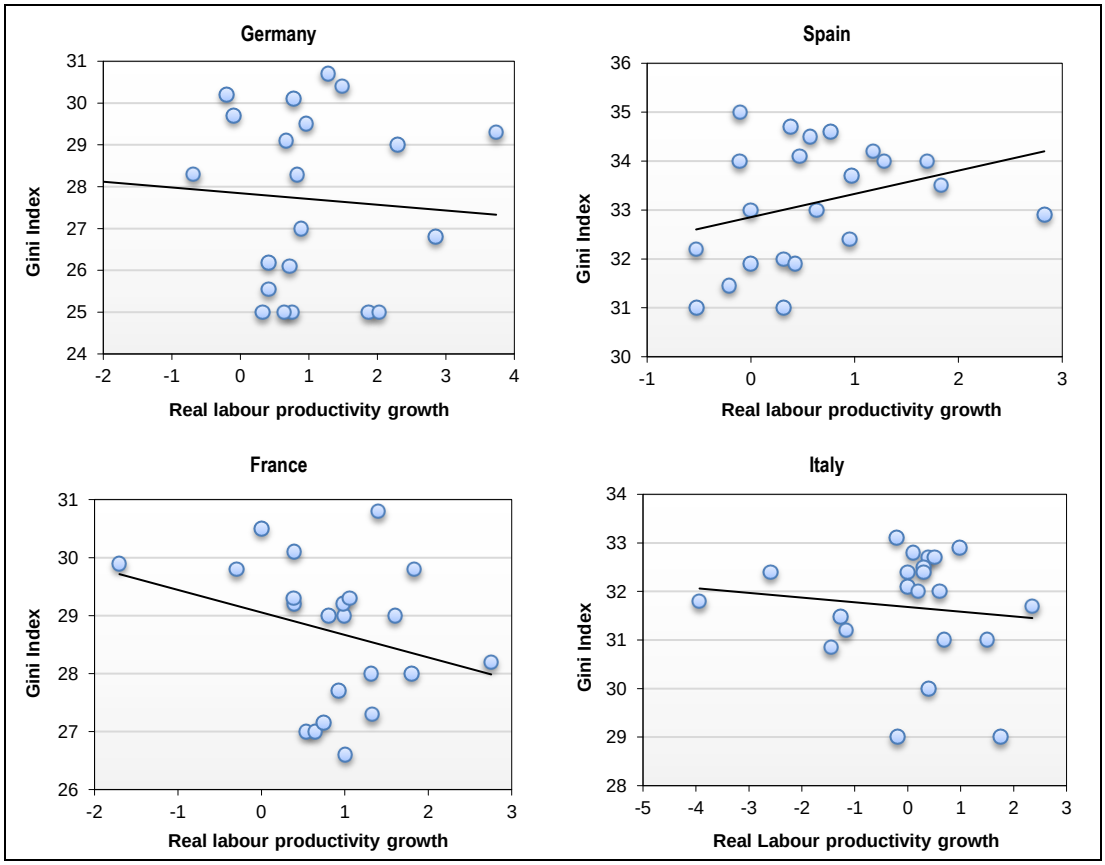

*Source: Eurostat.*

In Spain in the period 1995-2010 the labour productivity was stable while the income inequality displayed a reduction until 2004 and then a mild increase. In Italy the negative relationships between productivity and income inequality (increasing productivity associated to a reduction in

income inequality or viceversa), starting from 2012, ended, leaving both labour productivity growth and income inequality stagnating.

Differently, in France, Germany and Spain, since 2010, the negative association seems to have intensified although from the chart 4 and 5 it is not possible to draw conclusions on the direction of causation.

**Chart 5. Labour productivity and net Gini coefficient (after taxes and transfers, index, 1995=100)**




*Source: Eurostat.*

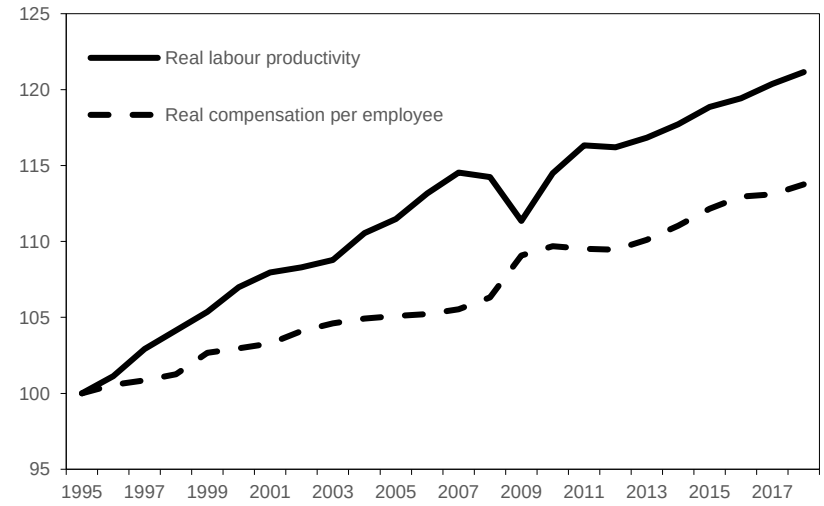
**Evidence 2.** *In Italy, wage developments did not diverge much from those of labour productivity but the weak performance of the former determined a very stagnating growth of real wages preventing income inequality from falling.*

In the post crisis period, economic expansion in the euro area has gathered pace. However, improving economic conditions and falling unemployment have translated only partly into higher wages. Since 2010, productivity has expanded on average by 0.9 % annually while real wages have risen by just 0.5%.
Chart 6 shows that in the euro area not only after but also before the crisis there was a substantial decoupling between productivity and wages. The evidence of a wage–productivity "gap", which holds for the

euro area as a whole masks, however, a heterogeneous behaviour across countries related to cyclical and structural conditions and to institutional differences (i.e. sector specialization and wage bargaining systems). In Germany, while labour productivity grew at an average of 1.0% per year between 1995 and 2008, real wages declined. In the early 2000s, concerns about competitiveness, a recession in 2002-2003 and labour market reforms exacerbated wage restraint. Only in 2011 wages reached their 1999 level while real productivity has increased by 13% since 1995

Differently, France experienced a more aligned development of productivity and wages in the observed period. In the early 2000s, France economy has increasingly expanded until 2008. Wages, which registered the highest acceleration among the four economies, rose by 12.7% up to 2008 (from 1995). Thereafter, they continued to grow at a relatively even pace but productivity started to decelerate, although both measures remained aligned.

**Chart 6. Labour productivity and wage developments in the euro area**



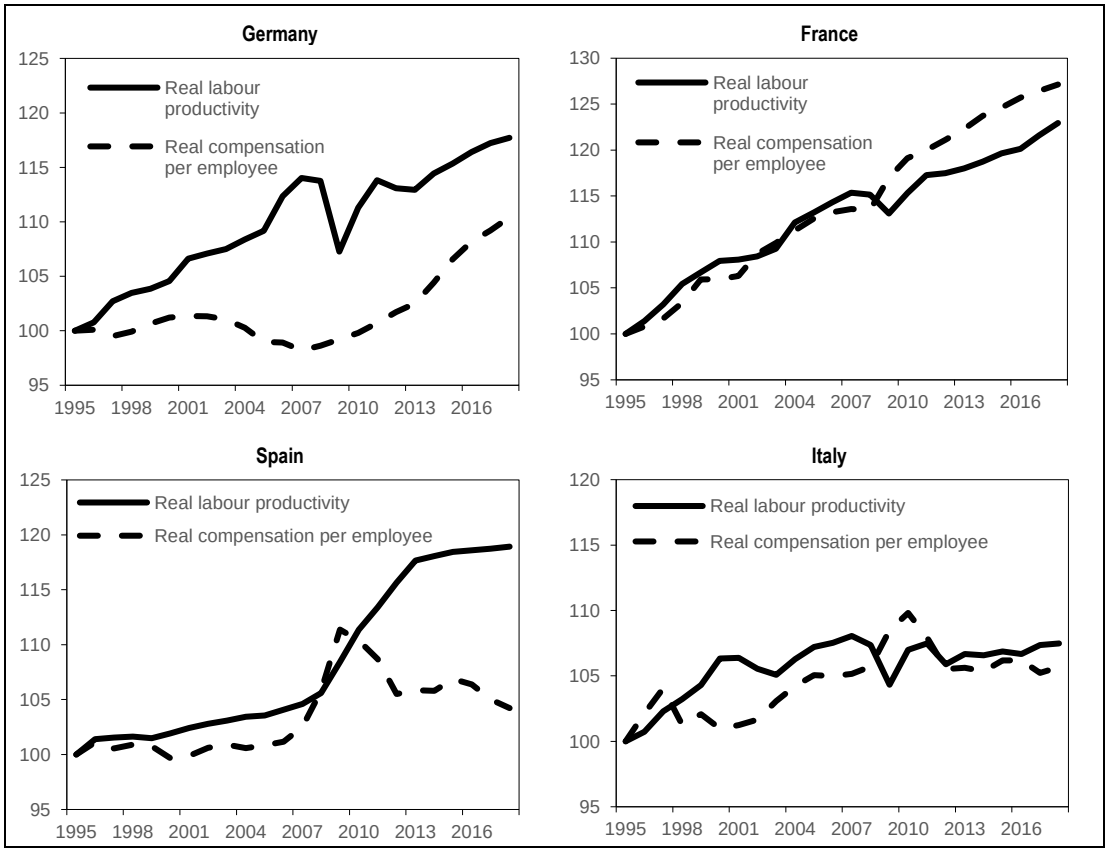

*Source: Ameco databse, European Commission.*

In Spain, the economic boom of the 2000s was not reflected in real productivity and real wage increases for two main reasons. On the one side, the economic growth largely depended on the construction and financial sectors, where productivity gains are either small (construction) or come in the form of capital deepening rather than labour productivity gains (finance). On the other side, high inflation kept real wage increases at a moderate level.

Moreover, Spain was hit by a double-dip recession, which led to a significant decline of real wages by almost five percentage points from 2010 to 2012. At the same time, real labour productivity grew at a solid pace, opening a wedge between the two indicators. When the economy rebounded in 2013, wage pressures remained weak due to high unemployment. Labour productivity, however, continued to improve, resulting in a quite substantial internal devaluation that strengthened Spain's cost competitiveness.

Italy lagged behind with productivity and wages which were basically flat. Like Germany, Italy experienced a period of low growth in the early 2000s. The main difference with Germany and France was that labour productivity also performed weakly with an average annual growth of just 0.4% between 1999 and 2008. Wage developments did not diverge much from productivity before or after 2008 but the weak performance of the former implied that up to 2018 real wages in Italy increased only by 3.6% with respect to the 1999 levels.
Overall, in Germany and Spain, the phases of wage restraint led to a substantial decoupling of wages and productivity. In France and Italy, there was not a misalignment between wages and productivity. Moreover, labour productivity in France and Germany was already above the euro area average in 1999 and has grown relatively steady since then. By contrast, in Italy low productivity growth and the uneven diffusion of productivity improving technologies (growing capture of rents by frontier firms) has very likely held back real wages with a possible impact on income inequality.

**Chart 7. Labour productivity and wage developments**




*Source: Eurostat.*

The direction of causation, however, as underlined in paragraph 2 might have been also the opposite even creating a vicious circle (Cingano 2014; Bell *et al.* 2017).

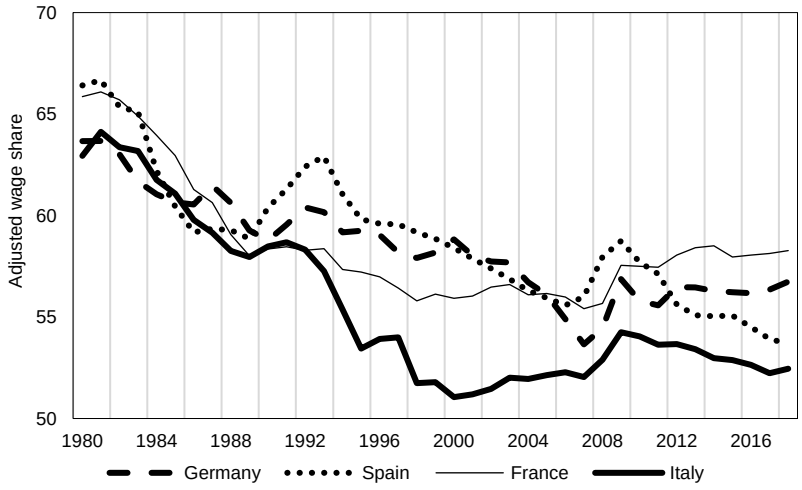
**Evidence 3.** *After a decline in the '80 and in the '90, the adjusted labour income share has stabilized in Italy, with negative spillovers on income inequality.*

Across advanced economies, the share of national income paid to wage earners has declined, although not uniformly, since the 1980s (Chart 8). In Italy, the adjusted labour share, starting from the second half of the nineties ended its decline and started to fluctuate around the value of 53%. This evidence corroborates the previous stylised fact stating that, in the period under observation, there was not a misalignment between productivity growth and real wage growth.

The suggested explanations in the relevant literature for the decline in labour income share include capital accumulation (Piketty 2014), automation of tasks previously performed by labour (Acemoglu and Restrepo 2016) and the rise of superstar firms (Autor et al. 2017, Kehrig and Vincent 2017). Research by the OECD (2015) has also found that the decline in labour share in European economies was primarily due to a decline in labour share within sectors, rather than a compositional shift between labour and capital-intensive sectors.

There is evidence for the European economies that declining costs of automating routine tasks have caused a polarization of employment and wages along the skill spectrum (Autor et al 2013; Goos, Manning, and Salomons 2014). This evidence also strongly suggests that the decline in the aggregate labour income share has been borne disproportionately by middle-skilled workers.

**Chart 8. Adjusted income wage share**[9]




*Source: Ameco dataset, European Commission.*

[9] The adjusted wage share is calculates as % GDP at market prices ant it is equal to: [(UWCD : NWTD) : (UVGD : NETD)] × 100 where UWCD = Compensation of employees, total economy Compensation of employees includes wages and salaries and employers' social contributions; NWTD = Employees, persons; all domestic industries (National accounts) NETD = Employment, persons; all domestic industries (National accounts); UVGD = Gross domestic product at current market prices, Domestic concept, included are residents as well as- non-residents working for resident producer units.

Thus, the impact of technological advancement and participation in global value chains on the aggregate labour share in advanced economies comes through a reduced share for middle- skilled labour.
This finding corroborates existing evidence for European economies that automation and import competition and offshoring have led to long-term losses in middle-skill occupations and displacement of middle-skilled workers to lower-wage occupations with adverse effects on income inequality. As shown in chart 9, lower labour income share seems to be associated with higher income inequality (measured by Gini coefficients), in Italy, Germany and Spain.
It is worth noticing that many European countries including Italy, together with the decline in the labour's share of national income, have experienced a slowdown in aggregate productivity. Interestingly, in a recent paper, Grossman et al. 2017, suggest that the productivity slowdown itself might have caused the decline in labour's income share with negative spillovers on income inequality.

**Chart 9. Labour wage share and Inequality**


*Source: authors' elaboration on World bank and Solt (2016).*

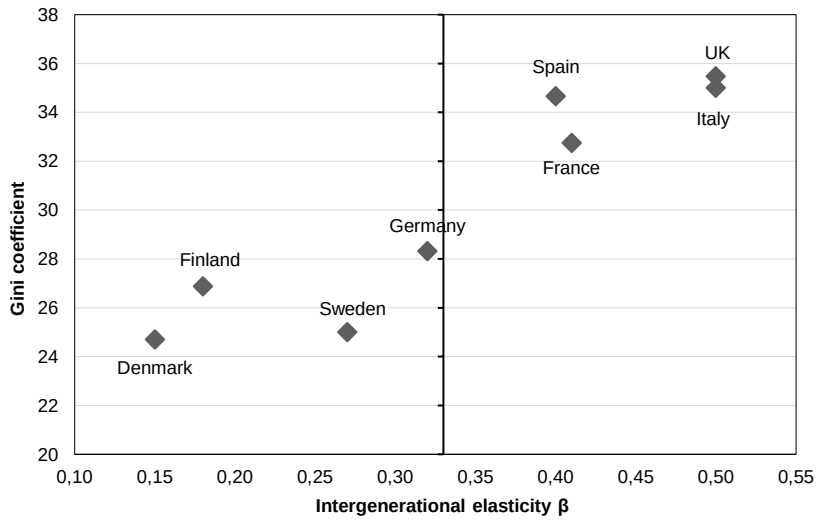
**Evidence 4**. *The very high Italian intergenerational income elasticity generates persistence in the negative feedback loop low education-low productivity-wage inequality with negative spillovers on productivity and income inequality.*

According to available intergenerational income elasticity (IGE) rankings (Corak, 2013)[10], while Nordic European countries are the most mobile (lower values of the IGE), the UK and Southern European countries are

[10] These rankings have been also confirmed by recent studies on EU countries that, instead of computing the intergenerational income association, have analysed the association between parents' socio-economic characteristics (e.g. education and occupation) and children's midlife earnings (Raitano and Vona, 2019). The estimates of the intergenerational earnings elasticity are derived from published studies, adjusted for methodological comparability as described in the appendix to Corak (2006), updated with a more recent literature review reported in Corak (2013). As for Italy, the data is taken from Barbieri et al (2019).

among the countries with the highest estimated values of the IGE ($\beta$>0.40).
Italy is among the worst performing developed countries with regard to intergenerational mobility.
In countries characterised by a high IGE, a significant association between parental background and children earnings persists even if children's educational and occupational achievements are controlled for. This evidence suggests a potential role in the intergenerational transmission process of background-related factors (i.e. social connections) (Raitano and Vona, 2018).
A recent work (Aiyar and Ebeke 2018) underline the role of equality of *opportunity* in mediating this relationship. In societies where opportunities are unequally distributed (i.e. material circumstances of parents are binding constraints on the opportunities available to their children) income inequality exerts a greater drag on productivity and growth.

**Chart 10. The "great Gastby" curve (various years)**



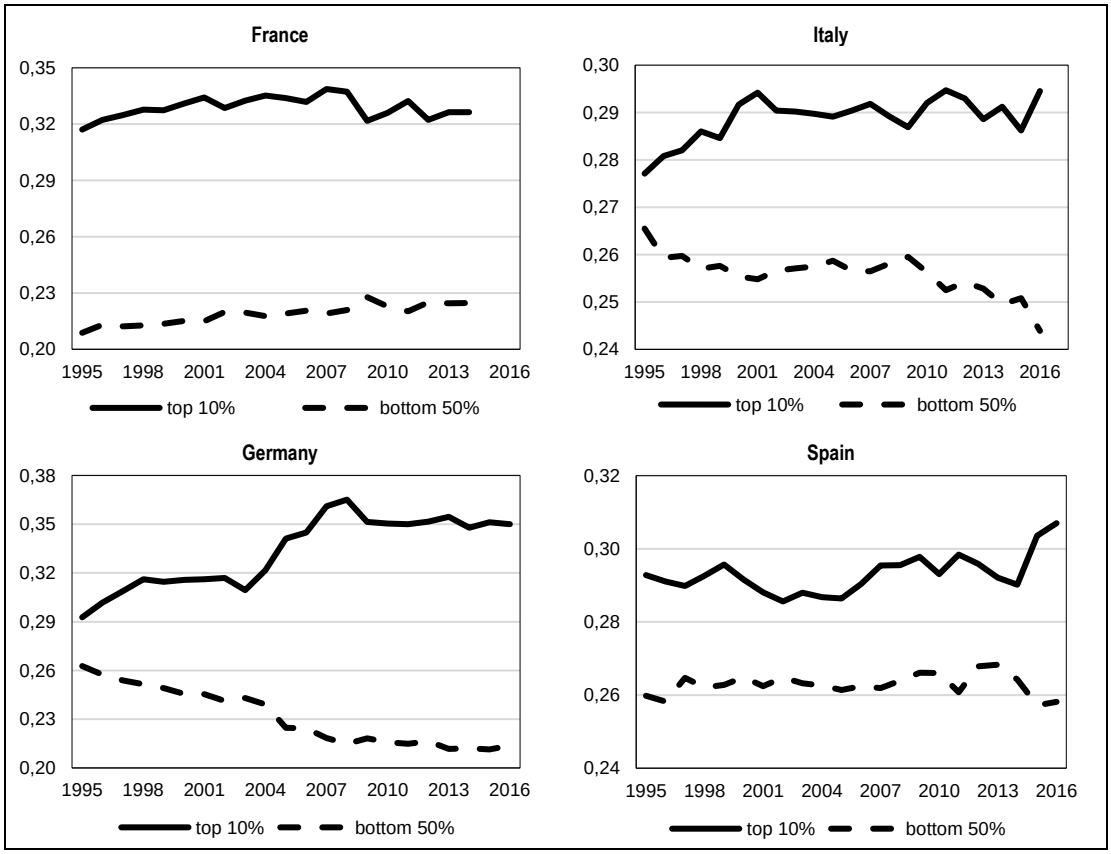

*Source: Corak, M. (2013) and Barbieri et al (2019).*

Any increase in income inequality tends to become permanent, limiting the investment opportunities (for example in education and technology) available to low-income earners, thereby hindering long-term aggregate growth. Aiyar and Ebeke (2018) find that the higher the degree of inequality of opportunity, the more detrimental is the impact of an increase in income inequality on growth.
The main transmission mechanisms among IGE, income inequality and productivity are three: i) unequal access to education, ii) unequal access to labour markets which is often divided between protected 'insiders' and unemployed or precariously employed 'outsiders'.
An increase in income inequality will tend to affect the outsiders, with hysteresis effects translating this into a permanent output loss; iii) unequal access to finance which can prevent low-income people from entrepreneurship opportunities and human capital investment, with a negative impact on growth.

**Evidence 5**. *Increasing "top" and "bottom" inequality in Italy had additional adverse consequences for productivity and growth.*

It is worth to underline that the Gini index is an aggregate measure of income inequality. Different forms of inequality evidenced by a more disentangled exam might display different consequences for productivity and growth (Voitchovsky, 2009)[11]. For example, a high number of individuals at the bottom of the income distribution with constraints on their human capital accumulation might reduce more labour productivity.

**Chart 11. Income inequality in the main European countries (top 10% versus bottom 50% average income shares)**




*Source: World Inequality Database.*

In order to perform a preliminary exploration in this direction for the four main European countries, we replaced the Gini index of inequality with the top 10% and the bottom 50% averages income shares. These measures give an indication of the relative distance between the two points considered, at the top or bottom end of the distribution.

[11] A key point here is that if the influence of income inequality on economic growth is not only a function of the spread of the distribution but also of its shape, inference based on estimated inequality coefficients could be misleading. It is a well-known fact that these inequality indices could summarize different distributional configurations in the same way and thus mask the underlying patterns. More precisely, and focusing on the e Gini coefficient in this argument, inequality could be concentrated at the top of the distribution in one case or at the bottom in another. The value of the Gini coefficient however could be the same in both cases.

In a large majority of European countries since 1980, top earners have captured an increasing share of national income[12]. Top 10% income shares in Southern Europe were slightly higher than in other regions in the 1980s, but increased less. Starting from the second half of the '90, income gaps widened in Italy but remained stable in Spain.

The growth trajectories of different income groups suggest that inequalities in European regions have mainly risen at the top of the distribution with country-specific trajectories.
Germany and France witnessed increasing inequalities at the top of the distribution. The top 10% share mainly rose in Germany in the 2000s and remained more stable in France over the period. Starting from the '90 differences in standards of living between residents grew rapidly in Italy, while they remained approximately stable in Spain. In Italy, the composition of top incomes changed since the 1980s: the share of labour incomes (from employment, self-employment and pensions, i.e., deferred wages) increased[13].

The unequal distribution of income within countries seems to have had an adverse impact on productivity although, as we underlined in the second paragraph, the empirical evidence on the impact of redistributive policies on productivity and growth is still controversial in the literature.

## CONCLUSIONS

According to our preliminary exploration, in Italy, the association between labour productivity and income inequality in the period 1995-2011 has been mostly negative suggesting that, overall, increasing productivity might diminish income inequality. This evidence suggests that the gloomy dynamics of productivity was likely to be an obstacle to the reduction of income inequality. There is also the possibility that income inequality itself was among the causes of the lack of productivity growth because of the related under investment in education and the uneven diffusion of productivity improving technologies.
After 2012, both productivity and income inequality have displayed a substantial stagnation remained stuck in a sort of vicious circle. In the period under observation, wage developments did not diverge much from those of productivity but the weak performance of the former determined a very moderate growth of real wages that might have contributed to keep income inequality high.
The common determinants of gloomy productivity and high income inequality were related to cyclical and structural conditions and to institutional factors in the framework of the globalisation process. It is worth noticing that differences in human capital accumulation and technology diffusion are among the main culprits of income inequality in

[12] It is controversial in the literature if an increasing share of income got by the richest might trickle down increasing investment, productivity and growth of the whole population (Franzini et al., 2016).

[13] Therefore, "*a new class of working super-rich, made up of professionals, top executives, CEOs (especially in the financial sector), and show business and sport superstars (Atkinson et al., 2011), emerged, and the labour market has become a place where extreme inequalities develop*" (Franzini et al., 2016).

Europe and in Italy and also the main determinants of productivity growth (sluggish in the case of Italy).
Overall, preliminary evidences suggest the possible presence in Italy of a vicious circle “low productivity - high income inequality – low productivity” reinforced by the fact that Italy is among the worst performing developed countries with regard to intergenerational mobility. In fact, intergenerational effects generate persistence in the negative feedback loop low education-low technology access-low productivity-wage inequality-high income inequality with negative spillovers at aggregate level on productivity and income inequality.

## REFERENCES


Acemoglu, D and P Restrepo (2017) “Robots and Jobs: Evidence from US Labor Markets” NBER Working Paper No. 23285

Aiyar, S and C Ebeke (2018), “Inequality of opportunity, inequality of income and economic growth”, IMF Working Paper WP/19/34

Autor, David H. 2015. "Why Are There Still So Many Jobs? The History and Future of Workplace Automation." Journal of Economic Perspectives, 29(3): 3-30.

Autor, D H, D Dorn, and G H Hanson (2013) “The China Syndrome: Local Labor Market Effects of Import Competition in the United States.” American Economic Review 103(6): 2121–68

Autor, D, Dorn D., Katz L., Patterson C., and J. Van Reenen (2017). “The Fall of the Labor Share and the Rise of Superstar Firms.” NBER Working Paper No. 23396, May.

Barbieri T., Bloise F. and Raitano M. (2019), “Intergenerational Earnings Inequality: New Evidence from Italy”, forthcoming in Review of Income and Wealth.

Barro, R.J. (2000) Inequality and growth in a panel of countries. Journal of Economic Growth 5(1): 5-32.Bell et al. 2017

Bell A., Chetty R., Jaravel X., Petkova N. and John Van Reenen (2017), Who Becomes an Inventor in America? The Importance of Exposure to Innovation NBER Working Paper No. 24062, December

Benabou, R (2000), “Unequal Societies: Income Distribution and the Social Contract”, *The American Economic Review*, 90(1): 96–129

Bengtsson, E., and Waldenström, D. (2018). Capital shares and income inequality: Evidence from the long run. The Journal of Economic History, 78(3), 712-743

Berg A., Ostry J., Tsangarides C. and Yakhshilikov Y. (2018), “Redistribution, inequality, and growth: new evidence”, Journal of Economic Growth, vol. 23(3), pp. 259-305

Bourguignon F. (2017), “World changes in inequality: an overview of facts, causes, consequences and policies”, BIS Working Papers, n. 654

Borjas G. (2003), "The Labor Demand Curve is Downward Sloping: Reexamining the Impact of Immigration on the Labor Market," Quarterly Journal of Economics, November 2003.

Brandolini, A. (1999), "The Distribution of Personal Income in Post-war Italy: Source Description, Data Quality, and the Time Pattern of Income Inequality", Giornale degli economisti e Annali di economia, 58(2), 183-239.

Brueckner, M, E Dabla Norris, M Gradstein (2015), "National Income and Its Distribution", *Journal of Economic Growth* 20: 149-175.

Bugamelli M., F. Lotti, M. Amici, E. Ciapanna, F. Colonna, F. D'Amuri, S. Giacomelli, A. Linarello, F. Manaresi, G. Palumbo, F. Scoccianti, E. Sette (2018), Productivity growth in Italy: a tale of a slow-motion change" QEF n. 422 Bank of Italy.

Cesaroni T., E. D'Elia and R. De Santis (2019), "Inequality in EMU: Is there a core periphery dualism?" Journal of Economic Asymmetries, Springer (forthcoming).

Checchi, D. and V. Peragine (2010), "Inequality of Opportunity in Italy", Journal of Economic Inequality, 8(4), 429-450.

Cingano, F. (2014), "Trends in Income Inequality and its Impact on Economic Growth", OECD Social, Employment and Migration Working Papers, No. 163, OECD Publishing

Halter D., M. Oechslin and J. Zweimüller, 2014. "Inequality and growth: the neglected time dimension, "Journal of Economic Growth, Volume 19, Issue 1, pp 81-104

Corak 2013 Income inequality, equality of opportunity, and intergenerational mobility. The Journal of Economic Perspectives, 27(3), 79-102

De Santis R. and V. Ferroni (2019), On Productivity Measurement and Interpretation: Some Insights on Italy in the European Context, LEQS Discussion paper n. 142, LSE.

Dollar, David, and Aart Kraay. (2002). "Growth is Good for the Poor," Journal of Economic Growth, 7, 195-225.

Franzini M., Granaglia E., Raitano M. (2016), Extreme Inequalities in Contemporary Capitalism: Should We Be Concerned About the Rich?, Springer

Freeman RB, Han E, Duke B, Madland D. (2016)Federal Reserve Bank, 2015 Community Development Research Conference Publication.

Goldin, C. and L. F. Katz. (2008), The race between education and technology. Cambridge, Mass: Belknap Press of Harvard University Press, 2008. 488pp. ISBN: 978-0-674-02867-8.

Goos, M., A. Manning and A. Salomons (2009), "The Polarization of the European Labour Market", American Economic Review: Papers and Proceedings, Vol. 99, No. 2, pp. 58-63.

Grossman, G M, E Helpman, E Oberfield and T Sampson (2017), "The Productivity Slowdown and the Declining Labor Share: A Neoclassical Exploration", CEPR Discussion Paper 12342

Jappelli, T. and L. Pistaferri (2010), "Does Consumption Inequality Track Income Inequality in Italy?", Review of Economic Dynamics, 13(1), 133-153.Kehrig and Vincent 2017).

Kuznets, S. (1955), "Economic Growth and Income Inequality", American Economics Review, 45(1), 1-28

Lilla, M. and S. Staffolani (2009), "The Evolution of Wage Inequality in Italy", Applied Economics, 41(15), 1873-1892.

Manacorda, M. (2004), "Can the Scala Mobile Explain the Fall and Rise of Earnings Inequality in Italy? A Semiparametric Analysis, 1977-1993", Journal of Labor Economics, 22(3), 585-613

OECD (2015a), In It Together: Why Less Inequality Benefits All, OECD Publishing, Paris, http://dx.doi.org/10.1787/9789264235120-en

OECD (2015b), Employment Outlook 2015, OECD Publishing, Paris, http://dx.doi.org/10.1787/empl_outlook-2015-en

OECD (2015) together with International Labour Organization with contributions from International Monetary Fund and World Bank Group " The Labour Share in G20 Economies Report prepared for the G20 Employment Working Group" Antalya, Turkey, 26-27 February 2015

Okun, M. (1975), *Equality and Efficiency: the Big Trade-Off*, Washington: Brookings Inst Press

Ostry, J.; Berg, A.; Tsangarides, C. G. 2014. Redistribution, inequality, and growth, IMF Staff Discussion Note 14/02

Piketty, T. (2014). Capital in the 21st Century, Harvard University Press.Ravallion 2004

Raitano M. and F. Vona, 2018. "Nepotism vs specific skills: the effect of professional liberalization on returns to parental back grounds of Italian lawyers," Sciences Po publications 36, Sciences Po Rosenfeld et al 2016

Ravallion, M. (2012), "Why don't we see poverty convergence?", American Economic Review, 102(1), pp. 504-523.

Voitchovsky, Sarah (2005), "Does the profile of income inequality matter for economic growth?", Journal of Economic Growth, 10, pp. 273-296.

Voitchovsky, S. (2009) "Inequality and economic growth", in Oxford Handbook of Economic Inequality, Salverda W., Nolan B., Smeeding T. (eds), Oxford University Press.

**Ministry of Economy and Finance**
**Department of the Treasury**
**Directorate I: Economic and Financial Analysis**

Address:
Via XX Settembre 97
00187 - Rome

Websites:
www.mef.gov.it
www.dt.mef.gov.it/it/

e-mail:
dt.segreteria.direzione1@tesoro.it

Telephone:
+39 06 47614202
+39 06 47614197

Fax:
+39 06 47821886