JOURNAL OF POST KEYNESIAN ECONOMICS
https://doi.org/10.1080/01603477.2017.1338966

Inequality, financialization, and economic decline

Pasquale Tridico and Riccardo Pariboni

ABSTRACT

The objective of this article is to argue that the labor productivity slowdown experienced in recent years by several advanced countries can be explained, following a Kaldorian-Classical approach, by a weak gross domestic product (GDP) performance and by a decline in the wage share. Moreover, drawing inspiration from recent post Keynesian literature, the authors identify the ongoing worsening in income equality and the increase in the degree of financialization as other major explanatory factors of sluggish productivity. The article will provide a brief literature review concerning nonmainstream attempts to endogenize labor productivity, beginning from the famous Verdoorn-Kaldor law (Verdoorn, 1949) and the Kaldor technical progress function (Kaldor, 1961) and including Sylos Labini's productivity equation (Sylos Labini, 1984, 1999). The authors will then discuss how labor flexibility and shareholder value orientation, one of the main aspects of financialization, can negatively affect equality and labor productivity. Finally, they propose an extended version of the Sylos Labini's equation, where productivity growth is claimed to depend positively on GDP rate of growth and the wage share, and negatively on income inequality and financialization. They submit to empirical scrutiny their extended productivity equation; the results of their estimations provide support to their theoretical argument.

KEYWORDS
Financialization; inequality; labor productivity

JEL CLASSIFICATIONS
E02; E12; E24; E44

The last decades have witnessed a pronounced increase in income inequality and a prolonged and generalized stagnation of real incomes for workers and wage earners in the lowest deciles of population, across a vast majority of Organisation for Economic Co-operation and Development (OECD) countries (see Christen and Morgan, 2005; Fitoussi and Saraceno, 2010; Atkinson et al., 2011; Tridico, 2012; Kumhof et al., 2015; Hein, 2015; and Kapeller and Schütz, 2015, for a detailed account of these trends in different countries).

These phenomena prompted an intense debate on the macroeconomic consequences of inequality, particularly in connection with the specular diffusion of household debt which, according to several authors (see, e.g., Barba and Pivetti, 2009; Rajan, 2010; Stockhammer, 2015), has acted as a substitute for wages in financing private consumption. However, in this article we will not focus our attention on the increase in financial instability

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experienced in many developed countries, nor we will try to assess the feasibility and sustainability of a debt-led growth process, issues that have been extensively analyzed elsewhere (see, e.g., Dutt, 2006; Hein, 2012b; Cynamon and Fazzari, 2016). Indeed, the ongoing worsening in income equality poses a further, perhaps less discussed threat. In a recent contribution, Storm and Naastepad (2015, p. 973) identified as a main problem for the Eurozone "the wide differentials in labor productivity and technological capabilities" among its members. Similar supply-side aspects are often neglected or only marginally treated in the critical Keynesian literature,[1] leaving the field open for the recipes proposed by the international institutions,[2] according to which the simple remedy to lack of external competitiveness is internal devaluation and wage compression.

In this article, we will try to provide a comprehensive, alternative explanation of the productivity slowdown experienced in recent years by several developed countries. Relying on a Classical-Kaldorian approach, we identify a weak gross domestic product (GDP) performance and a decline in the wage share as major explanatory factors of sluggish productivity. Moreover, drawing inspiration from recent post Keynesian literature, we will argue that also the increases of income inequality and of the degree of financialization of economies have hindered the dynamics of labor productivity.

The paper proceeds as follows: in the next section we discuss the paradigm shift that has occurred since the end of the 1970s in coincidence with Thatcher and Reagan administrations, to put our argument in a broader context and to locate our contribution within the debate on the economic implications of neoliberalism and financial capitalism. In the second and third sections we provide some theoretical background for our model: the *Productivity, Aggregate Demand, and Economic Growth: Some Ideas from Kaldor* section recalls the mechanism of transmission between productivity, aggregate demand and economic growth proposed by Kaldor and his 'technical progress function'; *From the decline of the wage share to the labor productivity growth slowdown: A theoretical background* section offers a brief literature review concerning nonmainstream attempts to endogenize labor productivity, including Sylos Labini's productivity equation (Sylos Labini, 1984, 1999). In the *Financialization, Labor Flexibility, and Inequality* section, we discuss the interaction between financialization, labor flexibility and labor productivity. In *The Model* section, we propose and test with an econometric model an extended version of the Sylos Labini's equation, where productivity growth is claimed to depend positively on the GDP rate of growth and the wage share, and negatively on income inequality and financialization.

[1]However, several recent post Keynesian contributions have attempted to fill this gap. See, for example, Naastepad (2006), Hein (2012a), Hartwig (2014) and Storm and Naastepad (2012a, 2012b, 2015).
[2]See Storm and Naastepad (2015) for an overview.

The shift toward a new paradigm

After the Second World War, economic growth in most of advanced economies occurred under the Keynesian compromise or paradigm of economic policy, which allowed not only for the construction of an important welfare state able to provide indirect wage and consumption capability to nearly everybody; it also allowed for the fairly equal distribution of productivity gains between workers and firms. Therefore, wage earners increased their income steadily at least until the mid-1970s.[3] The wage share increased and consumption fueled the positive dynamics of aggregate demand. At the same time, productive investments, both public and private, accompanied this positive trend and supported demand. Economic growth occurred and demand management policies guaranteed a steady development. Labor productivity was driven, following the Kaldor-Verdoorn approach, by the expansion of aggregate demand, which created positive spill-overs and economies of scales.

Since the end of 1970s, and in particular since the Thatcher and Reagan administrations in the United Kingdom and in the United States, a new paradigm of economic policy, which we will call *financial capitalism*, emerged—or better to say was shaped—in policy and institutional terms.[4] First in the United Kingdom and the United States and later in other advanced economies, a set of neoliberal policies boosting financialization and globalization were implemented, such as deregulation of the financial sector, liberalization of trade, capital mobility, wage flexibility, privatization, structural adjustments, retrenchments of welfare states, the policy shift from full employment to the fighting of inflation (see Barba and Pivetti, 2012), and the creation of a second pillar in the pension system (i.e., the pension funds with the clear aim to collect easily saving).

The main objective of this new paradigm was to restore the profit rate, which did not increase between 1945–1975.[5] Financialization and globalization were identified as two pillars through which (global) capitalism could return to its original idea, freed from the strings imposed by the Keynesian compromise. Financial expansion and globalization shaped the model of financial capitalism in which states and governments are obliged to fit to create institutions; to implement policies to compete with each other through

[3]See Armstrong et al. (1991) for a historical background and for a detailed investigation of the main trends and developments occurred in major capitalist countries after World War II.

[4]For these and other arguments discussed in this section, see Harvey (2005), which provides the perhaps most influential and insightful analysis of the ideological, political and social basis and implications of Neoliberalism. See also Vercelli (2015).

[5]Palma qualifies *neoliberalism* as "a new technology of power to help transform capitalism into a rentiers' delight" (Palma, 2009, p. 833), a technology of power that has been able to generate a spontaneous consensus, necessary for the acceptance of any institutional arrangement in a democratic system, toward the adoption of such measures as the deregulation of the financial and of the labor markets, the dismantle of the welfare state, the downsize of the State and of its tasks, the reduction of the progressive nature of taxation, the strategic relevance accorded to the military industrial sector, and all the other options that configure the counter-offensive of capital that followed the decades of the Keynesian consensus.

tax competition, attraction of capitals, and social dumping; and to deregulate the labor market and compress labor through labor flexibility.

Finance allows for both speculation and indebtedness. Financial investments look more lucrative for investors. Corporate managers in advanced economies started to abandon the pursuit of "new ways to generate productivity gains on the basis of retain and reinvest" and capitulated "to the new competitive environment through corporate downsizing" (Lazonick and O'Sullivan, 2000, p. 26). The dramatic increase of labor flexibility occurring in the age of financial capitalism is functional to the idea of "downsize and distribute," which allows for an expansion of financialization and the implementation of remuneration schemes for managers based on the firm's short-term performance and on shareholders' objectives, interested uniquely in the maximization of dividends.

Globalization, and global finance, induced aggressive practices of outsourcing and foreign direct investment outflows, improving in this way the bargaining position of capital relative to labor in higher-income countries. Trade unions lost power and labor market regulations, such as labor protection against firing, unemployment benefits, and minimum wage, weakened. The increase of the bargaining power of capital against labor consequently made easier for capital to obtain tax reductions and welfare retrenchments. States are willing to embark on tax competition among them to keep investments and production at home. This may have direct, negative impacts on

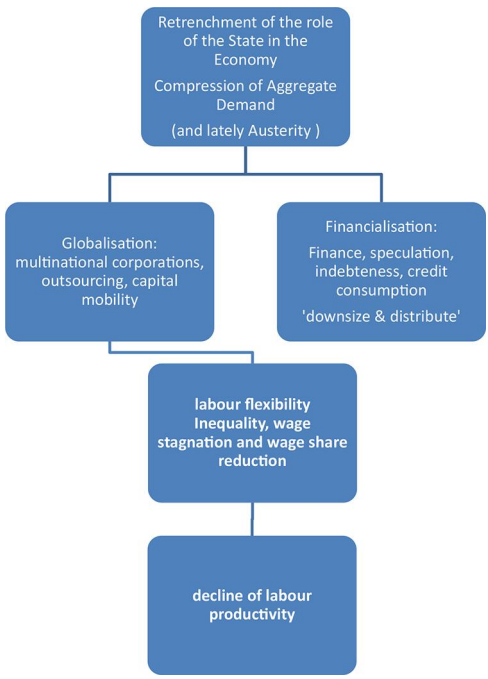

Figure 1. From financial capitalism to economic decline.

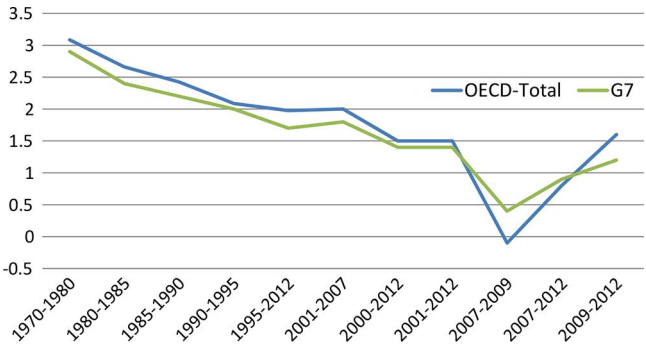

Figure 2. Labor productivity per hour, rate of growth (US $ per periods). *Source*: OECD.

unskilled labor and income distribution, which worsen without welfare support and social institutions.

Consequences are negative not only in terms of income distribution, but also in terms of labor productivity. In the framework of financial capitalism, the virtuous mechanisms of the Keynesian compromise concerning the distribution of productivity gains (through indirect wage and direct increases of the wage bill) and the positive spillover effects on aggregate demand created by the Kaldor-Verdoorn law are no longer stimulated. As we will try to argue, the consequent wage share reduction leads to a labor productivity slowdown. These processes are schematically synthesized in Figure 1, which shows the decline in labor productivity growth comes as a result of the paradigm. The decline of labor productivity growth, which occurred since the end of 1970s in most advanced economies and among G7 members, can be seen in Figure 2.

Productivity, aggregate demand, and economic growth: Some ideas from Kaldor

Post Keynesian economics has a long tradition in attempting to meaningfully endogenize labor productivity, beginning with the famous Kaldor-Verdoorn law (Verdoorn, 1949; Dixon and Thirlwall, 1975).[6] According to the latter, the evolution of output per worker (i.e., labor productivity) is driven by the output growth rate, mainly because of the operating of increasing returns to scale.

The other cornerstone of the post Keynesian approach to the investigation of labor productivity dynamics is Kaldor's technical progress function. In his 1961 article, Kaldor discussed the main weaknesses of the orthodox treatment

[6]See Bagnai (2016) for an analysis of the decline of Italian labor productivity, grounded on the works of Kaldor and Dixon and Thirlwall. As the article maintains, the appreciation of the real exchange rate implied by the introduction of Euro and the increased dependence on goods and services imported from the core Eurozone countries represents the main explanatory factors for the tightening of Italy's external constraint.

of technical progress, characterized as a continuous, exogenous process of improvement in the state of knowledge, which translates itself in a homogenous linear production function continuously shifting upward and outward. As Kaldor noticed, because "improved knowledge is, largely if not entirely, infused into the economy through the introduction of new equipment" (Kaldor, 1961, p. 207), the rate of shift of the production function cannot be treated as exclusively dependent on chronological time but has to be studied in connection with the rate of accumulation. In a neoclassical, aggregate production function-based framework, this leads to an unsolvable problem, being impossible to isolate the shifts of the production function curve—because of improved knowledge—from the movements along the curve itself, which represents the increase in the speed of accumulation (Kaldor, 1961, p. 207).

After having presented his criticisms, Kaldor proposes an alternative interpretative tool, which can be summarized by the following technical progress function:

$$g^{\lambda} = \alpha + \beta g^{k} \tag{1}$$

Equation (1), determining the rate of growth of labor productivity ($\lambda = Y/L$), has two components: the first has an exogenous nature and is given by the parameter α, which defines the height of the function and expresses "society's 'dynamism', meaning by this both inventiveness and readiness to change and to experiment" (Kaldor, 1961, p. 208). The second part of the equation states that the evolution of labor productivity is a positive function of the rate of growth of capital per head k ($k = K/L$).[7] The rationale is the following: Given that most of technical innovations and improvements are incorporated into machineries and equipment, for any given level of society's dynamism and inventiveness, the economy can absorb only a bounded amount of technical change, which is an increasing function of the speed with which capital is accumulated.[8] Equation (1) can be reported in Figure 3.

As it is possible to notice from the figure, the technical progress function is convex upward: the speed of capital accumulation brings forth diminishing dynamic returns, mainly because the ideas able to generate the greatest improvements in productivity are exploited first (ibid., p. 208); hence for high rates of investment (i.e., $g^{k} > g^{k}{}_{p}$) productivity growth is less than proportional than capital accumulation.

[7]It has to be recalled that Kaldor's treatment of capital in the context of the 'technical progress function' is subject to serious criticisms, related to the aggregation problem and to the utilization of "a measure of capital as a homogeneous physical quantity" (McCombie and Spreafico, 2016, p. 1124), in spite of the results of the Cambridge controversy on capital. See McCombie and Spreafico (2016) for a detailed discussion of these issues and for a restatement of Kaldor's insights on growth and productivity.

[8]In the book's paragraph devoted to technical progress, Lavoie (2014) mentioned also the augmented technical progress function proposed in Michl (1985), where the output growth rate and the rate of capital accumulation are independent arguments of the productivity function.

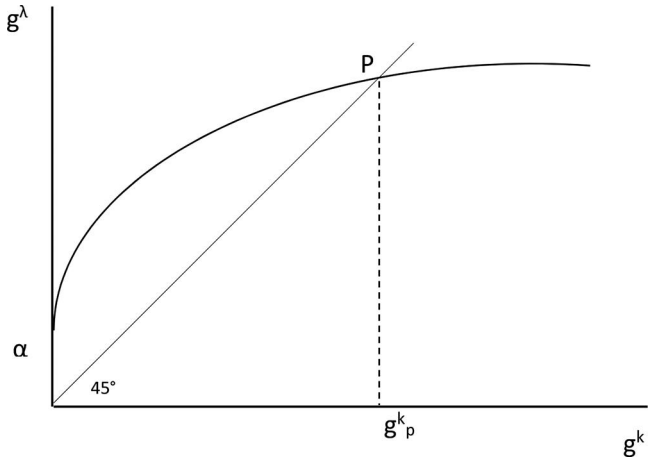

Figure 3. Kaldor's technical progress function.

To close his model, Kaldor also provides arguments in favor of the convergence of the economy toward the point of intersection of the technical progress curve and the 45° line: on the left of point P,[9] output grows faster than capital; the related decrease in the amount of capital required to produce a unit of output is likely to induce expectations of a prospective rate of profit higher than the actual one. This will cause an acceleration in capital accumulation and a movement to the right on the curve—which implies an endogenous increase in the capital-output ratio—until the system approaches point P, where output and capital grow in step. In correspondence of this equilibrium point, technical progress is Harrod-neutral (the capital-output coefficient is constant) and the economy experiences continuous increases in the amount of capital per worker, two events considered by Kaldor as "stylized facts" of the growth process in capitalist economies (ibid., p. 178).

From the decline of the wage share to the labor productivity growth slowdown: A theoretical background

More recently, the work of Paolo Sylos Labini (see, e.g., Sylos Labini, 1984, 1999) has stressed the connections among labor productivity, the dynamics of demand, the relative price of production inputs (capital and labor, in this case) and income distribution. It is possible to synthetically convey the main Sylos Labini's insights by means of the following productivity equation (Sylos Labini, 1999, p. 259):

$$g^{\lambda} = g^{Y/L} = f\left(g^{Y}, W/P_{ma}, 1-\sqcap\right) \text{ , with } f'g_{Y}, f'_{W/Pma}, f'_{1-\sqcap} > 0 \qquad (2)$$

[9]On the right of point P, an analogous, opposite process is at work.

The rate of growth of labor productivity λ, equal to the ratio between output (Y) and the level of employment (L), is a positive function of output expansion, the relative cheapness of labor over capital (W is an index of the real wage, P_{ma} is the price index of machinery) and the wage share (1 – ⊓).

The first argument of the equation captures what the author calls the Smith effect ("the division of labor depends on the extent of the market; and the division of labor is at the origin of those [labor productivity] increases"; Sylos Labini, 1999, p. 258) and describes a mechanism similar to the already introduced Kaldor-Verdoorn effect. The second argument—the price of labor relative to the price of investment—is labelled as the *Ricardo effect* and finds its rationale "in the classical notion of induced, factor-biased technical change" (Tronti, p. 210).[10]

Sylos Labini, however, focuses its attention on the productivity-enhancing role of the wage share: From the entrepreneur's perspective, the pressure exerted by the increasing cost of labor[11] provides a stimulus to reorganize the production process in a more efficient way; moreover, it also incentivizes, by making the necessary investment relatively convenient, the adoption of technologically advanced equipment and machinery, which allow to raise production without having to increase the number of employees.[12]

As reported in Lavoie (2014), traces of this intuition date back to Webb (1912), a seminal contribution whose main purpose was to support a proposal for the establishment of a legal minimum wage. The basic idea is that, as long as wage compression is prevented, entrepreneurs have to find other ways to lower the production costs with respect to their competitors. Indeed, they are induced to hunt for productivity gains,[13] to be generated by means of improvements in the productive process. Furthermore, the institution of a minimum wage is plausibly followed by an increase in the real wage, which can be troublesome and push out the market firms that do not keep pace with technological innovations. As a consequence, the average productivity and efficiency of productive units that remain active are higher (Webb, 1912, p. 984).

A similar line of reasoning is developed in Altman (1998), where the effect of higher wages on labor productivity is decomposed into several components: (a) the so-called *x-inefficiencies* are reduced. Low compensations and,

[10]As reported in Gehrke (2003), the term *Ricardo effect* has been used for the first time in Hayek (1939) as shorthand for the machinery substitution effect described in the *Principles*.

[11]Unlike from the Ricardo effect, which implies an assessment of the relative cheapness of the production factors, we are dealing here with an absolute evaluation (see Guarini, 2016, p. 52), given that the cost of labor is not compared to the other input's cost. However, the logic of the stimulus provided to productivity by these two factors is rather similar. For this and other reasons, which we will discuss later, we will exclude the Ricardo effect from our estimations.

[12]This makes clear that the technological progress under discussion is of the Harrod-neutral (constant normal capital-output ratio), labour saving (falling labour-output ratio) kind.

[13]As Webb vividly put it, "the enforcement of the Common Rule (i.e., a legal minimum wage) concentrates the pressure of competition on the brains of the employers and keeps them always on the stretch" (Webb, 1912, p. 983).

in general, a conflictual working environment are detrimental for the firm's work culture and negatively affect workers' effort. The improvement of workers' conditions, on the other hand, contributes to the establishment of more cooperative industrial relations and elicits employees' commitment;[14] (b) given that "low wages can serve as a substitute for technological change" (Altman, 1998, p. 101), firms that experience rising labor costs may be compelled to adopt already existing innovative techniques or to develop new ones.[15]

The idea of a positive influence of the wage share on the economy's productivity has been picked up also by authors such as Cassetti (2003) and Hein and Tarassow (2010), who include the Webb-Sylos Labini effect[16] into a Kaleckian growth and distribution model. In these formalizations, as a response to an exogenous increase in workers' bargaining power, capitalists try to defend their income share by means of an improvement in productivity and the consequent reduction in labor unit costs. Post Keynesian scholars have also substantiated convincingly the effects of income distribution on the productivity dynamics. Naastepad (2006) studied the Dutch case and concluded that "a reduction in real wage growth is likely to slow down productivity growth" (Naastepad, 2006, p. 428): Not only does wage moderation inhibit induced technical change; if the economy's demand regime is wage-led, it harms labor productivity also indirectly through the Kaldor-Verdoorn effect. Similar conclusions are presented in the empirical part of Hein and Tarassow (2010). The authors estimate the nature of the demand and productivity regimes of six OECD countries: a direct negative effect of the profit share on productivity growth is found for five out of the six countries in the sample, since at least the beginning of the 1980s. The indirect effect—operating through the impact of shifts in functional income distribution on GDP growth—is at work for the four countries that are found to be wage-led. Indeed, the analysis also confirms the prevalence of the Kaldor-Verdoorn effect for the whole period. Hartwig (2013, 2014) extended the Marglin-Bhaduri growth model (Bhaduri and Marglin, 1990), to study the interaction between demand growth and productivity growth. The former analyzes the case of Switzerland for the 1950–2010 period; the main result is that, despite the Swiss demand regime being profit led, the overall effect of real wage growth on productivity growth is (weakly)

[14]In mainstream literature, this is known as the *wage-efficiency effect* (see, e.g., Shapiro and Stiglitz, 1984, and Akerlof and Yellen, 1986). See also Lavoie (2014, pp. 304–306) for a discussion of Marxist and radical approaches that share with the efficiency wage literature the emphasis on workers' morale and motivation as a main explanatory factor for productivity.

[15]Altman (1998) also identified a third channel of influence, labelled as the *savings effect*, which postulates that high-wage firms are pushed to raise their propensity to save. The resulting increase in the economy's propensity to save is claimed to have a positive effect on the level of aggregate investment. Given that this argument reverses standard Keynesian logical causality, which posits that an independent level of investment generates the corresponding savings through output variations, we do not discuss further the savings effect.

[16]In post Keynesian literature, this effect is often referred to as the Marx/Hicks effect. See Hein and Tarassow (2010).

negative and the productivity regime is wage-led.[17] The latter (Hartwig, 2014) performs a panel data analysis on OECD countries, concluding that, on average, "real wage growth has a direct positive effect on productivity growth (the wage-induced technological progress) and an indirect positive effect that stems from real wage growth increasing demand growth (since the demand regime is wage-led), which in turn raises productivity growth through the Verdoorn channel" (Hartwig, 2014, p. 429).

On the basis of the brief discussion above, it is possible to conclude that wage compression and a worsening in income distribution not only do not necessarily enhance the external competitiveness and dynamism of a country. On the contrary, they might create a drag on productivity and inhibit technical change. In this regard, the case of the Southern European countries described in Storm and Naastepad (2015) is paradigmatic: Low-wage countries tend to remain stuck in low-tech production segments, specialized in "commodities and destination markets where demand growth is above average" (p. 968) and exposed to the competition of countries with a permanent advantage in terms of labor cheapness.[18]

Financialization, labor flexibility, and inequality

The political and economic roots of the financialization process, that brought about a new finance-dominated capitalism regime (Hein, 2015), along with the process of globalization, can be found in the 1970s. However, they were manifested openly politically in the 1980s. The financial sector has been an early and eager promoter of deregulation in the 1980s in the United Kingdom and United States under the Thatcher and Reagan administrations (Boyer, 2000; Petit, 2009), respectively, which Jessop (2002) identified as transition phases to the post-Fordist finance-led regime.

Jessop (2002) argued that new accumulation strategies emerged during that period. They involved multinational firms, international financial discipline, a more authoritarian state, and a form of popular capitalism. The previous Fordist strategy was replaced by an internationally oriented and financially aggressive strategy, deregulated and concentrated dually on Wall Street and in the City of London. Reaganomics and Thatcherism were strategies that aimed to restructure the accumulation system through the deregulation of the financial system (Peck and Tickell, 1992) at the expense of the social compromise realized after the Second World War. Moreover, after the fall of the Soviet Union, Alan Greenspan, who rose to oversee the U.S. Federal

[17]With this term, Hartwig refers to a positive effect of the real wage rate of growth on labour productivity growth, as it is done also in Naastepad (2006). On the other hand, Hein and Tarassow (2010) focused their attention on the relationship between profit share and productivity growth. In this regard, our analysis is closer to Hein and Tarassow's, given that we will consider the wage share as one of the determinants of productivity growth.

[18]We have discussed so far mainly contributions belonging to nonmainstream schools of thought. For a Neoclassical account of similar issues, a very influential recent reference is Cette et al. (2016).

Reserve during the Reagan administration, believed that the world economy could expand greatly through the globalization of the financial sector (Greenspan, 2007; Semmler and Young, 2010).

We will use here as a proxy for financialization—which refers to the rise of financial claims and incomes with respect to the real sector—the "Market capitalization" (also known as market value), which is the share price multiplied by the number of outstanding shares of listed companies in the stock exchange. Listed domestic companies are the domestically incorporated companies listed on the country's stock exchanges at the end of the year. Listed companies do not include investment companies, mutual funds, or other collective investment vehicles. A similar definition of financialization is used also in Nölke and Vliegenthart (2009), Engelen et al. (2010), and van der Zwan (2014). Stock market capitalization is one of the major sources of business finance in most of advanced economies. Hence it makes sense to refer to it as a proxy for financialization. Obviously also inward foreign direct investment are sources of business finance, but of less magnitude than stock market capitalization.

Figure 4 below describes the increase of financialization in advanced countries between the 1980s and the eve of the financial crash in 2006. The only exception here (which however confirms our expectations) is Japan, which in fact experienced stagnation, a feature that can be observed today in most of advanced economies since the end of 1980s. Japan had its main financial crash in the middle of 1980s, the bubble burst and then financialization, which had reached high level, started to decline. A similar path can be observed two decades later in the rest of advanced economies. Financialization increased along with instability. After the burst of the financial bubble, financialization declined in most of the countries. In this context of financial

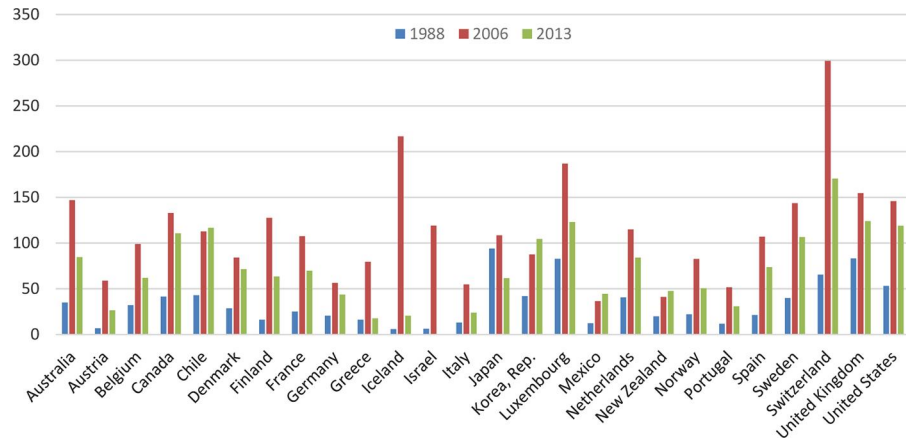

Figure 4. Market capitalization, Organisation for Economic Co-operation and Development countries, % of gross domestic product in 1988, 2006, and 2013. *Source*: own elaboration, IMF data.

bubbles and bursts, the effects on advanced economies is dramatic in terms of economic recession and stagnation. Interesting enough, as Figure 4 shows, is the reduction of market capitalization after the financial crash of 2007–2008.

Financialization is connected with both a redistribution of income in favor of profit-recipients and labor productivity slowdown. This is an important point that finds empirical evidences and theoretical foundations. In his thorough overview, Hein (2015) singled out seven stylized facts connected to financialization that, following a Kaleckian approach, impact directly functional income distribution:

> Increasing shareholder value orientation and increasing short-termism of management; rising dividend payments; increasing interest rates and interest payments, in particular in the 1980s; increasing top management salaries; increasing relevance of financial as compared to real investment and hence of the financial sector relative to the non-financial sector; hostile takeovers, mergers, and acquisitions; and liberalisation and globalisation of international finance and trade. (Hein, 2015, pp. 924–925)

Later on, the author also mentions the strong reduction of public intervention in the economy and the implementation of labor market deregulations, both occurred since the beginning of the 1980s. As also noticed by Hein, we can add that financialization worsens income distribution—and in turn this affects labor productivity—also because:

1. It favors the aggressive implementation of the "downsize and distribute" principle so that corporations' managers have as the only objective to maximize and distribute dividends for the shareholders at the cost of squeezing production and cutting wages.[19]
2. It favors an aggressive short-term strategy of corporations' managers interested mainly in the maximization of bonuses and profits in the short term at the expenses of the wage bill.

Financialization (a process that involves a set of institutions and financial tools) and labor flexibility (a set of labor market institutions that increase freedom of entrepreneurs to fire and hire workers and to cut wages) are two general categories of institutional forms that have been going hand in hand in particular during the last two decades, although not everywhere, and that were introduced across the world by countries in different degrees to guarantee the expansion of the globalization process that is believed by most of policy makers and governments to boost the national economy.

We are interested here in assessing if and to what extent financialization has affected the recent trends in productivity. This idea has been analytically

[19]In the short-term, however, the implementation of downsize and distribute might generate productivity gains, to be appropriated by shareholders. By reducing the size of the corporations and the number of workers involved, production per worker might initially rise. See also Hein (2012a, p. 484), for the provision of further reasons to expect short-term positive effects of increasing shareholder power on productivity dynamics, based on the early literature on shareholder value orientation.

investigated, within the framework of a post Kaleckian endogenous growth model, in Hein (2012a). As the author maintains, financialization might have, at first, a direct positive effect on productivity. However, also indirect effects are at work: financialization might negatively affect demand growth and, through the functioning of the Kaldor-Verdoorn effect, also the dynamics of productivity. Moreover, financialization is likely to weaken workers' bargaining power and reduce the wage share. Given that a wage-push component is included in the productivity equation, the overall effect can be plausibly expected to be negative. Indeed, there are several theoretical reasons to expect a negative relationship between financialization and productivity growth. It seems possible, in particular, to identify a causal link that goes from the prominence attributed to shareholder value orientation—one of the main features of financialization (see Lazonick and O'Sullivan, 2000)—to a decline in aggregate investment. The spectacular increase in interest and dividend payments to rentiers not only implies a loss in firms' internal means of finance; it also makes the recourse to external sources to finance capital accumulation more expensive and complicated, as highlighted by the Kaleckian principle of increasing risk. Moreover, the implementation of remuneration schemes for managers based on the firm's short-term performance on the financial markets is supposed to cause a slowdown in investment in capital stock, replaced by financial operations as a major concern for management.[20]

As a natural consequence of an unsatisfactory investment dynamics, productivity lags behind. This is one of the most relevant conclusions of Lazonick and O'Sullivan's analysis, where it is noticed that U.S. corporate managers in recent years have faced new challenges posed by international competitors mainly by downsizing firms and compressing labor costs; the same holds true for most of the OECD countries. At the same time, they renounced attaining productivity gains through the reinvestment of profits and chose to pursue short-term profitability.

Financialization diverts assets and resources toward speculative rather than productive investments with negative consequences on technological progress, which directly influences labor productivity. Labor flexibility negatively influences labor productivity because it allows for size reduction and employment squeezing: It reduces income opportunities and the wage share, increases precarious jobs and destabilizes aggregate demand. At the same time, a flexible labor market with compressed and low wages needs to be

[20]Orhangazi (2008) found empirical evidence of a negative influence of financialization on real investment, using data on U.S. nonfinancial corporations for the 1973–2003 period. Similar results can be found in Onaran et al. (2011), regarding the U.S. economy in 1960–2007. More recently, Tori and Onaran's (2017) analysis of the behavior of physical investment in selected European countries show that "financialization, depicted as the increasing orientation towards external financing, shareholder value orientation and the internal substitution of fixed investment by financial activity, had a fundamental role in suppressing investment in the NFCs (non-financial corporations)" (p. 35).

supplemented by credit consumption and developed financial tools to sustain consumption, reinforcing a vicious circle.

Deregulation of labor markets, labor flexibility, capital mobility, and global finance allow easily for labor pressure, cost compression, and wage stagnation. Consecutively, households are more and more pushed toward private indebtedness and credit consumption because their income constraints increase consistently in a period of wage stagnation. In this context, income inequality increases because labor, which is the most important production factor for income, is seen by the supply-side approach as a cost to be compressed rather than as a fundamental part of aggregate demand to be expanded.

The negative relation between labor productivity and labor flexibility can also be identified in the perspective of the models of the new Keynesian economics, which describes, at margin, work effort to be positively correlated with wages, so that unstable jobs, flexibility, scarce incentives, and low paid jobs push workers to put little effort into their work. Moreover, this does not guarantee that firms and workers invest in training and education to improve the quality of human capital, with lower results in terms of productivity, ceteris paribus, by the economic system (Salop, 1979; Shapiro and Stiglitz, 1984). From a nonmainstream perspective, similar arguments can be found in the works of Vergeer and Kleinknecht. In Vergeer and Kleinknecht (2010), the authors perform a panel data analysis based on 19 OECD countries, for the period 1960–2004. Among their main results, flexible labor relations are found to damage labor productivity growth through multiple channels[21] (p. 393) and to disincentive knowledge accumulation. Interestingly, Vergeer and Kleinknecht provide evidence that the labor productivity slowdown is not only due to the creation of precarious, deregulated, low-productivity jobs; the productivity of existing jobs is negatively affected as well. Vergeer and Kleinknecht (2014) performed a similar exercise for 20 OECD countries, in the same time span (1960–2004) of Vergeer and Kleinknecht (2010), substantially confirming the main findings presented there. Attention is drawn on the fact that easier hiring and firing procedures, leading to shorter job tenures, prevent the formation of firm-specific, tacit knowledge and hinder the functioning of the routinized innovation model (Vergeer and Kleinknecht, 2014, p. 383).

The Employment Protection Legislation (the EPL 2013 is the index we will refer to) is the indicator of the OECD, which measures the level of worker protection in the labor market and consequently the level of labor flexibility (it varies between 0 [*very low protection*] and 6 [*very high protection*]).[22] This indicator shows the level of protection offered by national legislation with respect to regular employment, temporary employment and collective

[21]The author mentions "capital-labor substitution, vintage effects, induced technical change, creative destruction, and demand-pull effects" (Vergeer and Kleinknecht, 2010, p. 393).
[22]However, no country has a value higher than 3.5 (OECD, 2013).

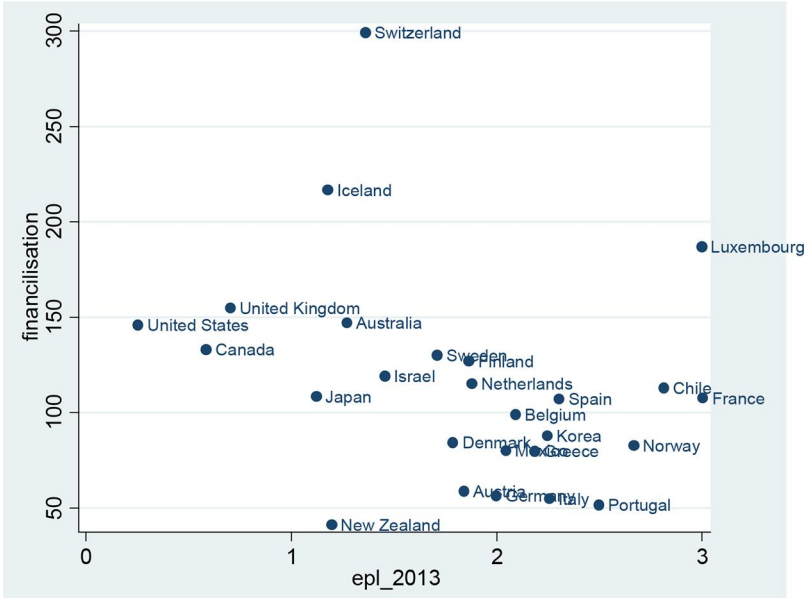

Figure 5. Correlation scatter between financialisation and labor flexibility (EPL). *Source*: Own elaboration on World Bank and Organisation for Economic Co-operation and Development data.

dismissal—in other words, regulation that allows employers the freedom to fire and hire workers at will (OECD 2004).

A flexible labor market with compressed wages needs to be supplemented by available financialization, credit, and developed financial tools to sustain consumption, which otherwise were compressed by low and unstable wages (Brancaccio and Fontana, 2011). In this context, a large number of financial tools were invented to finance consumption, postpone payments, extend credit, and create extra-consumption (Tridico, 2012).[23] That said, it is difficult to establish a causal relation: We cannot be certain whether financialization required labor flexibility or if increased labor flexibility brought about hyper-financialization. A simple correlation (Figure 5) between these two complementary institutional forms of neoliberalism seems more likely.

Labor flexibility allows for the reduction of the labor costs and thus wage saving at the expense of wage earners, i.e., consumers.[24] In such a situation, inequality increases and the aggregate demand could be restricted because consumption decreases. It is very interesting to notice an inverse relationship between inequality and the EPL index (labor flexibility): the lower the EPL

[23]It is important to remark that the emergence of a debt-led growth strategy has not been the only response to rising inequality and the related problem of weak domestic demand. Indeed, countries like Germany and Japan can be considered examples of the alternative export-led, neo-mercantilist growth model. See Stockhammer (2015) for an extensive discussion.

[24]In a recent work, Kleinknecht et al. (2016) provided a further argument to support the view that labor flexibility might be damaging for labor productivity. Based on Dutch firm-level data, the authors show that firms that use a higher share of flexible workers tend to have higher shares of non-productive, managerial personnel: to compensate for the lack of trust engendered by higher labour turnover and easy firings, more control is needed.

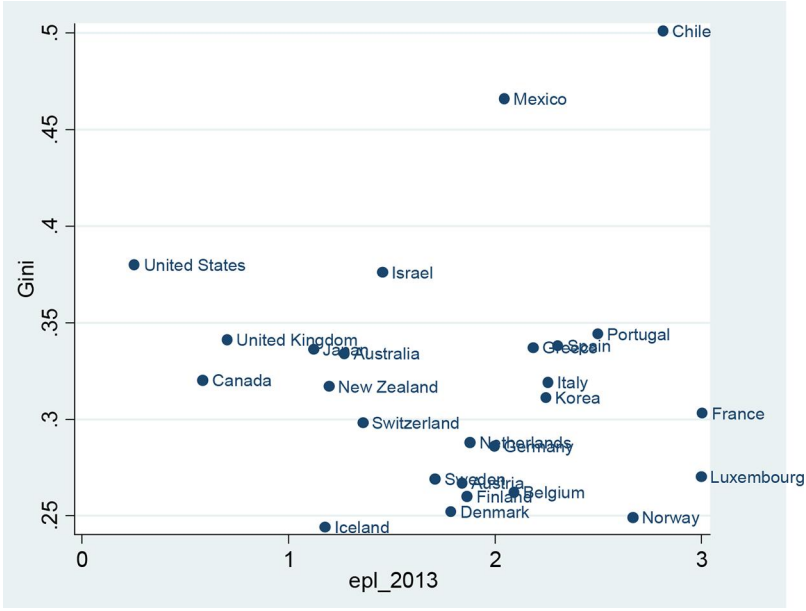

Figure 6. Correlation scatter between EPL and inequality. *Source*: own elaboration on World Bank and Organisation for Economic Co-operation and Development data.

(higher flexibility), the higher the inequality (see Figure 6). Continental and Scandinavian European countries have a higher EPL (lower flexibility) and lower inequality, while Anglo-Saxon and Mediterranean countries generally show the opposite values of higher inequality and lower EPL (higher flexibility; see also Tridico 2013).

In the following session, we will try to test the impact of the variable discussed (labor flexibility, financialization, inequality, and wage share on labor productivity) using an econometric model on a sample of 26 OECD countries.

The model

In this section, we estimate an extended version of the Sylos Labini productivity function, given by:

$$g^{\lambda} = g^{Y/Lh} = f(g^{Y}, 1 - \Pi, Ineq, Fin) \tag{3}$$

where Y/Lh is hourly labor productivity, g^{Y} is the rate of growth of GDP (which is the Smith effect or the Kaldor effect), $1 - \Pi$ is the wage share, Ineq is the inequality level identified by the Gini coefficient, and Fin is the level of financialization (market capitalization in % of GDP). We do not include in our estimated equation the Ricardo effect, which on the other hand is a component of the original Sylos Labini's productivity equation. As Gehrke (2003) made clear, Ricardo effect's validity is restricted to an "extremely special case", requiring very specific assumptions about "the available set of

production methods from which producers can choose" (pp. 152–155). Given these theoretical problems, we leave it out of our empirical exercise.

Coherently with our previous arguments, we propose an integration of the original Sylos Labini insight. In particular, we want to assess if it is possible to find some empirical confirmation for the negative impact of financialization on labor productivity growth we postulated in the previous sessions. The results are illustrated in Table 1.

$$\text{Labor productivity growth} = -1.256 - 0.004^{*}\text{F}_{ij} - 4.247^{*}\text{Ineq}_{ij} + 0.044^{*}\text{WS}_{ij} + 0.368^{*}\text{SKE}_{ij}, \text{with i} = \text{country and j} = \text{year}.$$

The regression results are the expected ones. Labor productivity growth is a function of the independent variables discussed. We use a GLS model with a random effect to establish the relation, verified through the Hausman test against the fixed effect. All coefficients are statistically significant at least within 5% level. The period considered is 1990–2013 with 26 OECD countries, for a total of 594 observations.

The GLS model (I) produces very robust results, according to which labor productivity growth increases when (a) financialization decreases (i.e., the level of market capitalization as defined previously); when (b) inequality decreases (the Gini coefficient); when (c) the wage share increases (i.e., the Webb-Sylos Labini effect); and when (d) the GDP increases (i.e., the Smith-Kaldor effect). These two last effects (wage share effect and Kaldor effect) are showed in Figure 7.

The random effect was tested against the fixed effect with the Hausman test: The results of the fixed effect regression are not consistent against the random effect and therefore are not advised by the Hausman test performed. In general, the random effect estimator not only is more efficient (Allison, 2005) than the fixed effect, but more importantly the random effects are

Table 1. Random-effects GLS regression results, 1990–2013.

	Dependent variable: Labor productivity growth	
	Model 1 (obs = 594; groups = 26)	Model 2 (obs = 526 groups = 23; Model 1 less Switzerland, Luxembourg, and Iceland)
Variable	Coefficient (standard error)	Coefficient (standard error)
Financialization $p > \|z\|$	−.0044956 (.0016295) 0.006	−.0041757 (.002012) 0.038
Inequality $p > \|z\|$	−4.247308 (1.793765) 0.018	−3.850582 (1.555349) 0.013
Wage share $p > \|z\|$	.0445975 (.0145888) 0.002	.0560304 (.0142582) 0.000
Smith-Kaldor effect $p > \|z\|$	.3685415 (.0275374) 0.000	.3863262 (.02913) 0.000
Constant $p > \|z\|$	−.1256192 (1.082406) 0.908	−.8772831 (1.037525) 0.398
	R^2 = wtn: 0.2009; btw: 0.6964; overall: **0.2864**	R^2: wtn: 0.2005; btw: 0.7820; overall = **0.3057**
	Wald $\chi^2(4) = 191.45$	Wald $\chi^2(4) = 199.37$
	Prob > $\chi^2 = 0.0000$	Prob > $\chi^2 = 0.0000$

Note. wtn = within; btw = between; Prob = probability.

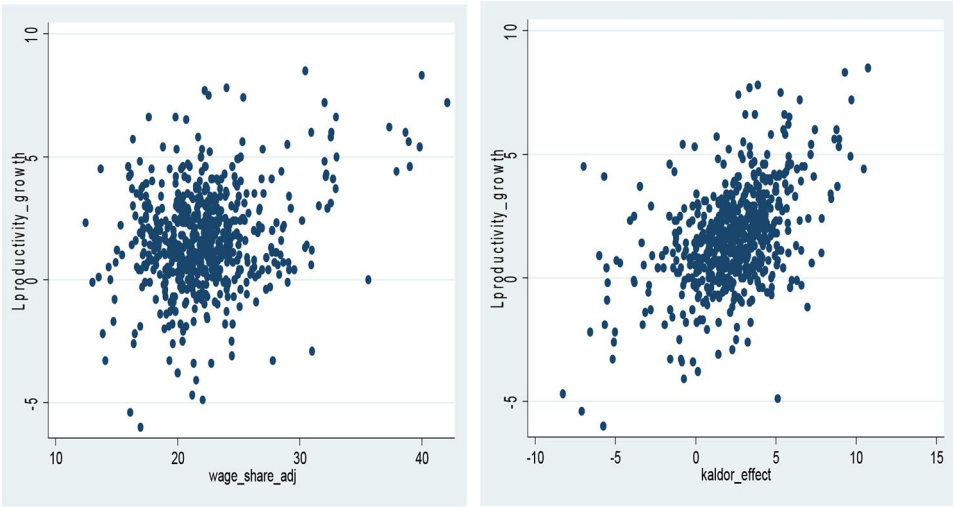

Figure 7. A: Wage share effect; B: mith-Kaldor effect. *Source*: own elaboration.

uncorrelated with the covariates in the model (correlation is assumed to be zero). In other words, differences between countries appear in the random disturbances, where change can occur over time rather than in the fixed effect. In our model, the time span of the panel (1990–2013) is long enough to allow for changes over time. Hence, random effect is a favored option not only because it is consistent against the fixed effect according to Hausman test, but also because it is a more reasonable option from an economic point of view. From the literature review we proposed, there are strong reasons to believe that differences across countries have influence on labor productivity.

Moreover, it seems from the three types of R^2 that the between component is predominant (0.6964), which may indicate that differences were found in the country-specific component of the random disturbance. A robustness check for that was added in the second model (Model 2), where we exclude Switzerland, Luxembourg, and Iceland, all of which are often outliers in some variables (e.g., financialization). Once those three countries are excluded, results do not change much and in fact the R^2 for the between component increases to 0.7820.

As for other diagnostic issues, the correlation matrix in the appendix (Table A1) shows that there is a relatively small (imperfect) multicollinearity between some variables. However, the multicollinearity test carried out in Table A2 in the appendix, the VIF test (variance inflation factor) excludes systematic multicollinearity among the explanatory variables: All the VIF values are much below 10, and the tolerance level (1/VIF = 0.1) under which multicollinearity may take place, is well overcame by all the independent variables used in the regressions (Drukker, 2003). Hence, multicollinearity is not biasing the estimated coefficients.

In the Table A3 in the appendix, the Levin–Lin–Chu test was used to verify whether the panel data contain unit roots or it is stationary. The null hypothesis tested, which we rejected with a level of significance below 1%, is that the series contains a unit root, and the alternative hypothesis is that the series is stationary (Levin–Lin–Chu, 2002). Last but not least, the residual normality test (see Kernel test in Figure A1) confirms a symmetric and unimodal distribution.

Conclusions

In this article, we attempted to provide an explanation for the labor productivity slowdown experienced by many advanced economies in recent years. Indeed, we consider extremely plausible Storm and Naastepad's (Storm and Naastepad, 2015) claim that differences in productivity and technological capabilities are of major importance to explain diverging economic performances across countries. However, we find extremely unconvincing the mainstream received wisdom according to which external competitiveness and labor productivity have to be enhanced through labor costs compression and labor flexibilization. Hence, we sketched an alternative interpretative framework for the analysis of endogenous labor productivity: Following a Classical-Kaldorian approach, we have argued that a weak GDP performance and a decrease in the wage share contribute to explain a decline in labor productivity growth. Drawing inspiration from recent post Keynesian literature, we have also identified financialization and income inequality as factors with a negative influence on the evolution of labor productivity.

After a selected literature review, which provides the theoretical bases for our tests, we submitted to empirical scrutiny an extended Sylos Labini productivity function. The results are promising and seem to confirm that weak GDP growth, a fall in the wage share, increases in financialization and inequality negatively affect the dynamics of labor productivity. In our view, the contribution of our econometric model is relevant. In its simplicity, it provides a synthesis that addresses four effects (financialization, inequality, income distribution, the Smith-Kaldor effect) at the same time in a single model. These effects are often discussed by the post Keynesian literature on the macroeconomics of financialization and on the alternative explanation of productivity growth slowdown; however now they are simultaneously in the same model thus contributing to the post Keynesian literature as an alternative explanation as compared to mainstream stories.

Acknowledgements

We wish to thank Gennaro Zezza for having organized the workshop at the University of Cassino in April 2016 for which this article was prepared. We wish to thank all the participants

at this workshop and all the participants at the 2016 EAEPE conference in Manchester and at the 2016 AIEL conference in Trento where the article was presented, for the useful comments and suggestions received. Finally, we wish to thank the two anonymous referees of the *JPKE* for the wonderful work they did with our article, and for the comments they made, which helped to improve the article. The usual disclaimer applies.

References

Akerlof, G.A., and J. L. Yellen (eds.) *Efficiency Wage Models of the Labor Market*. Cambridge, UK: Cambridge University Press, 1986.

Allison, P.D. *Fixed Effects Regression Methods for Longitudinal Data Using SAS*. Cary, NC: SAS Institute, 2005.

Altman, M. "A High Wage Path to Economic Growth and Development." *Challenge*, 1998, *41* (1), 91–104.

Armstrong, P.; Glyn, A.; and Harrison, J. *Capitalism since 1945*. Oxford: Basil Blackwell, 1991.

Atkinson, A.B.; Piketty, T.; and Saez, E. "Top Incomes in the Long Run of History." *Journal of Economic Literature*, 2011, *49* (1), 3–71.

Bagnai, A. "Italy's Decline and the Balance-Of-Payments Constraint: A Multicountry Analysis." *International Review of Applied Economics*, 2016, *30* (1), 1–26.

Barba, A., and Pivetti, M. "Rising Household Debt: Its Causes and macroeconomic Implications—A Long Period Analysis." *Cambridge Journal of Economics*, 2009, *33* (1), 113–137.

—. "Distribution and Accumulation in Post-1980 Advanced Capitalism." *Review of Keynesian Economics*, 2012, Inaugural Issue, 126–142.

Bhaduri, A., and Marglin, S. "Unemployment and the Real Wage: The Economic Basis for Contesting Political Ideologies." *Cambridge Journal of Economics*, 1990, *14* (4), 375–393.

Boyer, R. "Is a Finance-Led Growth Regime a Viable Alternative to Fordism? A Preliminary Analysis." *Economy and Society*, 2000, *29* (1), 111–145.

Brancaccio, E., and Fontana, G. "The Global Economic Crisis (Introduction)." In E. Brancaccio and G. Fontana (eds.), *The Global Economic Crisis. New Perspective on the Critique of Economic Theory and Policy*. London: Routledge, 2011, 1–10.

Cassetti, M. "Bargaining Power, Effective Demand and Technical Progress: A Kaleckian Model of Growth." *Cambridge Journal of Economics*, 2003, *27* (3), 449–464.

Cette, G.; Fernald, J.; and Mojon, B. "The Pre-Great Recession Slowdown in Productivity." *European Economic Review*, 2016, *88* (C), 3–20.

Christen, M., and Morgan, M. "Keeping up with the Joneses: Analyzing the Effect of Income Inequality on Consumer Borrowing." *Quantitative Marketing and Economics*, 2005, *3* (2), 145–173.

Cynamon, B.Z., and Fazzari, S.M. "Inequality, the Great Recession and Slow Recovery." *Cambridge Journal of Economics*, 2016, *40* (2), 373–399.

Dixon, R.J., and Thirlwall, A.P. "A Model of Regional Growth Rate Differences on Kaldorian Lines." *Oxford Economic Papers*, 1975, *27* (2), 201–214.

Drukker D.M. "Testing for serial correlation in linear panel-data models." *Stata Journal*, 2003, *3* (2), 168–177.

Dutt, A.K. "Maturity, Stagnation and Consumer Debt: A Steindlian Approach." *Metroeconomica*, 2006, *57* (3), 339–364.

Engelen E.; Konings M.; and Fernandez, R. "Geographies of Financialisation in Disarray: The Dutch Case in Comparative Perspective." *Economic Geography*, 2010, *86* (1), 53–73.

Fitoussi, J.P., and Saraceno, F. "Inequality and Macroeconomic Performance." Document de Travail 2010–13, OFCE, 2010.

Gehrke, C. "The Ricardo Effect: Its Meaning and Validity." *Economica*, 2003, *70* (277), 143–158.

Greenspan, A. *The Age of Turbulence: Adventures in a New World*. London: Allen Lane, 2007.

Guarini, G. "Macroeconomic and Technological Dynamics: A Structuralist-Keynesian Cumulative Growth Model." *PSL Quarterly Review*, 2016, *69* (276), 49–75.

Hartwig, J. "Distribution and Growth in Demand and Productivity in Switzerland (1950–2010)." *Applied Economics Letters*, 2013, *20* (10), 938–944.

—. "Testing the Marglin-Bhaduri Model with OECD Panel Data." *International Review of Applied Economics*, 2014, *28* (4), 419–435.

Harvey, D. *A Brief History of Neoliberalism*. Oxford, UK: Oxford University Press, 2005.

Hayek, F.A. *Profits, Interest and Investment: and Other Essays on the Theory of Industrial Fluctuations*. London: Routledge and Kegan, 1939.

Hein, E. "Financialization, Distribution, Capital Accumulation, and Productivity Growth in a Post-Kaleckian Model." *Journal of Post Keynesian Economics*, 2012a, *34* (3), 475–496.

—. "Finance-Dominated Capitalism, Re-Distribution, Household Debt and Financial Fragility in a Kaleckian Distribution and Growth Model." *PSL Quarterly Review*, 2012b, *65* (260), 11–51.

—. "Finance-Dominated Capitalism and Redistribution of Income: A Kaleckian Perspective." *Cambridge Journal of Economics*, 2015, *39* (3), 907–934.

Hein, E., and Tarassow, A. "Distribution, Aggregate Demand and Productivity Growth: Theory and Empirical Results for Six OECD Countries Based on a Post-Kaleckian Model." *Cambridge Journal of Economics*, 2010, *34* (4), 727–754.

Jessop, B. *The Future of the Capitalist State*. Cambridge, UK: Polity, 2002.

Kaldor, N. "Capital, Accumulation and Economic Growth." In F.A. Lutz and D.C. Hague (eds.), *The Theory of Capital*. New York: St. Martin's Press, 1961, 177–222.

Kapeller, J., and Schütz, B. "Conspicuous Consumption, Inequality and Debt: The Nature of Consumption-Driven Profit-Led Regimes." *Metroeconomica*, 2015, *66* (1), 51–70.

Kleinknecht, A.; Naastepad, C.W.M.; Storm, S.; and Vergeer, R. "Labour market Rigidities Can Be Useful: A Schumpeterian View." In S. Fadda and P. Tridico (eds.), *Financial Crisis, Labour Market and Institutions*. New York: Routledge, 2013.

Kleinknecht, A.; Kwee, Z.; and Budyanto, L. "Rigidities Through Flexibility: Flexible Labour and the Rise of Management Bureaucracies." *Cambridge Journal of Economics*, 2016, *40* (4), 1137–1147.

Kumhof, M.; Rancière, R.; and Winant, P. "Inequality, Leverage and Crises." *American Economic Review*, 2015, *105* (3), 1217–1245.

Lazonick, W., and O'Sullivan, M. "Maximizing Shareholder Value: A New Ideology for Corporate Governance." *Economy and Society*, 2000, *29* (1), 13–35.

Lavoie, M. *Post-Keynesian Economics. New Foundations*. Cheltenham, UK: Elgar, 2014.

Levin A.; Lin, C.F.; and Chu, C.S.J. "Unit Root Tests in Panel Data: Asymptotic and Finite-Sample Properties." *Journal of Econometrics*, 2002, *108* (1), 1–24.

McCombie, J.S.L., and Spreafico, R.M. "Kaldor's 'Technical Progress Function' and Verdoorn's Law Revisited." *Cambridge Journal of Economics*, 2016, *40* (4), 1117–1136.

Naastepad, C.W.M. "Technology, Demand and Distribution: A Cumulative Growth Model with an Application to the Dutch Productivity Growth Slowdown." *Cambridge Journal of Economics*, 2006, *30* (3), 403–434.

Nölke, A., and Vliegenthart, A. "Enlarging the Varieties of Capitalism: The Emergence of Dependent Market Economies in East Central Europe." *World Politics*, 2009, *61* (4), 670–702.

Organisation for Economic Co-operation and Development, *Employment Outlook, 2004*. http://www.oecd.org/dataoecd/8/4/34846856.pdf.

Onaran, Ö.; Stockhammer, E.; and Grafl, L. "Financialisation, Income Distribution and Aggregate Demand in the USA." *Cambridge Journal of Economics*, 2011, *35* (4), 637–661.

Orhangazi, Ö. "Financialisation and Capital Accumulation in the non-Financial Corporate Sector: A Theoretical and Empirical Investigation on the US Economy: 1973–2003." *Cambridge Journal of Economics*, 2008, *32* (6), 863–886.

Palma, J.G. "The Revenge of the Market on the Rentiers. Why Neo-Liberal Reports of the End of History Turned to be Premature." *Cambridge Journal of Economics*, 2009, *33* (4), 829–869.

Peck, J., and Tickell, A. "Local Modes of Social Regulation? Regulation Theory, Thatcherism and Uneven Development." *Geoforum*, 1992, *23* (2), 347–363.

Petit, P. "Financial Globalisation and Innovation: Lessons of a Lost Decade for the OECD Economies." Working Paper 2009–14, CNRS, 2009.

Rajan, R. *Fault Lines: How Hidden Fractures Still Threaten the World Economy*. Princeton, NJ: Princeton University Press, 2010.

Ricardo, D. *On the Principles of Political Economy and Taxation*. New York: Olms, 1817/1977.

Salop, S.C. "Monopolistic Competition with Outside Goods." *The Bell Journal of Economics*, 1979, *10* (1), 141–156.

Semmler, W., and Young, B. "Lost in Temptation of Risk: Financial Market Liberalization, Financial Market Meltdown and Regulatory Reforms." *Comparative European Politics*, 2010, *3* (3), 327–353.

Shapiro, C., and Stiglitz, J.E. "Equilibrium Unemployment as a Worker Discipline Device." *The American Economic Review*, 1984, *74* (3), 433–444.

Stockhammer, E. "Shareholder Value Orientation and the Investment-Profit Puzzle." *Journal of Post Keynesian Economics*, 2005, *28* (2), 193–215.

Stockhammer, E. "Rising Inequality as a Cause of the Present Crisis." *Cambridge Journal of Economics*, 2015, *39* (3), 935–958.

Storm, S., and Naastepad, C.W.M. *Macroeconomics Beyond the NAIRU*. Cambridge, UK: Harvard University Press, 2012a.

Storm, S., and Naastepad, C.W.M. "Wage-Led or Profit-Led Supply: Wages, Productivity and Investment." *ILO Conditions of Work and Employment Series*, 2012b, no 36.

Storm, S., and Naastepad, C.W.M. "Europe's hunger Games: Income Distribution, Cost Competitiveness and Crisis." *Cambridge Journal of Economics*, 2015, *39* (3), 959–986.

Sylos Labini, P. *The Forces of Economic Growth and Decline*. Cambridge, MA: MIT Press, 1984.

—. "The Employment Issues: Investment, Flexibility and the Competition of Developing Countries." *BNL Quarterly Review*, 1999, *52* (10), 257–280.

Tori, D., and Onaran, Ö. "The Effects of Financialisation and Financial Development on Investment: Evidence from Firm-Level Data in Europe." *Greenwich Papers in Political Economy 16089*, 2017.

Tridico, P. "Financial Crisis and Global Imbalances: Its Labour Market Origins and the Aftermath." *Cambridge Journal of Economics*, 2012, *36* (1), 17–42.

—. "The Impact of the Economic Crisis on EU Labour Markets: A Comparative Perspective." *International Labour Review*, 2013, *152* (2), 175–190.

Tronti, L. "The Italian Productivity Slow-Down: The Role of the Bargaining Model." *International Journal of Manpower*, 2010, *31* (7), 770–792.

van der Zwan, N. "Making sense of financialisation." *Socioeconomic Review*, 2014, *12* (1), 99–129.

Vercelli, A. "The Neoliberal Trajectory, the Great Recession and Sustainable Development." In P. Arestis and M. Sawyer (eds.), *Finance and the Macroeconomics of Environmental policies*. Basingstoke, UK: Palgrave, 2015, 37–73.

Verdoorn, P.J. "Fattori che Regolano lo Sviluppo della Produttività del Lavoro." *L'Industria*, 1949, 1, March, 3–10.
Vergeer, R., and Kleinknecht, A. "The Impact of Labor Market Deregulation on productivity: A Panel Data Analysis of 19 OECD Countries (1960–2004)." *Journal of Post Keynesian Economics*, 2010, *33* (2), 371–408.
—. "Do Labour Market Reforms Reduce Labour Productivity Growth? A Panel Data Analysis of 20 OECD Countries (1960–2004)." *International Labour Review*, 2014, *153* (3), 365–393.
Webb, S. "The Economic Theory of a Legal Minimum Wage." *Journal of Political Economy*, 1912, *20* (10), 973–998.

Appendix

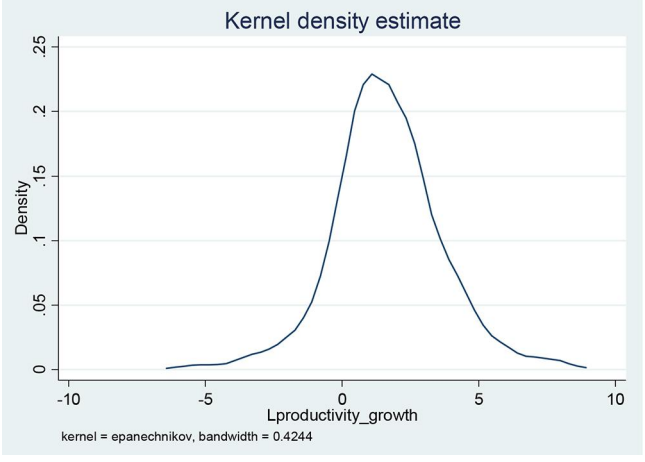

Figure A1. Normality test. *Source*: own elaboration.

Table A1. Correlation matrix.

Variable	1	2	3	4	5
1. Labor productivity growth	1.0000				
2. Financialization	0.0088	1.0000			
3. Inequality	−0.1218	−0.0928	1.0000		
4. Wage share	0.1335	0.2336	−0.2008	1.0000	
5. Smith-Kaldor effect	0.4850	0.1812	0.0015	−0.0617	1.0000

Table A2. Multicollinearity test.

Variable	VIF	1/VIF
wage_share~j	1.11	0.902598
Financiali~n	1.10	0.905032
growth	1.05	0.955716
GINI_ok	1.04	0.957461
Mean VIF	1.08	

Note. VIF = variance inflation factor.

Table A3. Levin-Lin-Chu unit-root test for Labour productivity (stationarity of the panel).

Hypothesis		Panel
Ho: Panels contain unit roots Ha: Panels are stationary AR parameter: Common Panel means: Included Time trend: Not included ADF regressions: 1 lag LR variance: Bartlett kernel, 9.00 lags average (chosen by LLC)		Number of panels = 26 Number of periods = 24 Asymptotics: N/T ->0
	Statistic	p-value
Unadjusted t	−8.0045	
Adjusted t*	2.9023	0.0019

Source: Own elaboration.