The Impact of Financialization on the Rate of Profit: A Discussion

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Abstract

The present work, by making use of the 'integrated wage-goods sector' methodology proposed by Garegnani, investigates some channels through which financialization may impact the normal rate of profit. We analyze the effect of a higher profit share in the financial sector, the technical innovations in the financial sector and rising household indebtedness. We find that none of them influences normal profitability, with the exception of one type of technical innovation. We subsequently critically discuss some Marxian strands of analysis that describe financialization as a temporary countertendency to supposed falling general profitability. We argue in favor of a separate analysis between growth caused by private borrowing and the study of a normal distribution. Finally, a recent attempt to read the 'sixth' countertendency to the falling rate of profit listed by Marx as an anticipation of the phenomenon of financialization is criticized, proposing an alternative interpretation.

Keywords: falling profitability; financialization; financial crisis; rate of profit.

JEL Codes: B51; B14; P12.

1. Introduction

In recent decades, the concept of 'financialization' has become a widespread heterodox analytical category. As Sawyer (2013) recounts, the first authors trying to systemize its description were Magdoff and Sweezy (1987) for the *Monthly Review*. Following Sawyer (2013, pp. 12-13), financialization characterizes a new epoch of a different capitalism, in which finance gained a major power position. This field of research continuous-

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ly expanded across the years, until the seminal contribution of Epstein (2005) set a new benchmark. According to him,

> financialization means the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies.

Recently, Sawyer (2018, p. 44) has further extended the definition:

> Financialization is perceived in terms of the increasing role of financial motives, financial markets, financial actors and financial institutions in domestic and international economies, societies, the environment and changing relationships between the financial sector and the real non-financial sector.

From a Marxian perspective, among others, we find the insightful analysis of Fine (2013), who describes the phenomenon as the propagation of 'interest-bearing capital' in the creation of financial assets detached from production and circulation of goods and services, and its diffusion to sectors where its presence was previously of minor weight.[2] On the issue of placing this phenomenon in a historical and institutional context, Vercelli (2013, pp. 26-30, 38-41) singles out two phases in which the process of financialization is peculiarly strong. Vercelli placed the first one between the end of the nineteenth century and the Great Depression. The second one, the so-called 'neoliberal' financialization, dates back to the collapse of the Bretton Woods institutional setup, started in the middle of the seventies. Fasianos *et al.* (2018) further extend this analysis by proposing an ulterior sub-periodization. Those authors set forth comprehensive and thorough research, which leads them to propose a 'four-phases' periodization of financialization. Accordingly, these phases are sorted out in the following manner: (i) first period, from the beginning of the twentieth century to the 1933 (in accordance with Vercelli), (ii) second period, a transitory period from the 1933 to the WWII, (iii) third period, the 'Golden Age' lasting from the 1945 to the 1973, ending with the related crisis, (iv) fourth period, the so-called 'financialized capitalism' era, spanning from 1974 to 2010. Fasianos *et al.* (2018, pp. 56) eventually summarize their findings into a remarkably informative table, which shows the four-periods categorization in light of a full list of institutional, economic and political features shaping each epoch (cf. Figure 1).

Specifically, they are: a high-income share/size of the financial sector, a high intensity of financial innovations, and a high level of household indebtedness. So, it can be argued that these three aspects shape the historical novelty of the last phase of financialization. However, another interesting comparison to be made is with the immediate predecessor. With respect to the third phase, the fourth one is again at odds with it because of the role of the financial sector (in the fourth phase it is dominant and occupies a wide share of the economy).

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[2] Fine (2013, p. 55) depicts financialization as "the intensive and extensive accumulation of fictitious capital or, in other words, the increasing scope and prevalence of interest-bearing capital in the accumulation of capital".

	1st period (1900–33)	2nd period (1934–40)	3rd period (1945–73)	4th period (1974–2010)
Dominance of financial sector	Yes	No	No	Yes
Income share/size of the financial sector	Moderate high	Moderate low	Moderate low	High
Financial regulation	No	Yes	Yes	No
Shareholder value orientation	Yes	–	No	Yes
Intensity of financial innovation	Moderate	Moderate	High	High
Household indebtedness	Moderate high	Low	Moderate	High
Income inequality	High	Low	Low	High
Commitment to full employment	No	Yes	Yes	No
Low inflation targeting	–	–	No	Yes
Free capital mobility	Yes	No	No	Yes
Leverage structures/inclination to financial crises	High	Low	Low	High

Figure 1 – Characteristics and periodization for the four phases
of financialization; source (Fasianos *et al.*, 2018, p. 56).

In addition, they have the same high degree of innovation waves (but the fourth one is financially deregulated, as we will discuss below) and household indebtedness, together with inequality, are noticeably higher. Thus, we think that the three peculiar features mentioned above ought to be discussed, as they constitute a characterization of the fourth phase with respect to both the first and third ones.[3]

In what follows, we will discuss the role of these peculiar novelties featuring the last decades of the fourth-phase deepening financialization pattern. In particular, we will attempt to appraise how they may have interacted with the general normal rate of profit, where the latter is defined as the profit rate yielded on newly installed capital goods, earned by employing the dominant available technique, for a normal level of capacity utilization (Garegnani, 1992). The analysis will be conducted at a theoretical level. We will accordingly be engaged in an enquiry on the possibility for 'financialization', and, in particular, its 'fourth phase' version, to impact the general normal rate of profit. The spirit in which the work is conducted is twofold. On the one hand, we wish to propose a theoretical standpoint on the matter of interest which, at least to the best of our knowledge, has not yet been set forward. Namely, we wish to treat the financialization-profitability nexus through the lenses of Garegnani's "integrated wage-goods" method (Garegnani 1984, 1987). A further stimulus to such a kind of investigation stems from the consideration that, while the literature has extensively focused on the impact of financialization on inequality and GDP growth, there has generally been less attention towards the issue that we are about to discuss.

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[3] There are several other facets marking the difference between the fourth and third phases: shareholder value orientation, commitment to full employment, low inflation targeting, free capital mobility, and leverage structure/inclination to financial crises. We will discuss them under the single label of broad institutional factors that we are not going to treat under the 'financialization' umbrella, but rather as a set of institutional and political arrangements that have had a noticeable impact upon the relative bargaining power of capitalists and workers, thereby making room for the dramatic enlargement of the financial sector we have been witnessing (cf. Sec. 2.4).

In addition to this, we will try to apply the principal insights that we are going to elicit from some contributions which have tried to connect financialization and profitability. As we are going to see below, it is possible to find in some of the Marxian strands of literature the endeavor to pose those two categories in connection. Those contributions have followed two major roots. On the one hand, we find the utilization of the 'Law of the Tendency of the Rate of Profit to Fall' (LTRPF), stated by Marx in the third volume of his *Capital*. On the other hand, there is the literature which mainly refers to the seminal *Monopoly Capital* of Baran and Sweezy (1966), within which the issue of the growing impossibility for capitalists to find profitable investment opportunities for an ever-increasing amount of employable surplus is seen. In what follows, we will try to understand whether their claim about the role of financialization as a temporary support to profitability is theoretically justified. Moreover, we will also be engaged in criticizing a recent proposal which aims at finding a role for financialization as a countertendency to the falling profitability in the third volume of *Capital*. We will argue that the attempt appears not to be convincing and, in addition, an alternative interpretation will be set forward.

The work is structured as follows: Section 2 builds a theoretical framework within which the main features of financialization will be discussed in light of their impact on the normal rate of profit; Section 3 recalls the most important elements of connection between 'financialization' and the 'falling profitability' theories and discusses the weak points to be found in such a relationship; Section 4 discusses the textual evidence from Marx which has been interpreted as an anticipation for the financialization phenomenon as a countertendency, while Section 5 concludes.

2. The role of financialization in a Classical-Marxian framework

In order to analyze whether and how financialization could have affected the general rate of profit in the last decades of advanced capitalism, we are going to develop our argument within a Classical standpoint, as revived by the work of Sraffa (1960). As explained by Garegnani (1984, pp. 320-323), in such a model there are two levels of investigation: the analytical *core*, in which the 'intermediate' data are given, and the institutional part, from which those data are taken. Within the former, as in the Classical-Marxian tradition, the distributive variables and the relative prices can be arrived at by considering the 'intermediate' data constituted by the social product, the available technological possibilities and one distributive variable as given (Figure 2).

Garegnani (1984, pp. 309-320) also argued that this method can be implemented by running two alternative routes: either a Sraffian "price-equations method", or a Marxian "integrated wage-goods sector" (from now on, IWGS).[4] The most important develop-

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[4] Whatever the choice, the basic insights regarding the possibility to validate the method firstly envisaged by the Classical authors and Marx, and put into light the inverse relationship between the profit rate and the wage rate, hold regardless.

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ments for the investigation of the role of monetary factors in the first framework have been two. Pivetti (1985, 1991) and Panico (1985, 1988) expounded Sraffa's suggestion that "the profit rate is accordingly susceptible to being determined from outside the system of production, in particular by the level of the money rates of interest" (Sraffa,
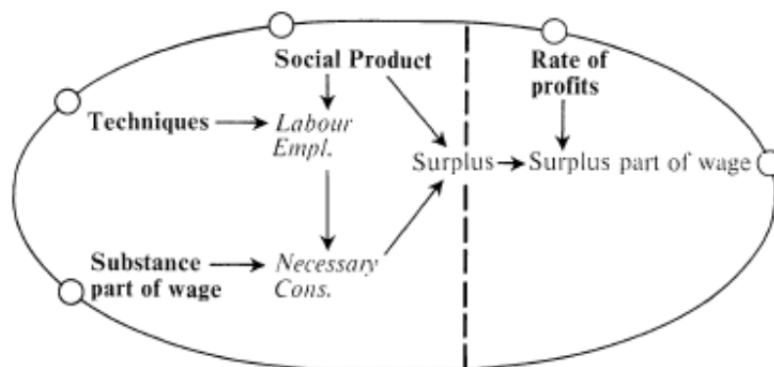

Figure 2 – The determination of distributive variables starting from the three set of Classical 'intermediate' data, source: Garegnani (1984, p. 322).

1960, p. 33). The first author elaborated a theory in which the exogenously given nominal rate of interest regulates the ratio between the nominal wage obtained by wage bargaining and the general price level (Pivetti, 1991). In it, the movements of the nominal interest rate and the movements of the general price level are expected to be positively related, considering that the former directly enters the normal (both direct and 'opportunity') costs of enterprises. Therefore, for a given normal profits of enterprises component and a given nominal wage rate, a higher (lower) nominal interest rate leads to a higher (lower) general profit rate and a lower (higher) real wage. If the opposing claims over the given economy's product from competing social groups are not mutually consistent, an inflationary process may arise.[5]

Panico (1988), while moving on similar grounds, highlights the role of the division of the economy into an industrial and a financial sphere, with the latter appropriating a share of the net product as a reward for providing loans to the former, while the uniformity of the general profit rate for the whole system is guaranteed. Moreover, the interest rate structure is governed by the 'illiquidity discounts' of agents of Keynesian flavor (Panico, 1988, Ch. 5).[6] Even in such a model, the nominal interest rate stands in direct relation to the general profit rate, while exhibiting an inverse relation *vis-à-vis* the real wage.

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[5] For a deeper treatment of this issue, cf. Stirati (2001, pp. 430-435), in which the pressures over a given social product coming from different social groups can lead to inflation if they are not mutually consistent.

[6] In that framework, the assessments of investors over the degree of illiquidity of the various forms of investment (financial short term, financial long term, real capital) shapes the interest rates' structure. Monetary policy can affect the course of distribution by moving that structure of interest rates via an exogenous fixation of the short-term interest rate and can also modify the structure by affecting the expectation and liquidity evaluations of agents.

However, for the sake of carrying out our enquiry into the role of financialization with respect to the normal profitability of the system, our choice is to follow the IWGS methodology. This latter decision has been driven by three orders of considerations. Firstly, on the empirical and logical levels, how to account for the continuously diverging pattern of the real interest rate and the profit rate through the lenses of the "price-equations method" *cum* exogenously given interest rate appears not yet clear. Indeed, what we have been witnessing in the last decades is a continuously diverging pattern for the profit rate on the one hand, and the real long-term interest rate on the other, with the former's increase going hand in hand with a lasting decrease of the latter (Basu and Vasudevan 2012, Gomme et al. 2015, Duménil and Lévy 2002b). Together with these trends, we see a stagnation of the real wage going along with continuously rising labor productivity. This goes hand in hand with falling wage shares all across industrialized countries. In the Panico-Pivetti approach, which would normally envisage a *fall* in the general rate of profit as the outcome of a prolonged fall in the short and long-term real interest rates, the recent distributive outcomes are, at least at first sight, at odds with their prescriptions. On the other hand, as we will discuss below (cf. Sec. 2.2), in the IWGS analysis the inverse relationship between the given physical real wage rate and the general rate of profit is more visible and can perhaps better highlight the indirect relationship between them which we have been witnessing. Thus, we think that the attempt to reflect upon the issues we are going to treat by means of this analytical device can be a suitable way to look at those aspects.

Secondly, at the institutional level, as we will see below (cf. Sec. 2.4), in our case it is perhaps better to consider the real wage as the distributive variable to be taken as exogenous instead of the profit rate. It can in fact be argued that the *initial* change in the relative bargaining position of capitalists and workers, a change permitting the subsequent expansion of the financial sector, has occurred via a renewed pressure on the real wage and the labor market conditions. Monetary policy can be seen in this instance as a tool deployed in the first place to cause a surge in unemployment, and then as a stabilizer of financial markets, allowing families to sustainably accumulate private debt. Even in this case, the analysis to be carried forward utilizing the IWGS appears a worthwhile path to follow. The latter takes the physical real wage as exogenously given and by that way determines the general profit rate residually, while the Panico-Pivetti approach takes the general profit rate as given and looks at monetary policy as affecting distribution primarily by possibly bringing about a higher price/money wage ratio via higher interest rates.

Thirdly, at the dialectical level, we will try to pose our proposal in relation to some Marxian explanations for the role of financialization in light of the profitability of investments (cf. Sec. 3). To such an end, the IWGS appears more suitable, since it had been built, among other things, to check the validity of the Marxian hypothesis about the determinants of the general profit rate, as we are going to see. In Marx's analysis, in fact, the general profit rate was arrived at once the exogenously given real wage rate, the technical conditions of production and the social product were given (Pivetti, 1987),

as subsequent Marxian literature continued doing. Thus, our choice also permits casting the enquiry in a common analytical procedure.

2.1. The "integrated wage-goods sector" method

Garegnani (1984, 1987) has shown the possibility to arrive at a correct formulation for the rate of profit along Marxian lines, with some necessary corrections with respect to the insights provided by Marx himself. It is in fact possible to demonstrate that the rate of profit depends on solely two factors: the rate of surplus value and the ratio between the means of production and labor. However, those two elements have to be evaluated differently from the Marxian categories of the rate of surplus value expressed in the embodied labor and the organic composition of capital, the latter being the ratio between the economy-wide constant-to-variable capital. In Garegnani (1984, pp. 313-320, 1987, pp. 19-23) it is possible to find the construction of the IWGS. The first step is to isolate, at the logical level, the branch of the economy which is composed of the industries engaged in the production of both the wage goods and their direct and indirect means of production.[7] It is then possible to obtain the surplus value extracted from the workers as the difference between the wages paid to the laborers employed in the whole economy and the ones employed in the IWGS.[8] Hence, the flow of profits stemming from the IWGS can be calculated without recurring to price valuations, given the physical homogeneity between the net product of the sector and the wages given to its workers.[9] Once the amount of surplus value in the IWGS has been calculated, the value of the means of production employed in it is needed to calculate the general rate of profit. In order to overcome the difficulty constituted by the dependency of their prices on the rate of profit, which makes the physical homogeneity property not exploitable therein, Garegnani made use of the 'reduction to dated quantities of labor' analytical tool (from Sraffa, 1960, Ch. VI, pp. 40-47). At this point, the rate of profit appears as the only unknown in the 'profit function'. Finally, the so-called 'surplus equation' obtained at the end has a shape that only depends on two elements: the physical composition of the real wage and the technical conditions of the wage-goods' direct and indirect means of production. Following Fratini (2015b, 2019), we can arrive at formally representing the surplus equation through which the rate of profit is calculated in the IWGS method:

$$\boldsymbol{Q} = \boldsymbol{\Lambda} + \mathbf{M} \cdot \boldsymbol{Q} \tag{1}$$

$$MP_v = \boldsymbol{M} \cdot \boldsymbol{Q} \, , \; L_v = \boldsymbol{l_v} \cdot \boldsymbol{Q} \tag{2}$$

$$\boldsymbol{\Lambda} = L \cdot w \cdot \boldsymbol{\lambda} \, , \boldsymbol{\lambda} = (\lambda_a, \lambda_b, \dots, \lambda_k) \tag{3}$$

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[7] The various industries are rescaled in such a way that the net product of the IWGS is the composite wage commodity.

[8] Whose relative numbers are given, since the technical conditions of production and the quantities produced are taken as given.

[9] Let us notice that Garegnani employed the 'commanded labor' instead of the 'embodied labor' standard. For a reconstruction of the use of the latter category in the Classical/Marxian tradition, cf. Garegnani (2018).

$$\Pi_v = \boldsymbol{p} \cdot \boldsymbol{\Pi}_v = \boldsymbol{\Lambda} \cdot \boldsymbol{p} - L_v \cdot w \cdot \boldsymbol{p} \cdot \boldsymbol{\lambda} = (L - L_v) \cdot w \cdot \boldsymbol{p} \cdot \boldsymbol{\lambda} \qquad [4]$$

$$w \cdot \boldsymbol{p} \cdot \boldsymbol{\lambda} = 1 \qquad [5]$$

$$\pi_v = \frac{L - L_v}{L_v} \qquad [6]$$

$$r \cdot v_v(r) \equiv r \cdot \left\{ \sum_{x=a}^{k} l_x \cdot \mu_x + \sum_{t=1}^{\infty} \left[\sum_{x=a}^{k} l_{xt} \cdot \mu_x \right] \cdot (1+r)^t \right\} \qquad [7]$$

In equation (1) we start from the construction of IWGS gross product $\boldsymbol{Q}$, which is a vector equal to the sum of the IWGS net product $\boldsymbol{\Lambda}$ plus the means of production (circulating capital goods) $\mathbf{M} \cdot \mathbf{Q}$ used to obtain the gross product, where $\mathbf{M}$ is a K · K matrix of unitary coefficients of production. In equation (2) we have the means of production MP_v already defined and the labor employment in the IWGS L_v, equal to the IWGS labor coefficients' vector $\boldsymbol{l}_v$ times its gross product vector. In equation (3) the IWGS net product is obtained as the product of the total labor employment L, the wage-commodity units w and the physical set of commodities forming one wage-commodity unit $\boldsymbol{\lambda}$, with the latter then expressed in its single components. Equation (4) expresses the amount of profits Π_v obtained in the IWGS, which is equal to the product of the profits in physical terms $\boldsymbol{\Pi}_v$ and the respective prices $\boldsymbol{p}$. It is equal to the value of the total amount of wages given to laborers minus the amount given to the laborers of the IWGS. Equation (5) sets the numéraire to be the labor commanded by w units of the wage-commodity. Therefore, in equation (6) the amount of profits per unit of labor employed in the IWGS is π_v, while the total amount is simply the difference between the two labor employments to be found at the numerator. Equation (7) shows the rate of profit r multiplied by the profit function $v_v(r)$. The latter displays the reduction to dated quantities of labor of the a to k commodities entering the direct and indirect production of the $\boldsymbol{\lambda}$ wage-goods, where l_{xt} are the units of direct labor coefficients used to produce a x good t periods ago, and μ_x are the means of production per unit of labor required to produce the x good. Lastly, by equating the amount of profits per worker and the profit function, we get the surplus equation:

$$\pi_v = r \cdot v_v(r) \rightarrow$$

$$\frac{L - L_v}{L_v} = r \cdot \left\{ \sum_{x=a}^{k} l_x \cdot \mu_x + \sum_{t=1}^{\infty} \left[\sum_{x=a}^{k} l_{xt} \cdot \mu_x \right] \cdot (1+r)^t \right\} \qquad [8]$$

In equation (8) we have on the left-hand side a term which is equivalent to the Marxian rate of surplus value (but expressed now in commanded labor), known in physical terms once the labor employments and the physical wage rate composition are given. On the right-hand side there is a summation, expressing the ratio of capital to labor requirements in the IWGS in the form of dated quantities of labor, multiplied by r. That term is monotonically increasing in r. Thus, at their intersection we find the general profit rate that can be graphically represented as in Figure 3.
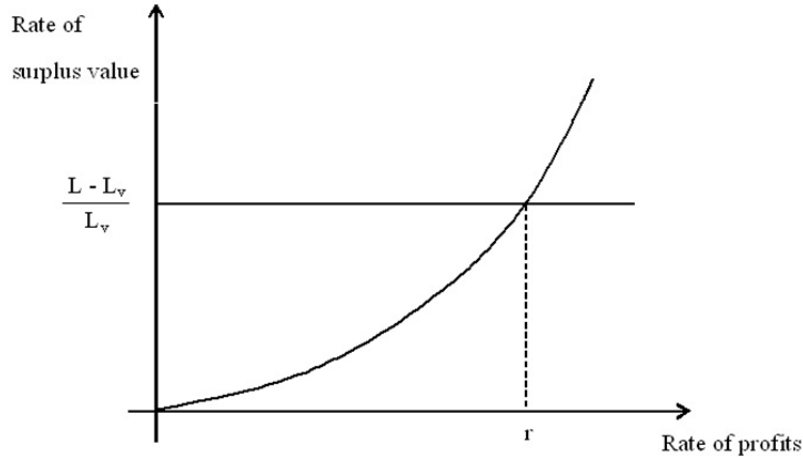
Figure 3 – The determination of the profit rate in the 'integrated wage-goods sector', source: Garegnani (1984, p. 318).

The graphical representation in Figure 3 depicts what we have so far described: the monotonically increasing profit function and the given rate of surplus value do cross in a single point, where the general profit rate is univocally determined. By means of this analytical construct, Garegnani has shown that the Marxian determination of the profit rate, once the surplus value is calculated in a 'commanded labor' standard within the IWGS and the organic composition of capital is restated as the proportional time distribution required to produce the commodities entering the real wage, is perfectly coherent. Moreover, by using this theoretical device in place of the "price-equations" method, a clearer picture for the inverse relationship between the profit rate and the real wage is provided. Let us now employ it to investigate how the various elements characterizing the financialization process may have affected the normal profitability of the economic system.

2.2. The real and financial components of the "integrated wage-goods sector"

In the present section, we are going to sort the IWGS into two sub-sectors, the industrial and the financial branches. We will accordingly distinguish between the goods entering the direct and indirect production of the real wage commodities produced by the industrial sector, and the ones produced by the financial sector. While the industrial sector can be supposed to be mainly concerned with the production of the physical goods entering the wage-commodity and its direct and indirect means of production, the financial sector can be supposed to be busy with providing the loans necessary to start the industrial process and the financial services needed to carry out the physical production activity. Let us therefore rewrite equation (8) in a different form:

$$\alpha \cdot \left[\frac{L - L_v}{L_v} \right] = r^{is} \cdot \left\{ \sum_{x=a}^{g} l_x \cdot \mu_x + \sum_{t=1}^{\infty} \left[\sum_{x=a}^{g} l_{xt} \cdot \mu_x \right] \cdot \left(1 + r^{is} \right)^t \right\} \quad [9]$$

$$(1 - \alpha) \cdot \left[\frac{L - L_v}{L_v} \right] = r^{fs} \cdot \left\{ \sum_{x=h}^{k} l_x \cdot \mu_x + \sum_{t=1}^{\infty} \left[\sum_{x=h}^{k} l_{xt} \cdot \mu_x \right] \cdot \left(1 + r^{fs} \right)^t \right\} \quad [10]$$

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$$r^{is} = r^{fs} \qquad\qquad [11]$$

Equation (9) refers to the industrial sector producing the *a* to *g* commodities, r^{is} is the profit rate of the industrial sector, $0 < \alpha < 1$ is a parameter that multiplies the given rate of surplus value, in so fixing the surplus value magnitude necessary for the sector to pay r^{is} to the capitalists investing in it. In equation (10), describing the financial sector producing the *h* to *k* commodities, we find that r^{fs} is the profit rate of the financial sector, 1 – α is the quota of the rate of surplus value accruing to the financial sector. Equation (11) guarantees the uniformity of the rate of profit between sectors. The system might be generalized to encompass additional sectors, but for the sake of the current study the fundamental distinction between industry and finance suffices. The system has 3 unknowns (r^{is}, r^{fs}, α) in 3 equations, and it is thus determinate. An alternative representation can be that of writing down only equations (9) and (10) by using directly a uniform rate of profit *r*, in so having two unknowns in two equations. This issue of the uniform rate of profits requirement between the financial and industrial branches of the economy is discussed also for the sake of connecting the IWGS analysis to the treatment of a credit economy made by Ciccarone (1998). In his work (pp. 405-411) the author shows that the profit rate of the financial sector can be separately modeled by taking into account the fact that the main source of profits for the financial intermediaries is given by the difference between the lending and borrowing interest rates. Once a proper formalization of the financial sector profit rate is proposed, Ciccarone imposes the uniformity of the latter with the industrial profit rate. Despite the absence of a prior formalization of the financial sector profit rate in that spirit, we have however preferred to explicitly propose again the condition in (11) to recall the crucial differentiation in the way in which profits are made in those different sectors. Going forward, a graphical representation of the two-branches IWGS would look like:
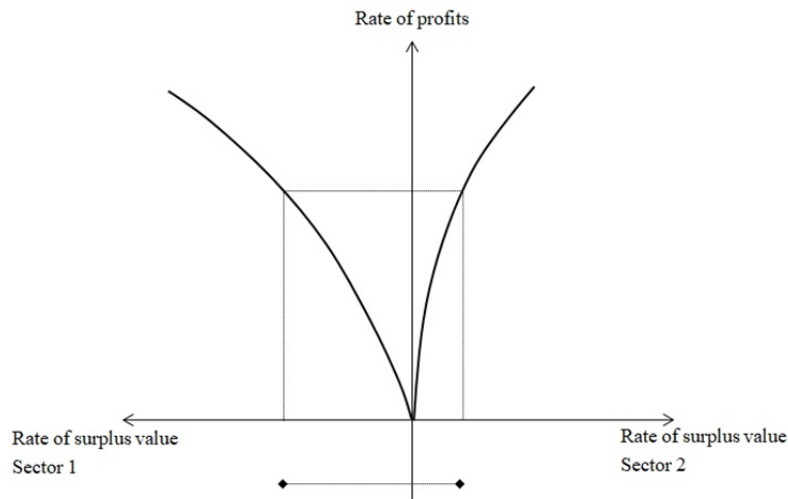

Figure 4 – The uniform profit rate between two different sectors; own graph.

In Figure 4 one can see the two profit functions, one for the industrial sector and one for the financial sector, which are analogous to those shown in Figure 3. In the figure

we have left the sectors unspecified. Below we find the horizontal line representing the given rate of surplus value. The latter is distributed between sectors in such a way as to ensure the general profit rate uniformity. This corresponds, in equations (9) and (10), to the endogenous determination of the α parameter. Let us notice how in this graphical exercise it is not possible to represent situations that do not strictly relate to an already established uniformity. This is owed to the fact that the profit rate employed in the reduction to dated quantities of labor, essential to arrive at the profit functions, is supposed to be uniform throughout the economy.

Once a general framework grounded in the IWGS analysis and differentiating between industrial and financial sectors has been set up, we can reconnect this mostly theoretical section to the general discourse looking at the possibility for financialization to impact upon normal profitability. In the next sections we will, accordingly, deal with the main factors that we have singled out in the introduction of our work. They are, in order: the income/size of the financial sector, financial innovations and household indebtedness. Later, we will also discuss some elements which can have a role, but from outside the IWGS so defined.

2.3.1. The income share/size of the financial sector

The enormous shift that has occurred in the last decades in the size of the financial sector is hardly debatable. Just by glancing at the magnitude of the phenomenon, one can see the evidence brought by Barba and De Vivo (2012, p. 1487), showing the progressive growth of the financial corporate profits, and the corresponding decline of corporate manufacturing profits, over the total domestic corporate profits in the US (1960-2010):

Figure 5 – Financial and manufacturing corporate profits in percentage of total domestic corporate profits in the US (1960-2010); source: Barba and De Vivo (2012).

In Figure 5 it is evident that the average value for the corporate financial percentage share of total corporate profits for the period after the start of the eighties is remarkably heightened compared to the period before it. The corporate manufacturing share follows

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a specular, plunging pattern. Krippner (2005, pp. 181-188) can add to this preliminary picture. Krippner (2005, pp. 181-188) shows a particularly insightful indicator for tracing the US financialization trends, which compares the profits accruing to the financial and non-financial sectors. The author shows the patterns for the financial-to-nonfinancial ratios of both corporate profits and corporate cash flows, asserting that a reliable financialization index ought to be found between these two measures, serving respectively as upper and lower bounds. In the figure below it is possible to see that the smoothed lines for those measures tend to become steeper and to reach higher average values from the eighties, consistently with the sketchy evidence mentioned before. The author interpreted this outcome as evidence for intensifying financialization.
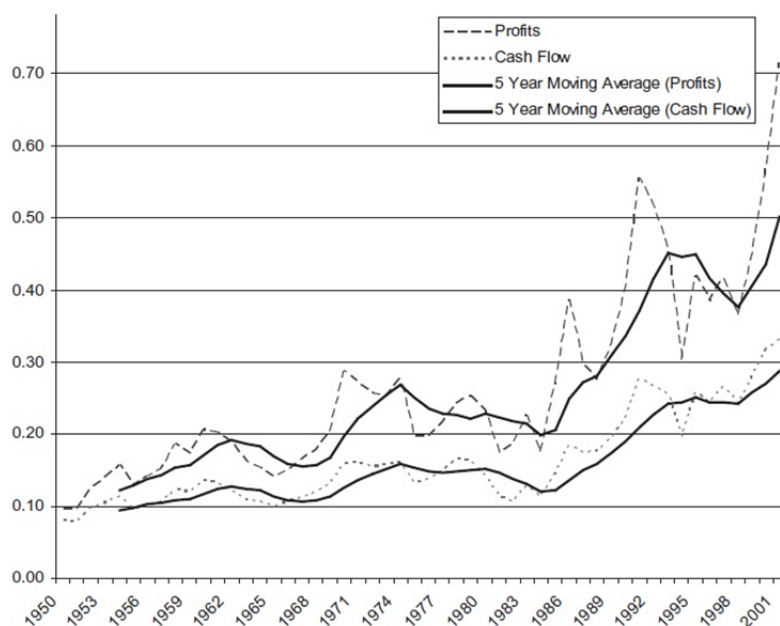

Figure 6 – Ratio for the corporate financial to non-financial profits and the corporate financial to non-financial cash flows, shown also as smoothed series, for the US (1950-2003); source: Krippner (2005).

We can now contemplate this first aspect of financialization. From the IWGS analysis developed in Sec. 2.2-2.3, it is possible to see that general profit rate, residually determined once the physical composition of the real wage and the available techniques are given, is not affected by the repartition of profits between sectors.[10] Indeed, for a certain mass of surplus value, the tendency to level out capital remunerations within the industrial and financial sectors will ensure that the general profit rate will prevail in a long-term equilibrium position of the economy. However, this does not amount to saying that there cannot be movements of the sectorial profit rate which are opposite to one another. Given the real wage, the amount of profits absorbed by one class of capitalists

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[10] Given the more accurate construction of the rate of surplus value offered by the IWGS method, such a process of redistribution does not alter the total amount to be distributed, when the process of competition operates the equalization of profit rates. This issue hindered the correct determination of the profit rate envisaged by Marx, who, despite his awareness of the problem, did not arrive to a fully correct transformation procedure. (Garegnani, 1984, pp. 305-309).

is in an inverse relationship with the amount available for the other class[11, 12]. This feature appears to have also an empirical support: in Duménil and Lévy (2004) the authors investigate the magnitude of and the relationship between the real and financial components of profitability. After having isolated the profit rates for the real and financial sectors[13], the authors compare them:
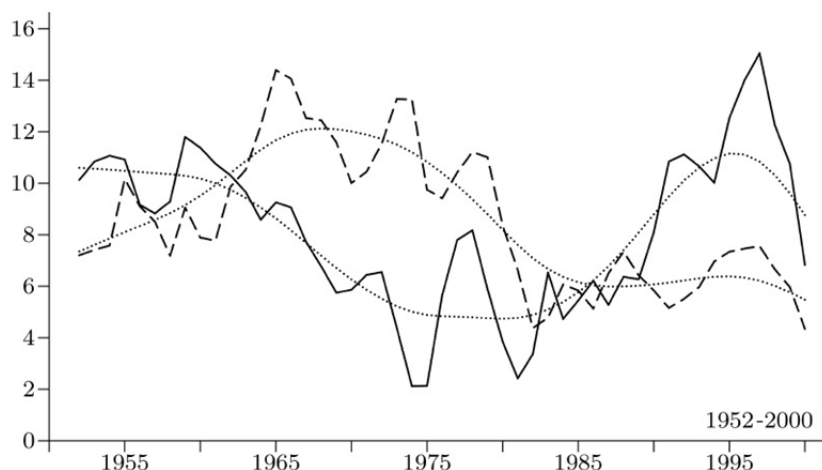

Figure 7 – Profit rates of the restricted financial sector (continuous line) and the nonfinancial restricted-corporate sector (dashed line) for the USA (1952-2000); dotted lines are trends. Source: Duménil and Lévy (2004).

By referring to the series shown in Figure 7, they conclude that while there can be a lasting divergence between the two profit rates[14], the tendency to a leveling towards a common level appears warranted. Indeed, they estimate an average value for the profit rates of the financial and nonfinancial sectors (in the USA from 1952 to 2000) to be respectively 8.6% and 8.2%. They also discern among three periods: 1952-1961, where the financial sector's profit rate was larger, 1961-1986, witnessing a reversal in the pattern, 1986-2000, with the financial sector recovering the predominant role. While this empirical work provides some evidence in favor of the theoretical exposition, it is nevertheless important to stress that there is no straightforward link between the two. The insights to be taken from the theoretical analysis are not directly comparable to the empirical outcomes as the IWGS is not directly observable.[15] Yet, we think that there can

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[11] On the tendency to uniformity for the rates of return between industrial and financial sector in Marx, cf. Panico (1988, Ch.2-3).

[12] However, Figure 4 cannot serve to show this reasoning, since by means of it we can only represent equilibrium situations. Were we using two different profit rates for the two sectors because of a disequilibrium situation, we would not have been able to draw the respective profit functions, which are built by utilizing the uniform profit rate in the reduction to dated quantities of labor.

[13] For a detailed reconstruction of methods and procedures, cf. Duménil and Lévy (2004, pp. 84-99).

[14] A divergence possibly due, among other things, to political shifts, such as the transition from a Keynesian policy environment to a neoliberal one.

[15] The IWGS cannot but be only theoretically isolated, and the fact that in it the general rate of profit is arrived at without referring to price valuations is confirmation that the Sraffa (1951) interpretation of the Ricardian rationale for a profit rate determined before prices can be exploited to arrive at a correct calculation. Then, the rate of profit of the other sectors will have to adapt to it.

be reasons to maintain that the aspect of financialization relating to the increasing portion of profits accruing to the financial sector cannot have, other things being equal, a relevant effect upon the general profit rate.

2.3.2. Intensity of financial innovations and financial regulation

In this part of the work we will focus on the role of financial innovations and regulation in affecting general profitability. The differentiation between an industrial and a financial branch within the IWGS can now be better characterized. In fact, by looking at equation (10) we find the h to k goods and services produced by the financial sector which enter the direct and indirect production of the wage-goods. Following Garegnani (1987, p. 19, p. 23), we can state that the technical conditions of production of the so-called 'luxuries', i.e. the goods and services not entering the wage-commodity, do not impact on the general rate of profit. An example of how it is possible to build a fully-fledged Sraffian price system encompassing an industrial and a financial sectors as basic industries, plus a non-basic industry, can be found in Panico *et al.* (2012, pp. 1463-1468). In there, there is an equation for a non-basic productive activity of the following form:[16]

$$(1 + r)\boldsymbol{a}_k^T\boldsymbol{p} + l_k w + q_k i = p_k \qquad [12]$$

In light of our enquiry, we can say that the goods and services that can be deemed to be 'luxuries', can be grouped together in a list of l to t outputs, whose rate of profit is taken from the a to k equations (9-11) of the IWGS and is not influenced by their technical conditions. Therefore, when discussing the role for innovations in the financial sector in light of the general rate of profit movements, it is important to distinguish between the financial services entering or not the IWGS. In addition to this, it is important in our opinion to look at the role of financial regulation, in the sense of *permission* to utilize the newly available innovations. Let us clarify what we mean. From Fasianos *et al.* (2018, pp. 50-51) it is possible to see the trend of the financial innovations which occurred in the US (1900-1996) in terms of patents on inventions and trademarks in the financial sector relative to the total patents registered (cf. Figure 8).

From Figure 8 it is difficult to recognize a neatly different trend growth rate that marks a distinction among periods, even though the continuously increasing trend surely means that the last phase witnesses the highest share of financial innovations. Anyway, what we deem to be important is the shift (from Figure 1) occurring in financial regulation, with the fourth phase hosting a process of progressive deregulation, differently from the third phase. The upshot of the reasoning is: for a given trend growth rate of innovations, the fourth phase's financial deregulation has made possible their extensive use.

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[16] Where r is the rate of profits, $\boldsymbol{a}_k^T$ is the material input vector of the non-basic commodity, $\boldsymbol{p}$ is the price vector of the n basic commodities, l_k is the labor input of the non-basic commodity, w is the money wage rate, q_k is the loan input of the non-basic commodity, i is the nominal short term interest rate, p_k is the price of the non-basic commodity.
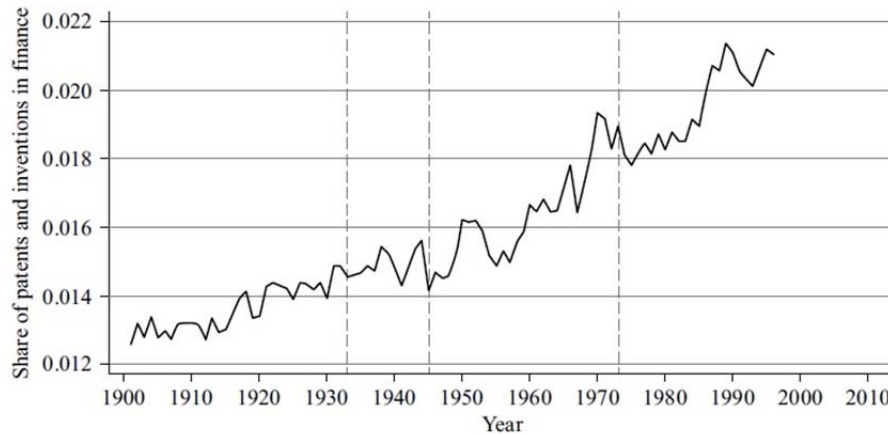
Figure 8 – Share of patents in finance over total patents
in the US (1900-1996); source: Fasianos *et al.* (2018).

2.3.3. Innovations in the financial activities entering the IWGS

Since the financial industry enters the direct and indirect production of at least some of the industries producing the commodities belonging to the given real wage, its technical condition of production matters for determining the general rate of profit. We suppose that the innovation to be studied in its effects takes the form, *ceteris paribus*, of a single-coefficient of production reduction. Such a reduction in the material requirements needed to produce the loans and services used as direct or indirect means of production of the wage-commodity will, *ceteris paribus*, create the conditions for an increase in the general rate of profit. The economy-wide increase will come about once the new technique has become the dominant one. Let us describe the entire process just summarized. Before doing so, let us also point out the fact that the reasoning we are about to set forward can be applied to whatever productive sector entering the IWGS. In other words, although there can be few doubts about the institutional and political peculiar weight enjoyed by the financial sector, its role within the determination of the general profit rate is akin to that of any other particular industry.[17] We make use of the following graphical illustration to describe what happens after the technical improvement in the financial sector production conditions (cf. Figure 9).

In Figure 9, one initially sees the starting situation, which has to be found in the graph to the right, analogous to that of Figure 3 for the aggregate IWGS, where the straight line for the rate of surplus value and the profit function *PF1* intersect at the general rate of profit *r1*. On the left side graph, we find, at the same rate of profits *r1,* the uniformity between the two profit curves for the financial sector *PFfs1* and the industrial sector *PFis1*, with the rate of surplus value repartitioned in a higher share to the former. It is now the moment to see how a technical innovation changes the picture.

Given our assumption about the material single-coefficient reduction, two things will happen. It is known from Samuelson (1957), Sraffa (1960), Garegnani (1970) that for a

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[17] In this sense, an improvement of the technical condition of production of the services delivered by the financial industry is tantamount to an improvement in those of the, say, private transport industry.
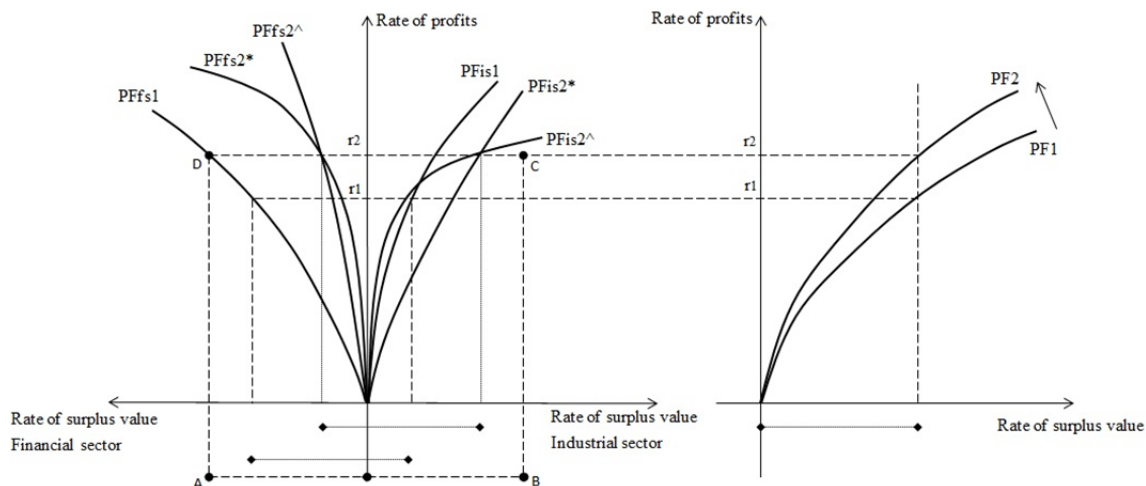
Figure 9 – The effect on the general rate of profits of a technical improvement in the financial sector, own graph.

given distributive variable, a technical improvement lowering an input coefficient in the production matrix will yield extra-profit for the first introducer of the innovation. Once the innovation is generalized, the other distributive variable is heightened. Following Okishio (1961),[18] we are considering the real wage in physical terms as given, and the technical improvement is meant to be a decrease in the material coefficient of production needed in the financial sector equation (10). In Figure 9, from the given physical real wage composition and the technical conditions of the whole economy, the coefficient reduction occurring in the financial sector will cause the profit function to rotate to the North-West, therefore causing, for a given rate of surplus value,[19] a rise in the general profit rate to *r2*. The single-coefficient reduction/increase scenario can be found in Garegnani (1987, p. 22), and we are ensured about the translation happening without a changing profit function form. In fact, for any given point of the profit function we now have less capital employed which has to be remunerated with a certain amount of surplus value.[20] Now, it is difficult to discern what happens in the left side graph. Why? The profit functions of the industrial and financial sectors are built for a given set of sectorial interconnections, and thus the modification of a single coefficient in one equation is liable to change the shape of both functions in unpredictable ways. This is represented by drawing two possible new shapes for the profit functions, which may be supposed to be respectively *PFis**, *PFis^* and *PFfs**, *PFfs^*.[21] Anyway, one sure thing is that in the new graph *r2* must be higher than *r1*. At this point we build the rectangle ABCD, which serves to delimit the movements of the two new profit functions. The

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[18] The same thing can be argued by referring to Bowles (1981).

[19] It remains put since it only depends on the difference between the labor employment of the whole economy and the labor employment in the IWGS.

[20] With a technical improvement taking the form of a reduction in some coefficient and the increase in some other, we may end up having a profit function, even at the aggregate level, which is not directly confrontable with the old one.

[21] Nevertheless, the shapes for the new functions may be whatever; these are just two possible cases used for graphical explanation.

rectangle is drawn by supposing the two extreme situations in which the new surplus value requirement for one of the two sectors falls to zero. Thus, taking as given the surplus value straight line, we draw it from the origin to A, and then from the origin to B. Then, taking as given the horizontal stretch that from the aggregate *PF2* determines *r2* on both graphs, we draw the AD and BC vertical stretches. In this way, by spanning the area from a zero-profit rate to *r2*, and from one extreme surplus value distribution to the other extreme, we have the ABCD area in which the two profit functions can move. At this point, we only need to consider that the new profit functions, whatever their new forms, have to cross at least once, in correspondence to the D-*r2* and the C-*r2* stretches, and in such a way that their distance has to be strictly equal to the length of the rate of surplus value stretch. We have thus demonstrated that a technical improvement in the financial sector, on the same footing of an improvement in any of the sectors encompassed in the IWGS, is liable to heighten the general rate of profits.

Let us then add that a technical improvement in the labor requirements would cause the new profit rate to be even higher than the previous case. In fact, besides the effect already taken into account, we have to consider also the production of a higher rate of surplus value. We now see why. The rate of surplus value has been defined in equation (6) as:

$$\pi_v = \frac{L - L_v}{L_v}$$

The two labor employments are derived from the product of, respectively, the whole economy gross output and the labor coefficients, on the one hand, and the IWGS gross output and its labor coefficients, on the other hand, as in equation (2). Given the employment of the whole economy and the employment of the IWGS, a positive rate of profit is obtained if and only if the former is strictly higher than the latter:

$$r > 0 \rightarrow \frac{L}{L_v} > 1 \tag{13}$$

Starting from this situation, a labor requirement reduction (for given gross outputs) will reduce the labor employment by the same amount. Thus, the new *L*-to-L_v ratio will be higher than before, and so will the rate of surplus value. Therefore, given the change in the profit function, which can equivalently come about because of a labor or material requirement improvement, the former will also cause an increase in the rate of surplus value which will contribute to make the profit rate higher.

We think that it is reasonable to regard the financial sector services such as the provision of loans, the selection of worthy investment projects, the provision of insurance services and so on, as goods and services entering the direct and indirect production of the wage-commodity. Therefore, the technical improvements shaping the profit functions derivable from these activities can increase the general rate of profit. However, these are not the only facets to be appraised when discussing the role of innovations in this sector.

2.3.4. Innovations in the financial activities not entering the IWGS

Let us now concentrate our attention on a different aspect. We have so far seen the effect of the innovations regarding the financial sectors' "traditional" businesses on the general profitability of the economic system. It is however well-known that another important channel through which the financial sector has become famous in the last decades is the increasingly diffused production and circulation of financial instruments such as derivatives.[22] In light of our previous reflection on the different role to be assigned to 'wage-goods' and 'luxury-goods', we think that the analysis proposed by Barba and De Vivo (2012, pp. 1485 - 1493) comes in peculiarly handy. The two economists' contention is in favor of considering the derivatives as 'non-basic' goods.[23] They maintain that the financial industry can generally be gauged to be a sector providing useful services such as providing finance to borrowers and easing the risk management. Yet, Barba and De Vivo do not consider as true productive services two activities carried out by financial intermediaries in the last decades: the overextension of credit to insolvent borrowers and the widespread production and circulation of derivatives instruments. This is because, on the one hand, the former activity is deemed to have nothing to do with the correct management and optimal allocation of risk, but rather with the fueling of unsustainably risky lending operations. On the other hand, the derivatives are considered as financial instruments which have been used not in light of insurance against uncertain future events, but rather as a pure speculative activity mostly managed by few large banks. Considering the evidence brought by Barba and De Vivo, the branch of activity of the financial sector connected to the production of adventurous lending and derivatives contracts diffusion can in our opinion be deemed not to belong to the wage-goods category.

Nevertheless, while they surely do not belong to the goods and services entering the given real wage rate, they might somehow enter their direct and/or indirect means of production. One can, for instance, think about the role of a derivative contract in the production of corn in a land which is subject to unpredictable weather changes. The subscription of those contracts may well favor the stabilization of the prices of that commodity, which would then enter the wage basket. Unfortunately, there is evidence on the empirical level, as presented among others by Girardi (2012, 2015), for claiming that even in this respect the role of speculation has been a destabilizing element, which accordingly needs heavy regulation (Ghosh, 2011).[24] This amounts to saying that, in the

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[22] For a careful recount of the nature and role of several kinds of financial instruments, cf. Dodd in Epstein (2005, pp. 149 - 180). For an analysis of the adverse effect of the widespread use of financial instruments on the macroeconomic stability of the US economy in the course of the late nineties, cf. Parenteau in Epstein (2005, pp. 111-148).

[23] The 'wage/luxury' goods and the 'basic/non-basic' goods dichotomies are not perfectly superimposable. However, the meaning of what we want to show remains, despite this subtle distinction, unscathed.

[24] In addition to this, Adams and Kartsakli (2018) claim that financialization has transformed commodities in something akin to a purely financial asset, rather than real products. They show how financial indicators drive the variations in returns and volatility of several commodities (among others, energy, metals, and agricultural products) by a noticeable extent. This is in line with Girardi (2015) findings, leading the

spirit of Barba and De Vivo, even from the point of view of the production of wage-goods, the services provided by financial actors appear to have been much more akin to the profile of 'luxury' goods, whose conditions of production do not exert an influence upon the general profit rate in the IWGS framework. A general assessment of the role of the financial sector in this respect can also be read in Kay (2015, pp. 281-291), where he maintains that:

> Volumes of trading in financial markets have reached absurd levels - levels that have impeded rather than enhanced the quality of financial intermediation, and increased rather than diversified the risks to which the global economy is exposed. […]

> We need focused financial businesses with a clear productive purpose and a management system, governance regime and capital structure appropriate to that purpose. We should aim to restore and nourish the rich variety of institutions and organisational forms that existed in the finance sector before the 1980s.

Hence, while, generally speaking, the financial goods and services' production conditions matter for determining the general profit rate, we think that it is reasonable to state that that branch of the finance sector can be placed outside the IWGS sector. In other words, a, say, derivative contract can well be used to insure someone against possible worse future scenarios. However, the concrete use that has been made of those financial innovations, exploiting a possibility that can be traced back to the widespread financial deregulation typical of the 'fourth phase' of financialization, has turned those parts of the economy into portions devoted to the production and circulation of 'luxury' goods. Thus, the innovations taking place in those branches are not liable to impact the general rate of profit.

2.3.5. Household indebtedness

The last aspect of the effects of financialization on profitability that we are going to debate is the phenomenon related to recourse to private borrowing from financial institutions on the part of households. We try to relate the emergence of the demand for private lending by households to a frustrated desire to increase the real wage, and then see how this impacts normal profitability. In Levrero (2013, pp. 168-170), one finds the attempt to formalize a bargaining process among classes (workers, industrial capitalists, financial capitalists) in which each part tries to obtain a larger share of social product in real terms. In particular, the author highlights the strive of workers to bargain for higher money wages, and the monetary authorities response via the fixation of higher nominal interest rates.[25] The author formalizes the desired change in the nominal wage rate,

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author to conclude that the detected increasing correlation between agricultural prices and stock market dynamics can be supposed to be due to an intense process of financialization that the agricultural products' markets have been experiencing.

[25] If the normal profits of enterprise component does not adjust to make room for the workers' desire to obtain a higher real wage, an inflationary process may result. For a comprehensive study of how both transitory and persistent attempts from workers (via higher money wages) and monetary authorities (via higher nominal interest rates) to shift distribution in their respective favour, cf. Stirati (2001). For a dis-

which we will use to characterize a regime of bargaining process in which workers are strong enough to bid for higher nominal wages. Then, we model a second regime in which workers are not capable of attaining a sufficiently high nominal wage increase, and so they instead augment their quests for loans:

$$R_1: \frac{dw}{w} = \vartheta(w_r^* - w_r) + \gamma = \varphi \qquad [14]$$

$$R_2: \frac{dq_w}{q_w} = \vartheta(w_r^* - w_r) + \gamma = \delta \qquad [15]$$

$$w_r^* = \gamma_0 + \gamma_1 \cdot IN + \gamma_2 \cdot PS \qquad [16]$$

$$w_r = \beta_0 + \beta_1 \cdot U + \beta_2 \cdot LP + \beta_3 \cdot \pi + \beta_4 \cdot EPL \qquad [17]$$

$$R_x = \beta_0 + \beta_1 \cdot U + \beta_2 \cdot EPL + \beta_3 \cdot PC, \qquad x = 1, 2 \qquad [18]$$

$$L \cdot w_r^* \cdot \lambda - L \cdot w_r \cdot \lambda = L \cdot (w_r^* - w_r) \cdot \lambda = L \cdot \left(\frac{\delta - \gamma}{\vartheta}\right) \cdot \lambda \qquad [19]$$

$$\frac{dQ}{Q} = \frac{1}{1 - c_w} \frac{dq_w}{q_w} \rightarrow \frac{dL}{L} = \frac{dL_v}{L_v} \qquad [20]$$

Equation (14) describes the fact that workers may try to obtain a nominal wage increase dw/w in excess of what they have anticipated if they see that there is a positive difference between the real wage that they are able to attain, w_r and the desired one, w_r^*. ϑ is a positive coefficient linking the divergence between the target and actual real wage to the rate of growth of money wages, γ is the percentage increase in money wages already programmed by workers, φ is the growth rate of money wages required to accommodate the desired increase of the actual real wage to the target real wage. Equation (15) shows the second regime, in which the desired but unattainable increase in money wages translates into an increase in loans dq_w/q_w of magnitude δ. Equation (16) formalizes the desired real wage as a positive function of a constant term standing for an exogenously given set of socio-political factors, *IN* which refers to inequality (for instance, the Gini coefficient) and *PS* as a measure of the profit share. In other words, the desired wage is supposed to depend on some sort of 'visible consumption' effect, according to which workers form their desires to consume by looking at the patterns and habits of the richer classes. As we will see, this allows introducing an effect on the growth of private consumption akin to the one present in Kapeller and Schütz (2015). Equation (17), inspired by the empirical findings of Stirati and Paternesi Meloni (2018, pp. 504-517) for 21 countries (1960-2015), formally makes the obtainable real wage be a function of a constant term for given political and institutional factors, *U* the unemployment rate, *LP* a measure of labor productivity, π the expected inflation rate, and the *EPL,* an index measure of labor market regulation and rigidity. Equation (18) shows a dichotomic regime selection equation, to be read as follows: if the sum of a set of parameters as a giv-

en constant for social factors, the unemployment rate, the labor market regulation and political conditions (PC)[26] crosses a certain threshold, the bargaining equation to be looked at is (14), whereas, if the value falls short of that threshold, the bargaining equation is (15). Equation (19) signals what happens in the aggregate when the bargaining process selected is (15): the L laborers would want to obtain w_r^* units of the λ wage-commodity, but can only acquire w_r units. As a consequence, they will substitute the exceeding desired part with a corresponding number of loans, which is the term in brackets derived from (15). Equation (20) illustrates the effect on the quantities produced of the additional consumption out of loans (with a marginal propensity to consume out of loans c_w) made possible by the granting of those new loans to workers, and the corresponding effect on the growth rate of the labor employment of the total economy and of the IWGS, respectively.

Let us now offer an economic interpretation of the model just sketched. Workers can obtain a certain actual real wage by resorting to their strength as a class, and thus trying to target a certain real wage, which is, among other things, fixed by looking at richer classes' consumption patterns. However, that bargaining power can be sufficient to locate them into a regime in which the possible positive divergence between desires and actual outcomes can be made up by increasing nominal wages in order to obtain higher real wages. However, when the regime in which workers carry on with their claims does not allow them to cover that difference up, they will try to close the gap by substituting higher money wages with loans from the financial sector.[27] This description appears to be consistent with the explanation offered, among others, by Barba and Pivetti (2009), Cynamon and Fazzari (2008, 2015), Tridico (2012), for the process of private debt build-up experienced by the US economy in the decades of financialization. This process is also consistent with the one envisaged by Panico *et al*. (2012), Panico and Pinto (2018), according to which a growth rate of the loans to workers higher than the growth rate of total wages increases the profit share and diminishes the wage share. Moreover, from Panico *et al*. (2012, pp. 1467-1468) we consider the positive effect of the additional private debt upon both quantities produced and overall employment. In our case, the drive to incur additional debt has been linked to a wish to 'keep up with the Joneses', which keeps the desired real wage higher than the actual one, and thus kick-starts the pattern of surging indebtedness, as in Kapeller and Schütz (2015, pp. 58-64). However, since the given real wage and the technical conditions of production have not changed, we know that the profit function and the *rate* of surplus value have remained unchanged, while the *amount* of surplus value has increased. This conclusion is due to the

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[26] On the remarkable empirical relevance to be attributed to political shifts in shaping not only broad political conditions, but also relevant economic variables such as investment decisions and share prices, cf. Girardi (2018), Girardi and Bowles (2018).

[27] This is not necessarily the only response to a worsening income distribution. For example, Oh et al. (2012) test a labor discipline model incorporating 'Veblen effects'. They investigate the effect of changing top income shares on, among other things, the hours worked by the employees. Their results largely and robustly show that an increase in the relative incomes of the top income earners causes an increase in the hours worked, while increases in the political representation of workers reduce them.

fact that since the economy has grown, the amount of total labor and the labor in the IWGS have both increased at the same rate, and since their ratio is higher than one, their difference has widened. Yet, since what matters to us is the amount of surplus value *per worker,* with unchanged technical labor unit coefficients, the rate of surplus value has remained put.

Let us now try to look at these aspects from the IWGS model. In it, the quest for a higher real wage can be rationalized in three manners. The result of a bargaining process over the real wage (if successful) can bring about three outcomes: a higher real wage of unchanged physical composition, a higher real wage in which one physical component has been added to the existing ones, and a higher real wage in which some components decrease while others increase. Leaving aside, for simplicity, the third option,[28] we now see what happens in the other two instances by means of a graphical representation:[29]
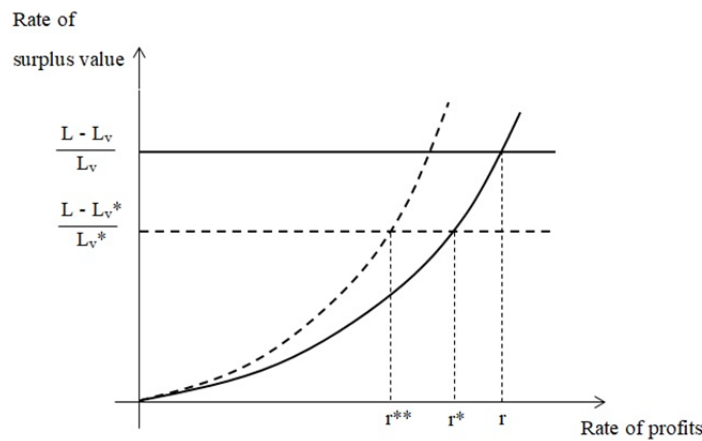
Figure 10 The effect upon the general profit rate of a rise in the quantity of the real wage rate of unchanged composition, and of a rise in one component of the coefficients entering the real wage rate; own graph based on Garegnani (1987, p. 21).

Starting from the initial situation we found in Figure 3 with a profit rate *r*, let us see what would happen after a bargaining process delivering a higher real wage. If the new real wage is increased in amount, but has an identical physical composition, the new rate of profit that we will find will be located in r^*, because, for an unchanged profit function, the rate of surplus value has decreased. If the new real wage also comprises a new item, there will be a shift in the profit function as well, which will add to the profit rate fall to r^{**}.[30]

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[28] If the real wage changes in composition, the new profit function can change shape in any manner, and therefore the situations before and after the change cannot be directly compared; cf. Garegnani (1987, p. 22), Fratini (2019). However, we think that the other two cases which we are discussing are sufficiently general for the discussion to provide useful clues.

[29] Since we are now focusing on a situation in which there is an explicit evaluation of what the confrontation between workers and capitalist can result in, we have switched the analysis back to the aggregate profit function.

[30] In the first case, a higher real wage of unchanged physical composition leaves the profit function unscathed. Yet, the higher wage requirements to be distributed among the L total workers causes the neces-

At this point, it can be supposed that a reasonable description of what we have been witnessing in recent decades has been a process in which the inability of workers to obtain a certain target real wage rate has caused a persistent divergence between it and the actual real wage, with finance stepping in to concede the desired additional loans. Consistently with Panico *et al.* (2012), we can say that the lending activity to households does not directly hinge on the rate of profit. However, as the authors contend, despite this, the income shares can be affected by a process of increasing quests for borrowing by households. By looking at Figure 10, one can nonetheless get the idea of how financialization, when read through the lenses of the households' borrowing patterns, can have *passively* impacted on profitability, in the sense of permitting workers to reach the desired level of the wage-commodity without actually having the bargaining power to strike a deal and directly attain it.

2.4. Financialization as a factor impacting on the real wage

We have thus far been engaged in analyzing what role financialization can have directly on the rate of profits. However, another aspect through which that phenomenon might have impacted income distribution is by putting pressure upon the real wage itself. Generally speaking, the relationship between financialization and workers' incomes has been seen as bidirectional. Indeed, on the one hand, there is remarkable empirical evidence about the possibility for financialization to impact the wage share and inequality. For instance, Hein (2015), Dünhaupt (2016), Stockhammer (2017), among others, provide evidence of the negative effect of financialization on the wage share. The first author presents evidence about the fall of labor share due to both financialization and neoliberal policies. Three main mechanisms leading to this outcome are pinned down: first, the economy's sectoral composition change (from the public sector and the non-financial corporate sector to the financial corporate sector); second, the increase in management salaries and interest/dividend payments of the corporate sector; third, waning trade union bargaining. The second author's results suggest that financialization affects labor income share. Stronger shareholder value orientation, globalization and financial liberalization have a considerable negative impact on the bargaining power of laborers.[31] The third author mentions four channels through which financialization can affect income distribution. First, firms can decide to invest in financial assets when they are not satisfied with real capital investment prospects. Secondly, financialization puts pres-

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sary net product of the IWGS to increase, and so will the labor employed in it. Since the wages given to workers are set equal to one (numéraire), this leaves us in the end with an unchanged total labor employment, but with the IWGS labor employment capturing a higher size of the total economy employment. Therefore, the rate of surplus value decreases, and so does the general profit rate. In the second case, an additional physical good unit entering the real wage causes the same outcome, but with the addition of a rotation of the profit function. It is so since the new means of production needed to produce the additional wage-good require a higher amount of profits to be paid on them if the same rate of profit has to prevail in the economy. Otherwise, for a given rate of surplus value but additional means of production to be remunerated, the general rate of profit would be lower.

[31] Additional relevant elements are found to be rising mark-ups and declining government intervention.

sure on wages since investors can more forcefully claim bigger interest and dividends payments. Third, financialization tends to shift the shareholders interest towards profitability rather than growth. Fourth, household financialization undermines working class identity, thereby weakening its bargaining position. In his empirical exercise, financialization is shown to have had a major role in the wage share's decline compared to globalization and the welfare state retrenchment.

On the other hand, there are authors who suggest looking at the role had in the first place by the frontloaded attack that capitalists launched against labor in the middle of the seventies. Stirati (2018) singles out the important role to be attributed to the attack against labor started in the US labor market relations in the mid-seventies, and which culminated in the Volcker monetary policy shock, causing an abrupt surge in the unemployment rate. According to her reconstruction, in fact, the surge in the short and long-term real interest rates started in 1979 came after a period of restructuring labor market relations in a sense unfavorable to workers. The change in labor relations came about in the form of delocalization, union avoidance and an increasing unemployment rate. Hence, it could be said that there are elements to presume that the events located at the beginning of the period of financialization impacted directly and principally on the labor market, thereby paving the way for the subsequent events. The key role of the renewed capitalist drive against labor at the end of the seventies/early eighties is pointed out also by Shaikh (2011, 2016, pp. 729-736). According to him, the lasting stagnation of real wages, in comparison with surging labor productivity, has created room for the enlargement of the financial sector in the sense of increasing quests for loans from the household sector. The Reagan era testified a noticeable divergence between labor productivity and real wages, and Shaikh singles out the attack on labor-protecting institutions, together with the competition with cheap labor abroad due to globalization, as the two main elements that mattered. At the same time, the ever-decreasing interest rates made momentarily sustainable the accumulation of household private debt. Moreover, slowing real wages and decreasing interest rates made the support of enterprise profitability possible. We find in the literature also the attempt to look at increasing financialization and waning workers' bargaining strength as a complementary process, as maintained in Tridico (2018). The author finds that, in a panel data analysis for 25 OECD countries (1990-2013), income inequality has been mainly driven by financialization, labor flexibility, weakening labor unions and welfare state retrenchments. He then presents a bidirectional line of causation, running from inequality to financial crisis and conversely from finance to financialization and inequality.[32] This latter direction is said to be read from a medium/long term viewpoint, when a restructuring of capital-labor relations has taken place.

In our view, despite the self-reinforcing complementarity between the two directions, it is relevant to highlight the starting point of the process. The reason is that, distributive variables. So, despite the two-way relationship just discussed, it is relevant to single out

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[32] A similar description can be also found in Pariboni and Tridico (2018, pp. 245-251).

whether the enlargement of the financial sector size was a *primum movens* or a consequence of weakened labor strength, regardless of the self-reinforcing process which was thereafter established. Even though a full answer to such a question is beyond the scope of the present work, we want to draw attention to some supplementary evidence in favor of the view preferring to assign a more relevant stance to the attack against labor. We stress this aspect by referring to some contributions from the so-called "Social Structures of Accumulation" literature in the late eighties.[33] We think that they can provide some useful clues to this topic for two reasons. Firstly, they offer a comprehensive assessment of some of the most important facets to be looked at when evaluating the relative bargaining strength of the opposing social classes. Secondly, they were published at a peculiar point in time, when neo-liberal policies were already considered a powerful tool against labor conditions, but, at the same time, the issue of financialization in the broad picture under enquiry had yet to be taken into account. In Bowles *et al.* (1986, 1989) one finds the scrutiny of the novel social structure of accumulation inaugurated by the transition to Reaganism in the US. The authors show the major features of that policy shift, which they summarize in four aspects. First, the capital-labor accord, through which firms have benefited from secured control over decision-making processes at the cost of giving up higher real wages. Second, the Pax Americana, warranting a stable international economic environment and advantageous terms of trade for US capital. Third, the capital-citizen accord, exchanging favorable conditions for profitability while warranting the government intervention to take care of citizens' basic necessities. Fourth, the moderation of inter-capitalist rivalry, curbing external and internal competition conditions.[34] The question they pose is whether the post 1979-Reagan policy could have been deemed successful in the eyes of corporate power and profitability once the first complete business cycle experiencing those conservative policies had come to an end. Their answer is that the situation looked quite paradoxical: despite the undoubted success in terms of re-acquired broad power in the economy, the corporate sector had not yet enjoyed a strong recovery in profitability and accumulation. The authors' opinion is that the two considerations can be reconciled by taking into account the fact that the restoration of corporate power had been brought about by inflicting a severe recession via high real interest rates and low capacity utilization rates to the economy. Reconnecting these studies to our main line of discussion, we deem as relevant the consideration that, as mentioned above, these studies can be regarded as informative in light of one point. If we recall the categorization of Fasianos *et al.* (2018) in Figure 1, from the first year of the 'fourth phase' (1974) to the last year considered by the two cited studies (1987), we have almost fifteen years in which the issue of financialization (in its several aspects), at least in these influential works, was not even

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[33] The general aim of that thread of literature is the examination of the institutional structures determining, on the one hand, the relative power of social classes leading to the repartition on income and, on the other hand, the effect that profitability so determined exerts on capital accumulation.

[34] In the regression model they build, the determinants of profitability are capacity utilization, the real federal funds rate, product market tightness, the cost of job loss, workers' resistance, trade power, government regulation, capital tax share, and import penetration.

mentioned. Yet, the progressive reacquisition of the power and influence of the capitalist world, via aggressive policies aimed at slashing the strength of laborers, was already evident and documented. The upshot of these considerations is to point out a small piece of evidence, however sketchy and incomplete, in favor of the position appraising the reverse in the capital-labor confrontation as a necessary premise coming *before* the emergence of financialization. Therefore, despite the undeniable *complementarity* between these two issues, there is evidence buttressing the study of financialization as a phenomenon that has been somehow a *consequence* and not a premise of that reversal. Thus, it is in our opinion possible to reinforce the vision placing financialization in a secondary position with respect to labor market and workers' subdued bargaining strength.

2.5. An overall assessment

Once the general description of (what we have considered to be) the three main aspects through which financialization may have impacted the general profit rate has been settled, we can proceed to draw a conclusive appraisal. If the question we posed were "Is it possible for the financial sector to affect the normal profitability of the economic system?", then the answer at this point would be "Yes". In fact, we have been contemplating three main sources of profitability boosts from the financial sector: the 'traditional' activities linked to the production of financial services to industries and households, the production of derivatives, and the lending to households. We have found among them one instance in which the financial sector can be the originating point of an upsurge in general profitability. We have traced this source back to technical innovations in the 'traditional' role of the financial sector. On the contrary, we have seen that a repartition of profits more favorable to the financial sector, the production of derivatives contracts and the growth of private household debt do not influence the normal rate of profit.[35] Thus, overall, the financial system can have an impact on profitability, since one aspect out of three might have such an effect. Yet, the question we wanted to answer is a different one: "Is financialization capable of affecting the general rate of profit?" In this respect, we would say that the answer is "No". We think so since that element affecting normal profitability can be seen as a common feature of a capitalist economy, regardless of the phenomenon of financialization. Competition among capitalists also drives, among other things, the process of technical innovation, which is meant to cut production costs aiming at stealing customers from competitors. Technical innovations, if they yield extra-profits, once generalized, will raise the profit rate; but this feature characterizes both the financial and the industrial sector. Therefore, one ought to argue that the *relative* pace of technical innovations between sectors has been faster in the financial branch, *and so* financialization is of particular relevance for the surge in profitability of

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[35] In the latter's respect, such a pattern cannot have impacted on profitability since, consistently with Panico et al. (2012), Panico and Pinto (2018), the effect on the profit share can be confirmed, but not the same holds for the profit rate.

the last decades. An evaluation of this kind is outside the scope of the present work. However, two things can be singled out. Firstly, if anything, the process of financial expansion of the last decades is commonly referred to as a pattern of growth of an *oligopolistic* sector.[36] It may therefore be argued how, with respect to a hypothetical situation featuring more competition, the actual process of financial expansion might have weakened the stimulus to technical innovations in that branch of production. However, in the second place, what, on the other hand is beyond doubt, is the impressive spur of innovations witnessed by the business of producing and selling derivatives contracts. The latter can reasonably be deemed to be perhaps the most remarkable aspect of the process of financialization. Nonetheless, according to our reconstruction, the use of these contracts can hardly be included amongst the direct and indirect means of production of the wage-goods and therefore cannot be seen as affecting the general rate of profit.

Finally, we have discussed the presence in literature of viewpoints arguing the influence of financialization upon the wage share, the relevance of workers' subdued bargaining position in making room for the expansion of the financial sector, and some approaches stressing the complementarity among these directions of causation. In this respect, we have made reference to the "Social Structures of Accumulation" literature, which saw some contributions placed in a historical phase during which financialization ought to have been already present, according to widespread periodization. Nonetheless, the mentioned studies only pointed to the role of labor market and political factors, altogether disregarding the role of the financial sphere of business. This has been interpreted as hinting to the fact that the role of financialization was highlighted in the literature only in a second phase, once its presence was well-established, and made possible by the previous restructuring of power relations between capital and labor.

3. Financialization in a Marxian perspective

The literature contemplating the issue of financialization and its impact upon profitability has seen some Marxist explanations attempting to make a connection between those two aspects. In what follows we will briefly recount the gist of these arguments, and we will then discuss them by making use of the results displayed thus far.

3.1. Some Marxist explanations

Lapavitsas (2011) has considered several viewpoints about financialization, ranging from Marxist to Post-Keynesian, by way of radical sociology as well.[37] In light of our

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[36] For some evidence about the increasingly monopolistic nature of the financial sector, cf. Detzer et al. (2013) and ECB (2017).

[37] In Lapavitsas (2013, pp. 794-798) one finds a closer look at the numerous Marxist lines of thought. In Lapavitsas and Powell (2013) there is an insightful analysis of the varieties of financialization patterns in several advanced economies.

enquiry, the Marxist standpoints trying to relate financialization to a supposed tendency for capitalists to seek a way out from the subdued profitability in the real investment sphere are of particular interest. According to Lapavitsas (2011, pp. 612-614), two major lines of thought are discernible within that broad analytical framework. One of them is placed within the *Monthly Review* (MR) tradition and looks at financialization as a way to absorb an ever-increasing surplus. In Sweezy (1997), financialization enters the picture once the increasing monopolistic nature of firms triggers a slowdown of the growth rate. As Lapavitsas argues, within it

> The unspoken assumption has often been that capital has attempted to deal with problematic profitability in production by seeking financial profits. But at some point, the potency of the financial escape declined, and crisis manifested itself.

Foster (2010) claims that the expansion of speculation bolsters capital accumulation, but at the cost of accelerating the decline of the entire system by hindering its stability. We want to add to Lapavitsas' discourse the consideration that the profitability issue in the MR tradition appears to be not so tacit. Indeed, Foster (2010, p. 9-10) highlights two things in this respect. First, the studies of stagnation, drawing on the hints of Keynes (about long-term stagnation and financial speculation) and Marx, carried out by Baran-Sweezy (and Alvin Hansen) are said to focus on the vision that

> the potential savings or surplus generated by the economy normally outweighed the opportunities for profitable investment of that surplus, leading to a tendency to stagnation.

Second, he states that Keynes' worries about the declining expected profitability of investment due to sustained capital accumulation (and the ensuing drive towards financial speculation) were placed in a long-term assessment. So, among other considerations, he blames Minsky for having placed those Keynesian intuitions only in a cyclical perspective. Again, Foster (2007, p. 6) advocates that it is the "stagnation of the underlying economy" that lets capitalists run to the financial sector, but "financialization, no matter how far it extended, could never overcome stagnation within production." From the already-mentioned work of Sweezy (1997), we can read that:

> Monopolization has contradictory consequences: on the one hand it generates a swelling flow of profits, on the other it reduces the demand for additional investment in increasingly controlled markets: more and more profits, fewer and fewer profitable investment opportunities, a recipe for slowing down capital accumulation and therefore economic growth which is powered by capital accumulation.

To these latter considerations from Sweezy, we add a brief summary of the MR argument. The increasing monopolistic nature of firms is seen to be a cause of a higher share of profits flowing to capitalists' hands. On the other hand, this exacerbates the issue of finding profitable investment opportunities because of a stagnating aggregate demand, owing to worsening income distribution. Financialization is a temporary remedy since it consents to provide an outlet for utilizing the financial speculative activities that do not find profitable employment elsewhere. However, the monopolistic nature of

the financial sector and the unsustainable destabilizing role of financialization concur, in the end, to the re-emergence of the inherently capitalistic tendency to stagnation.

The other influential explanation has been the one linking financialization to the LTRPF, mostly in the works of Brenner (2001, 2004, 2012) and, among others, Harman (2010). According to Brenner (2001), the period starting with the seventies featured a prolonged plummeting trend for profitability at a world level, and such an issue had grave repercussions on the accumulation rate. The fundamental flaw has to be located in the lasting over-capacity accumulated in the international manufacturing productive structure that was initially felt by the 1965-1973 period. In response, a wave of austerity measures meant to foster profitability turned out to be a further limit to capital accumulation as it caused an aggregate demand growth restraint. At this point, capitalists sought to regain more favorable conditions by pressing governments to progressively deregulate the possibilities for capital to freely move and to defend the international position of key domestic industries (via protectionist measures and currency devaluations). In addition to this, there was an acceleration towards financial and speculative businesses. By the nineties, the profit rate partially recovered in consequence of the wide-scale set of reforms enjoyed by capitalists, but Brenner concludes that a true recovery can only entail a decisive resolution to the long-term manifestation of a tendency to chronically accumulate excess manufacturing capacity. Brenner (2004, 2012), while sticking to the general picture just described, adds some more hints to the role of finance. Indeed, he believes that since the middle of the nineties to the most recent years the financial system provided funding for a 'stock-market Keynesianism' that replaced the huge deficits of the Reagan-Bush era. In this context, borrowing by non-financial corporations, wealth effects for the rich households, sustained household consumption, all permitted by financial sector lending, had temporarily covered up the underlying profitability crisis. Not only: the investment stimulated by this broad stimulus to private consumption aggravated the issue due to excessive capital accumulation. Later on, the housing bubble favored by the FED low-interest policy acted as a driver for accumulation, at the cost of further exacerbating overall economic instability. At this point, Brenner (2004, p. 69) maintains, the US economy had been brought into

> a paradoxical two-track trajectory. Manufacturing and related industries have continued a profound contraction whose origins go back to 1995, and lie in ongoing global over-capacity, intensifying overseas competition and a long- overvalued dollar. But major parts of the non-manufacturing sector have, by contrast, succeeded in sustaining an expansion that also originated in the mid-1990s, due to the perpetuation throughout the boom and right through the ensuing slowdown of broader trends and conditions dating back to that point—notably the ever easier availability of cheap credit, the continued blowing up of asset-price bubbles, the impetuous and unending growth of debt, the credit-driven increase of consumer spending, and the dizzying rise of imports made cheap by the high dollar.

Brenner (2004, pp. 75-77; 2012, pp. 212-213) then recounts the enormous growth of financial profits over the total mass of profits. Overall, this LTRPF narrative accounts for the rise of finance as one of the ways in which capitalists have tried to counterstrike

a long-run profitability issue. In particular, the drive to financialization is seen as initially due to plunging profitability in the real sector, and then as a way to sustain demand and accumulation despite the still unsatisfying levels of the profit rate in the industrial sector. Therefore, while temporary useful as a palliative cure against the drawbacks of over-accumulation, financialization remains a secondary matter when seen in light of the LTRPF problem.

In both the MR and the LTRPF versions there is, hence, the idea that capitalism is doomed to face, in the long run, a profitability crisis, which can either be due to the progressive monopolization of capitals or the chronic presence of manufacturing low-profitability. Although these long-term profitability issues can possibly be temporarily alleviated in the short term, they are bound to resurface sooner or later and become evident in the event of a *redde rationem,* which, in this context, can be said to be the 2008 Great Recession. In this view, the explosion of financialization has served to postpone, together with other concomitant factors, however not indefinitely, that moment of truth. Before discussing these positions in light of our previous theoretical analysis, let us recall the fact that not all the Marxist traditions share such a kind of interpretation. Among others, Duménil and Lévy (2011), while overtly considering the last decades as a phase in which capitalism is more and more connoted by its financial traits, do not look at the Great Recession as a low-profitability-induced crisis. Basu and Kotz (2017), drawing on the 'Social Structures of Accumulation' tradition, put financialization below a more comprehensive categorization, according to which the post-1979 period ought to be read as the first phase of a new neoliberal SSA, to be afterwards followed by its phase two, started in 2007 and still running.

3.2. A theoretical discussion

In this section we discuss the basic clue to be taken from the previous arguments, i.e. the surge of financialization as a phenomenon helping in transitorily sustaining the general profitability of the economic system. For this sake, we will try to place the main theoretical results reached in section 2 into an analytical representation of the profit rate which is commonly used in Marxian literature, that is, the famous 'Weisskopf decomposition' (1979, pp. 342-348):[38]

$$r = \frac{P}{K} = \frac{P}{Y}\frac{Y}{Y^*}\frac{Y^*}{K} = \sigma \cdot u \cdot v \qquad [21]$$

where the profit rate is the product of the profit share σ, the normal capacity-capital ratio v, the degree of capacity utilization u. The author wanted to investigate the respective relevance of the Marxian explanations for the crises falling under the 'rising strength of labor' (RSL), the 'realization failure' (RF) and the 'rising organic composition of capital' (ROC) categories. From our viewpoint, we can utilize such a model to

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[38] Where r is the profit rate, P the amount of profits, K the capital stock, Y actual output, Y^* normal capacity output.

better frame the issue of profitability and financialization. Let us separately analyze the three different components of profitability.

The RSL element relates the profit rate to the distribution of income. It has been traditionally associated, in the Marxian crisis theories, to the 'profit squeeze' cause for a profit rate fall. More favorable conditions for the workers (improved bargaining strength, lower unemployment, etc.) can be conducive to a higher wage share, which consequently compresses the profit share. In this common interpretation, the RSL can be said to have been operative during the last decades in the sense of a 'wage squeeze', and so a profit share rise. Nevertheless, we have tried to argue in section 2.4 that financialization in this respect can be deemed to be an element which, at least in the first fifteen years of the Fasianos *et al.*'s 'fourth phase', was a result rather than a cause of the wage squeeze. In close connection to this point, we can then seek to relate the result of sec. 2.3.1 about the repartition of profits between capitalists to the RSL. In this respect, we can say that, for a given real wage rate, a 'relative profit squeeze' in the sense of a higher financial share of profits against a lower non-financial share cannot *per se* have an effect upon the profit rate. This is so since, for a given real wage rate, the general rate of profit is arrived at and the repartition of profits does not hinge on the long- term profit rate.

The RF component is a component related to the capacity of capitalists to 'realize' what they have produced. It is therefore a component referring to the patterns of aggregate demand. Being represented by the ratio of effective-to-normal production, it causes, *ceteris paribus*, a higher realized profit rate when capacity utilization increases. At this point it is important to differentiate between the realized and the normal profit rate. It is a crucial distinction since it is absolutely plausible to conceive that a higher degree of capacity utilization, if sufficiently strong and persistent in time, will cause a flow of investment aimed at bringing back utilization to its desired value. In addition, the latter value is in turn crucial since the profit rate that matters for the evaluation of income distribution is the normal profit rate, not the effective one (Garegnani 1992).[39] Therefore, while the cyclical fluctuations of the profit rate due to the ability to realize the amount of production surely matter over the cycle, in the longer term the evaluation has to be made by looking at the normal rate of profit. In this respect therefore, all the evaluations that we have been doing, as said in the opening of the piece, have been made keeping in mind the normal profit rate and not the one affected by the actual degree of capacity utilization.

The ROC component is the one traditionally resting at the foundations of the LTRPF, since the latter ought to be explained by means of the former. In this explanation, allegedly unavoidable technical progress featuring a rising organic composition of capital leads to the fall of the maximum rate of profit, and eventually the profit rate as well. Such a statement has been disproved, as already seen, by Okishio (1961), Bowles

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[39] For a thoroughgoing analysis of the determinant of the normal degree of capacity utilization in terms of profit-maximizing choice of techniques and desire to keep a spare amount of capacity to meet unexpected peaks of demand, cf. Kurz (1986), Ciccone (1986).

(1981), Samuelson (1957), Sraffa (1960), and Garegnani (1970).[40] Following the same line of reasoning, we have also tried to show the effect of technical innovation upon the general profit rate. Yet, before discussing it, firstly we have to somehow change the ROC component so as to encompass arguments which do not directly refer to the organic composition of capital. Recall, in fact, the shift to the proportional time distribution of the labor necessary to produce the wage-goods. That said, if the innovation comes up in the direct and/or indirect production of a wage-good, it raises the profit rate. We have then advocated for regarding the technical progress characterizing financialization as a factor which has manifested itself principally in the production and use of derivative contracts, falling outside the wage-goods production sphere, thereby not impacting general profitability. So, in this sense, financialization cannot be seen as a counter-element to the ROC. However, an unpleasant dilemma emerges when we discuss these results in the ROC category. Indeed, one might not accept the fundamental outcome of Okishio. But then he would have no room to state that innovations in the financial sector can sustain the profit rate. Conversely, accepting that positive impact, the validity of the ROC factor as a driver of the profit rate fall would be implicitly denied. We neatly favor the first option, hence dropping the ROC category and discerning between different kinds of technical progress, with the type characterizing financialization not influencing the general profit rate.

Let us now apply the considerations thus far expounded to the two Marxian arguments we have described in the previous section. The LTRPF variant crucially relies on the supposition of a chronic excess of capacity, which ought to be fixed by an appropriate destruction of capital. Financialization can, in the short haul, help sustain the realized profit rate, while the enlargement of the financial sector acquires a continuously rising share of profits. Nonetheless, as we have been arguing, these two factors cannot have acted upon the normal general profit rate. Even taking for granted a long run unavoidable fall of the profit rate, the realized profit rate does not matter to the study of the long term conduct of income distribution, nor does the repartition of profits among production spheres. On the MR side instead, the long-haul profitability issue is linked to the lack of available outlets in which the increasing surplus can be fruitfully invested, since intensifying monopolization curbs aggregate demand growth. Again, even here financialization can help by temporarily offering a source for demand to absorb the otherwise wasted surplus, at the cost of destabilizing the entire economic system. While the issue related to the realized/normal rate of profit still matters also in this type of explanation, we have here an additional aspect to discuss. There may be, in principle, an ulterior element, namely the 'mark-up' component which is supposed to be heightened by a rising financial sector share on the total value added. That element can indeed result in a higher profit share, but it has no bearing on the normal general profit rate. The latter is

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[40] In addition to these authors, it is interesting to notice the attempt of Petri (1999) to demonstrate the validity of Okishio's theorem by means of the IWGS; something that fully fits the spirit of our enquiry on this specific aspect of the discussion.

arrived at in a model (the IWGS) in which there is the supposition of free capital mobility. Therefore, sectors displaying monopolistic features capture a higher share of surplus product, but without affecting the general normal rate of profit, which is arrived at independently of the presence of some degree of market power. Furthermore, and concluding this section before moving to a discussion upon a history of economic thought issue, we hint towards a possible alternative way to model the topics so far debated. Our viewpoint is in favor of a vision in which, building along the lines proposed by Serrano (1995), Cesaratto *et al.* (2003), Freitas and Serrano (2015), and Girardi and Pariboni (2016), the long run patterns of autonomous, non-capacity creating aggregate demand components shape the trends of economic growth and capital accumulation. Within this framework, the role of private consumption growth driven by endogenous money creation can be a driver of growth, without of course neglecting its likely adverse effects upon macroeconomic stability, as found in Pariboni (2016). In it, among other things, investment is treated as a component of demand which is endogenously stimulated by private lending, and which is implemented with the aim to endow firms with an amount of capacity to be used at a normal level. Furthermore, Dutt (2006) builds a Steindlian demand-led model involving mark-up pricing linked to monopoly power and consumer borrowing. Therein, the stagnation caused by higher monopoly power of firms is avoided in the short run by credit to households; nonetheless, in the longer run household debt can depress aggregate demand. These features closely resemble the ones discussed in the MR tradition, but there the higher mark-up results in a higher profit share, and demand patterns are treated separately from distribution.

4. Interpreting the 'sixth' countertendency to the LTRPF

In this section we are going to look at the possible connection between falling profitability and financialization through a history of economic thought lens. The interpretation of Marx to be found in Giacché (2011) is particularly interesting in light of the present study. The author was therein engaged in an examination of the supposed role of financialization in the last decades as a contrasting element to the LTRPF (pp. 22-27). He discusses the five counteracting factors to the LTRPF as listed by Marx: increasing intensity of exploitation, depression of wages below the value of labor-power, cheapening of elements of constant capital, relative over-population, and foreign trade. Then, he adds to the list the 'increase in interest-bearing capital', stating that

> This factor, which Marx mentions last, consists in an increasing share of capital becoming "interest-bearing capital," that is, investments in credit and financial activities. The importance assumed by "interest-bearing capital" in the past few decades is one of the keys to understanding the processes underlying the current crisis and the events that triggered it.

Hence, we find here an explicit attempt to directly link financialization to the LTRPF through a 'sixth' countertendency. To our knowledge this interpretation constitutes a

novelty.[41] Our point in this respect is that such a straight linkage is not warranted. Let us, in the first place, quote the whole passage from the original text:[42]

> The foregoing five points may still be supplemented by the following, which, however, cannot be more fully treated for the present. With the progress of capitalist production, which goes hand in hand with accelerated accumulation, a portion of capital is calculated and applied only as interest-bearing capital. Not in the sense in which every capitalist who lends out capital is satisfied with interest, while the industrial capitalist pockets the investor's profit. This has no bearing on the level of the general rate of profit, because for the latter profit = interest + profit of all kinds + ground rent, the division into these particular categories being immaterial to it. But in the sense that these capitals, although invested in large productive enterprises, yield only large or small amounts of interest, so-called dividends, after all costs have been deducted. In railways, for instance. *These do not therefore go into levelling the general rate of profit, because they yield a lower than average rate of profit*. If they did enter into it, the general rate of profit would fall much lower. Theoretically, they may be included in the calculation, and the result would then be a *lower rate of profit* than the seemingly existing rate, which is decisive for the capitalists; it would be lower, because the *constant capital particularly in these enterprises is largest in its relation to the variable capital* (emphases added).

The first point to be singled out is the explicit mention about the irrelevance of the division of profits to the general profit rate. Then, and this is crucial to our argument, Marx appears to allude to a purely formal countertendency. In his reasoning, the high organic composition of capital characterizing some particular sectors would render their peculiar profit rates lower than the general one. So, if those sectors enter the overall calculation, they lower the average. By not including them, that average remains higher than it would be otherwise.

It is in our opinion noteworthy to look at an analogous kind of reasoning, in spite of its development being carried out in an altogether theoretical framework. Knut Wicksell, in his *Value, Capital and Rent* ([1893]1954, pp. 118-119), when dealing with the role of long-lived capital goods in determining the rate of interest, was figuring out the issue in these terms:[43, 44]

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[41] Two authors such as Sweezy (1964, Sec. 6, Par. 2, pp. 97-100) and Foley (1986, Ch. VIII, pp. 132-134) contemplated the LTRPF countertendencies. However, the former just said that "One of these, the sixth, is really concerned with the way in which the rate of profit is calculated and will not be considered here.", while the latter did not mention that factor at all.

[42] Marx, Capital, Volume III, Part III, "The Law of the Tendency of the Rate of Profit to Fall". In this essay, reference is to the Lawrence & Wishart edition, London, 1984.

[43] For a study in which the analysis of Wicksell, from which we are reporting a single passage, and its relation to the work of Walras on interest and capital is thoroughly carried out, cf. Imperia et al. (2018). Wicksell (op. cit., p. 105) was sorting out capital goods in different categories. At one extreme we find that the "Consumable or quickly exhausted production or consumption goods, so long as the latter are not yet in the hands of consumers, I shall call capital-goods or capital in the narrower sense". At the other "the highly durable goods rent-goods, whether they are products themselves, or, like virgin soil, goods furnished by nature itself and whether they yield useful services spontaneously or only by the addition of human labor", to which he was comparing the capital goods of greater durability.

[44] I am highly indebted to Prof. Paolo Trabucchi for having drawn my attention to these quotes from Wicksell.

In my opinion, however, it is precisely because of this that *goods of greater durability* (such as streets, railways, buildings, etc.) cannot be regarded or treated as capital in the narrower sense, but, once they are there, must be placed, economically speaking, in the *same category as landed property* itself. In other words, if, in accordance with Bohm-Bawerk's precedent which we ourselves shall later follow, all existing capitals are united in one sum, in order to use this sum as an element in the theoretical determination of the level of interest and of wages, it would be misleading to think of the capital value of all railways, buildings, etc., as being included in this sum. This value is rather, like the capital value of landed property itself, to be thought of as a secondary phenomenon which has *no influence* on the determination of the above-named magnitudes. The *net interest of durable goods*, however, is determined, *like ground-rent*, simply by the value of their useful services (after the cost of repairs has been deducted) (emphases added).

Wicksell was obviously contemplating the subject within the traditional neoclassical apparatus, thereby envisaging the determination of the interest rate as hinging on the available techniques, consumer tastes and factors of production endowments. In spite of this, one finds the supposition that sectors exhibiting a high degree of capital durability ought to somehow be treated separately from the others.[45, 46] In this case, Wicksell suggests equating them to rent-earning goods.

It is all the more interesting to note that, in addition to these theoretical speculations, there is some point to be underscored also on the empirical side. The empirical research studying the plausibility of the Classical theory of gravitation of profit rate around a uniform value owing to capital mobility delivered noticeable confirmations. Despite the variety of approaches, there is evidence in favor of confirming the tendency to uniformity of rates of return. For instance, among others, Scharfenaker and Semieniuk (2017) use a so-called 'statistical equilibrium approach', Tescari and Vaona (2014) concentrate on 'regulating capitals', Vaona (2012) employs a 'panel data varying coefficient', and all confirm the supposition. Among these kinds of econometric analysis, two are of particular relevance to our point. Shaikh (2008, pp. 174-182) supplies additional evidence in support of the gravitation process in US industries between 1988 and 2005. However, he explicitly pinpoints, there is a differentiation among the thirty industries considered. Among them, in fact, twelve tend to *lastingly remain outside* the process of gravitation (seven keep on yielding a higher-than-average rate of return, while five a lower-than-average).[47] Furthermore, the result obtained by Duménil and Lévy (2002a) in an analogous investigation (for the non-financial US sector, 1948-2000) yielded an even more fascinating result. Indeed, the two authors show that gravitation is actually at work and profit rates converge. This process is visible in what they label the 'non-financial capi-

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[45] It is important to recall that it is not generally possible to either 'unite all existing capitals in one sum' (Wicksell) or to determine the amount of 'constant capital' (Marx). The impossibility to establish the 'quantity of capital' of a peculiar branch of production regardless of the magnitude of the interest rate is a problematic that has been thoroughly studied decades after the works of both Marx and Wicksell. Therefore, we are going to retain such a terminology only for the sake of closely referring to the intuition of the two authors, which is the subject under discussion.

[46] For a discussion of the determination of rent in a classical and Marxian point of view, and how the issue can be treated within a Sraffian price equations system, cf. Fratini (2015a, 2018).

[47] Similar evidence is reported also in Shaikh (2016, pp. 301-305).

talist core business', which is composed of the manufacturing, trade and services sub-sectors, accounting for 81.5% of the net product of the whole branch of the economy considered.[48] Yet, the 'highly capital intensive' sub-sector[49] (taking the remaining 18.5%), composed of mining, transport and public utilities, does not follow the same pattern: the profit rates yielded within it do not gravitate and remain persistently and *remarkably lower than the average*. The authors (2002a, pp. 432-433) conclude the piece by pointing out two things in this respect: that sub-sector has a particularly lengthy service-life of capital[50] and its industries are often regulated. Thus, they can possibly remain outside the scope for gravitation because of these elements.

The discussion set forth in this paragraph aims at reinforcing our general point. In fact, there seems to be a much weaker link than suggested between the 'sixth' counter-tendency to the LTRPF and 'financialization'. However, this comes at no harm to Marx: he seems to have anyway correctly envisioned, as in many other cases, a deep rationale beneath the process of capitalistic accumulation.

5. Conclusions

The present paper addresses, as a first question, the issue of what the role of financialization can have in affecting the normal profit rate of an economy. We have worked on the broad definition of financialization and the most important features characterizing its last phase provided by historical and institutional studies. Therefore, we have focused our research on three points: the role of a higher profit share accruing to the financial sector, the role of technical innovations in both the 'traditional' financial sector activities and the production of derivative contracts, the role of skyrocketing private household indebtedness. By running the theoretical enquiry within the 'integrated wage-goods sector' proposed by Garegnani, we have tried to separately assess the effect of each element upon the determination of the general rate of profit. We have found that only one factor, namely the technical progress in 'traditional' financial sector activities, is liable to affect the general profitability of the system. However, we have signaled how this specific aspect can be seen as not particularly relevant to the overall picture of the phenomenon of financialization. What is more, the influence of financialization on the wage share, with the latter being shown in many studies to be adversely affected by the former, could be seen to have been possible only after a decisive attack upon the workers' bargaining position.

The application of these theoretical results to the proposal of two Marxian lines of thought has led to the discussion of whether financialization can be a countertendency

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[48] Which is total economy minus government and real estate.

[49] Such a name comes from the fact that those industries 'use very large amounts of capital compared to their output'.

[50] It is in our opinion striking the specification that Duménil and Lévy make by singling out that the capital employed in 'railways' has an especially lengthy service-life. In both the reflections of Marx and Wicksell we have found the reference to that sector.

to an alleged tendency for the profit rate to fall. In those approaches, financialization is regarded as a useful element to slow down the inescapable fall of the profit rate, which can, in turn, be due to either an increasingly monopolistic economy or a chronic excess of capacity in the manufacturing sector. According to us, and coherently with the previous part of the work, financialization, while undoubtedly being a still evolving and astonishing process, should not be seen as a countertendency to the supposed profitability fall. This conclusion is arrived at by separately analyzing the three different components (income distribution, capacity utilization, and technical conditions) into which the profit rate is usually decomposed in Marxian literature. The main features shaping the process of financialization are maintained not to be capable of describing it as a factor reversing the fall of the general rate of profit in either viewpoint.

Lastly, we have advocated for a different reading of Marx's passage in the third Volume of Capital, which has been recently interpreted as textual evidence in favor of the consideration of financialization as a countertendency. According to our view, Marx was referring to the possibility to see particular sectors of the economy as branches which would be better excluded from the calculation of the general rate of profit, given their peculiar nature. Indeed, according to us, Marx expressed a vision in which sectors displaying an unusually high organic composition of capital would make the average rate of profit lower than what could have been otherwise and was not envisaging some intuition about a long-yet-to-come-financialization.

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