This paper aims at providing an interpretation of economic crises within a theoretical framework where some elements of Classical political economy are superimposed on the theoretical framework of the monetary theory of production. The dynamics of wages, of conspicuous consumption on the part of rentiers and of investments are taken into consideration, in order to show that economic crises largely depend on the combination of declining wage shares, increasing financial rents and the reduction of investments.

Keywords: monetary theory of production, labour market, economic crises
JEL: B51, B52, E3

In the ongoing debate on the causes of the current crisis, relatively little attention has been devoted to the dynamics of the labour market in the neo-liberal regime, with particular reference to the increasing labour flexibility, the reduction of public transfers to workers on the part of the State, and the increasing gap between the current wage and the subsistence wage. While it is widely accepted - from the PostKeynesian standpoint - that the crisis largely depends on an increasingly unequal income distribution, which pushes workers to get into debt (see, among others, Hein, 2009; Charpe et al, 2009), it is difficult to find theoretical and empirical studies on the (seemingly trivial) question of why the demand for consumer credit has significantly increased in the past decades.

Watkins (2000) suggests that consumer credit is ultimately driven by advertising, in a context where big corporations are in the position to affect workers’ desires. In a similar vein, Sawyer and Spencer (2010) maintain that the target wage is profoundly affected by ‘consumerism’. According to Forges Davanzati and Pacella (2010a), the existence of emulative effects among workers, in a context where, due to labour flexibility the labour market has became even more fragmented, can be regarded as a significant factor which establishes workers’ target consumption (see also Palley, 2010; Dutt, 2006).

The aim of this paper is to provide an interpretation of the current crisis starting from the view that workers aim at obtaining (at least) a subsistence wage whose value is historically and socially determined, moving within the theoretical framework of the monetary theory of production (hereafter MTP). In so doing, it will be shown that the drop in GDP may depend on the fact that: 1) when wages fall below the subsistence level workers are pushed to get into debt. As a result, private indebtedness fills the gap between workers’ target consumption and the consumption allowed by the current wage.

2) At the same time, as profits grow, capitalists tend to disinvest, allocating resources to unproductive uses, including speculation in the financial markets.

On the methodological plane, the model presented here aims to insert elements of ‘the macrofoundation of microeconomics’ into the MTP. This means that individual behaviours are explicitly taken into consideration, but, unlike the mainstream view, they are not regarded as being
generated in an institutional vacuum, as they are profoundly affected by group affiliation, and by norm-driven behaviours (i.e. what is also labelled ‘weak individualism’).

A preliminary analytical problem will be addressed, which concerns the fact that provided – in the MTP approach – the money wage bill is advanced with respect to the end of the production process, the real wage is known only at the end of the production process, once the price level has been determined. In dealing with this problem, it will be suggested that – due both to capitalists’ decisions and to economic policy – current wages tend to be lower than the subsistence wage, and the latter is ‘memorized’ by workers, so that it is what they received (both in terms of direct and indirect wages via services provided by the state) in the previous production process. Accordingly, the subsistence wage is purely historically determined and gives rise, in the current production period, to a customary target level of consumption.

The paper is organized as follows. Section 2 deals with the description of a basic MTP schema. Section 3 deals with the problem of the equalization, in real terms, between the current wage and the subsistence wage, in a theoretical context where it is assumed that the money wage bill is advanced and real wages are known ex-post, i.e. once firms have set the price level. Section 4 provides a simple model where crises depend on the increasing inequality of income distribution as well as on purely institutional factors (which concern variations of capitalists’ propensity to consume and involve financialization), and section 5 concludes.

2 – The monetary theory of production

The MTP describes the functioning of a sequential economy which involves three macro-agents: banks, firms and workers. The banking system creates money ex nihilo, in accordance with the idea that loans make deposits; firms advance the money wage bill and produce commodities; workers supply labour power. The circular process of the monetary economy starts with bargaining in the money market between banks and firms. Banks supply firms with initial finance; firms need money in order to buy labour power and to start production. Firms use bank finance to purchase labour power, paying workers the previously negotiated money wages. After the production process has taken place, the price level is determined, so that real wages are known ex-post. The MTP emphasises that income distribution is primarily determined by firms’ decisions that are reflected in the value of the mark-up. This means that in the MTP approach, income distribution among banks, firms and workers depends on the relative market and socio-political power of the agents. The monetary circuit closes with the repayment of the initial finance to banks (see Graziani, 2003).

The basic schema of the MTP can be formalized as follows. Assuming that workers have a unitary propensity to consume, it is shown that firms as a whole recoup an amount of money exactly equal to their costs of production for whatever price level, which at the aggregate level equals the money wage bill (see Graziani, 2003). This conclusion can be algebraically shown as follows. $N$ is the volume of employment, $F$ the so-called initial finance, $p$ the unitary price, $C$ the acquired consumption goods, $R$ firms’ revenues, $\Pi$ aggregate money profits. Initial finance is:

$$F = wN \quad \text{[2.1]}.$$  

while money revenues ($R$) for firms as a whole are:

$$R = pC = wN \quad \text{[2.2]}.$$  

Since, at the aggregate level, firms only pay the money wage bill (changes in the firm sector giving rise to a ‘zero sum game’), money profits for firms as a whole are:

$$\pi = pC - wN = 0 \quad \text{[2.3]}.$$
In this schema, since firms can only recoup the total amount of the initial finance, there is the problem of how they can make sufficient revenue not only to pay interest\(^1\), but also to make profits, thus giving rise to the so-called paradox of profits. The traditional solution of the problem consists in assuming that firms as a whole reimburse their debt in real terms, by giving banks part of the investments goods they have produced (Graziani, 2003). This solution implies that banks and firms tend to become a single macro-agent, in contrast to the view that firms and banks are two distinct macro-agents. More generally, as emphasised in particular by Seccareccia (2003) and by Messori and Zazzaro (2005), the traditional view does not see capitalism as a decentralized system where the production decisions are taken in a context of competition among firms.

The recent developments of research within the MTP approach have emphasized some unsettled questions presented in the basic schema. For the sake of the arguments presented in this paper, the focus will be on two aspects. First, in the schema presented above, banks can finance entrepreneurs also in the case where they are not capitalists in the classical meaning (i.e. proprietors of capital goods), if one admits that collateral in physical terms is not required, and banks finance production on the basis of the expected profitability of the idea underlying the projects of investment. In this respect, it is the banking system which ultimately determines class composition, and full social mobility is admitted. Even if this can happen in the real world, this assumption may pose theoretical problems if inserted in the MTP approach. In fact, in this framework, in order to start the production process, firms needs not only initial finance but also capital goods, and it is unclear where they come from in a context where firms as a whole are financed only on the grounds of the expected profitability of their investment project, particularly if one admits that the production of capital goods involves time. In what follows, in the framework of the classical approach, the view that capitalists are financed because they are proprietors of means of production will be maintained, on the grounds that fixed capital is the collateral that firms offer to banks. Second, as regards the realism of the assumption that the whole production is financed via bank creation of money, one should consider that this is a very special case, and there is no logical constraint internal to the MTP to exclude self-financing (see, in particular, Seccareccia, 2003, p.177)\(^2\). Moving along this line of thought, equation [2.1] can be rewritten as follows:

\[
F = wN - S_f
\]

where \(S_f\) is the internal retention of firms. Equation [2.1\(^{'}\)] establishes that, for a given money wage bill, \(S_f\) is inversely proportional to firms demand for money and, for a given interest rate, to banks’ money profits (see below, section 4).

As regards to the ‘paradox of profits’, the failure to realize a monetary surplus should not be seen as a purely logical puzzle\(^3\). It is worth noting that it focuses on a key problem of the capitalist system, namely the problem of the realization of a monetary surplus. One can argue that – depending on historical and social conditions – capitalism solves the problem in different ways, and these ways – not being a mere ‘outside factor’ used as an ad hoc assumption in circuitist models – are, as a matter of fact, social devices serving for the reproduction of the system. In this sense, the MTP approach provides an ‘open’ model, where the closure of the circuit depends on ‘outside factors’ which are historically, institutionally and socially determined, as well as empirically/factually significant. It should be added that – by its very nature - the problem of the realization of a monetary surplus is a

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\(^1\) It is worth noting that – in this schema – the interest rate is a “tax on profits”. Moreover, inflation is not a monetary phenomenon, not being caused by an excess of money supply, but it mainly depends on distribution conflicts.

\(^2\) The case where firms finance production by issuing bonds is not considered here.

\(^3\) Notice that the paradox of profits, as shown among others by Chapman and Keen (2006), can be solved by considering multiplier effects and by assuming that the velocity of money circulation is higher than 1. This is not the case dealt with here, on the conviction that the paradox of profits pertains to the problem of capitalist reproduction in monetary terms.
macroeconomic problem, closely linked to Kalecki’s view that capitalist reproduction needs low wages with high consumption (Kalecki, 1971).

3 – The subsistence wage

As a matter of fact, the existence of a subsistence wage is a theoretical problem in the monetary circuit approach, since if one can admit that the real wage is set by firms at the level corresponding to its subsistence level in a theoretical context where real wages are advanced, in a credit economy – where firms advance the money wages – the price level is set at the end of the circuit, implying that the equality between the subsistence wage and the actual real wage can occur only by chance.

The argument runs as follows. Let us assume that both workers and firms know the level of wages corresponding to the subsistence level, due to the prevailing social norms. In this sense, the subsistence wage is conceived as a ‘customary’ level of wages. If wages are paid in money terms, competition among firms is likely to determine a price level which can fix the actual real wage below (or above) its subsistence level. Moreover, a policy of low money wages is profitable for the individual firm (as well as for firms as a whole) insofar as it increases its competitiveness. Otherwise, in normal circumstances, union action can affect money wages, not the price level.

Seccareccia (2003, pp.187 ff.) sets out to consider competition among firms in a two-sector model (sector 1, producing consumption goods and sector 2, producing investment goods). Following this line of thought, the market price of consumption goods is calculated by equalizing aggregate supply and aggregate demand.

\[ pQ_1 = C + G \]  

where \( p \) is the unitary price, \( Q_1 \) is the quantity of consumption goods produced, \( C \) is the consumption of workers (their propensity to consume being equal to 1) and \( G \) is public expenditure.

As a result:

\[ p = \frac{C + G}{aN_1} = \frac{wN_1 + wN_2}{aN_1} + \frac{G}{aN_1} = \frac{w}{a} + \frac{wN_2}{aN_1} + \frac{G}{aN_1} \]  

which establishes that the higher the public expenditure (\( G \)), the higher the market price of consumption goods and, given the money wage (\( w \)) and labour productivity (\( a \)), the lower the number of workers employed in the sector producing consumption goods (\( N_1 \)). This result establishes – other things being equal – that prices crucially depend on the distribution of employment between the two sectors. In this context, money profits derive from public expenditure, so that the market money profit rate is \( r = \frac{G + wN_2 - iF}{wN_1} \), where \( iF \) is the cost of finance. The average real wage becomes:

\[ \frac{w}{p} = \frac{a}{[1 + (G + wN_2 - iF)/wN_1]} \]  

In this theoretical context, capitalist reproduction requires low (or declining) wages at the same time as high (or increasing) total demand. This occurs because while it is profitable for firms – on the microeconomic plane – to cut wages and to oppose public intervention, for firms as a whole high total demand allows the realization of money profits (see Kalecki, 1971).
Since capitalists do not have direct control either over the amount of public expenditure or over the interest rate, they cannot fix the current wage at its subsistence level, even if they would find it to their advantage.

By starting from the Classical (and Marxian) view that the subsistence wage is a historically determined value, it will be argued that – at the beginning of the current production process – it is a datum, reflecting workers’ “memory” on their past successes in their claims for wage rises, so that the more frequent they have been, the higher the subsistence wage \( C_{t-1} \). Moreover, by taking into account the increasing processes of labour ‘flexibility’, the reduction of the ‘welfare state’, and the decreasing relevance of social conflict, the condition \( C_{t-1} > C_t \) holds (where \( C_t \) is current consumption). Accordingly, \( C_{t-1} \) is a customary level of consumption and it becomes a target level of consumption in the current period. If the existence of the underground economy is excluded and if the length of the working day is considered as given, with an accommodating banking system, this gap is filled via private indebtedness \( (D) \):

\[
D_t = \overline{C}_{t-1} - C_t
\]

Equation [3.3] shows that the increase in the difference between ‘memorized’ and current consumption generates an increase in workers’ demand for private indebtedness. The consumption target incorporates class memory resulting from its history (as well as the individual background), and particularly the frequencies of successes/failures of their claims for higher wages. Notice that in this theoretical framework, the inverse relationship between the wage rate and the profit rate is indirect, in the sense that as wages increases so does firms’ indebtedness towards the banking system, thus reducing their money profits. Otherwise, as shown below, wage cuts increase profits via the increase in worker indebtedness.

4 – The dynamics of the crisis

In order to analyse the effects of changes of income distribution on profits and output, the following assumptions are made.

1) The economy is formed by two sectors: one producing wage-goods (sector 1), the other producing luxury goods (sector 2). Workers \( (N) \) only consume wage-goods, while both type-1 and type-2 capitalists only consume luxury goods.

2) The level of worker indebtedness \( (D) \) depends on the difference between subsistence consumption and the consumption allowed by the current wage. The subsistence wage, in turn, is the real wage obtained in \( t-1 \) and assumed to be a customary wage.

3) Employment is based on a fixed coefficient, so that \( N = K/\lambda \), where \( N \) is the level of employment, \( K \) is the stock of fixed capital and \( \lambda \) is the technical coefficient, and, at the beginning of the circuit, it is assumed that capital is fully utilized. Moreover, it is assumed that \( K \) depreciates entirely in one period, and that unemployment exists \( (N_s > N) \), where \( N_s \) is labour supply). For the sake of simplicity, it is assumed that workers repay their debt in a period \( t+m \) which is outside the current production period. The banking system reacts to the increase in prices by increasing the interest rate.

4) Investments are decided by capitalists at the end of the circuit and they are financed via their savings and via finance by the banking system. Capitalists’ savings, in turn, are a share of current profits and it is assumed that their propensity to consume \( (c_k) \) is higher than zero, and grows as profits grows. The money interest rate is assumed to be equal for all sectors and also equal for firms and indebted households.

The following preliminary considerations are in order.

i) As regards worker indebtedness, based on evidence, it is established here that current consumption allowed by the current wage is lower than the subsistence consumption ‘memorized’ by workers. This depends on a number of phenomena, which can be reduced to the increase in
firms’ bargaining power in the labour market due in turn to the increased capital mobility and the so-called capital strike linked to it (see Bowles and Gintis, 1986). Guscina (2006) finds that in OECD countries – the labour share crucially depends on international capital mobility. Figure 1 shows that the share of wages over GDP declined dramatically starting from the beginning of 1980’s, that is from the period when the ‘neo-liberal’ regime went fully into operation, and before the current crisis.

**Figure 1. Cross-Country Average Labor’s Share in National Income**

(Ratio of labor income to national income)

Guscina (2006) concludes that, during the globalization era, increases in direct foreign investments led to increases in inequality.

**ii)** The assumption related to banks’ behaviour is based on the dominant view (in the pre-crisis decade) that fiscal policy is ineffective, or even counterproductive, for the purpose of controlling macroeconomic variables (the so-called new consensus approach). More specifically, it was argued that expansive fiscal policies produce ‘crowding out’ effect at the expense of private investments, and that – in a theoretical framework where unemployment (the NAIRU) depends on wage rigidities – the sole space assigned to policymakers regards the control of the inflation rate. Once a

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5 This argument runs as follows. It is assumed that **i)** firms are mobile in the international arena, **ii)** every single government is interested in electoral consensus, **iii)** consensus for the existing Government increases as domestic investments increase. As a result, the credible threat of investing abroad or of postponing investments – the so-called ‘capital strike’ – is enough to force the Government to implement pro-firm policies. Moreover, the higher the unemployment, the more likely it is that social conflict will occur. Notice that, as found by Iakova (2009), wage cutting is not necessarily linked to the existence of an industrial reserve army, since the high degree of international mobility of capital is a sufficient device for this purpose. In this sense, the Phillips curve tended to become flat during the first decade of the 2000s.
target rate of inflation has been fixed, since it is impossible to control the money supply (which is recognized as endogenous), the Central Bank fixes the ‘equilibrium’ real interest rate, that is, the interest rate consistent with zero output gap, which implies a constant rate of inflation. In the event the current inflation is higher (lower) than its target value, the interest rate has to be increased (or decreased). From a PostKeynesian point of view, the main criticism of this approach lies in the consideration that it completely excludes cases where expansionary fiscal policy could have a positive effect on the employment level, although there is much evidence in support of this view (see, among others, Angeriz and Arestis, 2009). Moreover, the new consensus approach is based on the very questionable idea that the control of the interest rate is a purely technical issue. By contrast, and particularly for the MTP, the interest rate is a distributive variable, whose value affects the distribution of social product between banks, firms and workers, and monetary policy is also a means to reach distributional objectives (see, among others, Setterfield 2009). From the empirical viewpoint, the Fed reduced the monetary policy rate from 6.5 percent in early 2001 to 1 percent by 2004. At the same time the Fed Funds rate passed from 5.25% in the fall of 2007 to 2% by the spring of 2008.

iii) The rationale for assumptions 3) and 4) concerning the existence of a given stock of capital goods at the beginning of the circuit lies in the fact that – in view of what has been said above – the economy described here is a capitalist economy in the classical sense, where, at the beginning of the circuit, capitalists are proprietors of the means of production. As a result, they do not need to demand credit to acquire capital goods. The demand for credit in order to finance investments occurs when the capital stock is depreciated, i.e. at the end of the current production process. iv) Assumption 4) overcomes the conventional description of the classical models, where – at the extreme – capitalist consumption is assumed to be nil. Note that this conventional description is not typical of classical economists, if one consider Marx’s view that:

“When a certain stage of development has been reached, a conventional degree of prodigality, which is also an exhibition of wealth and consequently a source of credit, becomes a business necessity to the ‘unfortunate’ capitalist. Luxury enters into capital’s expenses of representation”. And, by recalling Goethe, “along with this growth, there is at the same time in his breast a Faustian conflict between the passion for accumulation, and the desire for enjoyment” (Marx, 1994 [1867], pp.293-294).

In this sense, the rationale for assumption 4) can be found in purely institutional factors, since the choice is between accumulation and consumption. This view is in line with Kalecki’s idea that the personal consumption of capitalists derives from a constant part plus a part which is proportional to gross profits (Kalecki, 1971). Further arguments can be added in support of this view.

a) The reduction of investments may also derive from capitalists’ expectation of a future drop of private indebtedness and the consequent reduction of the demand for consumer goods and/or in the event they expect social conflict to occur.

b) Capitalists’ aim of preserving the gap between their own income and workers’ income can push them to increase their own consumption when worker consumption increases.

c) The existence of a “dynastic” motive which, according to Michl (2009), may induce capitalists to abstain, at least partially, from accumulation, for the sake of passing on to their households an amount of (physical and/or monetary) resources so that their status can be reproduced in a long-run perspective. On the formal plane, this can lead to an increase in the propensity to consume, assuming that goods are durable and transmissible, and/or an increase in non spent liquidity.

d) A relevant cause of disinvestment, as shown empirically by Stockhammer (2009), is to be traced in the so-called financialization process. Thomas Palley (2007) emphasises that “Fincialization

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Several important criticisms of this approach are found in the papers included in the special issue of the Journal of Post Keynesian Economics, 31, 4, 2009.

transforms the functioning of the economic system at both the macro and micro levels. Its principal impacts are to (1) elevate the significance of the financial sector relative to the real sector, (2) transfer income from the real sector to the financial sector, and (3) contribute to increased income inequality and wage stagnation\(^8\). Post Keynesian scholars tend to consider financialization as the result of a radical modification of the structure and the aims of firms, in a context where a ‘shareholder value orientation’ prevails\(^8\), rejecting the view that it is the outcome of the alteration of agents’ preferences and more specifically of the fact that investors are becoming increasingly less risk loving and increasingly risk averse and that, as in the mainstream approach, this helps to generate macroeconomic stability (Graziani, 2003, p.158).

A different interpretation, suggested here, is based on the conviction that contemporary capitalist firms are even more interested in the\(^8\) timing of the realization of money profits. Accordingly, firms compare the turnover of fixed capital with the turnover of money capital, and – for a given speed of goods and services production – the lower the money turnover, the more they find it profitable to try to make money by means of money. Moreover, as suggested by Bronars and Dreere (1991), financialization can be regarded as a device for the purpose of resisting increasing worker claims in the expansionary phases of the cycle, when wages normally tend to grow. This argument implies that the processes of financialization are pro-cyclical, in line with the evidence reported, among others, by Nersisyan and Wray (2010). They also find that financialization is associated with increasing concentration in the financial markets. In the USA, by 2007 the top four banks accounted for over 40% of bank assets. Palley (2007) shows that the “rentier share” rose dramatically in the period between the 1970s and the 1990s, and that it generated increasing income inequality and a decline in the growth rate. Moreover, the FED reports that the index of industrial production (IP) in the USA showed moderate increases from 2004 through 2007 but declined sharply in 2008. Relative to earlier estimates, measured from fourth quarter to fourth quarter, total IP is now reported to have increased by 0.3 of a percentage point more slowly in 2007 and to have decreased by 0.5 of a percentage point more rapidly in 2008; the index for February 2009 now stands at about 1 percent below its previously published level. Moreover, the FED reports that the annual inflation rate rose from 2.2% in 1999 to 3.8% in 2008, reaching its lowest level for the decade in 2002 (1.6%). On the basis of this scenario, the expansionary phase and the crisis will be analysed.

4.1 – The expansionary phase

In view of assumption 3), total production in sector 1 is:

\[
\sum_{i=1}^{n} Q_i = \sum_{i=1}^{n} a(K / \lambda)_i
\]

[4.1],

which grows in proportion to labour productivity and the volume of employment. The apix \(n\) indicates the number of existing firms, so that \(Q\) increases as \(n\) increases, for a given degree of competition.

In view of assumption 1), private indebtedness for workers as a whole is:

\[
D_t = \bar{C}_{t-1}(Z_{t-1}) - C_t(Z_t)
\]

[4.2]

where \(Z_{t,j}\) indicates worker bargaining power in the previous periods. Equation [4.2] expresses a static relation which is allowed to vary over time, if one considers that continuous wages reductions are associated with reduction of the customary subsistence wage. Accordingly, \(C_{t-1}\) is no longer a

\(^8\) See, among others, Hein (2009).
datum, but a function of $C_t$. Equation [4.2] shows that private indebtedness grows in proportion to i) subsistence wage growth, or – for a given subsistence wage – the lowering of the current wage, ii) the lowering of worker bargaining power and iii) the growth of unemployment. Note that fiscal policy can play a significant role in affecting the current wage, both the direct and the ‘indirect’ wage, since policy decisions on the allocation of public transfers to the benefit of firms or workers significantly modify income distribution. It follows that worker bargaining power in the socio-political arena is relevant too, insofar as it influences the Government decisions on the distribution of public resources\textsuperscript{10}.

Type-1 firms’ profits - at time $t$ - are:

$$\Pi_1 = C_t + D - wN_t - iF_t$$

[4.3]

and, since $C_t=wN$, we obtain $\Pi_1 = wN_2 + D - iF$. In view of equation [4.3], the greater the difference between customary subsistence consumption and current consumption (and, hence, the greater the indebtedness), and the lower the money interest rate, then the higher money profits will be. Moreover, since current consumption depends on worker bargaining power and on the unemployment rate, it follows that profits increase as worker bargaining power decreases, and when the unemployment rate increases.

Two comments are worth noticing.

1) Money profits rise as the gap between the subsistence and the current wage widens, since it is this gap which drives private indebtedness. Accordingly, equation [4.3] defines the distributive conflict between capitalists and workers.

2) Equation [4.3] also takes into account the intercapitalist conflict involving the banking sector and industrial capital. In fact, any reductions of the wage bill imply a consequent reduction of banks’ money revenues ($iF$), so it is in the interests of banks as a whole for firms (or the Government) to give workers a higher money wage\textsuperscript{11}.

Given assumptions 1) and 4), profits in sector 2 are:

$$\Pi_2 = c^k \left( \frac{\pi_1}{\pi} \right) \pi - wN_2 - iF_2$$

[4.4]

Evidence shows that in last decades there has been a very significant increase in the consumption of luxury goods on a global scale. The Hurun Report 2010 shows that luxury consumption, on a global scale, significantly increased in recent decades (from about 80 billion euros in 1995 to 160 billion euros in 2005), above all in the USA, producing a price hike in that sector of about 5% more than the inflation rate calculated on the basis on the consumer price index\textsuperscript{12}.

Investments are therefore:

$$I_{t+1} = \left( 1 - c^k \left[ \frac{\pi}{\pi_1} \right] \right) \pi_1$$

[4.5]

\textsuperscript{9} I thank Giorgio Colacchio for raising this point.

\textsuperscript{10} I wish to thank Giorgio Colacchio for this suggestion.

\textsuperscript{11} In a context where firms can react to the increase in money wage by increasing prices, workers can increase their standard of living only by means of a direct State intervention in supplying goods and services at their benefits.

\textsuperscript{12} It is interesting to notice that, for the first time in last decades, the consumption of luxury goods in China in 2009 has been higher than in the USA.
on the simplifying assumption that type-2 firms do not invest$^{13}$. In view of equation [2.1’], a high value of \( c_k \) is not only associated with a low value of investments, but also with a low value (nil, at the extreme) of firms’ internal financing in the ensuing production process. This leads us to stress that the more interested capitalists are in consumption, the higher their ‘dependence’ on the banking system and, other things being equal, the lower their long-run money profits will be. Note also that since, by assumption, type-2 firms do not invest and plants are fully utilized at the beginning of the circuit, the increase in the demand for luxury goods – for a given supply – gives rise to an increase in prices in that sector, which, in turn, due to the operation of the ‘Veblen effect’, generate further increases in demand (see Forges Davanzati and Pacella, 2010b). Equation [4.5] establishes that the path of investments crucially depends on capitalists’ propensity to consume, which in turn, by assumption, is an increasing function of money profits obtained in the previous production process. As emphasized by many scholars (see, among others, Hein in Hein et al. 2008, p.94), the current paradigm of capitalist reproduction is characterized by “profits without investment”. In the long-run, when workers repay their debt, bank profits will be proportional to the interest rate and, given their costs of production, to the demand for credit expressed by firms. Moreover, bank money profits increase in the money interest rate or, for a given interest rate, in the amount of initial finance. In the long-run, workers repay their debt, bank profits will be proportional to the interest rate and the level of private indebtedness$^{15}$. If one considers the existence of firms’ internal funds at the beginning of the circuit \( S_f \), \( F \) decreases as \( S_f \) increases, thus reducing bank profits, with respect to the case of the standard firms’ budget constraint in the MTP where \( F=wN \).

Accordingly, for a given current money wage bill, the more profits rose in the previous production process, the less dependent firms will be on the banking system. Notice that since private indebtedness increases as the gap between the subsistence wage and the current wage widens, the (expected) bank money profits are inversely proportional to the money wage bill, thus defining the distributive conflict between finance and labour. However, since, by

\[ \Pi_b = iF - C_b \]

where \( C_b \) are banks’ costs of production, including the payment of wages to their employees.$^{14}$ Equation [4.7] shows that short-run bank money profits grow in proportion to the money interest rate and, given their costs of production, to the demand for credit expressed by firms. Moreover, bank money profits increase in the money interest rate or, for a given interest rate, in the amount of initial finance. In the long-run, when workers repay their debt, bank profits will be proportional to the interest rate and the level of private indebtedness$^{15}$. If one considers the existence of firms’ internal funds at the beginning of the circuit \( S_f \), \( F \) decreases as \( S_f \) increases, thus reducing bank profits, with respect to the case of the standard firms’ budget constraint in the MTP where \( F=wN \).

Accordingly, for a given current money wage bill, the more profits rose in the previous production process, the less dependent firms will be on the banking system. Notice that since private indebtedness increases as the gap between the subsistence wage and the current wage widens, the (expected) bank money profits are inversely proportional to the money wage bill, thus defining the distributive conflict between finance and labour. However, since, by

$^{13}$ The rationale for this assumption lies in the fact that firms operating in luxury goods sectors (such as artigianal production) tend to use a non significant amount of fixed capital.

$^{14}$ For a more detailed treatment of the operation of the banking system in a model of the MTP, see Bossone (in Rochon and Rossi, 2003).

$^{15}$ Remember that, by assumption, workers plan the reimbursement of their debt in a period \( t+m \) which is outside the current period. Therefore, expected bank profits are: \( \Pi_b = \sum_{i=1}^{m} iF_m + iD - \sum_{i=1}^{m} C_b \).
assumption, workers repay their debt in a future period, current bank money profits increase when the money wage bill goes up, since, for a given money interest rate, \( iF \) increases.

4.2 – The recessionary phase

The increase in capitalist consumption during the expansionary phase of the cycle generates the following long-run effects.

1. the stock of capital in \( t+1 \) is reduced and, given \( \lambda \), employment is reduced too;
2. the reduction of employment – insofar as it reduces worker bargaining power – implies a reduction of the unitary wage and, hence, of the money wage bill. This, in turn, has a negative effect on the demand for consumer goods and money profits in that sector, for three reasons. First, it is reasonable to consider that although they may benefit from consumer credit, unemployed workers receive a smaller amount of money from the banking system than that obtained by employed workers. Second, in a long-term perspective, due to the continuous reduction of real wages, the subsistence wage is likely to fall too, thus generating a decline of the demand for private indebtedness. Third, the fall of the real wage, and the expectation that the real wage will further decline, even if the subsistence wage remains unchanged, can discourage workers from contracting debt, insofar as they foresee that they will be unable to repay it.
3. the fall of investments reduces the growth rate. The reduction of the growth rate increases in proportion to \( i \) the initial increase in \( ck \), for a given amount of money profits; \( ii \) the lowering of worker bargaining power and, hence, the lowering of the money wage bill. Worker bargaining power, in turn, declines due to the increase in unemployment which follows the decrease of investments.

Two issues are worth noticing.

a) The reimbursement of debt on the part of workers becomes progressively more difficult because of the fall of real wages and the increase in unemployment which in turn derives from the decline of investment. If one admits that the subsistence level tends to fall as the current wage is reduced for a sufficient time span, then the demand for consumer credit would tend to fall over time. Moreover, it can be shown that, in this theoretical context, private indebtedness reduces real wages (cfr. Forges Davanzati and Pacella, 2010a). Since the price level is given by \( p=(w/a)(1+r) \), the increase in \( D \) implies an increase in profits and in the rate of profits, so that the unitary real wage becomes:

\[
\frac{W}{P_{t+1}} = \frac{a}{[1+(D-iF)/wN]}
\]

Equation [4.7] shows that, given the unitary money wage and labour productivity, the unitary real wage declines as private indebtedness increases, so that the more indebted workers as a class become, the more they receive a declining share of social product in real terms. Obviously, this is a macroeconomic result. On the microeconomic plane, workers perceive their debt (at least in the

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16 Notice also that, albeit on the purely formal plane, indebtedness on the part of the State and on the part of households gives rise to the same result as regards the magnitude of aggregate money profits, two basic differences should be emphasized. First, the increase in \( G \) produces an increase in employment, not only for the standard Keynesian multiplier mechanism, but also because the State can act as employer of last resort, while the increase in \( D \) may increase employment only in the event private firms react to the expansion of demand by increasing production, or – as stated here – if they work with unused capital (see Forges Davanzati, Pacella and Realfonzo, 2009). Second, as shown below, a mode of capitalist reproduction based on private indebtedness proves intrinsically unsustainable in a long-run perspective, while, as shown in a seminal paper by Pasinetti (1998), there is no definite limit of sustainability on the growth of the public debt/GDP ratio.

17 Where \( r = \frac{\pi}{wN} = \frac{D-iF}{wN} \).
short-run) as an increase in their net wealth, necessary to fill the gap between the ‘memorized’ subsistence wage and the consumption allowed by the current wage.
b) In view of equation [4.6], for a given interest rate, bank profits go up when the initial finance increases. Moreover, in view of assumption 3), banks react to the prices rises by raising the money interest rate. This can happen for two reasons. First, the Central Bank follows an inflation targeting rule, with the sole aim of reducing the price rises. Second, if – as in the postKeynesian view – the interest rate is manipulated also for distributive purposes, its increase may satisfy the aim of preserving bank money profits. This effect is in line with Marx’s (Capital, book III, ch. 32):

“A phase is reached, in the course of the industrial cycle, in which the rate of interest exceeds its minimum and reaches its mean level (which it exceeds later) and that this movement is a result of a rise in profits”.

Accordingly, the interest rate increases as profits increases. In both cases, a perverse effect occurs. This is because the increase in the interest rate makes it more difficult for workers to repay their debt (cf BIS, 2009), and, as a consequence, in the long-run, banks suffer a decline of their profits (or in the extreme case they go bankrupt). Moreover, the increase in the money interest rate reduces aggregate money profits, so that firms will be able to reimburse their debt (or to continue demanding the previous amount of money) only in the event workers continue to get into debt, which cannot happen due to the discouraging effect of the increased interest rate on the demand for consumer credit.

On the basis of this schema, crisis emerges as a result of a double distributive conflict. First, the conflict between capital and labour, which manifests itself by means of wage cutting, giving rise to the following sequence. The reduction of the money wage entails an increase in worker indebtedness and in inflation\(^ {18}\) and the consequent reduction of real wages. This generates a reduction of worker indebtedness (also because of the reduction of the ‘memorized’ subsistence wage and/or because workers are not in the position to repay their debt) and hence a drop in money profits and investments. Second, the conflict between financial and industrial capitalists, which manifests itself by means of increases interest rates, which directly reduces aggregate money profits and indirectly damages firms due to the decline of consumer credit and, hence, to the consequent fall of the demand for consumption goods and money profits in that sector.

As a general result, it can be stated that the crisis depends on the fall in aggregate demand, due in turn to both the decline in consumption (deriving from wages and private indebtedness) and the decline in investments, within a mode of production where capitalists tend to become rentiers and the motivation to accumulate becomes weaker.

5 – Concluding remarks

This paper offers an interpretation of the current crisis within the theoretical framework of the monetary theory of production. It is shown that the realization of a monetary surplus on the macroeconomic plane has been guaranteed by private indebtedness, which, in turn, depended on the difference between the historically determined subsistence wage and the current wage, in a context where – due to the increasing power of firms in the labour market as well in the socio-political arena – real wages are systematically lower than the subsistence wage, as ‘memorized’ by workers. Moreover, it is suggested that the increase in money profits due to the continuous increase in consumer credit pushed capitalists to devote an increasing share of their profits to ‘unproductive’ sectors, particularly to acquiring luxury goods and in the financial market. The consequent decline of investments implied an increase in unemployment and a further decline of wages, thus giving rise

\(^{18}\) As a matter of fact, inflationary pressures mainly occurred in the housing market. See, among others, Seccareccia (2005).
to the impossibility – on the part of workers – to repay their debt and/or to the disincentive to renew their debt. As a result, consumption declined and, for the reason above, investments declined as well, giving rise to a fall in aggregate demand, output and employment.

References


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