Evidence shows that, in most European countries, both credit restriction on the part of banks and the reduction of the demand for credit on the part of firms are in operation. The aim of this paper is to show that both phenomena ultimately depend on the decline of aggregate demand, insofar as it negatively affects both banks’ and firms’ expectations on their future profits. A macroeconomic model is presented, where Keynesian and Institutional arguments are considered in order to analyse the links existing between the dynamics of the credit market and the path of wages and employment.

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1 - Introduction

Evidence shows that, in most European countries, both credit restriction on the part of banks and the reduction of the demand for credit on the part of firms are in operation. Bijlsma, Dubovik and Straathof (2013) find that bank loans to non-financial corporations declined from 6.5 trillion dollars in 2003 to 3.5 trillion dollars in 2012, in OECD countries, while the base interest rate fell by about 5% in the same period. They imputed this to both the credit crunch and the drop in demand for credit on the part of firms1.

Schematically, the dominant view has attributed this phenomenon to two causes. First, it is maintained that the decline of the demand for credit is due to the increased riskiness of investment projects on the part of firms in the phase of economic growth experienced before the explosion of the crisis. Second, the credit crunch is imputed to banks’ low capitalization, so it is suggested that the more capitalized banks performed better during the crisis (cf. Beltratti and Shulz, 2012). Within the so-called "broad credit view", it is emphasised that the operation of the credit market is profoundly affected by the existence of asymmetric information between borrowers and lenders, and that this is the ultimate cause of the fluctuations of credit demand and credit supply (cf., among others, Bernanke and Gertler, 1989). It is also maintained that the credit crunch ultimately derives from the "greed and incompetence" of the administrators of banks (cf. Brummer, 2009).

PostKeynesian scholars suggest that credit restriction ultimately depends on a "lack of confidence" by the banks on the solvibility of firms (cf. Herr, 2013). Parguez (2011, p.81) stresses the existence of a link between public debt and bank behaviour: "Interest paid by the state [for financing public spending] is the main source of banks' net profits in the long run (by abstracting from capital gains).

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1 See also Panetta and Signoretti (2010) for the case of Italy, where evidence shows that the reduction of credit is mainly derived from the reduction of credit demand, both on the part of households and on the part of firms. (cf. http://www.bancaditalia.it/pubblicazioni/econo/quest_ecofin_2/QF_63/QEF_63.pdf, http://www.bancaditalia.it/pubblicazioni/econo/temidi/tid10/tid764_10/td_764_10/en_tema_764.pdf).
For a given bank profit constraint, state interest payment must soften the creditworthiness norms imposed on private debtors.

The aim of this paper is to expand this argument, showing that both phenomena (i.e. credit crunch and the reduction of credit demand) can depend on the decline of aggregate demand, insofar as it adversely affects both banks and firms expectations on their future profits. In so doing, a macroeconomic model is presented, where it is assumed that credit supply is endogenous and the level of employment depends on expected aggregate demand. Moreover, insofar as the path of aggregate demand ultimately depends on the operation of the credit market, which affects the amount of production and investments, the path of employment (and wages) also depends on the dynamics of the fluctuations of credit demand and credit supply. This idea is in line with Graziani’s (2003, p.29) view that: "The wage policy of the firms [is] ultimately depends on the credit policy of the banks."

Two "radical" Institutional topics derived from Veblen and the contemporary development of Institutionalism - are superimposed onto this picture. First, capitalists' ostentatious consumption is explicitly considered, as a component of aggregate demand. In so doing, the Classical assumption that capitalists do not consume is relaxed, and substituted with a more realistic hypothesis (cf. Forges Davanzati and Pacella, 2013). Second, it is maintained that the Government does not pursue the maximization of social welfare: political decisions (with particular reference to Government net expenditure) are ultimately affected by a bargaining process involving banks, firms and workers in the socio-political arena. Accordingly, the arguments proposed here fall within a Post-Keynesian-Institutional theoretical framework.

The exposition is organized as follows. In section 2 the assumptions of the model are presented and discussed. In section 3 a macroeconomic model is presented, based on the PostKeynesian approach as presented in section 2. The model explores the causes of both credit restriction and the decline of credit demand, and their effects on the level of employment. Section 4 concludes.

2. Bank credit and the labour market: assumptions

The following assumptions are made:

a. The economy is formed by two sectors, one producing consumer goods (sector 1), the other producing investment goods (sector 2). For the sake of simplicity, it is assumed that a single consumer good is produced, and it is acquired by both workers and capitalists. Firms fix prices with the mark-up rule. The economy considered is a closed economy, without external trade;

b. At the beginning of the production process, capitalists own a disposable stock of wealth deriving from the net profits made in the previous production process, and a given stock of fixed capital. Capitalists can use this stock of wealth either to consume or save, and, as regards savings, it can be used to finance production and investments. This occurs in every production period (cf. Trezza, in Arena and Salvadori eds. 2003, pp.75-86). It is assumed that capitalists' consumption is an institutional datum;

c. It is assumed that firms finance the production of consumer and investment goods both by means of their internal funds and bank finance. Money supply is endogenous. The order of the financing channels is given, based on their cost for firms: firms first finance production and investments via their internal retention and after that they contract debts. Firms' indebtedness is assumed to depend on the expected rate of profits and on the interest rate. It is assumed that firms operate with a Leontief technology and that they vary the degree of utilization capacity in relation with changes in expected aggregate demand.

2 The Hurun Report 2010 shows that luxury consumption, on a global scale, significantly increased in the past 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.

3 The idea that an order of financing channels is given which contrasts with the standard Modigliani-Miller theorem reflects the so-called "pecking order theory" (cf. Myers and Majluf, 1984).
d. Central Bank sets the overnight interest rate and passively accommodates bank demand for reserves (Moore, 1988). Money supply remains in private hands (as bank reserves and as cash)⁴. Commercial banks, interested to maximise monetary profits, follow the mark-up rule (over the overnight interest rate) in order to fix their own interest rate (Wray, 2007, p. 13).

e. Capitalists as a whole decide how much to save and consume. Workers’ propensity to consume is lower than 1, and adaptive expectations are assumed. Public spending has a positive effect on firms’ expected and current aggregate money profits (cf. Parguez, 2002; 2007; Forges Davanzati, Pacella and Realfonzo, 2009)⁵.

Two key assumptions stand out. First, as regards the endogenous money view, it is maintained that loans are created ex-nihilo and that the only limit to credit creation depends on the willingness of borrowers to borrow, and on the willingness of banks to grant credit-worthy status to their customers (cf. Rochon and Rossi, eds, 2003). Second, as regards the complementarity between public spending and profits, this assumption is based on the idea that the deficit crowds-in private expenditures i.e. the view that Aggregate profits are [...] determined by the amount of autonomous demand minus the leakage resulting from household saving. Autonomous demand is generated by firms themselves (investment spending) and the state, the deficit reflects the state-generated autonomous demand. The deficit determines an equal increase in aggregate profits relative to profits generated by the private sector (Parguez, 2002, p. 93).

Moreover, the assumption that capitalists and workers consume the same goods is put forward just for the sake of simplicity. As a matter of fact, there are differences between capitalist consumption and worker consumption on two basic grounds, i) capitalists’ motive for consuming is different from that of workers (i.e. ostentation vs. subsistence) and ii) the technology used in the sectors producing luxury goods is normally different from that used for producing basic goods (see below)⁶. Following Veblen, capitalists’ aim is the consumption of luxury goods, which is subject to ostentation and emulation. Accordingly, competition is above all a struggle to excel more than a struggle for survival (see Forges Davanzati, 2006). In this context, capitalists internalize a habit of thought i.e. an institution in the Veblenian sense that moulds their actions leading them to perceive a person’s value in terms of how much he displays an accumulation of luxury goods. Their ostentative and competitive consumption is driven by emulative factors: the custom on which it rests - Veblen (1975 [1899] p.100) remarks its traceable to the habit of making an invidious [...] comparison.

3.1 Bank credit and the labour market: a macroeconomic model

In order to analyse the effects of the path of credit supply and credit demand on employment, we will focus firstly on the determination of aggregate demand and secondly on the dynamics of the market for credit.

3.1.1 Aggregate demand, credit supply and credit demand.

The symbols used are listed below.

\( \pi \) are aggregate profits

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⁴ As Wray (2007, p.12) points out: if it is demand-determined and is not a discretionary variable from the point of view of the central bank that is targeting an overnight interest rate.

⁵ This assumption reflects Keynes’ argument that the increase of aggregate demand in particular cases (and including public spending) can have a direct positive effect on profits. This case is examined by Keynes when dealing with the employment function, in these terms: if the output of the industry is perfectly inelastic, the whole of the increased effective demand (in terms of wage-units) is expected to accrue to the entrepreneurs as profit (Keynes, 1973 [1936], p.283). This occurs when the output of the industry is perfectly inelastic, the whole of the increased effective demand (in terms of wage-units) is expected to accrue to the entrepreneurs as profit (Keynes, 1936 [1973], p.287).

⁶ On these issues, cf. among others, Forges Davanzati and Pacella (2013).
\( W_k \) is capitalists’ disposable stock of wealth
\( C_w \) is workers’ consumption
\( C_i \) is capitalists’ consumption
\( A_k \) is firms’ expenditure deriving from their disposable stock of wealth
\( w \) is the unitary money wage
\( N \) is the level of employment
\( i_{cb} \) is the interest rate fixed by commercial bank\(^7\)
\( F_T \) is firms’ total expenditure for production, including their internal finance
\( F_d \) is the amount of finance demanded by firms to banks in order to produce consumption goods and investments goods
\( F_s \) is credit supply
\( F_c \) is the amount of monetary resources devoted to finance the production of consumption goods
\( F_l \) is the amount of monetary resources devoted to finance the production of investment goods
\( r^e \) is the expected rate of profits
\( I \) are investments
\( G \) is net government spending
\( p \) is the unitary price of consumer goods
\( a \) is average labour productivity
\( \alpha \) is the degree to which banks are accommodating
\( K \) is fixed capital
\( b \) is firms’ propensity to invest
\( \lambda \) is a technical coefficient
\( \beta \) is workers’ bargaining power

At the beginning of the production process, firms decide the amount of finance to request from the banking system. On the basis of assumption b), \( F_d > 0 \) if \( r^e - i > 0 \). On the assumption of initial given expectations implying that the expected rate of profits is higher than the interest rate, firms’ demand for credit is a given: i.e. \( r^e > i \rightarrow F_d > 0 \). On the macroeconomic plane, \( i \) the lower the firms’ initial stock of wealth used to finance production and investment\(^8\); \( ii \) the more optimistic their expectations and \( iii \) the lower the interest rate, then the more indebted firms will be towards the banking system. Firms’ total expenditure is:

\[
F_T = F_d + A_k
\]

with:

\[
F_c = F_c + F_l
\]

\[
F_c = \varphi(D_c^e)
\]

\[
F_l = \varphi(D_l^e)
\]

Equation [1] establishes that firms’ demand for credit depends on their expectations on the demand for consumer goods and on the demand for investment goods. The amount of credit applied for by firms producing consumer goods will rise in line with their expectations on workers’ consumption (and, hence, on the wage bill paid in the sector producing investment goods, for a given propensity

\(^7\) \( i_{cb} = i_{cb} (1 + m) \) where \( i_{cb} \) is the interest rate fixed by the commercial bank, \( i_{cb} \) is the interest rate fixed by the Central Bank and \( m \) is the commercial bank’s mark-up.

\(^8\) For the sake of simplicity, it is assumed that \( W_k \) is equally distributed among firms producing consumer and investment goods.
to consume), and the demand for credit by firms producing investment goods will increase with the growing optimism of their expectations on the demand for investment goods expressed by firms producing consumer goods.

On the basis of assumption c), credit supply is demand-driven and, hence:

$$F_d = \alpha F_s \quad \text{with } 0 < \alpha \leq 1$$  \[2\]

where $F_s$ is credit supply on the part of commercial banks. On the microeconomic plane, banks can supply credit on the basis of savings collection and their demand for reserves from the central bank. Savings collection allows commercial banks to create monetary reserves without having to ask the Central Bank for credit, thus reducing the costs of liquidity collection (cf. Fontana, 2009). Therefore, money is not *discretionally managed* by the Central Bank but it is endogenously produced within the system, and the logical chain at the basis of the conventional view (i.e. the exogenous money theory) is reversed: *loans make deposits and deposits make monetary reserves*. This is because the economy is a monetary economy and not a pure credit economy. The system therefore needs liquidity when someone asks for it and commercial banks need liquidity only if firms need liquidity. When commercial banks finance firms they create a deposit (\(\hat{D}\) sign\(\hat{D}\)) in their favor. Since these deposits are expressed in monetary terms, the commercial bank then has to provide the required money\(^9\). By contrast to the exogenous money view, it is maintained here that the central bank does not control the amount of high powered money.

Note that this condition holds for whatever value of the interest rate, insofar as $F_d$ is determined on the basis of the difference between the expected rate of profits and the interest rate. In other words, high levels of interest rate (with respect to the rate of profits) reduce the demand for credit, but do not alter the equilibrium condition in the market for credit\(^10\). Hence, the credit market is in equilibrium when $F^+ = F^d$, i.e. when $\alpha = 1$.

Aggregate demand in monetary terms is:

$$AD = C_k + C_w + I + G = W_k + F_r + G$$  \[3\]

Since capitalists' consumption is financed via their accumulated wealth, it follows that $C_k = W_k - A_k$. Workers' consumption is: $C_w = c w N$, where $c$ and $w$ are given and $N = K / L$. Firms settle the amount of fixed capital to use on the basis of aggregate demand, on the assumption that they hold reserve capacity. For a given fixed technical coefficient, employment increases as the expected aggregate demand increases, since as aggregate demand increases so does the fixed capital used. Insofar as the path of aggregate demand ultimately depends on firms' demand for credit and on banks' degree of accommodation, *the dynamics of the labour market depends on the dynamics of the market for credit*. When firms repay their debt, they obtain a volume of aggregate net money profits equal to:

$$\pi_n = C_k + C_w + I + G - F_d - i F_d$$  \[4\]

\(^9\) Proponents of the endogenous money view stress that the commercial bank adopts the interest rate fixed by Central Banks as the cost for its loans and follows the mark-up rule in order to fix its own interest rate: $r_{cb} = r_{CB} (1 + m)$, where $r_{cb}$ is the interest rate fixed by the commercial bank, $r_{CB}$ is the interest rate fixed by the Central Bank and $m$ is the commercial bank's mark-up.

\(^10\) Harcourt (2007, p.71) maintains that "the rate of interest which clears the market is the one which reflects the rate that induces agents not to hold more money than is available at a moment of time\(\hat{t}\). See also Dow (1997).
Equation [4] establishes that aggregate net money profits are higher: i) the higher capitalists' consumption; ii) the higher workers' consumption; iii) the lower is the interest rate. By assumption, public spending positively affects $\pi_n$. On the basis of assumption a), firms operating in the sector producing consumption goods fix prices with the mark-up rule, i.e. $\frac{w}{a}(1 + \mu)$, where $\mu$ is the normal rate of profits including the interest rate. Therefore, given the unitary money wage and labour productivity, a reduction of the interest rate can produce the following outcomes: i) an increase of the rate of profit; ii) a reduction of prices. The more competitive the market structure, the more firms react to possible reduction of the interest rate via price cutting (see below (cf. Docherty, 2005). Firms operating in sector 1 use part of their profits ($b$) to acquire investment goods. The supply of investment goods is: $I_s = p\alpha N_f$, while the demand for investment goods is $I_d = b\pi_i$. Therefore, the equilibrium in the capital market is reached when: $p\alpha N_f = b\pi_i = b(C_a + C_w + G)$. Note that the higher the money wage bill paid in both sectors, the higher the demand for investment (for a given $b$), insofar as $C_w$ increases profits in the sector producing consumer goods and hence boosts the demand for investment goods. Note that the equilibrium condition can happen only by chance. For the sake of simplicity, it is assumed that the supply of investment goods equals the demand for investment goods, so that the variable $I$ in equation [3] can be read as a component of the aggregate demand\(^{11}\).

Moreover, although consumption on the part of capitalists, by increasing aggregate demand, may positively affect the level of employment, the technology used to produce luxury goods (acquired by capitalists) is, as a norm, characterized by low elasticity of supply, and firms operating in this sector have a low propensity to invest. As a result, an increase in $C_i$ tends to generate inflationary pressures, without significant effects on the employment level.

Furthermore, if the functioning of the credit market is explicitly taken into consideration, an increase in investment generates an increase in aggregate demand which depends not only on the propensity to consume ($c$) but also on the degree of actual financing ($\alpha$)\(^{12}\). The degree of actual financing is $0<\alpha<1$. Note that the case of $\alpha=0$ is excluded at the outset, since the case where banks do not offer credit at all is not considered. In formal terms, while the standard Keynesian multiplier is $\Delta Y = \frac{1}{1-c}\Delta I$, by assuming that $\Delta I = \alpha\Delta F_i$ (see above), the effect of increasing investment on aggregate demand is:

$$\Delta Y = \frac{\alpha}{1-c}\Delta F_i$$ [5].

---

\(^{11}\) This equilibrium condition can occur in the event firms have correct expectations: in this case, firms operating in sector 2 will produce an amount of $I$ exactly equal to that demanded by firms operating in sector 2. A similar result is likely to apply in dynamic terms. If firms' expectations are not correct, they tend to become correct over time, if it is accepted that $\hat{\alpha}$ other things being equal $\hat{\alpha}$ firms learn from the past and adjust their current behaviour taking past mistakes into consideration. As Keynes (1973 [1936], p.51) points out: it is sensible for producers to base their expectations on the assumption that the most recently realised results will continue, except in so far as there are definite reasons for expecting a change. This is because it would be too complicated to work out their expectations de novo whenever a productive process was being started; and it would, moreover, be a waste of time since a large part of circumstances usually continue substantially unchanged from one day to next. Keynes (1973 [1936], p.77 footnote n.1) adds that My method there was to regard the current realized profits as determining the current expectation of profits Allain, Harwing and Hayes (2013) have recently provided a detailed analysis of this issue.

\(^{12}\) For the sake of simplicity, we consider here solely the effects that investments financed via bank credit have on national income, abstracting from the spending of firms' internal retention.
where \( \frac{\alpha}{1-c} \) is the multiplier resulting from the operation of the credit market and, hence, on the value of \( \alpha \). Of course, this value equals \( 1/(1-c) \) only if \( \alpha = 1 \), i.e., only if the demand for credit equals the supply of credit. Moreover, for the reasons above, even if the credit market is in equilibrium (i.e., \( \alpha = 1 \)), this does not mean that the labour market, too, is in equilibrium.

### 3.2 Public spending and income distribution

The amount of net public spending is assumed to depend on workers, firms and banks' bargaining power in the political arena. On this basis, two main reasons can be taken into account for motivating a restrictive fiscal policy, on the grounds that \( \bar{t} \) by assumption \( \bar{t} \) this decision ultimately depends on firms' and workers' bargaining power in the political arena.

1) Considering an economy populated by heterogeneous firms (say, big and small firms), it is not profitable for big firms that the Government expand domestic demand, particularly if it is devoted to improving workers' conditions (cf. Pluta and Leathers, in Tilman 2003, pp.106-107). Big firms can obtain profits by selling abroad - what Leathers (1989), in line with Veblen, labels 'modern mercantilism' - and/or by means of increasing monopolization. This latter effect is made possible by the decline of small firms profits (and even their bankruptcy) owing to the reduction of public spending, and the consequent increase of the market shares of big firms and/or the processes of mergers and acquisitions.

2) High levels of unemployment reduce workers' bargaining power not only in the labour market, but also in the political field (cf. Colacchio, 2013). Assuming that workers are interested in pushing the Government to spend (since this implies an increase in aggregate demand and employment), it follows that the higher the unemployment rate, the lower the workers' bargaining power and the lower the net public spending. More generally, in line with the Institutional view (cf. O'Donnor, 1973), it is to be considered that the Government pursues two (potentially contrasting) aims: on the one hand it has to facilitate capitalist reproduction; on the other hand, it has to legitimate the existing social order. Considering that the legitimacy function is in operation when wages and employment are at a level which minimize workers' discontent (Bohle, 2011), a continuous decline of wages and employment \( \bar{t} \) deriving from a continuous reduction of public spending - is likely to produce social conflict and social conflict, in turn, is an undesired outcome for firms. But, although firms as a whole are interested in avoiding social conflict, a deregulated labour market tends to create the conditions for conflict to occur. This happens due to a lack of composition effect. While, under given circumstances (see below), the individual firm finds it profitable to cut wages and employment, the resulting increase in worker discontent \( \bar{t} \) if it translates into social conflict \( \bar{t} \) damages firms as a whole. The possible occurrence of social conflict can be considered by the Government as a significant variable to take into account when deciding the direction of economic policy and the size of possible variations in public spending. If this is the case, it may happen that public spending increases as unemployment increases.

13 Following Veblen's view (1904, p.268) that Representative government means, chiefly, representation of business interests. The Government commonly works in the interest of the business men with a fairly consistent singleness of purpose. Although Veblen does not clearly specify which interest groups capture the Government, one can argue that they are formed by the leisure class in its broader sense: i.e. by big corporations and the rentiers (cf. O'Donnor, 2000).

14 This issue has been clearly addressed by O'Donnor (1984, pp.202 ff.): the employment struggle goes along with demands for state intervention in the economy. He adds that Keynesian theory was in part the unintentional result of the working class struggle, not only a doctrine used to legitimate working-class demands.

15 As O'Donnor (1984, p.201) remarks: Keynesianism tries to legitimate this role by presenting itself as animated by the desire for improvement and social reform. It is worth noting that \( \bar{t} \) in this theoretical context \( \bar{t} \) there are no exogenous constraints to public debt. If constraints exist, they are imputed to political decision. This is because, as Parguez (2011, pp.80-81) points out, contrary to the widespread opinion, the state is not obliged to sell bonds to finance its deficit. Indeed, the sale of bonds is just an offsetting operation substituting bonds earning interest for excess reserve or liquidity earning no interest. Moreover, the growth of public debt counteracts an increase in private net
Let us analyse the effects of restrictive fiscal policies on unemployment and growth. If big corporation finds it convenient for the Government to reduce net public spending, they can obtain this result by exploiting their superior bargaining power over workers. In particular, in line with what is suggested by contemporary Institutional scholars (cf., among others, Bowles and Gintis, 1986), big firms can orient economic policy by means of the threat of delocalization i.e. the so-called capital strike.

In view of equation [4] this implies a reduction of current profits and the consequent reduction of expected profits. There are two possible outcomes.

First, for a given interest rate, this generates a decline in the difference \( r^e - i \), and, hence, a decline in \( F^T \). Accordingly, a reduction of public spending \( \bar{I} \) by negatively affecting aggregate demand \( \bar{I} \) involves a reduction of the demand for credit on the part of firms. It follows that, since wages are paid (also) via bank credit, the reduction of \( F^d \) involves a reduction of \( C_w \), because firms are likely to react to the reduction of expected profits by lowering the level of employment and/or of the unitary wage. In other words, for given expected profits and the interest rate, restrictive fiscal policies allow firms to reduce their indebtedness towards banks, provided that they have sufficient internal retention for their production and investment purposes.

Second, if this is not the case (i.e. if firms have low internal retention), the reduction of public spending produces the opposite result: it increases firms’ debt towards banks, thus redistributing income to the benefit of financial rents. More generally, a reduction of public spending may increase the interest rate. This occurs because in order to finance production and investment, firms (particularly small firms, with low internal retentions) have to increase their demand for credit. This, in turn, reinforces bank bargaining power, allowing banks to raise the interest rate.

The electoral prospects of an incumbent government depend on the general performance of the economy in the period preceding the election, particularly the level and growth of employment and personal income. The overall performance of the economy, in turn, depends on the level of investment. The level of investment in any given country depends on the anticipated domestic profit rate compared with expected returns in the rest of the world, and compared also with returns on non-investment uses of capital. Therefore the adoption of public policies that reduce the expected rate of profit also tend to reduce the electoral prospects of the incumbent government (Bowles and Gintis, 1986, p. 88).

By assumption, the reduction of aggregate demand also produces an increase in the quantity of underutilised capital.

The fact that firms get into debt when interest rates are high is explained on two grounds: i) their expectations on future profits are optimistic and/or ii) they expect further increases in the interest rate.

No national central bank which is a member of an international system, not even the Federal Reserve System of the United States, can expect to preserve the stability of its price level, if it is acting in isolation and is not assisted by a corresponding action on the part of the other central banks. Moreover, Keynes also takes the so-called Gibson Paradox into account, so that a rise in the interest rate generates inflationary pressures. In this vein, Graziani (2003, p.119) points out that high interest rates might therefore be a source of inflation.
Accordingly, restrictive fiscal policies redistribute income from wages and profits to financial rents.

These arguments lead to the following results. First, public spending is more likely to increase in economies made up of small firms. Second, firms' dependence on the banking system grows as their internal retentions rise, given their expectations.

Moreover, a decline in wages also generates disequilibrium in the credit market, insofar as $F^d < F^s$. This is a case of self-fulfilling prophecies: an expected reduction of aggregate demand produces its actual reduction. A further effect can be considered. One can argue that the minimization of indebtedness can be conceived as a competitive strategy, on the assumption that firms compete via price cutting. The reduction of $F^d$ (which presupposes policies of wage cutting), in fact, allows the individual firm to lower production costs, and, insofar as firms are in competition with each other, each of them has to reduce prices to stay competitive. This, in turn, produces a reduction of total costs and prices thus giving rise to increased expected profits.

It can also happen that, if the burden of debt is considered too high by firms, they find it profitable to reduce their demand for credit, even when the banking system is fully accommodating. The following remarks are in order.

i) Firms can increase their market share and their profits also by raising labour productivity. As shown by Forges Davanzati and Pacella (2008), this result can be reached through policies of labour market regulation. Wage rises combined with legislation against the use of flexible labour contracts is likely to force firms to compete by raising productivity and hence through innovation. In any case, this is a more costly strategy than wage cutting, and, as a norm, it happens when firms are not in the position to compete by means of continuous reduction of wages, which can occur as a result of labour market regulation. Furthermore, as Dutt (2010, p.54) emphasises: 

Firms increase labour productivity growth when the labour market becomes tighter, or the employment rate rises: necessity is the mother of invention.

ii) Firms can also compete via the use of flexible labour contracts, insofar as if a discipline device mechanism is in operation - temporary jobs are associated with increasing worker effort. However, as Forges Davanzati and Realfonzo (2004), among others, have shown, labour market deregulation increases uncertainty (because of higher job insecurity), and this reduces the present propensity to consume, thus generating a reduction in aggregate demand and employment.

According to this view, money is held as a reserve of value in a condition of high uncertainty on the part of workers, which can derive from high job insecurity.

As regards the supply of credit, following Keynes, it is maintained that, as a norm, the credit market is not competitive and banks tend not to behave in a fully accommodating way. This issue is addressed, in particular, in the TM:

There is, that is to say, in Great Britain an habitual system of credit rationing in the attitude of bank to borrowers - the amount lent to any individual being governed not solely by the security and rate of interest offered, but also by reference to the borrower's purposes and his standing with the bank as a valuable or influential client. Thus, there is normally a fringe of unsatisfied borrowers who are not considered to have the first claims on a bank.

21 Moreover, restrictive fiscal policies generate a decline in AD not only directly, through the reduction of public spending, but also indirectly, through the reduction of private investment.

22 These issues have recently been examined by Tortorella Esposito (2012, pp.139-141).

23 Following Lavoie et al. (2004), it can be argued that uncertainty can also affect firms' reserve capacity, in an attempt to anticipate unexpected increases in demand.

24 Stockhammer and Ramskogler (2007) stress that i) in a capitalist economy, uncertainty is not evenly distributed among social classes and that ii) workers, in particular, suffer from higher levels of uncertainty, due to job insecurity.
favours, but to whom the bank would be quite ready to lend if it were to find itself in a position to lend more\(\text{\textcopyright Keynes, 1971 [1930, vol.II], italics added, p.327}\)

In the theoretical framework presented here, \textit{credit rationing and credit restriction may be, at the same time, cause and effect of a lack of aggregate demand}. Let us pose the condition that banks restrict their credit supply in the event that their current and expected profits are lower than the current and expected profits for firms. This condition reflects the assumption that banks are interested in making money profits. Two distinct cases are in order.

First, in the case where firms are not homogeneous, the credit system tends spontaneously to contribute to the increase in the size of the biggest firms. Firms with a higher amount of collateral obtain a higher amount of credit and hence can expand, thus gaining further advantages over their (smaller) competitors. This allows them to face an even more inelastic demand for their goods (due to the increasing industrial concentration ratio), so that they are in a position to further raise prices. This results in inflationary pressures and the consequent decline in real wages. Moreover, as monopoly power increases, so does firms' reserve capacity, thus giving rise to a reduction of employment. Moreover, one can argue that Keynes' view that \textit{banks' decisions are affected by fundamental uncertainty}, so that \(\bar{I}\) in economies populated by heterogeneous firms \(\bar{I}\) banks tend to finance big firms, insofar as they consider them less likely to go bankrupt (cf. Stockhammer and Rasmkogler, 2007). This is the case of \textit{credit rationing}.

Second, assuming that firms are homogeneous so they offer the same amount of collateral to banks, credit restriction can arise in the event that banks' expected profits are lower than firms' expected profits, and, importantly, there is no endogenous mechanism guaranteeing equality between banks' and firms' expectations. Moreover, in view of assumption \(c\), both current and expected profits also depend on fiscal policy. It follows that an increase (reduction) in public spending \(\bar{I}\) for a given taxation level - increases (reduces) current and expected profits. This is likely to occur due to the following effect. A reduction of public spending reduces the money wage bill, and thus also aggregate money profits, making it more difficult for firms to reimburse their debt to banks. Banks are expected to react by reducing their credit supply. In this case, it follows that \textit{restrictive fiscal policies are likely to produce credit restriction}.

Insofar as the path of aggregate demand, employment and profits ultimately depends on relations between firms and banks, the schema above essentially describes the dynamics of a monetary economy, in a \textit{credit-led-recession regime}.

Moreover, it can be shown that \textit{even if the credit market is in equilibrium, there is no guarantee that the labour market is in equilibrium}. For the sake of simplicity, let us only consider the case where firms finance production and investments only via bank credit. Aggregate demand can be re-written as:

\[
AD = C_k + G + F^d \tag{6}
\]

and the level of production corresponding to the point of effective demand, is:

\[
p\alpha \frac{K^e}{\lambda} = C_k + G + F^d \tag{7}
\]

Consider the case where \(K^e\) is such that involuntary unemployment exists. This condition is perfectly consistent with a situation where \(F^d = F^e\), i.e. equilibrium in the credit market. In fact, if this condition holds, one can substitute credit supply into equation [7], obtaining the same result, on the assumption that credit supply equals credit demand.
3.3 The labour market

As regards to the functioning of the labour market, two more arguments can be considered. First, as unemployment grows, wages decline. In Keynes’ words (1971, p.185): “under the pressure of growing unemployment, the rate of earnings will fall.” Second, as profits decline (increase) wages decline (increase). Keynes approaches this issue in the TM in the following terms: if the entrepreneurs [...] suffer an abnormal loss [...] this will cause entrepreneurs to seek to protect themselves by throwing their employees out of work or reducing their wages (Keynes, 1971, p.159). And: “the rate of remuneration of the factors of production tends to rise or fall according as entrepreneurs are making a profit or a loss” (Keynes, 1971, p.164). Accordingly, workers bargaining power is endogenous, depending on firms profit and on the unemployment rate.

Given the assumption of a Leontief technology, the level of employment is:

\[ N = \frac{K[\phi(AD^r)]}{\lambda} \quad [8] \]

Equation [8] shows that the degree of utilization of capital and employment decline as aggregate demand falls\(^{25}\). Accordingly, restrictive fiscal policies not only reduce the level of employment, but they also impact negatively on the path of accumulation. This occurs because i) the demand for investment falls as \( \tilde{\lambda} \) due to the reduction of the expected rate of profits - the amount of unused plants increases; ii) labour productivity tends to decline as plants become obsolete. It can be observed that the decline in labour productivity also depends on credit restriction, insofar as this involves a reduction of investment.

The wage equation is:

\[ w = w_0 + \frac{\beta(\pi)N}{N_s} \quad [9] \]

where \( w^e \) is the minimum level of money wage socially accepted (see Forges Davanzati and Tortorella Esposito, 2013). By substituting equation [8] into equation [9], one obtains:

\[ w = w_0 + \frac{\beta(\pi)[K(AD^r)]}{N_s} \quad [10] \]

Equation [10] establishes that for any given level of employment, the higher the workers bargaining power, then the higher the unitary money wage. Since workers bargaining power depends on firms profits, the conclusion is that \( \tilde{\lambda} \) in line with Keynes \( \tilde{\lambda} \) the lower the profits, the lower the wages. This conclusion holds on condition that when profits are high, firms can sustain wage claims, and that, on the other hand, when profits are low, wage claims are low as a result of unions aim of obtaining wage rises under the constraint of not determining the bankruptcy of the firm. Hence, a reduction of public spending, insofar as it reduces aggregate demand (via the reduction of firms indebtedness) and employment, has a negative impact on profits and, in view of

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\(^{25}\) As regards the functioning of the labour market in the post-Keynesian theoretical framework, as Parguez (2011, p.85) emphasises, “in a positive monetary economy, there cannot be a supply of labour curve because earning an income is a constraint and not a choice.” He also refers to the dubious notion of a labour market.
equation [9], on wages. Moreover, since it determines an increase in firms’ reserve capacity, the quality of capital deteriorates, thus negatively affecting labour productivity.

Two remarks are in order:

1) This conclusion states that restrictive fiscal policies reduce the growth rate, not only because of the standard “demand-side” Keynesian effect, but also because it produces negative outcomes on the supply side. Note that this result contrasts with the standard view that as unemployment increases, so does workers’ effort and productivity (see Shapiro and Stiglitz, 1984). This difference basically depends on what should be considered the main determinant of labour productivity. If, as in the case of the model presented here, it is capital accumulation, it follows that high levels of unemployment are associated to low labour productivity, and, by contrast, if labour productivity is supposed to depend on workers’ effort, then the opposite result occurs.

2) In the schema proposed here, money is not neutral not only in the sense that increases in money supply affect employment and output positively, but also in the sense that an increase in money supply also has a positive effect on the path of labour productivity.

Sequence 1 describes these effects. A reduction of public spending reduces firms’ profits, and, in view of the assumption of adaptive expectations, in turn reduces firms’ expectations. This produces a decline in both credit supply and credit demand, which negatively affects production and investment. Employment declines, and so do wages. At the same time, the drop in profits involves a fall in wages, while the reduction of investment produces a reduction of labour productivity. Note also that the lowering of labour productivity can derive from a decline in wages and employment, insofar as this produces a drop in consumption and aggregate demand.

\[
\begin{array}{c}
\text{AD} \rightarrow \text{P} \\
\text{FT} \rightarrow \text{D} \\
\end{array}
\]

Sequence 1: public spending, bank credit and the labour market

4. Concluding remarks

This paper dealt with the relationship existing between the operation of the credit market and the path of employment and wages. A theoretical model has been proposed where the level of employment ultimately depends on the path of aggregate demand, which, in turn, is profoundly affected by the supply and the demand for credit. It has been argued that both credit restriction and the decline in the demand for credit for production and investment purposes depend on the decline in aggregate demand, according to a feedback effect where low aggregate demand involves low

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26 This result is derived from the Verdoon law. In a similar vein, Rochon and Setterfield (in Gnos and Rochon [eds.] 2011, p.124) conclude that the dynamics of productivity growth are wage led.
credit supply (and low demand for credit), and low credit supply (and low demand for credit) involves low aggregate demand.

References


Herr, H. (2013). An anaylitical framework for the post-Keynesian macroeconomic paradigm,