[Paragraph 7 and Appendix in:

Levrero E.S, Marx's theory of wages and the revival of the surplus approach, in Levrero E.S., Palumbo A., Stirati A., *Sraffa and the Reconstruction of Economic Theory. Volume 1 – Theories of Value and Distribution*, Palgrave Macmillan, 2013, forthcoming]

7. Money Wages, Real Wages and the Trend of Capital Accumulation

In conclusion I shall briefly offer some remarks on the latter two points in order to evaluate the relevance of Marx's wage theory with respect to the present capitalist societies more satisfactorily.

As far as the second point is concerned, the idea that the rate of accumulation will fall as a consequence of a decrease in the rate of profit is the central feature of the modern Marxian profit squeeze theory (see e.g. Dumenill & Levy, 1993; Shaikh, 1989; Goodwin, 1967). Marx, however, did not posit any necessary mechanical link between those two variables. Although he stressed that profit is the 'motive power of capitalist production' (Marx, 1867-94, III, p. 254), he observed that 'in spite of the falling rate of profit the inducements and faculties to accumulate are augmented' (Marx, 1867-94, III, p. 260). Furthermore, Marx considered that overproduction could be solved by shrinking productive capacity (see e.g. Marx, 1867-94, III, pp. 247–248; and Marx, 1862-63, II, pp. 495-496), and hence that the actual trend of capital accumulation would probably be adversely affected by a fall in real wages.

Following this suggestion by Marx, as with the Keynesian premise of investment as an independent variable, the pace of accumulation would not appear to be determined by the saving rate and the rate of profit as argued in many Marxian or Classical-Harrodian models on the grounds of the specific assumption of balanced growth and (consequently) of a capital-output ratio continuously equal to its normal or desired level. In actual fact, a redistribution of income to wages would increase consumption and have an uncertain effect on other components of effective demand (for instance, on exports, according to the effects on prices of the workers' claims for higher real wages). Moreover, the amount of nonresidential investment seems to be influenced not so much (or not directly) by the rate of interest moving in the same direction as normal profit, but by the level and rate of growth of effective demand.[1] So, if demand increases thanks to a redistribution of income to wages, firms will be induced to expand their productive capacity, which will tend to (re-)establish *normal* profitability, irrespective of whether the latter happens to be high or low.[2] Hence, on average, not a fall, but an increase, in the *actual* rate of accumulation would occur.

Now, as far as the theory of distribution is concerned, such a dependence of the rate of growth on the trends of the autonomous components of effective demand, which will shape the rate of change of income and productive capacity (Palumbo&Trezzini, 2003), only strengthens Marx's rejection of any mechanical or natural or iron law of

[1] It does not overlook the fact that a fall in the profits rate might lead to a "strike of capital" if that rate falls below some minimum level or below that prevailing in other countries, or if that fall is accompanied by a general loss of power in society.

[2] It also explains (see Garegnani, 1992; and Vianello, 1985) why the *normal* rate of profit is not determined by the rate of accumulation as suggested in the post-Keynesian models: an increase in the *actual* pace of accumulation will be able to be 'financed' by an increase in output per unit of capital and in the amount of productive capacity, given the wage rate and the methods of production.

wages. In fact, the weight of keeping changes in wages 'within limits' capable of leaving 'intact the foundations of the capitalistic system' (Marx, *Capital*, I, p. 620) will now primarily fall, as well as on labour-saving technical progress, on the intervention of the State, directly by law in the labour market, or indirectly, by increasing the reserve army of labour through restrictive monetary and fiscal policies.[3]

But can the classical theory of wages developed by Marx be used to explain income distribution in the context of advanced capitalism, where the wage rate is probably above the subsistence level and class conflict acting on money wages would not necessarily determine a corresponding change in the real wages as in a gold money economy? In these circumstances, would not the surplus wage appear as a residuum after the firms have fixed their prices on the base of a mark-up added to their money prime costs?

As Dobb (1973) has observed, since the classical theory admitted the possibility of wages sharing in the net, or surplus, product (which is implicit in a notion of subsistence as historically determined), this possibility *by itself* does not necessarily contradict the wage bargaining theory of Smith or Marx, as is sometimes argued on the grounds of a different theory of distribution (see Kaldor, 1956), or when analysing Sraffa's suggestion of taking the rate of profit as the independent variable in the price system (see e.g. Goodwin, 1986).[4] Nor does there seem to be any need to disregard it when considering a fiat money economy, since a full cost pricing rule appears to be compatible with different theories of distribution, provided that interest is included in the normal money costs of production, and firms equalise prices to those costs under the action of competition (see Garegnani, 1979; Panico, 1980; Pivetti, 1991). In fact, an increase in money wages could bring about a rise in the real wages, since prices initially adjust to the historical costs of capital (cf., for instance, Nordhaus, 1974) and the *real* rate of interest (that is, the opportunity cost of any capital invested in production) will happen to be lower than the initial given *nominal* rate of interest (cf. Pivetti, 1991; Stirati, 1999). If then the workers obtain *continuous* increases in their money wages, they will be assured a permanent increase in the real wage rate, provided that the monetary authorities leave the nominal interest rate on long-term riskless financial assets unchanged.

The key question, then, is what actually sets the *real* mark-up on prices. Taking the mark-up as given as in the Kaleckian tradition, on the grounds of a degree of

[3] On the other hand, the dependence of the rate of growth on effective demand does not imply the rejection of Marx's crucial notion of an inverse relationship between wages and profits. The idea that room exists *in the long run* for cooperation between capital and labour thanks to changes in the average realised rate of profit brought about by changes in the average degree of capacity utilisation (see e.g. Amadeo, 1986; Cassetti, 2005; Dutt, 1990) does not take into account that a permanent change in effective demand is not necessarily unexpected, that gross investment is guided by the rate of profit expected to be earned on the *new* installed productive capacity (and thus by the *normal* rate of profit corresponding to a normal degree of capacity utilisation), and that the desired degree of capacity utilisation is usually shaped by the experience of many cycles, thus changing slowly over time.

[4] The fact that, when the wage rate increases above the subsistence level, it would end up by being measured by an abstract standard of value does not deny the possibility of taking as given the wage rate in the price system if the forces of distribution are viewed to act primarily on the wage rate. Since in fact changes in distribution are never drastic, we can always divide the wage rate into its subsistence and surplus components, and measure the surplus wage by the bundle of commodities corresponding to the standard consumption of the workers which arises both from the hierarchies of needs and the distinction between necessary and superfluous goods (comprising Smith's luxuries of the poor) that are observable in any given initial situation, as well as from the process of imitation of the consumption of the upper classes which is a characteristic of the consumption behaviour. See Levrero (2000) for further considerations on this point.

monopoly determined by barriers to entry, the elasticities of demand and so on, leaves open the question of what happens to profits in the case of free competition, and also of how the average mark-up is arrived at when taking input-output transactions among sectors into account (cf. Pivetti, 1991; Steedman, 1992). However, given the normal profits of enterprises, it is possible that the real mark-up is directly fixed by the monetary authorities when they follow a coherent policy aimed at maintaining a certain real rate of interest, so that any increase in the rate of price inflation is offset by an appropriate increase in the level of the money rate of interest.[5] Of course, their ability in this respect would be greater if the trend of money wages remained unchanged over time (see Appendix A), while the pursuit of a *real* target by the monetary authorities could be in conflict with other objectives and constraints of the monetary policies.[6] For instance, the reaction of trade unions to a stagnation of real wages could well lead to a lower real mark-up on prices as central banks would eventually be forced to accept it in order to stop a price spiral eroding the real value of financial assets and worsening the trade balance. Besides, lower interest rates might be preferred since they reduce the cost of servicing the public debt and pursing expansionary fiscal policies.

While in this framework inflation will be the result of incompatible claims on distribution which would manifest themselves through changes in money wages and in the nominal rates of interest, the actual real mark-up might be seen as the final result of the whole process that determines the distribution of income, including the mechanisms and feedbacks that reconcile those claims. Income distribution will thus ultimately depend on the relative bargaining strength of the parties involved, and Marx's analysis of the elements shaping money wage trends will play a crucial role in this respect.

Appendix A

Consider a price system of dimension n at time t = 0

$$ {}_{n}\mathbf{p}_{1o} = {}_{n}\mathbf{A}_{n}\, {}_{n}\mathbf{p}_{1o}\,(1+i)(1+np) + {}_{n}\mathbf{l}_{1}\, w_o $$

where i is the rate of interest, np are the normal profits of enterprise,[7] and w_o is the money wage at time t = 0.

Given the money wages (and the methods of production), since $(1+r) = (1+i)(1+np)$, where r is the rate of profits, if the rate of interest i increases[8] you will have

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[5] Given the target real interest rate r^T and the expected rate of inflation p^a, the money interest rate i^* should thus be such that $(1+i^*)=(1+r^T)(1+p^a)$. This implies that, if the actual inflation rate p is equal to the expected one, and $i = i^*$, then the real rate of interest $r = (i^* - p)/(1+p) = r^T$. Of course, if the workers' target real wages happen to be incompatible with the target rate r^T, then a change in the inflation rate will be set up if no change occurs in the normal profits of enterprise or the technical conditions of production. Note that a different money interest rate i^* should be viewed in the light of the price index chosen by the monetary authorities to calculate the (actual and expected) inflation rate.

[6] It is significant in this respect that the variance in the *real* rate of interest is usually greater than that in the *nominal* rate (see Moore, 1988: 257). It should also be noted that, if the subsistence wage is included in the methods of production, the maximum rate of profits R may be viewed as a constraint on monetary policy, since, if the interest rate leads to $r > R$, an inflation barrier will be set up.

[7] For the sake of simplicity I consider np as uniform among industries and as a percentage of gross profits. The condition $np = u/(1+i)$ could be put forward to ensure that it will be equal to that calculated by the percentage u on the anticipated capital alone. Note that, if different profits of enterprise among industries are considered, the price vector must be multiplied by the row vector of dimension n ***(1+np)***, thus taking into account the different "risk and trouble" involved in investing in the various industries, as well as the presence of monopoly elements if any.

[8] Indicating as i^{BC} the interest rate on long-term riskless financial assets as influenced by the policy of the Central Bank, we may put $i = hi^{BC}$, where $h \geq 1$ is a parameter set by the banking sector.

$$dr = (1+np)di$$

and the real wage rate will fall due to the increase in the prices of the n commodities. If the rise in the price-wage ratio is only slight, probably no reaction by the workers will be set in motion.[9]

Suppose now that the money wages increase by $(1+\gamma)^{\beta}$ per cent a year, where β is the number of wage round settlements in a year, and γ is the percentage increase in money wages in any round of wage bargaining. If (for the sake of simplicity) $\beta = 1$, then

$$w_1 = (1+\gamma)w_o$$

If firms adjust prices to the historical cost of capital (that is, if they do not fully *anticipate* the increase in the prices of capital goods),[10] then in period t = 1 you will have

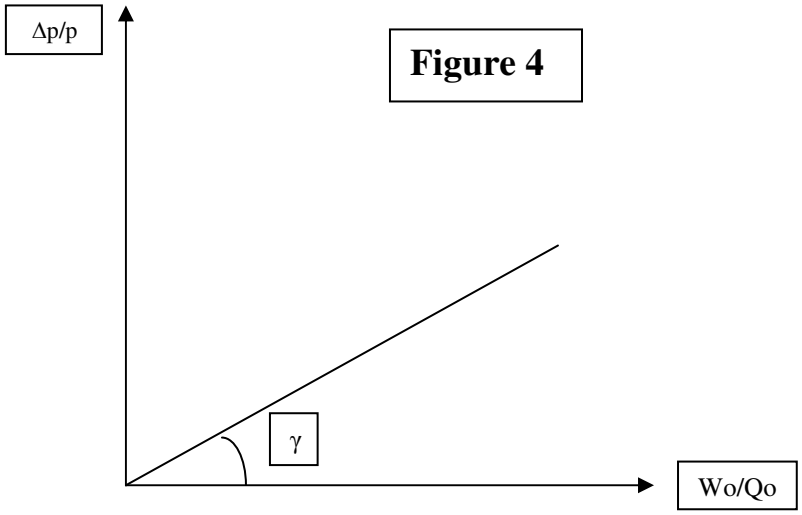
$$\mathbf{p}_1 = \mathbf{A}\,\mathbf{p}_o(1+i_n)(1+np) + \mathbf{l}\,w_o(1+\gamma)$$

where i_n is the nominal rate of interest, and $\mathbf{p}_o$ and $\mathbf{p}_1$ are the vectors of prices at time t = 0 and t = 1. If *Qo* and *Wo* are respectively the value of gross product and the total amount of money wages at time t = 0; and **s** is the sum operator (a row vector of dimension n), we will thus have

$$\frac{\mathbf{sp}_1}{\mathbf{sp}_o} = \frac{\mathbf{sAp}_o(1+i)(1+np) + w_o(1+\gamma)\mathbf{sl}}{\mathbf{sAp}_o(1+i)(1+np) + w_o\mathbf{sl}} = (1-Wo/Qo) + (1+\gamma)(Wo/Qo) = 1+\gamma(Wo/Qo)$$

that is $\Delta p/p = \gamma(Wo/Qo)$, where Wo/Qo is the wage share in the gross product at t = 0. Hence the inflation rate $\Delta p/p$ will be greater, the greater the initial wage share and the rate of change in money wages (see Figure 4).

Figure 4



[9] In the case of a decrease in the rate of interest, you can set the condition $dw/w = \max(\theta dp/p; 0)$, where θ (probably equal to zero if dp/p is less than a certain value) is a parameter which reflects the strength of the workers in wage bargaining. Note that, unlike in Kalecki and Eichner, a change in the interest rate here affects the rate of profit, and not the normal profits of enterprise. Moreover, unlike in many post-Keynesian or Kaleckian models (see Lavoie, 1995), it affects the rate of profits directly, not indirectly (through the effect, if any, of the change in the rate of interest on the rate of accumulation).

[10] It can be seen as an aspect of the relations between industrial and financial capital. On these relations (and their conflictual nature in time of crisis, or when the wage rate happens to be at subsistence level) see Argitis (2001), who also reconstructs the analysis of such a conflict by Marx. Note that, in actual fact, the slowness of price adjustments may also be favoured by the fact that the timing of wage bargaining is not uniform among industries and firms.

The increase in money wages will thus determine at time t = 1 an increase in the real wages w_r equal to

$$dw_r/w_r = dw/w - dp/p = \gamma - \gamma(Wo/Qo) = \gamma(1-Wo/Qo) > 0$$

which is greater, the greater *Wo/Qo*, since the lesser will be the weight of the *unanticipated* increase in the price of capital goods. On average this change in income distribution will be "re-absorbed" if no other change in money wages occurs. However, even in time t = 1 the change in income distribution will not happen if the firms instantaneously adjust prices to the reproduction costs of capital, or if the monetary authorities change the nominal rate of interest satisfying the relation

$$(1+ i_n)(1+np) = (1+i_r)(1+ \gamma)(1+np)$$

which implies

$$\mathbf{p}_1/w_1 = [\mathbf{A}\mathbf{p}_o(1+i_r)(1+np)(1+ \gamma) + \mathbf{l}\, w_o(1+\gamma)]/w_o(1+ \gamma) = \mathbf{p}_o/w_o$$

namely, that $dp/p = dw/w = \gamma$.

Consider now a repeated increase in money wages until time t = j. In this case no change in distribution will happen only if

$$\mathbf{p}_j = \mathbf{p}_o\,(1+\gamma)^{j} = \mathbf{A}\mathbf{p}_o(1+\gamma)^{(j-1)}(1+i_r)(1+np)(1+\gamma) + \mathbf{l}\, w_o(1+\gamma)^{j}$$

that is, again, if $(1+i_n) = (1+i_r)(1+\gamma)$. But if the real wage rate corresponding to the rate of profits $[i_r + np(1+i_r)]$ is not equal to the real wage w_r^w aimed at by the workers according to their relative strength in wage bargaining,[11] this can lead to an increase in money wages by ϕ per cent greater than the rate γ *expected* and *anticipated* by the workers, that is to

$$dw/w = \Omega(w_r^w - w_r) + \gamma = \phi$$

It will again bring about a change in distribution[12] unless the monetary authorities do not make of further upward adjustment in the nominal rate of interest in order to maintain a desired real rate of interest i^T_r, that is unless

$$i_n = \phi + (1+\phi)i_r^T.$$

The discrepancy between the real wage rate w_r^T corresponding to the real rate of interest targeted by the monetary authorities, and the real wage rate w_r^w aimed at by the workers, may thus bring about a wage-price spiral, which may be attenuated by a fall in the absolute value (even for given differences between sectors) of the normal profits of enterprise ***np***, or by an increase in productivity and/or an improvement in the terms of trade and the exchange rate

[11] You could consider for instance that $w_r^w = \varepsilon_0 + \varepsilon_1 u + \varepsilon_2 n^{TU} + \varepsilon_3 \pi$, where *u* indicates the conditions of the labour market (for instance, the rate of unemployment), n^{TU} the share in the total labour force of the employment in the unionised and leading sectors in wage bargaining, ε_0 a parameter summing up the complex social and political factors that can affect the bargaining position of the workers, and $\varepsilon_3\pi$ the share of productivity growth aimed at by the workers (expressed, for instance, by a fraction of labour productivity).

[12] In this respect the timing of wage bargaining, wage indexation, as well as the rapidity of adjustment of prices by the firns, and of the *nominal* rate of interest by the monetary authorities, will influence the actual course of the real wage rate. In actual fact, however, the ability of the monetary authorities to change the nominal interest rates usually seems to be greater than that of the workers to change the money wages.

(especially if the share of imported goods in the value of gross product is substantial) – since these changes will lead to an increase in w_r^T for a given target real rate of interest. However, on average, in normal conditions, an adjustment of w_r^T and w_r^w to the same value will be achieved, and be driven by the fact that the monetary policy is not set in a vacuum, and that the price trend is one of the elements affecting the decisions of the monetary authorities.[13] Moreover, anti-inflationary fiscal and monetary policies may affect the bargaining position of the workers by increasing the rate of unemployment, thus adding it to price inflation as a means of limiting the increase in the real wages.

A further analysis of the process of adjustment to a normal position of the economy is beyond the scope of the present work, and would require specifying not only the (sometimes conflicting) objects, constraints and channels of the monetary policy, and its indirect effect on variables (like the unemployment rate) which affects the bargaining position of the workers, but more generally, the interactions between income distribution and the trend in effective demand. Here it is merely noted that the signs and weights of these interactions may change according to the circumstances, and be influenced by institutional and social factors.

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[13] For instance, monetary policy is influenced by international capital movements, which are guided by the difference between the nominal rate of interests and expected variations in the exchange rate.

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