

## **Alternative ‘closures’ to Sraffa’s system - some reflections in the light of the changes in income distribution in the last decades.**

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*Very provisional draft – do not quote or circulate*

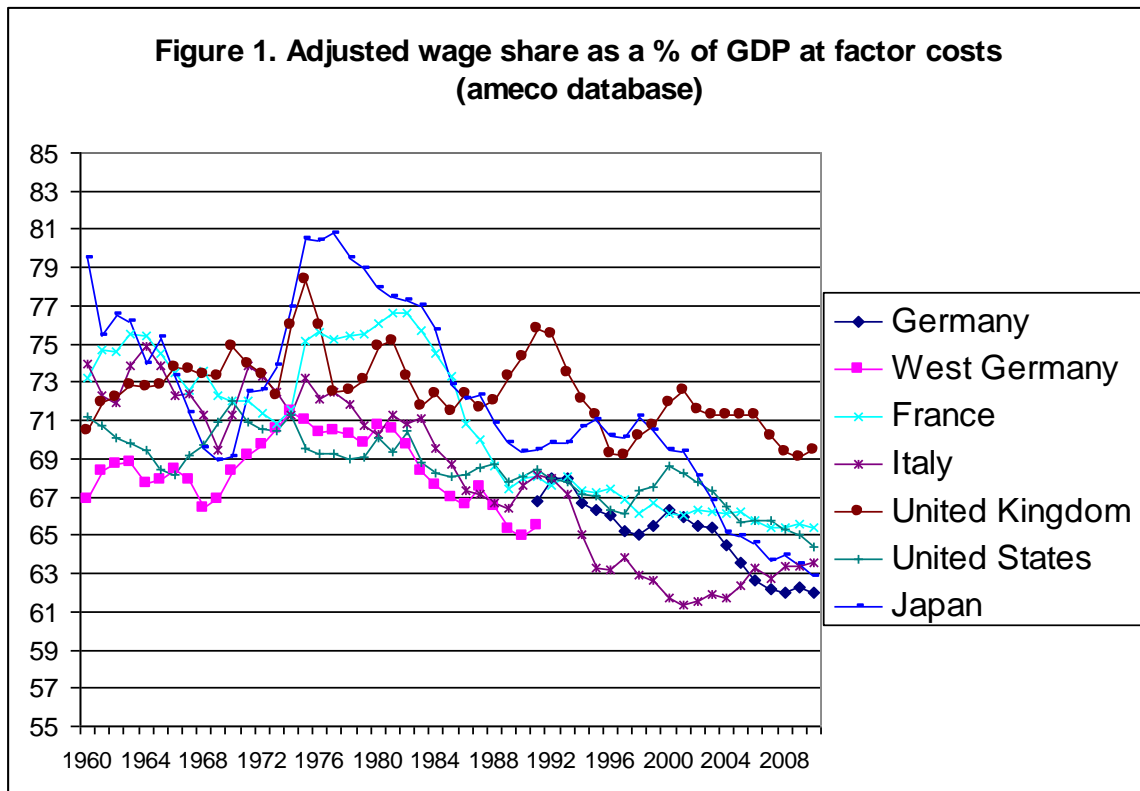
### **1. Introduction: the changes in income distribution and alternative approaches to economic theory**

The last 30 years have witnessed a dramatic change in the distribution of income, with the wage share<sup>1</sup> falling in all industrialized countries (figure 1). In addition, these data tend to underestimate the change, since the wage share include the compensations<sup>2</sup> of top-managers, which rose sharply particularly in the Anglo-Saxon countries and which may be regarded as capturing part of business profits rather than as labour incomes. In fact personal income distribution data (cfr Piketty and Saez, 2006, among others) and the trends in wages of non managerial workers suggest for the US an even sharper change in income distribution than is shown by income shares data – for example in the private sector the *level* of real hourly earnings of production workers actually fell in the US since the mid-seventies (–7%; see table 1), despite a steady increase in output per hour (+54%) in the same period (Pollin, 2003, p. 43).

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<sup>1</sup> The data reported here refers to the wage share adjusted for the changes in the proportion between employees and self-employed workers and measured on GDP at factor costs, that is, net of taxes on production. The share therefore is equivalent to the ratio of average labour income per worker (or standard labour unit) to average product per worker (or standard labour unit).

<sup>2</sup> The share includes the compensations that are paid in the form of salaries and therefore part of firms payroll payments, while it does not comprise payment to top managers in the form of stock options, or payment of professional services.

**TABLE 1**

**Average wage for non-supervisory workers in the private sector  
2001 dollars**

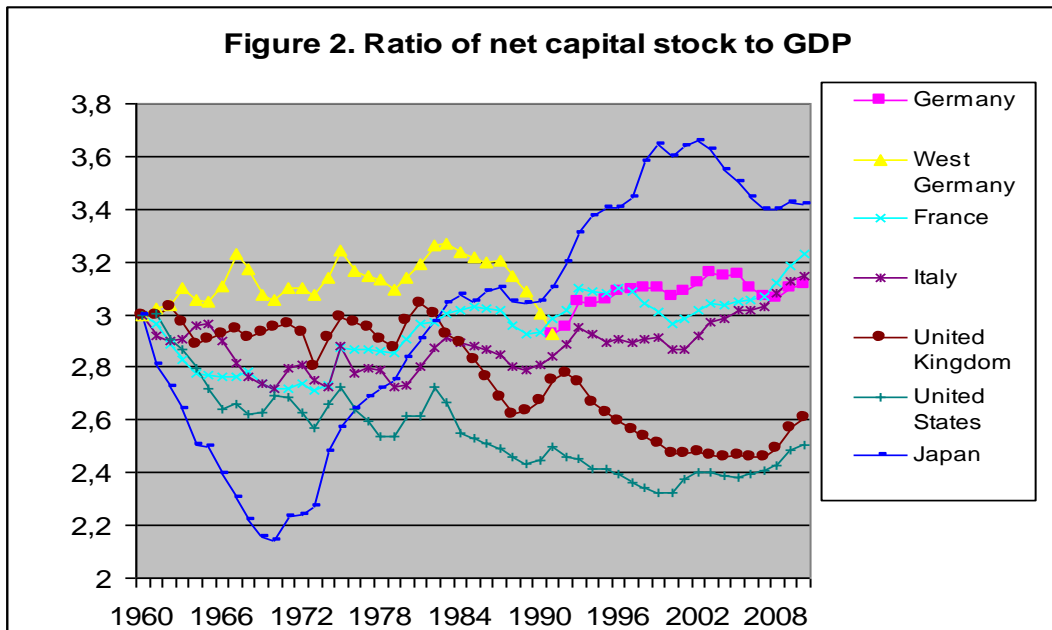
1961-68	1969-76	1977-80	1981-92	1993-00
13,60	15,14	15,03	13,91	13,60

Source: Bureau of labor statistics, as reported in Pollin, 2003, p. 42

To clear the ground it must also be clarified that it does not seem to be the case that such changes can be attributed, even partially, to an increase in the ratio of the value of the capital stock to value added. Although some caution is necessary on this point, since statistics on the capital stock are well known to be difficult to construct, not fully reliable, and subject to reflect both structural changes and changes due to variations in the degree of utilization of capacity, the data appear to deny a trend increase in the ratio between the value of capital and GDP in the major economies except Japan. (figure 2). Such an increase would obviously entail, for any given profit rate,<sup>3</sup> an increase in the profit share (and a fall in the wage share) which would *not* however

<sup>3</sup> In discussing the data I am not taking the neoclassical view but rather a classical one. Therefore I am not supposing any pre-determined relation between the capital output ratio (which will depend on the economic structure and relative prices) and the rate of profit. What I am considering here is merely the accounting fact that with a given profit rate, an increase in the value of the capital stock would entail increased total profits

reflect an increase in the return on capital and hence a change in distribution properly understood, but rather a structural change in the economy.



The interpretation of such changes in income distribution represents a challenge to economic analysis. Main-stream analyses, including New – Keynesian ones, which retain, at least in the long run, the notion of factor substitution leading to a “factor intensity”<sup>4</sup> inversely related to its rate of return, have encountered some difficulties in the interpretation of the described changes in income distribution. In these models a fall in the equilibrium real wage rate would have to be associated to a rise in the labour to capital and labour to output ratios determined by optimization in consumption and production.<sup>5</sup> This is particularly important in the context of the explanation of changes in income shares, since if factor substitution was supposed to take place in the manner described by marginal theory, a fall in wages (or in the proportion between wage and product per worker), owing to the increase in the above-mentioned ratios between labour and output and labour and capital, would probably give rise to small or nil (depending on the values of elasticity of substitution) changes in income shares (Rowthorn, 1999). This, by itself, creates an underlying difficulty in all mainstream attempts at explaining the observed changes in income shares, which

<sup>4</sup> Sraffa 1960 p. and Garegnani 1970 among others have shown that the notion itself of factor intensity is devoid of meaning, since – for any given underlying techniques - their relative factor intensity is not independent of relative prices and distribution.

<sup>5</sup> This is the case when, in the familiar model constituted by a price equation and a bargained wage equation, the former is decreasing in the real wage-employment space because it reflects a decreasing marginal product of labour. If labour marginal product is assumed constant, as is done in some textbook expositions, a change in the bargaining strength of the workers would shift the bargained wage equation, determining lower equilibrium unemployment, but no changes (given productivity) in the equilibrium wage. In this case therefore the model could not be used to explain changes in distribution.

are usually overcome by attributing such changes to labour-saving technical innovation. These technical changes are however hard to identify empirically, and the methods adopted in applied works have been criticized, among other things, as often amounting to *assuming* that changes that cannot be otherwise explained according to the theory *must* be due to technical innovations of the appropriate type (Stockhammer, 2009: 19-22).

Besides the role of labour-saving technical innovations, another, more appealing, explanation of changes in income distribution refers to the role of globalization in increasing unskilled labour supplies through various channels (immigration, off-shoring of intermediate production, imports of products from emerging economies). Again, however, when this is treated within mainstream economic models that retain 'well behaved' factor substitution and the consequent tendency to full employment of factors, the expected results are at variance with facts in some important respects. In particular, while according to mainstream trade theory, globalization should lead to a fall in relative unskilled labour incomes in advanced economies, it should also improve the relative wages of unskilled versus skilled workers in emerging ones, a phenomenon which is not generally observed (IMF, 2007: 176). In addition it must be noted, as pointed out by Krugman (2007), that what has been witnessed in industrial countries and particularly the US, in the last decades, is not a change in the relative positions of skilled and unskilled workers, but rather the inability of *both* groups of workers to benefit from the increased productivity, to the advantage of a tiny minority of the population.

The Keynesian-Classical approach to the determination of distribution and employment presents an advantage in the explanation of the phenomenon, consisting in the fact that it entails no *a priori* connections between the changes in distribution and the changes in the proportion between labour and output, or between the value of the capital stock and the value of output. Income distribution is analyzed separately from output and employment levels which depend, even in the long run, on the principle of effective demand.<sup>6</sup> Therefore if, for example, a change in the bargaining strength of the parties affects income distribution, the effects on income shares may be significant.

Yet empirical observation may pose some questions also to the analyses of distribution that have been advanced within this approach. In the following I will be interested in exploring the ways in which the Classical-Keynesian framework of analysis might be applied for the interpretation of the described changes in distribution. My limited purpose will be more that of

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<sup>6</sup> The main analytical premise of these views is to be found in the criticism to the principle of factor substitution (Garegnani, 1970). In contemporary macro-models the tendency of the economy to potential output is generally attributed to the so called real balance effect and "Keynes effect". However the former cannot by itself be regarded as capable of ensuring that tendency, while the inverse relationship between aggregate investment and the interest rate (the Keynes effect) must in the end rely precisely on factor substitution (see Petri, 2004, chap 7).

framing the questions rather than finding the answers. This on the basis of some consideration on theory and empirical evidence which is by no means meant to provide a ‘test’ for theory, but rather to contribute to an initial reflection on the open questions.

## 2. The different ‘closures’ to the classical price equations

To begin to look at possible interpretations of changes in income distribution in the light of the revival of the classical approach, we can start from the system of relative price equations:

$$\mathbf{P} = \mathbf{PA} (1 + i) + \mathbf{PA} \boldsymbol{\rho} + \mathbf{I}w$$

Where  $\mathbf{P}$  is the relative price vector expressed in terms of a numeraire,  $\mathbf{A}$  is the matrix of the production coefficients,  $i$  is the interest rate,  $\mathbf{I}$  is the labour inputs vector,  $w$  is the real wage and finally  $\boldsymbol{\rho}$  is the diagonal matrix of the rate of profits of enterprise or business profits that remunerate risk and illiquidity associated to productive activity. Note however that while risk and liquidity premia can be supposed proportional to the capital stock, this is not generally the case for top-managerial remuneration, though the latter may be regarded as a component of business profits adding to risk and illiquidity premia.

The business profit term is there to represent the fact that the return on capital invested productively must be higher than the interest rate obtained on safe financial investments (such as long term bonds) to compensate for risk and illiquidity associated to productive investments, which are likely to differ across industries. Thus while competition must equalize the pure remuneration of capital across industries, total profit rates, including both interest rate and business profits, do not necessarily equalize. In addition, the vector  $\boldsymbol{\rho}$  may also contain monopoly extra-profits earned in some industries owing to the existence of barriers to entry.

In the classical tradition, the relation between these distributive variables has been conceived in different ways. Most of the old classical economists thought, like Ricardo, that the real wage was the given variable, determined by socially established subsistence requirements and by the relative bargaining position of the workers (Stirati, 1992; 1994). Thus, profits would be determined residually. Given the normal rate of business profits, this would determine residually the pure remuneration of capital, which would ultimately govern the rate of interest in credit markets, though the latter could differ from the remuneration of capital determined in production for some length of time (Ricardo, 1921: 364). Thus the causal links went from real wages to the profit rate and from the latter (with given business profits) to the interest rate. Marx’s conception was different: he retained the notion of a given wage rate determined by necessary consumption

and class relations; but saw the rate of interest also as a magnitude independently determined. This left the business profits to be treated as the residual variable (for a discussion of these approaches see Pivetti, 1991: 61-69).

In the current revival of the classical approach to distribution two main lines have been pursued, that will be briefly described below: that of determining the rate of profit as a whole by means of the so-called Cambridge equation and that of accepting the broad view of the classical economists who saw income distribution as the outcome of class conflict, but attributing the role of the “independent variable” mainly to the interest rate.

### **3. The rate of growth as a determinant of the rate of profit**

One, very controversial, way of determining distribution within the Classical-Keynesian approach is the so-called “Cambridge equation” (Kaldor, 1956; Pasinetti, 1962) which establishes a link between the rate of growth of the economy and the rate of interest. Under the simplifying assumption of zero savings out of wages the equation takes the form

$$G = s_p r,$$

Where  $G$  is the rate of capital accumulation;  $s_p$  the propensity to save out of profit income and  $r$  is the profit rate.

The analytical criticism moved to this way of determining the rate of profits is that, if  $G$  is the actual rate of accumulation,  $r$  appearing on the right hand side is not the normal, but the ex-post actual profit rate reflecting the actual degree of utilization of capacity. The ex-post profit rate changes with capacity utilization, totally irrespective of changes in the real wage, given the techniques in use. This in contrast with the nature of the rate of profit that appears in the price equations, which is the normal profit rate, associated to: i) the dominant technique, described by the technical coefficients in the equation and ii) a normal or desired degree of capacity utilization. Only under the latter conditions the normal rate of profits has a definite, inverse relation with the real wage rate, and can therefore, if given, univocally determine it, as in Sraffa (Ciccone, 1990a; Garegnani 1992; Garegnani and Palumbo, 1998; Aspromourgos in this volume). The equation therefore is irrelevant for the theory of distribution.

What can be of some interest here is that although the Cambridge equation is still used in post-Keynesian formal macro-models, to my knowledge no one has attempted to interpret the changes in income distribution in the last decades with reference to changes in the rates of accumulation or in the share of investment on value added, as would be in the logic of the model under discussion. Indeed, such a suggestion would be at variance with observation. In major industrial countries in fact the decline in the wage share has gone together with a decline in the rates of accumulation

and GDP growth. It may be noted in this regard that even the ex-post actual profit share and profit rate that are measured by the national accounting statistics do not exhibit in the long run the relation expressed in the equation. The explanation lies in the short-run nature of the connection between the actual rate of growth and the ex-post rate of profits reflecting changes in capacity utilization. The relation is therefore clearly visible in the data for changes in the rates of growth of GDP over the cycle (e.g. the profit share actually tends to fall during sharp recessions), but not necessarily so when looking at longer term tendencies, since situations of under-utilization or over utilization of capacity tend to be corrected – albeit not necessarily ever fully eliminated - by changes in capacity; though some decline in the profit share associated to lower than desired capacity utilization might actually turn out to be rather persistent when the economy is stagnating or declining over relatively long periods of time.

#### **4. Bargaining power and social relations.**

Most economists adopting the Classical-Keynesian perspective actually tend to regard changes in income distribution as determined by changes in the bargaining position of the parties, in turn associated with changes in the economic, social and institutional set-up. Even within such broad stand-point however, the main channels through which the changes tend to take place may be regarded as acting primarily directly on real wages or on the interest rates.

As described above, the old classical economists and Marx tended to regard the real wage rate as the given variable, determined by social and economic conditions (among which of primary importance the size of unemployment and under-employment), with the profit rate determined residually. Some contemporary economists however have argued that this point of view is ill-suited to represent the process of determination of real wages, since in fiat money economies workers can only bargain over nominal wages, while firms can generally translate increased money costs of production on prices (Pivetti, 1991: 36-37; Smith; Panico). On this basis, and following the suggestion by Sraffa (1960: 33) that the rate of profit may be regarded as determined by the rate of interest, it has been argued that, in general, distribution may be seen as determined primarily via interest rate policy, acting on the minimum competitive return on capital appearing in the price equations. According to this view, which is close to the Keynesian tradition of regarding the interest rate as a ‘conventional’ and institutional variable, the interest rate is independently determined by the monetary authorities subject to a number of objectives and constraints. Since business profits, regarded as risk and illiquidity premia, must also be conceived as given magnitudes in a competitive economy, the residually determined variable is the real wage. This remains true even when business profits earned above the interest rate include, besides

risk and illiquidity premia, an extra-profit which is due to the existence of obstacles to free competition and barriers to entry, since these extra-profits cannot be regarded as arbitrary, but as a definite addition to the competitively determined benchmark. The mechanism through which changes in the interest rates would cause a change in real wages is the price level. For a given nominal wage rate and productivity, and given the rate of business profits, an increase in interest rates causes an increase in the monetary costs of production, and hence in the price level *vis à vis* the money wage (Pivetti, 1991). This way of looking at the role of the interest rate has gained acceptance also in a wider ‘post-Keynesian’ literature, which sees the interest rate as a component of the ‘mark-up’ charged by firms over the costs of production.

In regard to the connection between the rate of profits and the rate of interest, a somewhat more articulated position has been taken by Garegnani. He agrees that competition in product markets would tend to ensure, over sufficiently long periods of time, that the rate of interest and the rate of profit move in step, and that, if the rate of interest is a “conventional” variable, largely determined by monetary authorities, then it would be able to determine the normal rate of profit and the corresponding real wage rate. However, according to Garegnani, “The policy of the monetary authorities is not conducted in a vacuum, and the movement of prices and of the money wages determined in the wage bargain will be amongst the most important considerations in the formulation of that policy” (Garegnani, 1983: 63). This more cautious position finds support also in Ciccone (1990b) and Stirati (2001), where it is argued that the reaction of money wages to a price increase may affect the *real* interest rate, for a given money interest rate established by the central bank and financial markets. The causation between the interest rate and real wages therefore cannot be conceived too mechanically, and the direction of causation may actually differ according to circumstances.

It is perhaps also worth reminding at this stage that Sraffa in the cited passage explicitly refers to the *surplus component of wages*, since the subsistence requirements, according to Sraffa, are necessary costs and as such should most appropriately be treated in the same manner as other production costs, and included in the coefficient matrix (1960: 9-10). If so, there must be limits within which wages may be affected by monetary policy, depending on the size of the surplus component of wages above the subsistence requirements. The latter terms (“subsistence”, “necessaries”) are the same used by the old classical economists, whose standpoint Sraffa in his preface claims to be adopting. The meaning of the term ‘necessaries’ therefore should be understood as the same it has for the Classics, hence including, to quote Smith “those things which the established rules of decency have rendered necessary”. (1776, V.ii.k.3). Thus, even in advanced economies, the notion of a subsistence floor is not devoid of relevance, and may not be



so far distant from current wages. On the other hand, the tendency in contemporary economies towards a continuous increase in productivity creates scope for increases in the rate of profits that do not require a fall in real wage levels.

### **5. How do globalization and financialization come in?**

Recent discussions and applied analyses of the changes in income distribution have tended to emphasize the role of globalization and financialization in affecting income distribution in the last decades. Both phenomena can be incorporated in the present framework of analysis as factors that have, broadly speaking, affected class relations and economic institutions and hence the bargaining position of the parties.

More specifically “globalization” involving increased competition from emerging economies on product markets, off-shoring and immigration, can be expected to directly affect the bargaining position of workers in advanced countries by increasing job losses and unemployment, or by determining a powerful threat that jobs will be lost (because of de-localization or imports from other countries) as a consequence of higher wages or improved work contracts and conditions.<sup>7</sup> In addition, one could argue that the impact of globalization works through other channels as well; of particular importance are the constraints on macroeconomic policies that are imposed by free capital mobility (for example on public budget and public debt management), which can then affect the formation of aggregate demand. All in all, it thus would appear that many of the factors that are synthesized as “globalization” are likely to affect *directly* the bargaining position of workers through their impact on employment growth and unemployment and the threat of de-localization of production and job losses. Several observer for example referred to job insecurity as a main factor in subdued nominal wage dynamics in the US even in the 1990s, a period of low and falling unemployment: Greenspan (then governor of the Federal Reserve) referred to the “traumatized workers” and their job insecurity as a factor in explaining low inflation even in a period of sustained growth and low unemployment rates (Greenspan 1997; see also Pollin, 2003: 50-56; Choi, 2001) and Robert Gordon in 1997 wrote in this context “The 1990s have been a time of labour peace, relatively weak unions, a relatively low minimum wage” (1997, p. 30) and pointed to intensified world competition in product and labour markets, and the increased inflows of immigrant labour in the US as a likely explanation.

Many discussions of changes in income distribution carried out by non main-stream, post-Keynesian economists point to the role of financialization. Yet the theoretical causal mechanisms

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<sup>7</sup> At the same time, in contrast with predictions deriving from main stream theory, ‘globalization’ does not *necessarily* improve the *relative* position of unskilled vz skilled workers in emerging economies, owing to large labour reserves and/or to general political and institutional conditions in those countries.

envisaged here are not entirely clear, while the econometric exercises carried out still appear rather heterogeneous in terms of variables, methodology and results (Hein ?, Stockhammer 2009).

In terms of the Classical- Keynesian approach considered here the following considerations seem in point. First, it is perhaps worth clarifying that, from a macroeconomic point of view, the increases in the wealth of top-managers or investors in financial markets in the form of capital gains cannot be regarded as affecting the distribution of income. The moment any individual agent wishes to use that wealth to finance current consumption the assets must be sold, so that the aggregate effect for the private sector as a whole is nil. On the other hand, if increased wealth obtained in the form of capital gains can be used as a collateral to obtain additional credit (as was largely the case in the recent past) the outcomes of this for the distribution and uses of current output differ according to whether it is assumed that the latter is (on the average over economic cycles) given and equal to potential output or it is instead considered elastic, even in the long run, to changes in aggregate demand (Garegnani, 1992). Under the latter assumption, which is that consistent with the approach taken here, the transformation of capital gains into credit is the same thing as any credit-financed increase in autonomous expenditure, and would not therefore encroach upon someone else's income and consumption.

Yet, there may be a sense in which the high earnings of *individual* managers and firms in the financial sector, even in the form of capital gains, might have affected income distribution – i.e. by affecting the social norms concerning income levels, and the opportunity costs and expected earnings of individuals and firms operating in other sectors of the economy.

On the other hand, the enormous increase in financial transactions and leverage, made possible by the de-regulation and expansion of financial markets, has increased the profits of financial institutions (for any given capital stock), out of commissions and interest payments – and these are indeed part of the process of income distribution. Consistently with classical analysis of competition, one would expect that this would encourage the diversion of investment from the productive to the financial sector, and – if this is not capable of itself to lead towards restoring the inter-industry balance of profitability, it appears that it would tend to push non-financial firms towards realizing higher profits by means of a falling proportion between product wage and output per worker.

In post-Keynesian literature concerning financialization and income distribution the emphasis is on the changes the former brought about in the governance of firms. The focus of the latter would have moved from long-term investment and innovation towards realizing short-term gains to the advantage of share-holders. (Harison and Bluestone 1988; Hein, Pollin 2004; Stockhammer 2009).

Taken all together, the arguments about the distribution effects of financialization would translate, within the approach outlined above, into a force tending to determine an independent increase in normal profitability, for any given real long term interest rate.

### **6. Some evidence from the US economy in the last 50 years.**

Can a preliminary examination of empirical evidence and historical reconstruction provide some insights as to the role of interest rate policy in determining the changes in income distribution in the last decades? Naturally no statistical data can provide information on the normal profit rate as defined above, but only on the actual rate, affected by capacity utilization and earned on the existing capital stock, which is not necessarily of the kind associated to the dominant technique and includes quasi-rents on economically or technically obsolete plants. However, data on long term trends in income shares (that is, on the relative trends of real wages and labour productivity) and ex-post profit rate may provide an acceptable indication of the direction and order of magnitude of the changes.

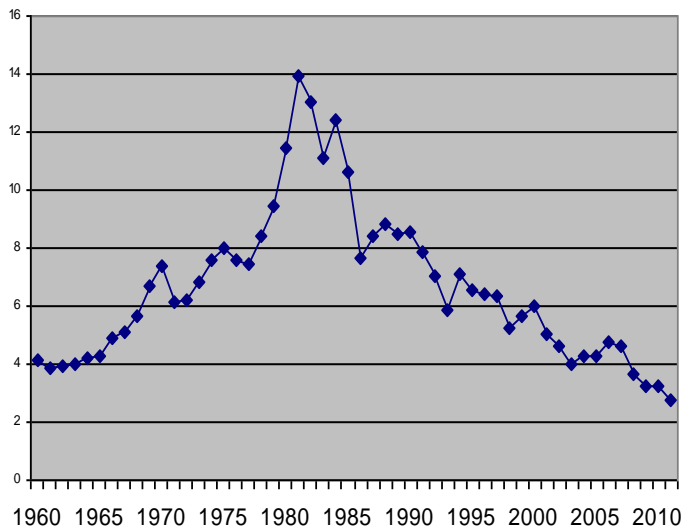
I will here confine myself to US data, given the leading role of this country and, accordingly, the fact that it is the least constrained in fixing the interest rates.

The long term real interest rate on government bonds (Figure 3b) increased sharply in 1984, as a result in the change in nominal interest policy in the previous years, beginning in 1979 (figure 3a). It subsequently fell, stabilizing around 4,5% in the period 1989-1997. A level which is about 2,5 points above the values observed in the early 1960s and about 3,6 above the – historically low – average values<sup>8</sup> in the period 1969-1979. After 1997 real interest rates began to fall and have remained below 2% since 2003, despite a moderate recovery between 2005 and 2007.

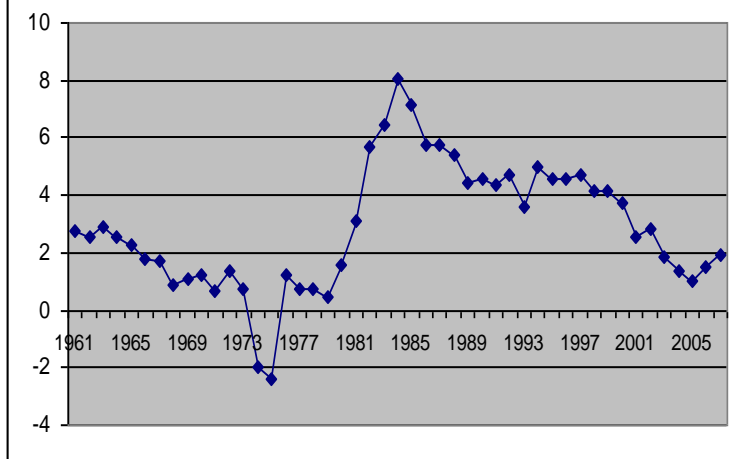
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<sup>8</sup> The average real interest rate of the period 1969-1969 – calculated excluding the two years in which interest rate became negative - was 0,9%.

**Figure 3a: Long term nominal interest rate in the US**  
(source:Ocse, MEI)



**Figure 3b: Real long term int rates in the US 1961-2007 (GDP deflator)**  
Source: Ameco database

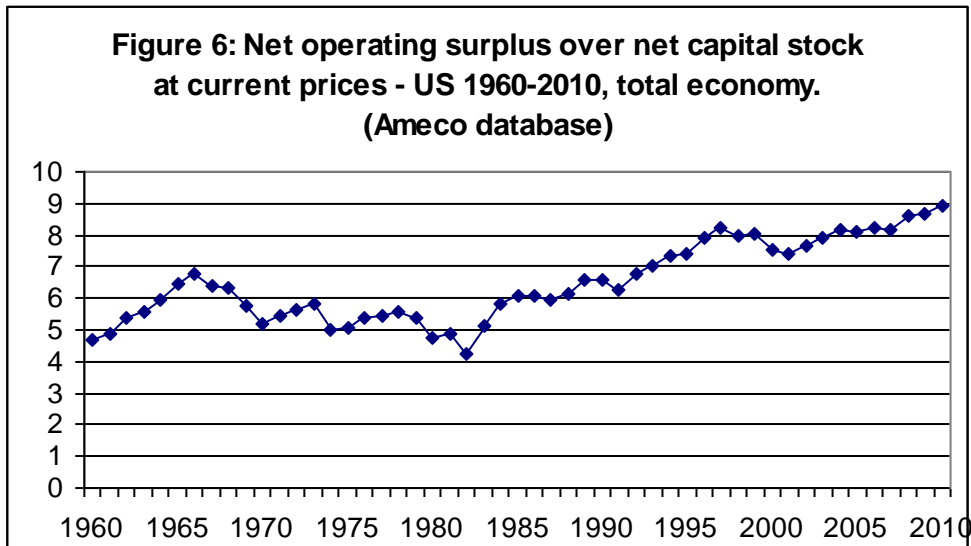


If we now look at the long term changes in income distribution over the same period, we see that the wage share for the entire economy exhibit a tendency to decrease since the early 1970, with two counter-movements: the first in the years 1980-1982, which is due to the sharp recession in those years, that caused a fall in the profit share caused by underutilization of capacity; the second in the years 1997 – 2000, which were on the contrary years of rapid GDP growth and falling unemployment associated with a rise in real wages and the wages share (figure 4). Since those data refer to the economy as a whole, including the financial sector, real estate, and the public sector, there may doubts as to whether aggregate data in reality reflect changes taking place in some sub-sector only or changes in the weight of different sectors. It is not so however, and in

this context this can be simply illustrated by looking also at the manufacturing sector data alone (figure 5). Here too there was a fall in the wage share in 1975-1979, and a continuously decreasing trend is clearly visible after 1985. The decline accelerates both in the economy as a whole and in manufacturing after 2000.



Symmetrically, the national accounting data on the net returns on the net capital stock (figure 6) indicate, after the 1980-1983 fall associated with the recession, an increasing trend which reverses the decline experienced between the mid 1960s and the end of the 1970s. The increasing trend in the net return on the net capital stock is interrupted only in 1997 – 2000, for the reasons described above.



Are these broad trends in the variables consistent with the approach described above, and do they provide some insights concerning the relative weights of monetary policy versus direct influences on wage bargaining?

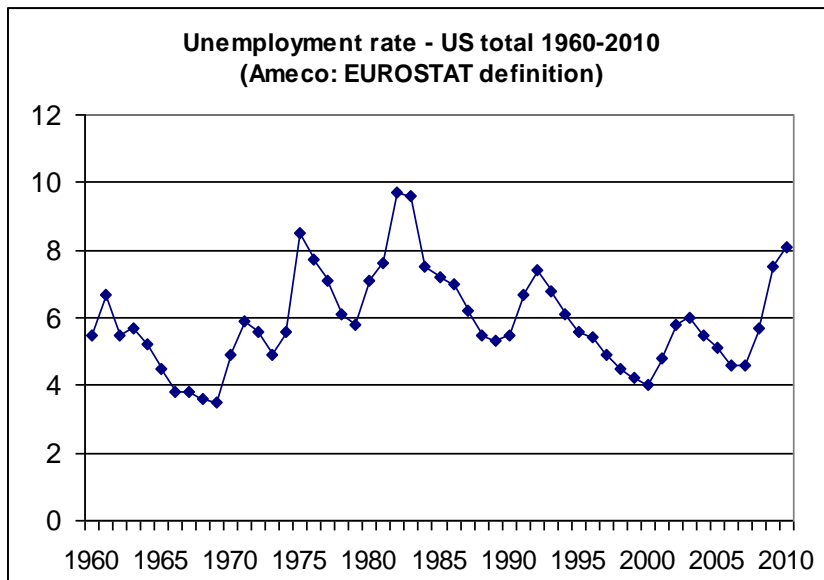
The change in net returns on net capital stock between the 1970s and the 1995-1997 appears broadly consistent with a gradual adjustment of income distribution to the rise in the average value of the real interest rate – the return on capital increased from about 5,4 on average in the 1970s to an average 7,5 in 1995-1997, less than the increase in real interest rate. These data however must be considered in view of the fact recalled in the introduction that the large increases in top-managers *salaries* are included here in the aggregate of the compensation of employees, and tend therefore to under-estimate the re-distribution of income away from non managerial labour.

Since 2000 however interest rates begin to decline significantly and after 2003 tend to stabilize at historically low values (below 2%), while the wage share declines even more sharply than in the previous period and the net return on net capital stock continue increasing.

The evidence for the last decade might thus be consistent with an exogenous increase in the “mark-up” such as could have been brought about by ‘financialization’ (see above). But also, alternatively, with Marx’s view that both real wages and interest rate can vary independently – at least for some length of time. In the period under discussion, real wage dynamics was directly affected by powerful economic and institutional forces tending to curb workers bargaining power: the continuing adverse effects of globalization, an increase in unemployment rates from 4 to 6% between 2000 and 2003, and a republican presidency possibly all worked towards an intensification of the workers insecurity emphasized by several observers with regard to the 1990s. At the same time for a number of reasons the Federal Reserve pursued in the last decade,

successfully, low nominal and real interest rates. In such circumstances profits of enterprise would become the residually determined distributive variable, appropriating the increasing surplus over and above real wages. In turn, by determining increasing profitability and dividends in relation to the cost of credit, this may have contributed to the acceleration of financialization by providing an incentive to borrow and reinvest in financial markets or real estate, and a ‘rational foundation’ for the expectation of increasing stock market and real estate values, favouring the then self-reinforcing financial ‘bubbles’. Actually, it is generally recognized that a major objective pursued by the Federal Reserve by means of its low interest rate policy was precisely that of sustaining financial markets.

Thus, it would not seem possible to rule out that in the last phase there were autonomous influences on wages coming directly from economic conditions (globalization) and institutional changes (de-regulation of the labour market, weakness of Unions). In this regards, it is also of some interest to observe what happened between 1997 and 2000. In those years there occurred a – albeit moderate and short-lived – reversal of the trend in income distribution, which took place in years characterized by sustained GDP growth and fall in the unemployment rate (figure 7), at the end of a relatively long phase of economic growth and declining unemployment begun in 1992 (the long Clinton boom); thus, it would seem, as a result of conditions directly affecting the labour market and wage bargaining.



Even with regard to the earlier phase, going from the early 1980s to 2000, though the data are broadly compatible with a causation going from higher long term interest rates to changes in income distribution, things might be more complex. The increase in interest rates was preceded by

firm-level reactions to the enhanced bargaining position of workers. Particularly, already in the early 1970s firms undertook restructuring processes featuring de-localization of production and ‘union avoidance’ (Bluestone and Harrison, 1988). In fact in the US the first signs of a change in labour relations can be dated to the early to mid seventies, with a reversal of the growth trend of production workers real wages (Pollin 2003, p 42 and ff; see table 1 above) and a fall in the wage share (figure 1 above). In parallel with this, the unemployment rate, that had been steadily falling between 1960 and 1969 initiated since then a reversal of the trend (figure 7). Thus, it could be suggested that Volker’s policy of high nominal and real interest rates was actually made possible by indications that a weakening of labour was already under way. In addition, the change in interest rates and monetary policy in the early 1980s was preceded and accompanied by other changes in macroeconomic policy – namely a more restrictive stance in fiscal policies - that all together determined a huge surge in the unemployment rate, which was in turn conducive to further institutional changes affecting Unions and the labour market. There are therefore elements that indicate that labour market conditions and institutional set-up directly affecting the bargaining position of workers may be important in determining not only nominal but also real wages.

## **Conclusions**

The Classical-Keynesian approach appears best equipped than mainstream theory (in all its variants) in providing a consistent explanation of the dramatic changes that have taken place in the last decades. This is so owing to the classical approach to distribution as determined by norms, institution and power relations, in turn connected with the criticism to the analytical foundations of decreasing factor demand curves and the consequent revival of the classical separation between the determination of output and employment and distribution. Or, said in other terms, those changes add to the collection of empirical observations that collide with main-stream theory (such as, among several others, persistently high unemployment or the absence of a vertical Phillips curve) – and not surprisingly so, since the approach is encumbered with flawed theoretical foundations.

Actually, even some main-stream New-Keynesian economist appear to now acknowledge that not only personal, but also functional income distribution essentially depends on norms and institutions, and only the changes in the latter can explain first the absolute and relative improvement in labour earnings until the mid-seventies and, subsequently, the reversal of that trend (Krugman, 2007). Note that this is a novelty since, despite the role of labour market institutions, in standard new-keneynesian macro-models the equilibrium real wage is determined



residually, given the mark-up. This in turn is determined by the elasticity of product demand curves in imperfectly competitive markets. Thus, changes in institutions in these models do not affect the equilibrium wage, but only the equilibrium unemployment rate.

Within the classical approach however different emphases can be found as to whether the changes in institutions and power relations affect the distribution of the surplus (over and above the necessary requirements of the workers) by acting primarily on interest rate determination or the wage bargaining. In this regard, the evidence concerning the US, briefly surveyed in this paper, seem to suggest that Garegnani's cautious position may be the most appropriate: in principle either variable may be subject to be determined "residually" according to circumstances, and monetary policy concerning interest rates may be influenced and constrained, among other things, by power relations and institutions in the labour market, so that the latter can be very important in determining distribution, even in contemporary, fiat money economies. In the US experience, the circumstances affecting directly the wage bargaining appear to have been important, and are often emphasized in narrative accounts of the changes that have taken place in the US (Krugman 2007; Pollin, 2003; Harrison and Bluestone 1988 among others), even though in the US, after the strong recession and high unemployment experienced in the early 1980s, wage trends are mostly related to institutional changes and less to the unemployment rate than they have been in European countries (Levrero & Stirati 2006; Stirati 2010: 132-39).

Finally, US data suggest that for about a decade now interest rates and the rates of profit on capital have not been moving in step - as ought to be the case if the working of competition tends to equalize the pure remuneration of capital in different uses, with given normal rates of business profits. In principle this could be explained by exogenous changes in normal business profits, where exogenous in this context means independent of the economic and institutional factors (e.g. the weakening of Unions) that affect directly the wage bargaining. The origins of such changes in turn would need to be carefully identified. Alternatively, it ought to be admitted that interest rates and profitability can actually diverge, at least for some length of time, owing to independent forces acting contemporarily and in the same direction on the interest rate and the proportion between real wages and output per worker – as was admitted by Marx (and even, for some period of time, by Ricardo).<sup>9</sup> If this is the case, again further enquiry would be needed concerning the causes of the divergence between interest rate and profitability and about its consequences.

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