

## **A patchwork post-Keynesian/evolutionary approach to income distribution**

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### *1. Introduction*

In this paper I shall endeavour to outline an approach to income distribution along post-Keynesian lines. Realistic appraisal of income distribution implies taking into account the different mechanisms in operation in a market economy which concur in determining the path followed over time by distributive variables. Attention will be paid to the various playing fields in which income distribution is determined, including bargaining over money wages between unions and employers, pricing decisions on the part of firms commonly operating in oligopolistic markets, the monetary behaviour of the policymakers, and so on. In doing so I shall utilise material drawn from previous writings on the topic (Roncaglia 1991, 1993, 1994, 2009 chapter 8, and particularly 2010).

As a first step, we shall briefly survey the major different approaches to income distribution, both mainstream and post-Keynesian, aiming at determining income distribution at a point in time as the result of certain equilibrium conditions or constraints, and the reasons for abandoning them. We shall thus recall the traditional marginalist approach based on supply of and demand for factors of production in § 2, the Keynesian-Kaldorian approach linking the rate of profits to the growth rate of the economy in § 3, the idea of a “monetary” determination of the rate of profits based on a (Keynesian) hint by Sraffa in § 4, and the idea of a connection between degree of monopoly and rate of profits (commonly, but rather imprecisely – as Basile and Salvadori 1982 showed – attributed to Kalecki) in § 5. All these approaches have been widely discussed in the literature (cf. for instance Kurz and Salvadori 1995, chapter 15), which however seems to have ignored Sylos Labini’s contributions on the issue, recalled below in § 6. An important aspect of these contributions lies in the fact that they explicitly point in the direction of a historical-evolutionary approach to income distribution, which is finally illustrated in § 7.

### *2. The traditional marginalist approach to income distribution*

Let us begin with the marginalist approach. Although it includes different streams, it is characterized by a common underlying vision, namely the notion of the market as a mechanism for the optimal allocation of scarce resources confronted with an inexhaustible multiplicity of human needs and desires. In such a context, the issue of income distribution between social classes – a problem which the first generation of marginalist authors all attempted to tackle, albeit in the declared context of methodological individualism – was addressed through the endeavour to determine equilibrium values for the distributive variables, wage rate and rate of profits or interest rate, such as to guarantee the balancing between supply of and demand for the so-called factors of production, labour and capital.

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The criticisms levelled against such an approach are well known (for a survey, cf. for instance Harcourt 1972; Kurz and Salvadori 1995, chapter 14), and are commonly accepted within the official version of the ‘pure’ marginalist theory, namely the general equilibrium approach (with its extensions, such as intertemporal equilibrium and contingent markets). In the context of this latter approach, the so-called Sonnenschein-Mantel-Debreu theorem (cf. for an exposition Mas-Colell et al. 1995, pp. 598-605) demonstrates the impossibility of determining unique and stable solutions for general equilibrium models, unless under very restrictive assumptions such as convexity of production sets, or in other words absence of increasing returns to scale. Thus, though logically consistent, general equilibrium models cannot constitute a great help for the interpretation of reality. Any result turns out to be possible. As already Schumpeter (a predecessor of Heinz Kurz at Graz University) remarked (Schumpeter 1908, pp. 360-1 of the Italian translation), when multiple solutions are allowed, then comparative static analysis should be ruled out. Moreover, when instability is allowed, then the invisible hand of the market does not hold. The traditional marginalist approach to functional income distribution, therefore, cannot be rescued by deriving equilibrium values for the functional distributive variables from the analysis of individual income distribution within general equilibrium models.

Nevertheless, mainstream macroeconomics continues to deal with functional income distribution, as well as employment and income, through variations on the old tradition, relying on the inverse relationship between real wage rate and labour demand which represents the basic foundation for any analysis. Either the criticisms of the inverse relations are forgotten, or the issue of functional income distribution is prudently left aside.

The unsatisfactory results of the marginalist approach justify the widespread interest among non-mainstream economists in alternative theories of income distribution. In subsequent sections of this paper we shall briefly consider a variety of approaches to the issue: not only those based on the choice of one of the distributive variables – wage rate or rate of profits – as exogenously determined, but also a historical-evolutionary approach based on the interaction of a multiplicity of factors over time.

### *3. Alternative (Cambridge, UK) approaches to income distribution: the Keynesian-Kaldorian line*

Following upon a hint offered by Keynes in the *Treatise on money* (1930, I, p. 139), according to which it is the expenditure decisions on the part of entrepreneurs, and in particular their investment decisions, which determine their income and not vice versa, and possibly following a similar pointer by Marx (as noted by Kurz and Salvadori 1995, p. 474), various authors including Kalecki (1971), Kaldor and Joan Robinson developed a stream of post-Keynesian income distribution theories.

Assuming full employment and full capacity utilization, Kaldor (1955-56) builds a model, fascinating in its simplicity, in which the share of investments in income (hence, under the assumption of a constant capital to output ratio, the rate of growth of the economy) determines the distributive shares of wages and profits (the functional distribution of income), given the saving propensities of capitalists and workers.

Pasinetti (1962, and successive writings, in particular Pasinetti 1981) develops Kaldor's approach by interpreting the relationship between investment and distributive shares as a normative relation connected to a full employment assumption, and by distinguishing between functional income distribution (wages and profits) and income distribution by social classes (capitalists and workers).

Kaldor (1966), on the other hand, sets out to develop his model as an interpretation of the causal links determining income distribution. In doing so, he focuses on the connection between entrepreneurs' investment decisions and their decisions on the share of profits retained within the firm. This implies shifting the focus of analysis from the social classes – capitalists and workers – to the distinction between categories of economic agents, families and firms. In other words, investment decisions determine the firm's financing requirements, and this in turn determines the firm's savings (while personal savings are considered negligible, or in any case a secondary complication which can be deferred to a subsequent stage of the analysis).

This latter line of analysis was subsequently taken up in various writings – notably Wood 1975, Eichner 1976, Harcourt and Kenyon 1976 – which stress the room for manoeuvre of large firms in setting the prices of their products. In these writings, and particularly in the model presented by Harcourt and Kenyon, the ratio between prices and direct costs, and hence the ratio between prices and money wages, is set in such a way as to allow for the financing of such investments as the firms decide to realise.

On close scrutiny these writings, and in particular Eichner's book, show a discrepancy between the formal models, in which firms' financing requirements univocally determine the price-wage ratio, and hence the profit share, and the non-mathematical argumentation, which points, rather, to an influence exerted by financing requirements on price decisions and hence on profits. In such a way the non-mathematical argumentation leaves some room for the possibility that firms' decisions and hence income distribution are influenced by other elements not directly taken up for consideration or only given passing mention in the writings under consideration here.

The trouble with the formal models recalled above lies in their microeconomic foundations. If investment decisions differ from firm to firm and from sector to sector, also profits and the rate of profits should differ from firm to firm and from sector to sector. This contradicts the assumption of competition, which implies a uniform rate of profits throughout the economy. Nor can we fall back on a sector differentiation of profit rates due to different degrees of monopoly, which would mean assuming that – by some miracle? – the investment decisions differed among the different sectors in the exact measure necessary to bring out the structure of profit rates as determined by differences in market power.

#### *4. Alternative (Cambridge, UK) approaches to income distribution: Sraffa's (Keynesian) hint*

Let us now move on from the Keynesian-Kaldorian approach connecting the rate of profits to the rate of growth to consider the second post-Keynesian research line recalled above, focused on a monetary determination of the rate of profits. As already mentioned above, this line of enquiry is suggested by Sraffa's hint in *Production of commodities by means of commodities*, according to

which “The rate of profits, as a ratio, has a significance which is independent of any prices, and can well be ‘given’ before the prices are fixed. It is accordingly susceptible of being determined from outside the system of production, in particular by the level of the money rates of interest.” (Sraffa 1960, p. 33).

Sraffa’s hint is cautious but attractive, opening as it does the way to interesting developments. We may interpret it both as pointing towards a Keynesian view of the economy, in which financial elements have a relevant influence on real variables, and as an indirect manifestation of dissent towards other lines of research, such as the Kaldorian one discussed in § 3 or the one based on the choice of the wage rate as the independent variable. This latter one can be read as Ricardo’s own theory (cf. Kurz and Salvadori 1995, pp. 472-3). It acquired political relevance in the aftermath of the publication of Sraffa’s book, implying that increases in money wages, obtained by forceful and combative trade unions through wage bargaining, do not automatically bring about price responses such as to offset them fully.

Obviously, Sraffa’s apparent negative attitude towards the choice of the wage rate as the independent variable does not necessarily imply an iron full-cost pricing principle, i.e. the assumption of full response of prices to costs, and in particular to labour costs, such as not even Kalecki supported. It simply means that the outcome of wage bargaining on real wages, hence on income distribution, depends on the response of money prices, which in turn depends on a number of circumstances, among which the choices of the monetary authorities may have an important place. Although such elements should be taken into account, we should be wary of attributing Sraffa with a theory of income distribution based on a mono-directional causal nexus, going from monetary policy to the rate of interest, from here to the rate of profits, and hence to the real wage rate. What Sraffa points to is simply the existence of causal influences operating in the opposite direction to the obvious one of wage bargaining on money wages, from here to real wages, and hence on the rate of profits. In order to build a theory of income distribution alternative to the marginalist one we then have to put together these two contrasting influences on wages and on the profit rate.

This task was not pursued in the writings (notably Panico 1988 and Pivetti 1991) which, following upon Sraffa’s hint, set out to develop, albeit in various different ways, a “monetary theory of income distribution”, focusing attention on the causal link running from the rate of interest to the rate of profits. Both the texts cited above are rich in useful suggestions, but both authors end up by trying to “close” their theories, or at least their models, albeit with abundant notes of caution.

In subsequent writings both authors, while reaffirming the importance of monetary elements for the theory of income distribution, signal some opening in different directions. For instance, Panico 1993 shows that in a more general model the two views – Kaldorian and “monetary” – can hold simultaneously (as recalled in Kurz and Salvadori 1995, p. 483). Pivetti (2000b, pp. 304-5), drawing on a letter by Sraffa to Garegnani (13 February 1962; Sraffa Papers D3/12.111), stresses the need to avoid a “mechanical” theory of income distribution. Here is the passage quoted by Pivetti, in which Sraffa points out how his hint to a monetary theory of income distribution should be interpreted (my translation): “It is the *negative* element which seems important to me: as to the *affirmative* element, I have no intention to put forward another mechanical theory which, in one

form or another, re-proposes the idea that distribution be determined by natural or technical circumstances, or even accidental ones but anyhow such as to render futile any action, by one side or the other, to modify it”.

#### *5. Alternative (Cambridge, UK) approaches to income distribution: the Kaleckist line*

Let us now consider the Kaleckist line of analysis (although attribution to Kalecki, as recalled above, is to say the least dubious). It is based on a causal link running from the market form prevailing in the economy (degree of monopoly) to the rate of profits, through the full cost mechanism of price determination. According to the full cost pricing principle, firms adjust prices to changes in direct costs, by applying to unit direct cost a proportional margin (mark-up) allowing for recovery of fixed costs plus some profit. The mark up therefore depends both on the weight of fixed over variable costs and on the market power of firms. The first element determines the margin on direct costs necessary to cover amortization of fixed capital, while the second element determines the profit margin.

Strictly considered, this approach has the defect that it utilizes a notion of the market power of firms which risks being misleading. Indeed, the market power of firms, in so far as it is accounted for over the long period by the elements which determine the size of the barriers to entry of new firms into the industry under consideration, is a relative notion (relative to individual firms or individual industries), and not an absolute notion applicable to the economic system as a whole. In other words, we should re-define the notion of market power, in order to utilise it in the context of a theory of income distribution, as relative “class power” of capitalists and workers. However, in such a context it is impossible to disregard those elements, such as monetary or exchange rate policy, through which the State influences income distribution. On the contrary, as far as the relative market power of individual firms or industries is concerned, we can consider it through the introduction of multiplying coefficients specific to each firm or industry to be applied to a “general” rate of profits (as pointed out by Sylos Labini, 1984, pp. 141-3), upon which income distribution theory can focus attention.

#### *6. Market forms and income distribution: Sylos Labini’s historical-evolutionary approach*

Let us forego any attempt to build a mechanical-deterministic theory of income distribution. We should, rather, set out to study within an evolutionary framework the interaction between the different factors, from wage bargaining to monetary policy, which can influence income distribution. In short, let us analyse income distribution not in a given instant of time, but in its evolution through time.

In other words, let us desist from any attempt to determine an equilibrium point on the wage-profit frontier. Nor is it useful to analyse movements along this frontier: it represents the technology in use, so it cannot be considered invariant to changes in income distribution. What we can assume as given, at a moment in time, is the state of technological knowledge. Such an assumption is useful in the negative for criticising a static theory of distribution such as the marginalist one; however, it is

of little use for a positive analysis, due to the multiple interrelations between technology and income distribution: suffice it to recall the influence which per capita productivity exerts on money prices and money wages, or the influence of profits on investments and hence on embodied technical progress.

It is therefore necessary to take into account the movements over time of the whole economy, including the wage-profit frontier. By the way, this does not mean rejecting the role of *ceteris paribus* in economic analysis: any theory implies simplifications, even drastic ones, applied to the object of analysis. However, economists cannot limit themselves to ensuring logical consistency in their analyses; they also need to ensure a sound relationship with the real world, in the sense that the results of the analysis should not depend crucially on indefensible assumptions.

Happily, we already have available a large corpus of works seeking to develop the line of analysis sketched above. Here we shall mainly refer to Sylos Labini's writings, beginning with his econometric model (Sylos Labini 1967), which also suggests a method and offers a theoretical contribution.

The wide-ranging article in which Sylos Labini presents his econometric model is entitled "Prices, distribution and investment in Italy 1951-1966: an interpretation"; it was reprinted, in the Italian version, in the textbook *Elementi di dinamica economica* (Sylos Labini, 1992) and had already been utilized, during the drafting, for didactic purposes with the aim of leading students to integrate theoretical analysis and historical sensibility, thus taking a non-deterministic approach.

Sylos Labini's idea in his econometric model is to study the connection between price determination, income distribution and the path followed by employment and income, by putting together different "theoretical pieces" (a method discussed in Roncaglia 2009, pp. 126-31, with reference to Sraffa). Specifically, Sylos Labini's model combines a Keynesian theory of income propelled by effective demand (investments, foreign demand, consumption) with a theory of market forms (oligopoly in the manufacturing sector, competition in agriculture, imperfect competition in the services sector). The influence of monetary variables on income and employment makes itself felt through the influence of liquidity conditions on the level of investments; the path of income distribution depends both on the price formation mechanisms (full cost pricing in the oligopolistic sector, but not in the other sectors of the economy) and on the outcome of wage bargaining, which among other things depends on the path of employment, but also on a political element such as more or less combative trade unions (as stressed in Sylos Labini 1972).

In subsequent writings Sylos Labini (1979) points out that the full cost pricing mechanism is not applied in a deterministic way. First of all, it behaves differently according to the different stages in which money wages either grow more than productivity or grow less. More precisely, the mark up of prices over costs tends in the former case to fall, and to remain constant in the latter. Secondly, but even more importantly, in periods of strong trade union pressure (as in the so-called "autunno caldo" or, literally, "hot autumn", corresponding to the British "autumn of discontent", reference being to the years 1968-70, and previously 1963 in Italy) prices fail to keep up with money wages, and trade union pressure has effects on the real wage, hence on income distribution. In other periods money wages tend to grow less than productivity and the profit margins increase.

In this way, empirical analysis of changes in the mark up contributes to the construction of a theory of income distribution. We can thus analyse certain elements which influence the mark up, and so income distribution, by considering some episodes in the evolution of the economy: changes in input prices, in technology, and in aggregate demand.

To begin with, let us consider changes in direct costs (raw materials and labour costs). Responding to such changes, oligopolistic firms adopt the full cost pricing principle; in other words, they apply a mark up in order to adjust the prices of their products to the changes in unit direct cost. However, should full adjustment of prices to costs imply a loss of market shares, firms tend to accept a decrease in the mark up. This happens especially in the case of an open economy, when foreign firms are not affected by the increase in direct costs as, for instance, when money wages increase more in a certain country than in other countries while exchange rates remain stable. As a consequence income distribution changes, with an increase in the share of wages and a reduction in the share of profits. The opposite happens when money wages grow less than in other countries or when there is a devaluation of the national currency: the pressure of foreign competition decreases and the mark up can be increased, with a shift in income distribution against wages and in favour of profits. As a consequence, we can say that as a general rule the path followed by money wages has some effect on income distribution, even if the change in real wages is commonly but a fraction of the change in money wages. Moreover, the effect is stronger in the short than over the long period, when the feedback considered below takes place. On the other hand, the mark up appears not to be influenced by changes in the prices of raw materials, which affect all countries in the world in the same way.

Secondly, let us go on to consider technical change. Technological improvements which remain specific to the firm introducing them generate extra-profits for that firm. When, however, the decrease in costs stemming from technological change affects all the firms operating in a given sector of the economy and the potential entrants in much the same way, then, under conditions of oligopoly, the price-leading firms adjust their prices in such a way as to prevent new entries, taking into account the fact that the new entrants can adopt the best available technology. Thus price adjustments to cost reductions due to technical progress are faster under oligopoly than under competition; indeed, in this latter case the extra-profits disappear only when new firms actually enter the sector, thus increasing supply and putting a downward pressure on prices, towards the new level of costs. Thus, what happens to the mark up (and so to income distribution) as a consequence of technical progress mainly depends on the prevailing market form and the speed of actual or potential diffusion of the new technique: the lesser the speed of diffusion, the greater the increase in mark up, at least in the short run.

We have a special case when technical change influences the ratio between direct and indirect costs. In this case a change in the mark up is necessary to leave the distributive shares unchanged. However, the speed and extent of the required adjustment depend on a number of factors, so that there is room for oscillations in distributive shares. Unfortunately no empirical analysis is available on this issue, at least to my knowledge.

Coming to the third step in our analysis, we may recall that as a general rule under oligopolistic conditions seasonal or short run changes in demand do not influence prices. This is due to the fact

that price leaders commonly avoid price changes when confronted with short run oscillations in the degree of capacity utilization around the “normal” degree. As a consequence, the share of profits tends to increase in the boom periods and to decrease in periods of depression, since fixed and indirect costs per unit of product are inversely correlated to the degree of capacity utilization.

When the change in demand, and thus in the current degree of capacity utilization, is ample, unforeseen and considered to be lasting, firms are induced to revise not only their investment programmes but also the prices of their products. In particular, as a consequence of a fall in demand, incumbent firms are hit by an increase in unit fixed costs computed on current production levels; since fear of new entrants is reduced due to the general stagnation in demand, incumbent firms can revise downwards the “normal” degree of capacity utilization, aiming at bringing it into line with current demand levels. In this way firms tend to increase the prices of their products relatively to variable costs. We may note that in this case oligopolistic firms behave in exactly the opposite way to what – according to marginalist theories – is the common practice, independently of the prevailing market form: confronted with a strong fall in demand, prices are driven upwards rather than downwards.

### *7. A sequential framework for a patchwork analysis of income distribution*

The brief observations in the preceding section exemplify pieces of analysis contributing to a “patchwork” theory of income distribution when the notion of mark up is utilised not as a variable univocally determined by the degree of monopoly, but as a variable endowed with a margin of flexibility. In other words, mark up pricing applies to price changes, not to the determination of an equilibrium price level. Clearly, the kind of analysis sketched out in the previous section is incompatible with a theory of income distribution which aims at determining a point on the wage-profit frontier such as to constitute a “natural” or “equilibrium” solution for the economic system under consideration. The problem of income distribution is, rather, to be dealt with in a historical perspective, by considering the factors which influence the change over time of the distributive shares.

At any given moment in time, income distribution depends mainly on its past history. This is highlighted, among other things, by the continuous references to customs, habits and institutional factors which abound in the various different analyses of our issue. To consider such factors as given, however, means abdicating the economists’ task. It is difficult, indeed, to maintain that customs, habits and institutional factors univocally determine income distribution: changes in real wages and in the profit rate cannot leave such elements wholly unaffected. Interrelations between such factors and distributive variables are to be considered in a dynamic-evolutionary context, by taking into account – as we saw in the preceding section – elements such as wage bargaining, the transmission of changes in costs into price changes under oligopolistic conditions, and so on.

As a provisional conclusion, let us, by way of example, attempt to set out a series of logical steps in which an analysis of income distribution could be organised. It should be clear, though, that the series can be rearranged and specified in different ways: what matters is the possibility of putting together a patchwork theory of income distribution.



i) Let us start from the situation prevailing at a given moment in time, and thus from a point on a given wage-profit frontier. Let us, then, begin by considering wage bargaining, which affects money wages. The result of a process of wage bargaining mainly depends on: unemployment, which affects the relative bargaining power of the contending parties; past and expected changes in the cost of living, which affect the workers' claims; the general political environment, which affects the degree of trade union militancy; current demand conditions and expected profitability conditions, which affect the entrepreneurs' attitude to meeting the workers' claims.

Within this context, we can also take into consideration the role of classes or social groups other than employees and capitalists. For instance, if commercial margins are increased, or if professional figures (doctors, dentists, lawyers and so on) increase the prices of their services relatively to manufacturing prices, or if rents or housing prices grow relatively to manufacturing prices, the cost of living increases and wage demands are driven upwards.

ii) The second step concerns the translation of money wage increases on labour costs per unit of output. In considering this link in our causal chain, we need to take into account changes in labour productivity, which can be influenced by previous investment levels (through embodied technical progress) and by the rate of growth of production (through various channels, such as the variety of static and dynamic increasing returns to scale which increase the room for real wage increases compatible with non-decrease in profits, but also overmanning, or in other words the habit fairly widespread among oligopolistic firms not to cut down on employment when production diminishes, thereby accepting a reduction in labour productivity).

iii) We then have the translation of the increases in unit labour costs over prices. As we saw in the previous section, we need to take into account the possibility of changes in the mark up influenced by foreign competition but also – as Panico 1988, for example, stresses – by the evolution of financial markets and the decisions of the policymakers. Thus we arrive at the new levels of money wages and money prices, and hence income distribution (that is, assuming technology as given, a new point on the wage-profit frontier).

iv) At this point we still have to take into account the feedback effects, consisting in the influence of changes in income distribution on production levels and technical change, and indeed on the general climate of expectations (which directly affects events in financial markets, but also investment levels and hence employment and unemployment, and with them the bargaining power of the trade unions and entrepreneurs) as well as customs and habits.

Obviously this scheme does not constitute in itself a theory of income distribution. It – or any such scheme – highlights the complexity of the issue of income distribution, and thus the impossibility of reducing it to a single deterministic model. Besides, it allows for organisation in a coherent framework of the different “analytical pieces” which contribute to analysis of income distribution; at the same time, it allows us to deal similarly with other issues, such as the influence which the policymakers can exert on income distribution. There are already important contributions for some at least of our “analytical pieces” (cf. for instance Sylos Labini 1972, 1979, 1984); the scheme illustrated above helps us to identify links in the chain in need of further analysis and, in particular, to clarify how the problem of income distribution is to be tackled – by distinguishing its constituent

elements, which are obviously related but which are better analysed separately, to be subsequently recomposed within a historical-evolutionary framework.

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