Shackle's *Years of High Theory* 1926 – 1939 [– 1960] and the Making of Classical-Keynesian Political Economy

From the Exchange Paradigm to a Monetary Theory of Production

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This still *provisional* paper, written in memory of Pierangelo Garegnani, is dedicated to all Russian (and CIS) political economists who are looking for a social liberal alternative to neo-liberal Capitalism and centrally planned Socialism.
This paper is also dedicated to the students of economics of the University of Tübingen who aim at *Rethinking Economics.*

Contents

[This paper is based to some extent upon Bortis (2003a, 2003c, 2010, 2012 and forthcoming OUP).]

[The passage marked in blue on pp. 63-73 has been written following up the Tübinger Sommertagung *Rethinking Economics,* June 22-24, 2012.]

Introduction: Problem and Plan

Shackle's *Years of High Theory 1926 - 1939[- 1960]* have been the scene of a twin, classical and Keynesian, revolution in economic theory that countered the marginalist, neoclassical-Walrasian, revolution which occurred in 1870 - 1890. In these years, Keynes and Sraffa laid the foundations for a monetary theory of production, capable of carrying a solid theoretical structure, now exhibited by Classical-Keynesian Political Economy. However, the way from the neoclassical Marshallian supply-and-demand or exchange framework, based upon Walras' general equilibrium model, to a Classical-Keynesian monetary theory of production has been long and tortuous, and many obstacles had to be overcome.

In the first place we aim at identifying the main obstacles on the way to be covered and to explain the efforts undertaken to remove them. A first type of problems arises from the deep gap between Keynes and Sraffa. How to reconcile Keynes's short-period model set in historical time, where uncertainty and expectations prevail, with Sraffa's timeless and deterministic long-period equilibrium model? An attempt to answer this question will contribute to removing some major obstacles on the way to a classical-Keynesian synthesis as are associated to the nature of the long-period equilibrium and to the relationship between determinism and uncertainty. The second type of problems is connected with the relationship between neoclassical-Walrasian economics and classical-Keynesian political economy. Which of the two approaches is more plausible and how to discriminate between them? Dealing with both types of problems will reveal the fundamental importance of *Institutions and Values,* the main theme of this conference.

The second and, principal, aim of the paper, however, is to present extensively the classical-Keynesian system of political economy, which, in fact, represents an elaboration, extension and synthesis of Keynesian, post-Keynesian and neo-Ricardian strands of political economy. A large-scale presentation of the classical-Keynesian system of political economy is required because this system is largely unknown at present.

The paper starts with considering the domination of the neoclassical exchange paradigm since the Marginalist Revolution 1870-1890, brought about by Alfred Marshall's *Principles of Economics.* The inability of neoclassical theory to properly explain the formation of prices through the mechanism of supply and demand and to cope with the deep depression of the 1930s initiated a classical-Keynesian counterrevolution in the course of Shackle's *Years of High Theory 1926 – 1939* (Shackle 1967), a counterrevolution which was accomplished in 1960 through Sraffa's *Production of Commodities by Means of Commodities* (section 2).

However, as is alluded to in section (3), a wide gap existed between Keynes's *General Theory* and Sraffa (1960), Keynes emphasising uncertainty about the future associated to the various investment projects, Sraffa putting determinism to the fore with the prices of production being governed by technology and distributional institutions. Section four deals with Pasinetti's effort to close the gap between Keynes and Sraffa, which opens the way to the classical-Keynesian synthesis of Keynes and Sraffa, set out in the central section (5). In the following section (6) the classical-Keynesian system of political economy is compared with neoclassical-Walrasian economics made operational by Marshall; here we also ask the question as to which of the two theoretical systems is more plausible. In section (7) classical-Keynesian economic policies are set out, with some emphasis on the specific situation of Russia. Some implications of classical-Keynesian political economy for political philosophy and the associated political system are exhibited in section (8). The concluding remarks emphasise the necessity for a new economic, financial and political world order.

The arguments set forth in this paper are entirely in line with Pierangelo Garegnani's life-work, consisting of a fundamental critique of neoclassical-Walrasian economics and, positively, of the attempt to bring together the classical tradition of political economy, that is, Adam Smith's notion of *natural price,* and Ricardo's surplus principle of distribution, with Keynes's principle of effective demand; the classical approach has been put into a very wide philosophical and historical context by Karl Marx and has been analytically revived by Piero Sraffa; based on Marx and Sraffa, Garegnani did most precious work to project Keynes into the long run where institutions and values, the themes of this Conference, play a crucial role. Given this, Pierangelo Garegnani had a tremendous impact on economic theorising on classical-Keynesian lines broadly from the mid 1960s onwards, when the Cambridge-Cambridge capital controversies took place, as is illustrated by a statement of Lord Eatwell at the outset of his *Garegnani Memorial Lecture* delivered at *Roma Tre* University on February 24, 2012: "It is no exaggeration to say that my encounter with Garegnani's Ph.D. dissertation in the Cambridge University Library in 1970 shaped my entire view of what economics is about, how it should be done, and what it is for. I came to understand Piero Sraffa through the lens of Garegnani. I came to understand Keynes through the lens of Garegnani. And, as a result of many, often difficult, discussions with Garegnani, I began to clarify and understand my own thinking on economics." In this vein, Gareganani's 1958 Cambridge Ph.D. dissertation, *A problem in the theory of distribution from Ricardo to Wicksell,* forms the background of this paper, which, in fact, is written in the spirit of Pierangelo Garegnani's way of thinking on economics, that is, on classical-Keynesian long-period lines.

1 Neoclassical domination since the Marginalist Revolution 1870 - 1890

To properly assess the marginalist revolution we have to distinguish between two types of classical economic theory (Dobb 1973, chapters 2 and 3). Indeed, Adam Smith's adding-up theory of prices paved the way for the supply-and-demand approach to value and distribution: all prices are made up of the costs for the three factors of production – land, labour and capital – including profits. With Ricardo, however, two associated principles are fundamentally important: the labour value principle and the surplus principle of distribution, according to which profits appear as a surplus over the natural wage. The marginal principle is of secondary importance in that it determines *agricultural* rents on the basis of the principle of *decreasing* returns. Karl Marx took up Ricardo's labour value principle and the associated surplus principle and put both in a very wide philosophical and historical context.

Given this, we should remember that according to Adam Smith, the law of decreasing returns prevails in agriculture, and the law of increasing returns or of decreasing costs in industry. In the hands of some German political economists, Friedrich List in the main, the law of increasing returns became the law of mass production, which has far-reaching consequences for economic theory. To simplify, the law of decreasing returns is associated with stability in the economic sphere through the law of supply and demand; indeed the downward sloping demand curves and the upward sloping supply curves on goods and factor markets result, as a rule, in a stable equilibrium on the various markets. The law of increasing returns, however, the law of mass production is associated with instability. For example, since larger output levels are associated with lower average costs and prices, exports increase in the highly developed countries, whilst the import dependence of underdeveloped countries grows. As Friedrich List has clearly perceived, free trade may thus result in growing inequalities between developed and underdeveloped countries, or as Indian development economists use to say: *development and underdevelopment are the two sides of the same coin* (see for example Bagchi 2008, p. 152 and Bagchi 2011, chapters 1-4).

The Marginalist Revolution consists in a *reinterpretation* and *generalisation* of Ricardo's marginal principle in agriculture *at the exclusion* of the labour value principle and the surplus principle of distribution. Ricardo, as is well known, conceived of the marginal product as the diminishing marginal product of *labour* on land with decreasing fertility. However, in the course of the marginalist revolution, the marginal product in agriculture was *reinterpreted* to

become the diminishing marginal product of *land,* giving rise to the demand curve for land, the intersection of which with the supply curve determined the rent on land. Given this, the remaining national income is made up of the sum of wages and profits, including interests. The *generalisation* of the marginal principle to labour *and* capital allows to construct corresponding downward sloping, thus well behaved, demand curves for labour and capital, which, if complemented with corresponding supply curves yields the neoclassical theory of factor markets. Here the problems of employment and distribution are solved.

In fact, the Marginalist Revolution has brought about the absolute dominance of the marginal principle in economic theory. Indeed all supply and demand curves are governed by some form of the marginal principle: marginal productivity declines as the quantities of factors of production increase; the supply curves on factor markets are based on some kind of disutility, the disutility of labour on the labour market, the sacrifice incurred by foregoing present consumption (saving) on the market for new capital goods. The supply curves on goods markets are upward sloping because marginal costs increase with the quantity produced; since marginal utility decreases with quantities consumed, the demand curves on goods markets are downward sloping.

Given the neoclassical revolution, Joseph Schumpeter enthusiastically states that the "whole organon of pure economics thus finds itself unified in the light of a single principle − in a sense in which it had never been before. Most of the problems that arise from this set-up can be discussed only on a level on which Walras rules supreme (Schumpeter 1954, p. 913). Indeed, Schumpeter once stated that Walras's General Equilibrium Model was the *Magna Charta of Economic Theory.* In the 1920s, some leading neoclassical somewhat sarcastically remarked, that there were only two kinds of economists, those who understand economics, the Walrasians to wit, and those who don't understand economics (political economists like Marx and Keynes would belong to this group!).

While the Walrasian equilibrium model stood in the background as the basic neoclassical model, Marshall's *Principles of Economics* became the bible of economics and, as such, dominated the teaching scene.

It is now important to situate theoretically neoclassical-Walrasian economics with respect to the classical political economy of the Ricardian type. In a fundamental paper (Pasinetti 1986) distinguishes two basic approaches in economic theory, the exchange or preference approach and the labour-cum-production approach. It seems evident that Ricardo puts to use the labour or production approach, with the social process of production at the center. Walras's General Equilibrium Model, however, is based on the exchange approach which can be extended to

production, in a specific sense though. Hence the Marginalist Revolution implies a shift from Ricardo's political economy approach to the neoclassical Walrasian exchange approach. The fundamental features of the neoclassical model are given by the rules leading on to the optimal allocation of resources: Gossen's second law for the consumers and the minimal cost combination for producers. Walras's general equilibrium model is, in fact, a real exchange model where money plays an insignificant role:

$$C - C' \text{ or } C - M - C' \tag{1.1}$$

(C, C' = commodities, M = money).

The crucial importance of the marginal principle emerges fully in Alfred Marshall's supply-and-demand approach: on each market some good, a final good or a factor of production, is exchanged at an absolute price in terms of money between those who offer the good and those who express a demand for it. Given this we could speak of a monetary theory of exchange:

$$M - C \dots MP \dots C' - M' \tag{1.2}$$

(C, C' = commodities, M = money, MP = a mysterious process, in fact, Sraffa's one-way avenue linking factors of production and final output). We have already mentioned that all the supply and demand curves on goods and factor markets are shaped by some form of the marginal principle: on goods markets, marginal utility shapes the demand curves and marginal costs the supply curves; on factor markets marginal productivities are behind the demand curves and marginal disutility governs the supply curves. Since $M = M'$ in scheme (1.2), money plays no essential role; it just facilitates exchange and is not used as a store of value.

The neoclassical-Walrasian-Marshallian system implies that *the market is the fundamental economic institution* on which all economic problems are solved. The problems of employment and distribution - the pricing of the factors of production - are solved on factor markets [$M - C$ in scheme (1.2) above]. The pricing of the final output takes place on the final goods markets [$C' - M'$]. Money is neutral and the prices of factors of production and of final goods constantly direct consumers and producers in the right direction, that is, in

direction of equilibrium. Given this, the smooth functioning of competitive markets eliminates uncertainty, although calculable risk may persist.

Looking back, the exchange paradigm marched on triumphantly after the publication of Marshall's principles in 1890. The classical-Keynesian counterrevolution, though theoretically highly important, produced small impacts on economic theorising: the Keynesian episode in the form of IS-LM bastard Keynesianism (Joan Robinson), which brought together Keynes and Marshall through Samuelson's neoclassical synthesis, seemed to establish Keynes's ideas in the 1950s and 1960s; the Cambridge-Cambridge capital theory debate in the mid 1960s (Harcourt 1972) caused temporary concern for some neoclassical economists, Samuelson for example, but largely fell into oblivion subsequently. In any case, Keynesianism was wiped out by *Monetarism* (Friedman) in the mid 1970s on the account that an increase in the quantity of money would not lead to lower interest rates and higher levels of investment and employment, but simply resulted in inflation. This monetarist view of inflation ignored the fact that the price rises of the 1970s were due increasing costs caused by the large increase in oil prices; subsequently, these price rises turned into a distributional struggle resulting in a wage-price spiral which, in part, was even institutionalised through indexed wages. In any case, the damage was done and the almost absolute domination of the neoclassical mainstream began. Subsequently, Keynes was integrated into the Walrasian system through Neo-Keynesianism (Walras without auctioneer) and New Keynesianism (unemployment occurs because competition is not perfect). Finally, there is the New Classical Theory, which postulates constant market clearing; however, unexpected supply and demand shocks may bring about cyclical fluctuations accompanied by changes in the volume of voluntary unemployment. The *dynamic stochastic general equilibrium model* constitutes the core of present mainstream economics (Caballero 2010, p. 85), which still utterly dominates economic theorising, in spite of neo-Ricardian, post-Keynesian, classical-Keynesian and Marxian onslaughts. The present situation resembles very much the setting of the 1920s, when the Marshallian supply-and-demand framework, backed by Walras's general equilibrium model, ruled in the realm of economic theory. However, the terrifying thunderstorm of the First World War and the Great Depression of the 1930s set powerful critical streams into motion, resulting in a classical-Keynesian counterrevolution.

2 Shackle's *Years of High Theory* 1926-39: a Classical-Keynesian counterrevolution

The work of Maynard Keynes and of Piero Sraffa lies at the core of a profound revolution in economic theorising during Shackle's *Years of High Theory – 1926 - 1939*. Indeed, „[our] period opens with the Sraffian Manifesto of 1926 [*The Laws of Returns under Competitive Conditions*], demanding the revision of [Marshallian] value theory [which, finally, in 1960, resulted in a classical theory of production, value and distribution]. The other great traditional branch of economics is monetary theory, and our period sees it transformed by [Keynes into a general theory of output and employment, interest and money, which, for the first time, convincingly challenged Say's Law]" (Shackle 1967, p. 12).

However, we entirely agree with Matias Vernengo who „argues that Shackle's interpretation of the 'years of high theory' is flawed. Shackle (1967) sees Sraffa's critique of the Marshallian theory of value only as a step in the development of the theory of imperfect competition. In the same vein, Shackle reduces the message of Keynes's *General Theory* to the claim from the existence of uncertainty [about the future and the associated necessity to hold money as a store of value, giving rise to the liquidity preference theory of the rate of interest, which, in turn, enables to set up the investment multiplier.] Thus, Shackle leaves open the the possibility that both Sraffa's critique of Marshall and Keynes theory of effective demand do not question the internal coherence of neoclassical theory. However, the theories of Sraffa and Keynes should be interpreted [as starting points for] radical departures from marginalism, [initiating thus] a return to the surplus approach of classical political economy [with all this implies for classical-Keynesian political economy (see Bortis 2003a)]"(Vernengo 2001, p. 343). This is really the point: the classical-Keynesian counterrevolution of Shackle's Years of High Theory represents the starting point to work out a coherent system of classical-Keynesian political economy as is sketched in section 5 below. Let us now very briefly set forth Keynes's and Sraffa's contribution to the classical-Keynesian twin revolution.

The Keynesian revolution: the principle of effective demand
The nature of the classical-Keynesian counterrevolution emerges most clearly from a little article Keynes wrote in late 1932, at a time when he was struggling to move from the *Treatise on Money* in direction of the *General Theory*. This highly important article, written in the face of the Great Depression of the 1930s, carries the significant title *A Monetary Theory of Production* (Keynes 1933, pp. 408-11). The article starts like this: "In my opinion the main reason why the problem of crises is unsolved, or at any rate why this theory is so unsatisfactory, is to be found in the lack of what might be termed a *monetary theory of*

production" (p. 408). Keynes immediately goes on to say that a monetary production economy is fundamentally different from an exchange economy, be it a Walrasian real-exchange economy [relation (1.1) above] or a Marshallian monetary exchange economy [relation (1.2) above]. In an exchange economy, money only facilitates exchange and is, as such, neutral with respect to relative prices and to income distribution and the scale of economic activity. Given this, money has no influence on real variables. However, the "theory which I desiderate would deal, in contradistinction to [an exchange economy], with an economy in which money plays a part of its own and affects motives and decisions and is, in short, one of the operative factors in the situation, so that the course of events cannot be predicted, either in the long period or in the short, without a knowledge of the behaviour of money between the first state and the last. And it is this which we ought to mean when we speak of a *monetary economy*" (pp. 408-9).

A very simple scheme presented by Marx in the second volume of *Das Kapital* (p. 31) exhibits the essentials of a monetary production economy and allows us to theoretically situate the nature of the classical-Keynesian counterrevolution:

$$M - C \dots P \dots C' - M' \text{ [original: } G - W \dots P \dots W' - G'] \tag{2.1}$$

(M = money and finance – financial sector; C = means of production; P = social process of production; C' = final output – social product; M' = money – effective demand).

First of all, the crucial role of money clearly appears. Financial means, own financial means and outside finance, represented by M are used to buy means of production C: labour force, primary and intermediate goods, and capital goods. These are transformed into final goods W' in the social and circular process of production P. The final output C' (equal to the social product Q) is determined by effective demand (M'). In this sequence, all calculations are made in money; *commodities are always exchanged against money, never* against other commodities; given this, absolute, not relative prices are all important. Since production takes time (Paul Davidson), and outlays and receipts associated to investment projects extend over several years – the lifetime of investment projects -, *money becomes the link between the past and the future* (Keynes).

In the second place, in a monetary economy the scale of output and employment is governed by effective demand. This implies that *involuntary* unemployment may come into being. This emerges from the fact that the neoclassical market for new capital goods [$S(i) = I(r)$] does

not exist, if disequilibrium situations are being considered, because, in a monetary economy, saving *always* equals investment, either there is $S = I$ (in equilibrium) or we have S identically equal I, which now consists of planned and involuntary investment. Moreover, on account of uncertainty about the future, saving cannot fundamentally depend upon the rate of interest since future consumption plans cannot be established; saving must therefore depend on something which is known and this is current income. In addition, the *long-period* ranking of investment projects according to the "marginal efficiency of capital" (mec) is also largely irrelevant because (mec) may be very unstable. Given this, investment is simply governed by long-term expectations. These considerations directly lead on to the investment multiplier which represents Keynes's short-period of output and employment:

$$Q = [1/(1 - c)] (I + a) \tag{2.2}$$

Q = quantity produced – social product, c = marginal propensity to consume, $[1/(1 - c)]$ = multiplier, I = investment volume, a = other autonomous demand components (autonomous consumption, a budget deficit, an export surplus). Autonomous expenditures $(I + a)$ set the economy into motion and the multiplier summarises the cumulative process of consumption demand and production.

Uncertainty about the future also leads on to a new role for money, M_1, which is now held not only for transaction purposes $[M_T(Q)]$ but also for precautionary and speculation purposes $[M_S(i)]$. With the quantity of money given, and the social product determined by the multiplier, the rate of interest is determined by the supply and demand for money:

$$M_1 = M_T(Q) + M_S(i) \tag{2.3}$$

Thus Keynes's contribution to the classical-Keynesian counterrevolution in Shackle's consists in establishing the principle of effective demand through the *monetary* way (Garegnani 1983). In terms of scheme (2.1) above, the *Treatise on Money* and the *General Theory* deal with the circulation spheres of a monetary production economy, the *Treatise on Money* with $M - C$ (banking, the credit cycle associated to a pre-post-Keynesian theory of distribution, industrial and financial circulation) and the *General Theory* with $C' - M'$, that is, with the principle of the effective demand, effective demand M' determining final output C'.

However, the neoclassical remnants remaining in the *General Theory,* the first (neo-)classical postulate: "The wage is equal to the marginal product of labour" (Keynes 1973/1936, p. 5) and the volume of investment depending upon the marginal efficiency of capital (chapter 11 of the *General Theory*), rendered possible the integration of Keynes into neoclassical equilibrium theory, with Marshall in Samuelson's neoclassical synthesis, and with Walras in Neo-Keynesianism and in New Keynesianism, as has been suggested above. Given this, a second, more fundamental way to effective demand was required, that is, Garegnani's *real* way to effective demand (Garegnani 1983). The real way to effective demand implies that *the fundamental prices, the prices of production, are formed within the social and circular process of production (P)* in scheme (2.1) above. In this theoretical vision *distribution is governed through the surplus principle* by social forces associated to the social process of production. The real way to effective demand, associated to the revival of classical, Ricardian-Marxian theory has been prepared by Piero Sraffa who has brought about the classical part of the classical-Keynesian counterrevolution. To this issue we now turn.

Piero Sraffa and the revival of classical political economy

The theoretical revolution in economic theory produced by Piero Sraffa starts in 1926 and is accomplished in 1960. This includes the shorter period 1926 – 39, which G.L.S. Shackle denotes the *Years of High Theory* (Shackle 1967) and credits Sraffa, aged 28, with opening the probably most important time-period in the whole of the history of economic theorising through his 1926 article *(The Laws of Returns under Competitive Conditions).* This period comes definitely to a close in 1960 when Sraffa's *Production of Commodities by Means of Commodities* came out.

The nature of the Sraffian revolution exhibited by (Sraffa 1926 and 1960) is twofold, critical and constructive. The Sraffian contribution to the theoretical revolution of the *Years of High Theory* starts off with a critique of Marshall's partial equilibrium price theory based on the law of supply and demand. Here we mention but two crucial points, first the fact, that, in the real world, there is, *fundamentally, monopolistic competition,* implying that it is wrong to take perfect competition as a reference and starting point, and, second, that the *supply curve* is *not* upward sloping on account of increasing marginal costs, which, in the neoclassical view, would reflect increasing difficulties of production as productive capacities are more and more intensely utilised through increasing the input of scarce factors of production, labour in the main. Both points provide the starting point for 'shunting the car of economic theory on to an entirely new line'.

First, then, Sraffa attacks the model of perfect competition. Here the equilibrium price is determined on the market and is a datum for each firm. The good produced is homogeneous and there is perfect information. The upward sloping supply curve, in fact the marginal cost curve implies that the given resources, mainly direct and indirect labour in the short term, are ever more intensely utilised. Once marginal costs equal the given prices profits are maximised if the minimum of the average cost curve is situated below the price. This optimum condition implies that all firms produce a *maximum* output. Hence economic activity is *resource determined.* In a wider view, the problem is to allocate the given resources in such a way that overall output is at a maximum level, with the Pareto Optimum being achieved.

Sraffa now argues that the perfect competition model cannot come to grips with the real world. Each firm of some industry produces a product of its own, which is similar, but differs from products produced by other firms in the same industry or sector of production. Customers are not indifferent as to the firm the products of which they are buying. "The causes of the preference shown by any group of buyers from a particular firm are of the most diverse nature, and may range from long custom, personal acquaintance, confidence in the quality of the product, proximity, knowledge of particular requirements and the possibility of obtaining credit, to the reputation of a trade-mark, or sign, or a name with high traditions, or to such special features of modelling or design in the product as – without constituting it a distinct commodity intended for the satisfaction of particular needs – have for their principal purpose that of distinguishing it from the products of other firms" (Sraffa 1926, pp. 190-91). A very detailed and subtle knowledge of the real world emerges here, revealing that the *demand curve* each single firm is faced with *must be falling.*

The falling demand curve for the individual firm is of *paramount* importance for economic theory. The theory of imperfect competition, including the struggle for market shares, starts off here. Moreover, implicit links with Keynes appear since the *position* of the demand curves depends upon on the incomes of consumers and, as a consequence, on national income. The importance of this point becomes clearer if we have a look at Sraffa's attack on the neoclassical supply curve. This issue is related to the determination of the price, which is not yet known.

Sraffa starts by observing that "[business] men, who regard themselves subject to competitive conditions, would consider absurd the assertion that the limit to their production is to be found in the internal conditions of production in their firm, which do not permit of the production of a greater quantity without an increase in cost. The chief obstacle against which

they have to contend when they want gradually to increase their production does not lie in the cost of production – which, indeed, generally favours them in that direction – but in the difficulty of selling the larger quantity of goods without reducing the price, or without having to face increased marketing expenditures"(Sraffa 1926, p. 189).

Indeed, "[everyday] expenditures shows that a very large number of undertakings – and the majority of those which produce manufactured consumers' goods – work under conditions of individual diminishing costs. Almost any producer of such goods, if he could rely upon the market in which he sells his products being prepared to take any quantity of them from him at the current price, without any trouble on his part except that of producing them, would extend his business enormously"(Sraffa 1926, p. 189).

The diminishing costs Sraffa mentions here are average total costs, and this type of costs declines because average fixed costs diminish if the quantity produced expands. This also implies that average variable costs and marginal costs are, in the short term, *constant* up to normal capacity utilisation as firms increase production. Moreover, total cost curves up to capacity utilisation are linear, implying again constant marginal and average prime costs, as is well known from business practice. (In the long run, however, all types of costs, and the prices established on the basis of these costs, might decline on account of technical progress or due to economies of scale, a fact Sraffa could have dealt without problems had the necessity arisen.)   What, then, are the reasons for marginal or average variable costs to remain constant as production increases? Several instances are implied in Sraffa's 1926 paper: direct wage costs do no change; wages are in fact fixed by contract. Moreover, labour is not scarce; hence wages will not increase when output increases even in the economy as a whole: the number of unemployed may be reduced, and some workers are mobile. The prices of intermediaries bought from other enterprises do not change either as output changes as the capacity utilisation of the firms, which deliver intermediaries, may adjust; stocks and delivery periods may change; intermediaries may be imported. However, all these instances may be valid in the short term, eventually in the medium term, but not permanently.

But there is one causal factor acting *permanently* to keep the prices of intermediaries and, most importantly, wages constant: output, as governed by demand, is given; indeed, if the position of the demand curve, governed by the given income of all consumers, is given for each firm, then aggregate demand for consumption goods is also determined. If in such a situation one or several successful firms manage to sell more, that is, to expand production, then sales and output will shrink with failing enterprises. Aggregate output will remain

constant and the factor of production ultimately governing output, labour to wit, cannot become scarce as is implied with Marshall's rising marginal cost curve.

A further step, perfectly compatible with Sraffa's analysis of marginal costs and its implications, concerns pricing. With the marginal and average variable (prime) costs constant until normal capacity utilisation, a mark-up can now be made on these costs at normal capacity utilisation such that the price so calculated covers fixed costs and ensures that a normal rate of profits is realised. This is the way followed by several theoretical economists, Kahn, Kalecki, Weintraub for instance, which, in fact, exhibits current business practice. Hence, starting from his 1926 article, Sraffa could have provided the micro-foundations for Keynes's *General Theory*, and, given this, numerous misunderstandings and wrong interpretations of Keynes could have been avoided, a point noted by many post-Keynesians and neo-Ricardians (see, for example, Pasinetti 2007, p. 167).

However, Sraffa did not go on in this seemingly most promising direction. He was after far bigger game. He realised that there were problems with Marshall's *partial* equilibrium approach. The primary and intermediate goods delivered to firms had prices and contained profit rates on the capital put to use in the process of production; capital goods, in turn, were also produced and contained a profit rate. How could these problems, value and distribution, be solved within François Quesnay's social and circular process of production, which presumably had to be generalised somehow? The problem Sraffa was facing constituted, in fact, the *most intricate conundrum* in the entire field of economic theory: the puzzle was no less than to demystify the *mysterious process,* given by the "one-way avenue that leads from 'Factors of production' to 'Consumption goods' [final output]"(Sraffa 1960, p. 93). Dealing with and finally solving this riddle represent the *constructive part* of Sraffa's work.

Sraffa started to write down equations of production between 1928 and 1931, but did not get very far (Pasinetti 2007, pp. 183). These years in which he made his first attempts to articulate his vision – establish a classical theory of production, value and distribution – must have been the most difficult in his life. Pasinetti writes on this: "In fact he had already tried to formulate his theory in terms of 'equations' as early as in 1928. He had even shown such equations to Keynes [as is mentioned in the preface to his 1960 book]. But in the late 1920s he had barely been able to go beyond the 'equations without a surplus'"(Pasinetti 2007, p. 183). In fact, his equations with a surplus were still entirely in terms of material flows without labour, which, precisely, was represented by the material means to maintain the labour force. So in a way Sraffa had got stuck. Given this, there was the real possibility that his whole enterprise could have failed, if Keynes, who possibly realised Sraffa's difficult situation, had

not provided him with a new huge task: to edit the *Works and Correspondence of David Ricardo.*

Luigi Pasinetti remarks on this: "The sheer fact of being compelled to lecture [in 1928-31 on *the advanced theory of value*] stimulates Sraffa's mind to the limit of endurance. One can see from his critical notes that he goes in depth, he goes into analysis, he goes into extension. Never does one find him going towards a synthesis. [...] Criticisms add themselves to criticisms and to the critique of criticisms.

It is a fact that, at a certain point, even delivering his already *written-up* lectures becomes for him an excruciating experience. It must indeed have become a hard task for him to guard himself from frustration. We can infer that Keynes's intuition was sharp enough to realise that Sraffa was in a serious predicament, without perhaps understanding clearly the basic source and wide extent of his drama. In any case, Keynes is sufficiently impressed to become convinced that in some way somebody or something should come to the rescue. Thus Keynes manages to convince Professor T.E. Gregory of LSE to withdraw from his already signed-up agreement with the Royal Economic Society to collect and edit the works and correspondence of David Ricardo. The contract is transferred from Gregory to Sraffa. A real blessing. God knows what Sraffa would have done otherwise"(Pasinetti 2007, p. 182).

It is highly likely that editing Ricardo has not been a loss of time for Sraffa, but an *essential precondition* for him to succeed in his task through getting deeply acquainted with the fundamentals of classical political economy through Ricardo's *Principles,* the first logically impeccable exposition of principles in this field. Indeed, after ten years work on Ricardo, in "1941-1944 he really makes a breakthrough. With the advice, not always followed and actually sometimes disputed, of Abram Besicovitch, he succeeds in formulating correctly the equations with a surplus and with labour explicitly introduced, while discovering the notions of a maximum rate of profit independent of prices, of basics and non-basics, and of the 'Standard System'"(Pasinetti 2007, p. 183). The influence of Ricardo is evident in the distinction between basics and non-basics, the necessaries and luxuries of the old classical economists.

After having completed the edition of Ricardo's *Works and Correspondence* in 1955, Sraffa could now turn to his book planned already in 1928. It came out in 1960 as *Production of Commodities by Means of Commodities.* For the *first* time, the great classical problems of *value and distribution,* are solved in a *logically perfect* way within the *social and circular* process of production, implying *unequal conditions of production* between the various industries. This is a *gigantic* achievement in itself, but also with respect to various intricate

problems that have been solved on the way, so to say. Pasinetti states on this: "The classical theories had been abandoned at a certain stage because a few basic concepts on which they were built seemed to contain deficiencies, ambiguities and even contradictions. Sraffa's contribution consists precisely in dispelling [all] those deficiencies, ambiguities and contradictions"(Pasinetti 2007, p. 143).

Let us first assess Sraffa's gigantic achievement, that is, having solved the problems of value and distribution within the social and circular process of production, implying unequal conditions of production between the various sectors. This achievement can be assessed best by comparing it with Walras's performance. Walras's problem was relatively simple, and could easily be dealt with mathematically; he in fact dealt with the – optimising – *behaviour* of individuals, meeting on the market place. All variables, that is, prices and quantities, were independent of each other, rendering thus easy mathematical treatment; the optimising behaviour, under constraints, of individuals had to be formulated, giving rise to relations and equilibrium equations, which had to be equal to the number of unknowns, prices and quantities to wit. Sraffa, however, was faced with something objectively given, the social and circular process of production, which, in a way, represents a structured entity; there are complementarities and interdependencies, the treatment of which required a kind of general equilibrium model, capable of being inserted eventually into a causal chain (Pasinetti in Bortis 1997, pp. 259-72); moreover, inputs had to be the same as outputs, which made sense with basic products only. Once the problems of value and distribution was solved on the level of basics, it was solved for the economy as a whole, since the net outputs of basics constitute inputs for all intermediate and final goods produced in an economy and govern, as such, a given economic activity and determine the prices of intermediate and final goods, with the rate of profits being uniform in all industries and sectors, the replacement of used up means of production secured, and national income divided into wage and profit incomes.

Once Sraffa's problem is solved, everything looks relatively simple. It is like the number zero and its implications: once it is there, all calculations – additions, multiplications, and so on – are very simple and easy to handle. But imagining the number zero had not yet been discovered makes us clear that its discovery represents one of the greatest performances of the human mind. In analogy, the solution to Sraffa's conundrum – determine value and distribution within the social and circular process of production, with the conditions of production differing between industries, and all the implications alluded to in Sraffa's 1960 book – represents *by far* the greatest analytical performance in the entire history of economic theories. The mysterious one-way avenue leading from factors of production to final output

was demystified; scheme (1.2), representing a monetary theory of *exchange*, may be abandoned in favour of scheme (2.1), picturing a monetary theory of *production*. This implies that markets are eliminated as the fundamental economic institution and are, as such, replaced by the social and circular process of production. It is here that, on the basis of the labour value principle and the surplus principle, prices of production are established and distribution becomes a social, not a market process.

Let us next look at the "deficiencies, ambiguities and even contradictions of classical theory"(Pasinetti 2007, p. 143) solved by Sraffa. First, Sraffa shows that the labour *theory* of value is mistaken. The prices of production are not proportional to labour values if there is a uniform rate of profits. However, Sraffa's work *implies* that the labour *principle* of value continues to hold. Quantities of direct and indirect labour may be considered the essence of prices; Bortis's (2003a) *Keynes and the Classics* is based on this consideration: labour values and prices of production are not exclusive, but intimately linked and hence complementary; and labour values can be transformed into prices of production whenever the necessity arises, and of course vice versa (Pasinetti 1977, appendix to chapter V). Both are valid at different levels of abstraction. In fact, the labour values are essential or constitutive to prices, and the prices of production bring them into concrete existence though in modified form. Probably, Sraffa had taken for granted this point; indeed in the introduction to Ricardo's *Principles* he writes (quoting from a letter of Ricardo to James Mill): "[...] I maintain that it is not because of this division into profits and wages, - it is not because capital accumulates, that exchangeable value varies, but it is in all stages of society, owing only to two causes: one the more or less quantity of labour required, the other the greater or less durability of capital: - that the former is *never superseded* by the latter, but is *only modified* by it" (Ricardo 1821, Introduction by Piero Sraffa, p. xxxvii, our emphases). This passage relates to the first edition of the principles. On the third edition Ricardo writes to Malthus: "You say that my proposition 'that with few exceptions the quantity of labour employed in commodities determines the rate at which they will exchange for each other, is not well founded' I acknowledge that this is not rigidly true, but I say that it is the nearest approximation to truth [...]; and adds [regarding the third edition in comparison with the first]: 'My first chapter will not be materially altered – *in principle* it will not be altered at all'"(Ricardo 1821, Introduction by Piero Sraffa, p. xl, our emphasis). Sraffa was, as is very likely, in agreement with these convincing arguments of Ricardo's, above all *that the conditions of production do not create, but only modify values.*

Given this, a second point arises. If the labour principle of value goes on holding and the conditions of production are not very important because they only modify values, why did Sraffa make that tremendous effort required to work out the equations for the prices of production? Several reasons account for this, all related to Sraffa's endeavour to clarify problems associated with the classical approach. Most importantly, Sraffa wanted to solve the transformation problem, that is, the transformation of values into prices. Here he uses Marx's production scheme: all capital is circulating capital; fixed capital is also relegated to circulating capital. Sraffa differs from Marx in one point only: the payment of wages is made at the end of the production period. This is appropriate for three main reasons. The first is analytical: there is now a system of n equations for the n prices of production and $n+1$ unknowns ($n-1$ relative prices, the real wage rate and the rate of profits); this leads on to a clear-cut distributional relation in the form of a real wage - rate of profit trade-off. Moreover, two material reasons come in, too: first, "once a commodity is taken as *numéraire,* [and if the real] wage rate is not at the subsistence level [and can, as such, not] be included within the means of production"(Fratini-Levrero 2011, p. 1129); this is associated to a second material reason: the device of paying wages at the end of the production period results in a clear separation of (non-produced) labour, in fact, labour force, from the produced means of production; this separation became important for the construction of the standard commodity, and, after the publication of Sraffa (1960), for the capital-theory debate in which capital-labour ratios, differing between industries became all-important. In any case, the solution of the transformation problem, which had discredited the classical approach from Ricardo (1821), through Marx's *Kapital* up to Sraffa (1960), was by itself a gigantic achievement (on the technical aspects of the transformation problem, see Pasinetti 1977, pp. 122-50). Moreover, Sraffa wanted to bring to the open that the social and circular process of production in the sense proper took place in the *basic products* sectors only. It is here that production of all commodities by means of all commodities occurred. In addition, it is on the foundations of basics that the problems of value and distribution are solved. Prices are governed by all coefficients of production and the rate of profits. Distribution, now based upon the surplus principle, could, from an analytical point of view, be reduced to a relationship between real wages and profits, a complex downward sloping distribution curve in case of the real system, a straight line for the standard system.

Sraffa (1960) is clearly a piece of pure economic theory (Pasinetti 2007, p. 187), exhibiting how the basic forces work *in principle* within a social and circular inter-industry framework to govern the prices of production and to regulate distribution. These principles are

subsequently realised in concrete empirical-historical situations. The prices of production are, in fact, realised through the normal cost and price calculation that takes place within enterprises, and distribution is regulated through the surplus principle, implying that distribution is a social, not a market process. As such Sraffa's (1960) book has highly important *practical* implications. In fact, the *prices of production* of Sraffa (1960) show how the *mark-up prices* implied in Sraffa (1926) are formed *in principle* and imply how the mark-up is directly related to the surplus principle (Bortis 2003a, pp. 436-45). To show how the formation of the prices of production goes on in the social process of production, with distribution (the uniform rate of profits) predetermined, was *the* big game Sraffa was after. Sraffa has thus paved the way for clarifying the relationship between the – immensely complex - nature (interindustry) aspect of pricing and the – very simple - labour aspect of pricing (mark-up pricing), fundamentally important in macroeconomic theory; this process of clarification has been carried on in an important way in Pasinetti (1977 and 1981); for a theoretical application in a classical-Keynesian framework, see Bortis (2003a, pp. 433-45). Given this, the *fundamental* prices are not, and cannot be determined on the market, be it in a Walrasian or in a Marshallian framework. But these basic prices need not be determined by a central plan either. Sraffa's work implies that *price formation is decentralised,* that is, prices can be fixed by the individual firms through the calculation of normal prices; and, within the limits of the given output, governed by effective demand, this is true of quantities, too. Sraffa has thus provided us with the foundations of the price theory pertaining to a theoretical alternative to neoclassical economics *and* centrally planned socialism, that is, classical-Keynesian political economy, sketched in Bortis (1997, 2002, 2003a, 2003b). As such, Sraffa's *Production of Commodities by Means of Commodities,* a piece of pure theory, becomes of the highest practical importance.

Hence with Sraffa (1960) the classical approach to price formation, distribution and competition was definitely rescued. This opened wide perspectives and immensely fruitful possibilities for pure and applied political economy in general, and industrial economics and the theory of imperfect competition in particular.

Moreover, it also emerges from Sraffa (1960), that, within a social and circular inter-industry framework, distribution can only be regulated by the surplus principle. This principle states that distribution is, essentially, a *social* process, not a market phenomenon. As such, the surplus principle is most fruitful to analyse distribution on the basis of evolving socio-political structures. How indeed are surpluses extracted, appropriated, distributed and used (Geoffrey Harcourt) in one country or region in differing periods of time or, in some given

period of time, within various countries or regions? These are most fascinating questions. Probably most historians, consciously or unconsciously, make use of the surplus principle in specific historical investigations.

Finally, in his book Sraffa deals with additional problems relevant in a modern economy where the social process of production is fundamental, not the market. Prominent examples are joint production, the treatment of land and natural resources, and fixed capital. Specifically, the problem of the choice of techniques is dealt with in an ingenious way: given the rate of profits, the technique associated to the highest real wage rate or the lowest price of production for the *numéraire-good* is selected. This implies a kind of social cost minimisation.

Hence, in 'his' *Years of High Theory 1926 – 1960* Sraffa has produced a stupendous performance. He has indeed solved the most difficult problems of economic theory. Given this, it is no exaggeration to call him the *greatest* theoretician in the entire history of economic theories, and *this by far so.* He indeed towers above all other theoretical political economists and economists, even Walras, who concentrates on exchange, and entirely ignores the really difficult problem: production as a social and circular process and its consequences for the problems of value and distribution; given this, Walras's general equilibrium model analytically boils down to setting forth equations for optimisation under constraints in *equilibrium* conditions, and to equation counting. The all-important issue of the tendency towards equilibrium has never been seriously tackled by Walras and his followers and therefore gradually became a matter of belief. Sraffa, however, is like Keynes, deeply rooted in the real world. Given this, both protagonists of the *Years of High Theory* provide the starting point to work out a fully-fledged system of classical-Keynesian political economy, capable to come to grips with historically evolving capitalism.

Conclusion: a theoretical abyss between Keynes and Sraffa

Given the above, Keynes and Sraffa laid the foundations for a monetary theory of production, capable of carrying a solid theoretical structure, and initiated a tremendous discussion, critical and constructive, on this subject. However, no coherent post Keynesian theoretical system capable of competing with neoclassical Walrasian-Marshallian economics has come into being so far.

Indeed, Joan Robinson later remarked on this twin revolution that "Keynes evidently did not make much of [Sraffa's 1928 draft of *Production of Commodities by Means of Commodities*] and Sraffa, in turn, never made much of the *General Theory*. It is the task of post-Keynesians

to reconcile the two" (Joan Robinson 1978, p. 14). But how to reconcile Keynes's short-period model set in historical time, where uncertainty and expectations prevail, with Sraffa's timeless and deterministic long-period equilibrium model? There was, in fact, a deep gap between Keynes and Sraffa.

Later, this cleavage showed up within post Keynesian economics which emerged in the 1950s and 1960s, comprising, according to Harcourt, with Hamouda (1992, pp. 213-22), three broad, partly overlapping strands, the Keynesian Fundamentalists, the Robinsonian-Kaleckians, and the neo-Ricardians. In the main, the Keynesian Fundamentalists and the neo-Ricardians largely ignored each other from the 1950s until the present. This means that no coherent alternative theoretical system to counter the neoclassical mainstream could be established. This had serious consequences for the development of economic theory. Indeed, even the most important critique of neoclassical theory, the capital theoretic critique (Harcourt 1972) remained without impact, although it resulted in a total victory of the Sraffians or neo-Ricardians.

The capital-theoretic discussion culminated, in the mid-sixties, in the publication of several important articles, which are gathered in the *Quarterly Journal of Economics*, vol. 80 (1966); for a brief summary of events see Pasinetti (1977, pp. 169–77, especially footnote 9 on p. 171). Samuelson sums up the discussion in a crucial statement: "Lower interest rates may bring lower steady-state consumption and lower capital–output ratios, and the transition to such lower interest rate can involve denial of diminishing returns and entail reverse capital deepening in which current consumption is augmented rather than sacrificed.

There often turns out to be no unambiguous way of characterizing different processes as more 'capital intensive', more 'mechanized', more 'roundabout' [...] If all this causes headaches for those nostalgic for the old time parables of neoclassical writing, we must remind ourselves that scholars are not born to live an easy existence. We must respect, and appraise, the facts of life" (Samuelson 1966, p. 250).

The post-Keynesians and neo-Ricardians could *not benefit from this total theoretical victory because they could not offer a coherent and complete alternative system of economic theory.* The neoclassical economists admitted that there are serious problems with their neoclassical-Walrasian system; for example, money and finance could be disturbing factors, resulting in bubbles in the financial sector and to crisis situations in the real sector. However, the post-Keynesian and neo-Ricardian critics had no convincing answer to the neoclassical question: What kind of comprehensive and coherent theoretical system have you to offer? Given this, the classical-Keynesian counterrevolution of the years 1926 – 1960 did not produce

significant positive results. On the contrary, Keynes has been integrated into neoclassical theory, first Marshallian and, subsequently, Walrasian theory. And, as already suggested, it has been attempted to interpret Sraffa's system of prices of production as a special case of General Equilibrium Theory (see Mandler 2008).

Given the serious consequences of this seeming incompability between Keynes and Sraffa, we have, in the next section, a closer look at the theoretical abyss between Keynes's *General Theory* and Sraffa's *Production of Commodities by Means of Commodities*.

3 The gap between Keynes and Sraffa: uncertainty versus determinism

Most, if not all Keynesian fundamentalists, and most neo-Ricardians would argue that it is impossible to close the gap between Keynes and Sraffa. This is one of the main conclusions of John King's excellent *History of Post Keynesian Economics since 1936* (King 2003). Broadly speaking, Keynes's *General Theory* is dominated by investors who act under uncertainty about the future and whose actions are co-ordinated by the functioning of the socio-economic system regarding employment determination through the principle of effective demand. This principle is embodied in the multiplier relation, which, given autonomous demand, governs output and employment in a monetary production economy. In sharp contrast, Sraffa's *Production of Commodities* pictures how value and distribution are governed, in principle, within the social process of production by technological and institutional structures. Here, determinism prevails. Given this sharp contrast between Keynes and Sraffa, Alessandro Roncaglia, for example, thinks that, at best, a loose bridge may be built "between Sraffa's analysis of prices and Keynes' analysis of production levels. [Sraffa] looks to conditions for reproduction of the economic system. […] When the technology changes, the relative prices will [as a rule] also change"(Roncaglia 2000, p. 64). These price changes cannot be known ex ante because "of that all-pervasive uncertainty constituting a key feature of Keynes' vision, leading him to grant expectations a central role in his theory. For this reason the two problems – Sraffa's and Keynes' – must be kept apart. Nevertheless, given Sraffa's approach to his problem – isolating it from the determination of quantities produced while avoiding any opening in the direction of 'Say's law' – we may consider his analysis of the prices-distribution link conceptually compatible with Keynes' analysis of employment, once the latter has been cleared of marginalist encrustations"(Roncaglia 2000, p. 65). Since the future course of prices and quantities is unknown it is not possible to go beyond the short-

term. All that can be done is, to replace the Marshallian marginalist price remnants in Keynes' *General Theory*, which vary with changes in output levels, with some kind of fixed prices based upon the mark-up principle. This would, incidentally, require that Sraffa's prices of production are no longer seen as *conditions* for reproduction (Roncaglia), but as a pure theory of prices of production, with applied prices of production being set on the basis of normal cost calculation. Sraffa must be anchored in the real world and should not stay at the level of (Kantian) ideas produced by the human mind. Conceiving of Sraffa prices only as conditions for reproduction leads, as far as we can see, inevitably to setting prices through some planning mechanism: these conditions would have to be imposed on the real world. Considering, however, the prices of production as picturing how the pricing process goes on *in principle* within the social process of production, provides the possibility of linking distributional states – an institutionally determined rate of profits - not only to Sraffa prices, but also to the determination of the level of employment through the propensity to consume. A rising profit share would reduce the propensity to consume and the level of employment, and vice versa. This way of looking at things can be elaborated; for example, the capacity effect of investment can be taken account of and combined with the income effect. This is, broadly speaking, the way taken by Kalecki in his theory of cyclical growth (Kalecki 1971, pp. 165 ff.).

If post Keynesian political economists want to erect a theoretical structure constituting an alternative to the neoclassical Walrasian-Marshallian system and its modern elaborations, then 'broad consistency' between Keynes and Sraffa, leading up to building loose bridges between the two theories, is clearly not sufficient. Even less satisfactory is to leave the gap as it is. Given this, Keynesian fundamentalist and Kaleckians-Robinsonians would argue that Sraffa's theoretical system represents a long-period equilibrium model and that economies cannot get into long-period equilibria in a Keynesian world of uncertainty about the future, requiring a continuous revision of long-period expectations. However, the neo-Ricardians would reply that institutional-technological structures are the constant or slowly changing elements of the real world of the classical political economists which govern prices and quantities, and distributional outcomes, on a fundamental level. One cannot build economic theory upon psychological foundations, which echoes Sraffa's criticism of the *General Theory*.

The gap between Sraffa and Keynes is, probably, the fundamental reason why neoclassical economists do not take the post Keynesian system of political economy seriously. Indeed, in an excellent textbook on old and new macroeconomics, it is argued that "post Keynesianism

does not represent a coherent theory and can, therefore, not be dealt with in an introductory textbook" (Felderer-Homburg 2003, p. 101, transl. HB). The gap between Keynes and Sraffa is certainly the main reason why post Keynesian textbooks, by Joan Robinson/John Eatwell and Francis Cripps/Wynne Godley for example, were not successful. The description of steady states and golden ages contained in both books were simply not taken seriously by the neoclassicals and most post Keynesians, the most important – implicit – reason being the presence of time. It should be remembered that principles in general and pure theories in particular should be *independent* of space and time, hence of concrete institutional set-ups; principles, however, *imply* certain types of institutions.

4 Bridging the gap: Pasinetti's contribution

Probably, the only way to bridge the gap between Keynes and Sraffa is to set up a coherent set of principles bringing together the classical view of value and distribution, based upon the labour value principle and the surplus principle of distribution, respectively, and the Keynesian vision of employment and output determination through the principle of effective demand. Based upon Pasinetti (1986) this has been attempted in Bortis (2003a). This means reasoning, not literally, but, in a broad-ranging way, in the spirit of Keynes and Sraffa. Based upon the set of classical-Keynesian principles, a broadly structured system of long-period, medium- and short-term theories along post-cum-classical-Keynesian lines may be erected (for a very sketchy outline see Bortis 1997). This would enable us to put the *original* works of Keynes and Sraffa - *The General Theory of Employment, Interest and Money* and *Production of Commodities by Means of Commodities* - at their respective place within a system of Classical-Keynesian political economy, i.e. within a system of *theories* dealing with real world phenomena.

The classical system, taken in a wider sense, embodies two aspects of the social process of production, i.e. the nature (interindustry) approach and the (vertically integrated) labour approach, reflecting the famous Marxian statement that social production is an interaction between man (labour) and nature (land). The nature approch is pictured in François Quesnay's *Tableau Economique*, the labour approach in Ricardo's *Principles*. Modern classical theory builds on these foundations: Leontief and Sraffa start from Quesnay's *Tableau* (Sraffa is explicit on this), Pasinetti, evidently, builds on Ricardo's *Principles*. As will be seen below, the Pasinetti transformation links the interindustry and the labour

approach such that the labour model embodies the interindustry model at the basis of principles. The crucial point to be developed is that Luigi Pasinetti's *labour model,* set forth in *five* odd pages of his *splendid* article on the *Theory of Value – a Source of Alternative Paradigms in Economic Analysis* (Pasinetti 1986, pp. 421-27), provides *the analytical vehicle for bringing together Keynes and Sraffa at the level of first - fundamental - principles* (see on this Bortis 2003a). Based upon these principles it should be possible to erect a broadly coherent, and *open,* system of classical-Keynesian political economy which would appear as a synthesis, an elaboration, and an extension of post-Keynesian political economy. Thus, at the level of theories, very little would be new. The great number of fine pieces of existing post Keynesian theory would have to be adapted, elaborated, completed, synthesised, and put at the right place.

Before being able to deal in somewhat greater detail with the issue at stake, closing the gap between Keynes and Sraffa, two methodological issues have to be dealt with, first, as already alluded to, the difference between principles and theories, and, second, the notion of equilibrium implied in the subsequent analysis.

Principles and theories

Principles and theories imply two entirely different methods to get hold, probably and sketchily, of aspects of socio-economic reality and are associated, broadly and tentatively, with two different, but complementary concepts of social science. "The first, conventional, notion of science sees the theoretical economist as a model builder, possibly in view of establishing testable propositions. He endeavours to *explain* economic phenomena starting from *given* premisses and engages in the search for empirical regularities within economic phenomena. Even on the macroeconomic level, theoretical explanation is frequently complemented by empirical means, with the Phillips curve, the work done on the Keynesian consumption function, and the close association between price levels and quantities of money perhaps being most prominent. On the sectoral and on the microlevel, explanatory models and empirical investigations abound.

However, scientific work always rests upon fundamental principles, which, as a rule, are taken for granted. Neoclassical scientific work is based upon the marginal principle, Keynesians rely upon the principle of effective demand. This leads to a second notion of science. Here the theorist attempts to distil principles or fundamentals in view of *understanding* how socio-economic systems essentially function. For example, the question is about the fundamental forces governing prices, distributional outcomes or employment levels.

In this sense, Ricardo wrote on the principles of political economy, Marshall on the principles of economics. Based upon the principle of effective demand, Keynes aimed at establishing a general theory of employment, interest and money. In a way principles – the marginal principle, the surplus principle, the principle of effective demand – form the basis upon which theoretical work dealing with phenomena takes place"(Bortis 2003a, pp. 411-12).

In a way, theories are *reflections* of real world phenomena; for example, the price of production is a theoretical concept which reflects essential elements of prices calculated within enterprises in the framework of normal cost calculation; as such the price of production reflects technical conditions of production and the institutional determination of distributional variables such as money wage rates and target rates of profits. Principles, however, represent *recreations* or *reconstitutions* of essential elements of phenomena, for example prices, distributional outcomes and employment levels. The questions are: what, fundamentally, determines a price; is it labour or utility? Are the fundamental forces governing distribution social forces, associated with social power, or market forces, i.e. supply and demand? Is employment determined on the labour market or governed by effective demand? Alternatively, regarding value, the question is: what, fundamentally, *is* a price? What is its nature? And so for all other economic phenomena, distribution, employment, and so on. Hence, "principles represent the essential elements underlying a certain phenomenon, or the constitutive elements of an object. [Distilling principles requires considering the whole of society and of man], and all information available must be examined, scientific and non-scientific, theoretical and empirical and historical, whereby the objectively given material is dealt with by reason based on a metaphysical vision that, in turn, is associated with intuition"(Bortis 2003a, p. 412). In distilling principles, it is crucial to leave aside all accidental elements to put to the fore the constitutive, the essential or the fundamental. Since principles or sets of principles are reconstructions or recreations of essential elements of phenonoma, these have *not* to be realistic in the scientific sense, "since they are not reflections or copies (*Abbilder*) of certain spheres of the real world that can eventually be associated with testable propositions. In their being reconstructions of essential aspects of real world phenomena, principles illuminate these phenomena from inside and initiate the formation of empirically testable theories. In this sense Walras's *General Equilibrium Model* contributes to understanding how Adam Smith's *invisible hand* might work in principle. With the Walrasian model in the background the neoclassical economists have built simplified textbook theories of value, distribution and employment upon the marginal principle which is behind all demand and supply curves; in many instances, the

Cobb-Douglas production function or Samuelson's surrogate production function are used to elucidate the implications of the marginal principle – the Walrasian model is too complex for an easily understandable exposition of the neoclassical principles and their implications"(Bortis 2003a, p. 413). Finally, in Pasinetti's *Theory of Value* (Pasinetti 1986) „the fundamental differences between exchange-based neoclassical pure theory and production or labour-based classical theory is set forth on the level of *principles,* illuminating thus the basic options in economic theory open at present. In the following it is suggested that the classical principles ought to be elaborated and to be brought together with Keynes's, adapted to the classical long-period method"(Bortis 2003a, p. 415). This, as will be seen, implies bringing together Keynes and Sraffa at the level of principles.

The equilibrium notion

The clue for bringing together Keynes and Sraffa at the level of principles, in a way, to synthesise "proportions-based classical theory of value and distribution with Keynes's theory of employment dealing with the scale of economic activity, lies in the notion of long-period equilibrium (Bortis 1997, pp. 75-103). The conventional view starts from a disequilibrium situation in the present, which, in a stationary state, would work out and produce an eventual tendency towards a future equilibrium situation. This equilibrium concept is untenable once historical time is introduced as Joan Robinson emphasized time and again: an economy cannot get into an equilibrium if there is uncertainty about the future and if, as a consequence, expectations are liable to disappointment. The equilibrium position must, therefore, be sought in the present. The first step is to abstract from temporary and rapidly changing short- and medium-term elements of reality, i.e. *behavioural* elements related to markets and to business cycles (Bortis 1997, p. 106, scheme 3). This is to dig deeper to bring into the open the permanent or slowly evolving elements of the real world made up of the technological and economic *structure*, i.e. the material basis of a society, and the social, political, legal and cultural superstructure erected thereupon. *Technology and institutions* represent the *stable features* of social reality the classical economists, Ricardo in the main, had in mind when they conceived of labour values (and prices of production) as the natural and fundamental prices from which actual or market prices temporarily deviate (Ricardo 1821, p. 88). The *classical* […] equilibrium prices and quantities, as [are] implied in the price and quantity systems (19.18) and (19.25) [Bortis 2003a, pp. 451 and 457 respectively], complemented by the supermultiplier relation (19.40) [Bortis 2003a, p. 464], [represent], therefore, a *system equilibrium,* not a market equilibrium. The latter conceives of the market as an autonomous

subsystem surrounded by a social, political and legal framework. The former, however, implies that prices and quantities are directly or indirectly governed by the entire socio-economic system, i.e. by technology and institutions, which form a structured entity. This is the main tenet of Bortis (1997).

To conceive of the long run as being situated in the present has already been envisaged by Marshall. In fact, Robertson, relying on Guillebaud, mentions that "Marshall used the term 'the long period' in two quite distinct senses, one which stands realistically for any period in which there is time for *substantial* alterations to be made in the size of plant, and one in which it stands conceptually for the Never-never land of unrealized tendency"(Robertson 1956, p. 16). In Bortis (1997, pp. 81-89), it is suggested that, appearances notwithstanding, Marshall's second definition of 'the long period' is relevant for long-period analysis, not the first one. Indeed, with the usual first meaning of this notion the long-period equilibrium is located in the future and would come about if the persistent economic forces could work out undisturbed, i.e. if there was a stationary state or a steadily growing one. This first of the Marshallian definitions is largely irrelevent because 'in the long run we are all dead'; moreover, there are no 'stationary conditions and steady states'; and, finally, there are the results of the capital theoretic discussion: lower factor prices cannot, in principle, be associated with larger factor quantities. The second meaning of 'the long period', however, allows us to locate the long-period equilibrium in the *present* and to associate it with an institutionally governed system equilibrium (Bortis 1997, chapters 3 and 4). This takes us back to the Classicals and Marx whose [surplus] approach to economic problems has proved so immensely fruitful"(Bortis 2003a, pp. 419-20).

Throughout his entire work, Luigi Pasinetti works with the classical method. Principles or fundamental pure theory (Pasinetti 1981) and pure theories (Pasinetti 1977) tell us how the relevant causal forces work in principle, independently of space and time, that is independent of specific institutions and of specific technological structures. However, principles and theories of the classical type *imply* a corresponding type of institutional set-up, the classical 'institutional and technological material basis and the institutional superstructure'. To complete the picture we may add that neoclassical/Walrasian theory *implies* another type of the institutional set-up: the potentially self-regulating market stands in the centre, surrounded by a political, judiciary, social and cultural framework.

Nature and man (land and labour), and the social process of production

The starting point is the social process of production, which, basically, may be seen as an interaction between man (labour) and nature (land) by means of real capital, i.e. tools and machines (Bortis 2003a, pp. 433-36). The *nature or land* aspect of social production is set out in Pasinetti (1977). Here the (Leontief) interindustry flows are pictured: primary goods taken from nature and intermediate goods are transformed into final products in a social and, in part, circular process involving production of commodities by means of commodities – and labour (Sraffa). The *labour* aspect of production is set forth in Pasinetti (1981 and 1986): direct and indirect labour, in association with past labour embodied in fixed capital, produce the primary, intermediate and final products (Bortis 2003a, pp. 433-36).

Analytically, the land and labour aspects of the social process of production are linked by the *Pasinetti transformation*: the vector of *direct* labour is multiplied by the transposed Leontief-inverse to yield the *total (direct and indirect)* labour required to produce the various commodities (Bortis 2003a, p. 438, relation 19.5).

Since the i -th column of the Leontief-inverse contains the quantities of *each* good required *directly and indirectly* to produce one unit of good i, the i -th element of the n-vector stands for *all the labour used directly and indirectly* in the whole production system to produce one unit of commodity i. Since production runs from primary, through intermediate goods to final goods, there is, evidently, vertical integration with the final goods summarising all the 'lower-level' efforts made to produce them.

Linking the Classics with Keynes

The classical (Ricardian) labour model obtained by the Pasinetti transformation determines *relative prices and quantities* only (Pasinetti 1981, p. 23, note 30). To obtain *absolute prices,* the *money wage rate* (w) must be fixed; to determine *absolute quantities* requires fixing the *level of employment* (N) (Pasinetti 1981, pp. 32/33, Pasinetti 1986, pp. 422/23). Now, in chapter 4 of the *General Theory* – The Choice of Units – Keynes states: "In dealing with the theory of employment I propose […] to make use of only two fundamental units of quantity, namely, quantities of money-value and quantities of employment. […] We shall call the unit in which the quantity of employment is measured the labour-unit; and the money-wage of a labour-unit we shall call the wage-unit" (Keynes 1973/1936, p. 41). Thus, the labour model emerging from the Pasinetti transformation links the whole body of classical theory to Keynes's employment theory and, as such, closes the gap between Keynes and Sraffa on the level of fundamental pure theory, i.e. on the level of principles. In doing so, Luigi Pasinetti

has laid the long-period foundations for Classical-Keynesian political economy, which may be considered a synthesis and an elaboration of the post Keynesian strands of thought. To broadly sketch the Classical-Keynesian system is the object of the next section. A central problem is to adapt Keynes's short-period theory of employment to the long run to make it compatible with the classical (Ricardian) theory of value and distribution which focuses on stable or slowly changing magnitudes (institutions and technology) and is, as such, of a long-period nature (Bortis 1997, pp. 142-204, and Bortis 2003a, pp. 415-23 and pp. 460-67).

In a next step, we attempt to broadly picture the principles underlying the Classical-Keynesian system and suggest how these may be linked with the very rich Keynesian, post Keynesian, but also Marxist approaches – remembering here that Keynes was much more than just a political economist, he was in fact a social and political scientist in the widest sense of the word, and that Marx was a humanist, deeply concerned about the immense social problems of his time; moreover, it is Marx's historical and sociological method that is of crucial importance, not some aspects of the material content of his work (Bortis 1997, pp. 125-30); for example, the property issue is certainly important, but not decisive; in fact, private property may co-exist with social and state property, with the dominating form of property depending upon prevailing values having developed historically in some country or region. What really matters is the Keynesian question as to the nature of unemployment; is it, in the main, system-caused and involuntary or behavioural and voluntary?

5 The classical-Keynesian system of political economy

Principles and theories in a classical-Keynesian setting

The present remarks on method deal with *principles and theories* and on *the notion of equilibrium* respectively. These issues are now taken up in the context of the classical-Keynesian approach to economic problems.

The preceding remarks suggest that Keynes should *not* be associated with neoclassical economics (mainly Marshall) as Paul Samuelson has advocated. Indeed, his celebrated Neoclassical Synthesis is based upon Hicks's IS-LM diagram, which reduces Keynes to *equilibrium* economics. Following Luigi Pasinetti, we want to suggest that Keynes should be linked with classical political economy in a wider sense. Methodologically, this means setting up *causal* models and combining them subsequently. According to classical political economy value and distribution are determined within the social and circular process of

production. With values and prices of production fixed, Keynes's principle of effective demand would come in to determine quantities. It has been stated time and again that Keynes's theoretical model may naturally be associated with a fix-price theory.

On a fundamental level the labour value principle plays an essential role. After all, in social production, conceived of as an interaction between man (labour) and land (nature), it is man (labour) who plays the crucial (active) role. The basic model must, therefore, be a vertically integrated (Ricardo – Pasinetti) labour model into which a simplified version of the horizontal (interindustry) Leontief-model may be integrated (Bortis 2003a, pp. 433-45). More sophisticated models picturing the Quesnay-Sraffa-Leontief nature aspect of production may then be grafted upon the basic labour model. Subsequently, classical models may conveniently be combined with Keynesian models. However, there is no need to construct a classical-Keynesian supermodel, since such a model would be completely unmanageable. An all-embracing model is required only at the level of principles, and it is this basic model we are mainly dealing with in the following.

In the spirit of classical political economy of the Ricardian type, we shall only consider the influence of permanent or slowly evolving factors – institutions and technology – upon economic phenomena, mainly prices, the distribution of incomes, employment and involuntary unemployment. Hence the long-period prices and quantities set forth below all depend upon technology and institutions and form, as such, a *system equilibrium.* Here, the entire socio-economic system enters the picture. This contrasts with the neoclassical market equilibrium where the legal, social and political institutions are relegated to the framework surrounding the market.

The classical political economists have indeed conceived of society as a system of institutions. There is a material basis with the social process of production at the centre. The surplus emerging from this sector allows a society to build up and to maintain an institutional superstructure, political, legal, social and cultural. Classical-Keynesian political economy is about the way in which the institutional and technological system governs the persistent economic phenomena: the fundamental prices rooted in production, the distribution of incomes and the level of employment, and, as a rule, persistent involuntary unemployment.

Now, institutions and technology are precisely facts of the existing situation on which we have little reasons for expecting a change or on which the direction of change is broadly known, as is the case with technology where moreover changes occur, as a rule, at the margin. Regarding investment, the difference between the normal (satisfactory) rate of profits and the realised rate of profits, precisely constitutes a *given* fact which is very important for investment decisions,

and the importance of this fact increases if the difference is larger and more durable (Bortis 1997, pp. 207-14). Keynes is very explicit on this: "It would be foolish, in forming our expectations, to attach great weight to matters which are very uncertain. It is reasonable, therefore, to be guided to a considerable degree by the facts about which we feel somewhat confident […]. For this reason the facts of the existing situation enter, in a sense disproportionately, into the formation of our long-term expectations; our usual practice being to take the existing situation and to project it into the future, modified only to the extent that we have more or less definite reasons for expecting a change" (Keynes 1936/1973, p. 148). Hence institutions reduce uncertainty to a very large extent.

In a way, then, *Keynesian long-period analysis* could be called *Keynesian Institutionalism,* which differs from the traditional system-based, institutionalism of the German Historical School in the main, by is explicit theoretical foundations.

The output and employment trend may be conceived of as a - hidden - fully adjusted situation characterised by normal prices and quantities and normal degrees of capactiy utilisation (Bortis 1997, pp. 75-89 and 142-204). Normal or long-period prices and quantities, *including investment volumes,* depend upon the entire institutional system, i.e. on the material basis and upon the institutional superstructure. This is a crucial point. In the long run, the investment volume represents, like consumption, *derived* demand, depending upon the evolution of long-period output, with economic activity being set into motion by the autonomous demand components, exports and/or government expenditure.

Hence normal prices and quantities constitute a system equilibrium. Since normal output does not, as a rule, correspond to full employment output, permanent involuntary unemployment obtains. Normal prices are, in turn, governed by the conditions of production and distributional arrangements. The latter implies that normal prices are, in principle, associated with an equal - target - profit rate (r^*) which entrepreneurs consider satisfactory and which, therefore, enters their (normal) price calculation.

In the following it is to be suggested how this determination goes on in principle. Dealing with principles means that a model need not *reflect* reality and, as such, need not lead to testable propositions. As suggested above, a model of principles represents a *reconstruction* or *recreation* of what is probably essential to specific real world phenomena, leaving aside everything which is accidental (Bortis 2003a, pp. 411 ff.). Principles also contain a *normative* dimension that, again, points to the fact that models of principles are reconstructions of essential elements of specific real world phenomena, and not reflections. A striking historical example is Walras's *General Equilibrium Model*, which on the normative side is associated

with a Pareto Optimum. This model was elaborated in time of economic crisis – the last quarter of the 19th century. Its purpose is to represent the ideal liberal economy, and not the distorted or alienated capitalist reality.

In a wider view, the present set of principles is intended to constitute a theoretical alternative to Léon Walras's *General Equilibrium Model*, i.e. to the neoclassical principles, based upon an elaboration and extension of the (classical) labour model set forth in Pasinetti's (1986) *Theory of Value – A Source of Alternative Paradigms in Economic Analysis*.

The social process of production as the starting point

The way in which classical and Keynesian elements of political economy must be combined emerges from the very nature of the social process of production. Indeed, Marx suggested conceiving of this process as an interaction between man (labour) and nature (land). In this interaction labour is evidently the active element while land is passive. In the 17th century already William Petty suggested, that „labour is the father of value, and land the mother". The land and labour features of production give rise to distinguishing *three* kinds of basic goods, absolutely necessary for production: land basics, labour basics, and labour-land basics. *Land basics* are primary products taken from nature, for example iron ore or crude oil, which are made ready for productive use in the form of steel or petrol respectively. Subsequently, land basics or primaries are used to produce intermediate products: wheat, flour, leather, bricks for instance. Primary products and intermediate products represent part of the means of production that are converted into final products, specifically: bread, shoes, houses, various machines and equipments; generally: private consumption goods; private and public capital goods; and goods making up for state or public consumption. *Labour basics* are *final* products and correspond to the socially necessary consumption goods required to maintain the persons who are active in the ‚profit sector' and who, through the social surplus, enable to build up and to maintain a ‚non-profit sector', including the state, i.e. the political institutions. Finally, *labour-land basics* are machine-tools, i.e. machines to make machines, representing past labour and enable the labour force operating in the ‚profit sector' to enter into contact and to interact with nature through the social process of production, i.e. to extract primary goods, nature or land basics, with the aim of transforming them, passing through intermediate products, into final products, including labour basics. The primary land basics move between industries in horizontal interindustry models to produce, in a first stage primary goods entering the production of all goods, as is pictured by *Sraffa's model* in which *inputs and outputs coincide*. Since the output of land basics enters the production of all intermediate and final goods, necessary technical

relations exist between land basics and the final output. The prices of nature basics are thus determining the prices of final products. Hence the fundamental relations between value and distribution may be studied within the social process of production of *primaries or land basics* as Sraffa, with [great] intuitive insight and analytical ability, did indeed on the basis of a model implying non-uniform compositions of capital (Sraffa 1960). In fact, land basics contain, potentially, all final outputs, including labour basics, i.e. necessary consumption goods. [This was also the view of François Quesnay from whose *Tableau Economique* Sraffa's *Production of Commodities by Means of Commodities* directly derives (Sraffa 1960, p. 93).]

The output of land basics is, in a second stage, taken up to produce all intermediate goods. In a third stage, primary and intermediate goods are transformed into final goods consisting of labour basics, of labour-land basics and of non-basics. Part of the output, necessary consumption, is used up by the persons active in the 'profit sector'; the remaining output represents the social surplus: gross investment, consumption exceeding the necessary consumption of the workers and employees in the ‚profit sector', the necessary consumption of the ‚non-profit sector' population and the non-necessary consumption of the entire population, as well as social and state consumption, for example, for cultural purposes in the broadest sense and for running the judiciary system, the education system and government administration.

This view of production - primary products are, passing through intermediate products, transformed into final goods - explains the triangular structure of the Leontief matrix in which Sraffa's land basics are located in the upper left corner. Land basics are produced with land basics and hence the corresponding transaction table and the coefficient matrix form a square matrix. The output of primary goods is distributed to the industries producing intermediate and final goods. Intermediate goods require as inputs land basics and other intermediate goods. The corresponding coefficients form another square matrix beginning at the lower right-hand corner of the Sraffa land basics matrix. Final goods are produced with land basics and intermediate goods. Consequently, primary products enter the production of all goods; intermediate products enter the production of other intermediates and of final goods. The latter are only outputs. Hence for intermediates some positions to the left of the main Leontief diagonal are positive. By definition, for final goods only the net output vector contains positive elements. The broadly triangular structure of the Leontief matrix thus emerges, with zero positions dominating to the left of the main diagonal.

The vector of net outputs has zero positions for primary and intermediate products. The lower part of this vector is occupied by the final outputs. These are made up of private and public

investment (capital) and consumption goods. For each product, primary, intermediate and final goods, there is a specific capital good. Moreover, among the capital goods there is a particular type, i.e. machine-tools or machines to make machines, a point emphasised in Lowe (1976). Machine tools are, in association with labour, capable of reproducing themselves and of producing the corresponding investment goods for *each* industry, that is for all primary, intermediate and final goods industries. *Obviously, the machine tool sector is of basic importance for the social process of production.* As has been suggested, this sector enables man (labour) to enter into contact and to interact with nature (incidentally, in traditional societies, this role was held by the blacksmith who always occupied a privileged position in pre-modern societies because it is he who produced the tools and the weapons). Because of their fundamental importance in the social process of production machine-tools may, therefore, conveniently be called labour-land basics. The presence of the machine-tool sector also implies Sraffian 'production by means of commodities', not only among the processes linking primary and intermediate goods to final goods, but also on the *final* product side. The basic two sector model put to use in the capital theory debate - a capital good (machine tool) sector producing a capital good for itself and for the the consumption goods sector - is a striking example (Garegnani 1970 and Harcourt 1972).

The second type of final goods are the consumption goods. These are of three broad types: necessary consumption goods, non-necessary consumption goods and goods for social and state consumption.

Perhaps we may mention that Sraffa (1960) is treated here as a pure nature (interindustry) model containing *nature basics only*, i.e. primary goods taken from nature, and, as such, has been included in the left top corner of our Leontief-matrix. The two other types of basic goods, labour-basics (necessary consumption goods) and land-labour-basics (machine tools producing all capital goods) are included among the final goods. In fact, in Sraffa (1960) all three types of basic goods appear which, as will be suggested at the end of the next section, renders the treatment of value and distribution and the link with Keynesian employment models rather difficult.

Production, value and distribution

To deal with the principles (or fundamentals or essentials) of value and distribution within the immensely complex social and circular process of production sketched in the previous section all accidental elements have to be left aside. In this vein two simplifying assumptions are made, which, when given up, leave all the conclusions following from the principles

qualitatively intact when the analysis moves to the level of theories reflecting aspects of the real world: First, a vertically integrated economy is considered, and secondly, the conditions of production are similar in all the sectors of production in the sense that the relationship between total labour – direct and indirect – contained in some capital good used to produce some commodity i and the total labour embodied in this commodity – n_{iK}/n_i – is the same in all the sectors of production (consumption goods, capital goods, intermediate and primary goods). The heterogeneity of the goods is ensured by two factors: in the first place, the absolute values of n_{iK} and n_i diverge between the various sectors; and secondly, the same quantity of abstract labour is contained in qualitatively very different goods.

From these assumptions the labour principle of value emerges together with the surplus principle of distribution involving a uniform rate of profits. Both principles are put to practical use here in a broad humanist-ethical sense, not in the sense of class struggle (which, however, may arise if there is large-scale alienation, brought about by mass unemployment for example). In the sense of the classical political economists, but also of Aristotle and of Thomas Aquinas, the value of goods and services is, *in principle*, determined by the ,quantity of direct and indirect labour' contained in them. This quantity is, in turn, determined by three factors: first, by labour time; secondly, by the reduction coefficients, which reduce complex labour to simple labour. The reduction coefficients are expressed in the wages structure, the determination of which is a complex problem of social ethics and should be essentially based on an evaluation of work places; thirdly, on the social appreciation of a product.

Distribution on the basis of the *surplus principle* is a complex social process. First, the great shares in income must be determined, i.e. the shares of (normal or ordinary) wages, made up of necessary and of surplus wages, and the surplus proper, made up of profits and rents. Profits are socially necessary to run the production system, i.e. the enterprises; they represent, very broadly speaking, an award for good management, investible funds, and render possible the setting up of sinking funds in view of an uncertain future (see Bortis 1997, pp. 158-75). Rents, in turn, are made up of land *and* labour rents. The latter are equivalent to surplus wages due to special abilities or privileges, e.g. of managers, engineers, surgeons, artisans, artists, sportsmen, and so on. Secondly, the structure of necessary and surplus wages (normal or ordinary wages), surplus wages due to special abilities and privileges, and of profits and rents has to be broadly determined. Most important is the determination of the structure of ordinary and surplus wages, a task to be performed, possibly in an indicative way, through work evaluation inside the enterprises, and through trade-unions between industries and sectors. In a classical vein, the market would have to bring into line market wage and profit rates, and land

rent into line with the socially determined magnitudes through changing output levels. All in all, distribution emerges thus as the core issue of social ethics.

The surplus produced in the ‚profit sector' (the ‚productive' sector of the Classics) of an economy should be used to build up a socially appropriate ‚non-profit' sector (the ‚unproductive' sector in Classical terminology) in the widest sense of the word, comprising political, legal, social and cultural institutions. As such, the surplus is obviously socially necessary since it is required to build up an institutional superstructure upon the material basis. Hence, the surplus, if used in an appropriate way, leads to a good and proper functioning of society at large, including the material basis that produces the social surplus.

Inappropriate uses of the surplus lead to social and individual *alienation:* the distribution of incomes and wealth may get very unequal and involuntary (system-determined) mass unemployment may develop as a consequence; both lead, as a rule, to social exclusion, misery, and to an increasing number of crimes; terrorism, too, has deep roots in misery and despair. Hence, the production, extraction, distribution, and the use of the surplus are the most important problems of social and political ethics (Geoffrey Harcourt).

Value and distribution are regulated within or in direct association with the social process of production.

The *price equations* in a vertically integrated production system are as follows:

$$\boldsymbol{p}\boldsymbol{A} + w_n \boldsymbol{n}_d k = \boldsymbol{p} \tag{5.1}$$

$\boldsymbol{A}$ is the broadly triangular Leontief-Sraffa matrix sketched above [see also Bortis (2003a, pp. 433-36)]. The coefficients of the matrix $\boldsymbol{A}$

$$a_{ij} = x_{ij}/X_j \tag{5.2}$$

indicate the quantity of good i required to produce a unit of good j. $\boldsymbol{p}$ is the (row) vector of prices. At first, there are the prices of primary goods (land basics), subsequently the prices of intermediate goods and, finally, the prices of final goods.

Hence $\boldsymbol{p}\boldsymbol{A}$ represents the monetary value of the basic and intermediate goods (the monetary value of inputs) utilised in the social process of production for *each* good (primary, intermediate and final). The expression

$$w_n \boldsymbol{n_d} k \qquad\qquad (5.3)$$

represents value added and its distribution between wages and profits (and rents). $\boldsymbol{n_d}$ is the (row) vector of direct labour per unit of each product (primary, intermediate and final goods). w_n (a scalar) represents the money wage rate per unit of simple, unqualified, labour (with complex types of labour, qualified in most varying degrees, being multiples of simple labour). The scalar k is the ‚mark-up' on average costs at normal capacity utilisation. In a microeconomic view, k governs gross profits such that invested fixed capital gets a normal rate of profits r^* including the rate of depreciation. In a wider, macroeconomic, view k may be reinterpreted to contain, in addition to gross profits, surplus wages, labour rents, due to specific abilities or to privileges, for example, and land rents. Hence the microeconomic 'mark-up' is, on the macroeconomic level, transformed into the 'surplus coefficient', governing, in principle, the size of the social surplus over socially necessary wages.

Methodologically speaking, the present analysis is situated at the level of principles. Consequently, the relevant causal forces are presented in their pure form, independently of their historical realisations (Keynes' *pure* and *applied* theory). Moreover, we only consider what is essential to our analysis. In this sense, labour values constitute the essence of prices. This implies abstracting from specific conditions of production and from market conditions, and supposes a vertically integrated economy. Past labour is embodied in fixed capital.

The fundamental prices (equations 5.4, 5.6 and 5.10 below) emerge from the social process of production, and represent, in principle, the social effort that has been made to produce the various goods; hence, in a classical-Keynesian view, prices of *produced* goods are *not* scarcity indicators. In fact, *at the level of principles,* direct and indirect labour is basic to the value of goods and services.

As has already been suggested, *distribution* is, essentially and ideally, a social process with trade unions, entrepreneurial associations and the state intervening to bring about as much distributional justice as is humanly possible. In economic reality, however, the single worker or employee is, as a rule, directly faced with a potential employer; given this, heavy unemployment will exercise a pressure on wages, aggravated by increasing financialisation; as a consequence income distribution will get very unequal and therefore alienated from the ideal of distributive justice.

The links existing between value and distribution at the level of principles emerge formally from isolating the price vector in equation (5.1) on the left-hand side (see Bortis 2003a, pp. 436-45):

$$p = w_n[(I - A)^{-1}]'n_d k \qquad (5.4)$$

This operation, which links the nature (land or interindustry) model to the vertically integrated labour model, might be called the Pasinetti transformation (Pasinetti 1981, pp. 109-12). Multiplying the (column) vector of direct labour, n_d, with the rows of the transposed Leontief inverse yields the vector of total, direct and indirect, labour (n) required to produce some good i:

$$n = [(I - A)^{-1}]'n_d \qquad (5.5)$$

Inserting relation (5.5) into equation (5.4) and multiplying the capital good row for each good by a coefficient so as to make the ratio n_{iK}/n_i equal to unity for all goods (Bortis 2003a, p. 438) yields the classical – Ricardo-Pasinetti – price equations:

$$p = w_n n k \qquad (5.6)$$

which can be interpreted sectorially (p and n as vectors) or macroeconomically (p and n as scalars). To obtain the macroeconomic equivalent of these price equations we must first define the "macro-price" p. In a classical vein, we conceive of p as the price of a bundle of necessary consumption goods, which implies that the social product (Q) is measured by quantities of this bundle of necessaries:

$$Q = (\textstyle\sum p_i Q_i)/p \qquad (5.7)$$

Definition (5.7) enables us to define the fraction of output produced in each sector (Q_{ic}) to the total output, that is, the social product (Q):

$$[(p_i Q_i)/p]/Q = Q_{ic}/Q \qquad (5.8)$$

Both (Q_{ic}) and (Q_{ic}) are measured in terms of bundles of necessary consumption goods. This makes sense because the ultimate aim of production is to produce goods for private and public consumption.

Premultiplying in the price relations (5.6) the column vector $\boldsymbol{n}$ containing the reinterpreted sectorial labour coefficients (N_i/Q_{ic}) by a row vector made up of the shares of sectorial output to total output (Q_{ic}/Q) yields an expression for the macroeconomic labour coefficient (N/Q):

$$\sum N_i/Q = N/Q) = n \tag{5.9}$$

On the basis of relations (5.7) and (5.9) we can now write down the macroeconomic Kalecki-Weintraub price equation

$$p = w_n nk = w_n(1/A)k \tag{5.10}$$

where w_n is labour productivity (Q/N).

The price equation (5.10) may also be arrived at by premultiplying the column vectors $\boldsymbol{p}$ and $\boldsymbol{n}$ in relation (5.6) which have the dimension ($n \ x \ 1$) by the row quantity vector Q having dimension ($1 \ x \ n$) with elements Q_i ($i = 1,2,...,n$); in this vector the first $n - m$ elements for primary and intermediate products, will be zero; hence there are m final outputs Q_i ($i = 1,2,...,m$). This yields a relation for the nominal national product Q_n:

$$Q_n = w_n Nk \tag{5.6a}$$

Premultiplying on the left-hand side of this relation by (p/p), p being the price of the bundle of necessary consumption goods, and taking account of the definition $n = N/Q = 1/A$ ($A =$ labour productivity Q/N), yields the macroeconomic price equation (5.10).

Specifying the mark-up $\boldsymbol{k}$ yields a simplified price equation for all goods:

$$p_i = w_n n_i[1 + (rn_{iK}k)/n_i] = w_n n_j k \tag{5.11}$$

Since the mark-up k must equal the expression within square brackets in (5.11) for equal conditions of production in all sectors (n_{iK}/n_i is the same everywhere, to simplify equal to

unity as is argued in Bortis 2003a, p. 443, rel. 19.16), we get - on the macro-economic level - the following relations for the mark-up k and the wage share $1/k$ if the surplus consists of profit only:

$$k = n/(n - rn_K) \qquad (5.12)$$

and $$1/k = 1 - r(n_K/n) \qquad (5.13)$$

Both relations imply that *all economic* values are created by the workers and employees in the profit sector (the classical productive sector). In Marx's terms, it is *living* labour, which, using *dead (past)* labour, creates all economic values, that is, produces the social product.

From a distributional perspective, the *social surplus* may, as already suggested, be interpreted in a wider, macroeconomic sense, to include gross profits, surplus wages over socially necessary wages, labour rents as are due to exceptional abilities or privileges, land rents and profits. The *use* of the social surplus, ideally, provides the *material basis* for all the persons active in the non-profit sector in the widest sense, including the state, to create *political, social, legal and cultural* values through the actions of individuals and collectives within the institutions established in the institutional superstructure. *These values cannot, in principle, be measured in money terms*. Highly unequal distributions of the surplus and the ensuing inappropriate use of the social surplus are, as a rule, associated with alienated social states of affairs.

The equations (5.6 and 5.10) capture the essentials of classical (Ricardian-Pasinettian) price theory: the prices of *produced* goods reflect the social effort undertaken to produce them in terms of direct and indirect labour; distribution, based upon the surplus principle, is a complex social process.

The treatment of value and distribution within the social and circular and vertically integrated process of production suggested in this and in the preceding section enables us to deal with three problems associated, in our opinion, with Sraffa's model of circular production, value and distribution. *First,* the notion of land basics or primary products enables us to deal with the problem that, with Sraffa, inputs equal output. Indeed, in the upper left hand corner of the Leontief matrix iron ore is transformed into steel, crude oil into petrol, and so on; the outputs of land basics are subsequently transferred to all intermediate and final goods sectors. *Second,* treating fixed capital goods as final products, all produced by machines tools and labour, rather than to treat fixed capital as joint products renders the whole analysis of value and distribution

within social and circular production much easier; specifically, profits may now be calculated on fixed capital by way of a mark-up on circulating capital which includes direct wage costs and the costs of interrmediate and primary goods, which also become wage costs if there is vertical integration. [Even more appropriately, the mark-up may be calculated on average total costs at *normal capacity utilisation* – normal prices imply normal quantities!] *Third,* the social and circular process of production implies, in fact, production of commodities by means of commodities *and labour*. This means that the feature of *circularity* appears in three instances in the social process of production: In the first place, there is production of primary commodities by primary commodities and labour in the upper left Sraffa corner of the Leontief system. Secondly, in the realm of final products, there is production of commodities by means of commodities in the capital goods sector where all specific capital goods are produced by machine tools, which also produce and reproduce themselves. Thirdly, and perhaps most importantly, necessary consumption goods which are final goods have to move to all, even to the most remote corners, of the social and circular production system, because of the fact that there is production of commodities by means of commodities *and labour*, a fact pictured by relation (5.5) above which indicates the Pasinetti operation of calculating vertically integrated labour by multiplying the transposed Leontief inverse by the vector of direct labour.

Proportions and scale: classical and Keynesian macroeconomics – monetary theory of production

In a classical-Keynesian view, the social process of production is at the centre of a monetary production economy. *Distribution* – the *shares* of wages, profits and rents in domestic income and the *structure* of wages, profits and rents – gives rise to specific proportions, that is part-whole relationships. Relative prices and quantities, and the distribution of labour between sectors and industries, are also proportions. These proportions and their explanation are at the heart of *classical* political economy, which, in addition to production, deals also with the circulation of goods and money. In fact, *relative* prices and quantities have to be such that the *processes of production and reproduction* and the processes of *circulation of means of production and final goods* may go on smoothly. The breadth of the circuit, or the scale of economic activity, is the object of *Keynesian* political economy; here, *absolute* prices and quantities will be determined. Given this, the next two sections deal with the *proportions* and the *scale* aspect respectively.

The synthesis of the proportions aspect and of the scale aspect yields a classical-Keynesian political economy, i.e. a monetary theory of production, where money is all-important to run

the economy, since money always buys goods and never the other way round, and where, as a consequence, the real and the financial sector are inextricably linked:

$$M - C \dots P \dots C' - M' \tag{5.14}$$

Entrepreneurs have money and finance (**M**) at their disposal to buy means of production (raw materials and intermediate goods, machinery) and to hire labour (**C**). Within the social process of production **P**, labour, using machines, transforms the primary and intermediate goods into final goods **C'**. These are sold on the final goods markets for money **M'** which represents effective (monetary) demand for goods and services.

The proportions aspect of classical-Keynesian political economy
In this section, *all* equations are based upon Pasinetti's seminal *Theory of Value* (1986), and slightly elaborated.
The *price system (5.15)* depicts monetary flows and has several aspects which are considered in turn: first, there is the formation of prices; secondly, the formation of incomes and their distribution is suggested, and, thirdly, there is the spending of income by private households, enterprises, and the state:

$$
\begin{bmatrix}
1 & 0 & \cdots & 0 & -n_1 \\
0 & 1 & \cdots & 0 & -n_2 \\
\vdots & \vdots & \ddots & \vdots & \vdots \\
0 & 0 & \cdots & 1 & -n_m \\
-c_1 & -c_2 & \cdots & -c_m & 1
\end{bmatrix}
\times
\begin{bmatrix}
p_1 \\
p_2 \\
\vdots \\
p_m \\
w_n k
\end{bmatrix}
= 0
\tag{5.15}
$$

In this equation system the coefficients c_I are fractions of real income – in terms of (full employment) labour embodied N_f - spent on good i (5.16), or demand coefficients per labour unit (5.16a):

$$Q_{if} = c_i N_f \tag{5.16} \qquad\qquad c_i = Q_{if}/N_f \tag{5.16a}$$

The formation of absolute prices within the social process of production can only take place once the distributional variables are determined, i.e. the money wage rate w_n of some labour unit, and the mark-up k, including the uniform target profit rate (r); as mentioned above, the

labour unit could, for example, consist of simple, unqualified, labour with qualified labour as multiples - reduction coefficients - of unqualified labour; obviously, the reduction coefficients have a wide normative dimension, associated with distributive justice. One must sharply distinguish between actually existing, *normal*, and *natural,* normative or socially desirable reduction coefficients. On the level of principles, the natural is, in fact, the normative form of the normal.

The (absolute) prices (equations 5.17) represent the money value of the social effort to produce the individual goods within the social process of production. These prices result from multiplying the first $m - 1$ rows in the above matrix with the price and income vector.

$$p_i = w_n n_i k = w_n(1/A_i)k \quad (i = 1,2, ..., m) \tag{5.17}$$

The A_i coefficients represent sectorial labour productivities.

The formation of absolute prices is intimately linked with the formation of incomes and its distribution. The price equations (5.17), in fact, imply that the money value of sectorial outputs equal the sectorial incomes in money terms. However, this second aspect of the system (5.15) in fact, implies, as will be seen below, that this system determines *relative* prices only. This means that distribution is a problem of proportions. In fact, proportions associated with the social effort to produce goods are intimately related to *distributive* justice, first, through the reduction coefficients governing the wages structure, as emerges most clearly through relative prices:

$$p_i/p_j = n_i/n_j \tag{5.18}$$

and, second, through the distributional relationships governing the wages share and the 'property share', or, in a wider social view, the 'surplus share', which would also include surplus wages:

$$W/Y = 1/k \text{ and } (P + Y)/Y = 1 - (1/k) \tag{5.19}$$

Third, the spending of incomes by households, enterprises, non-profit-organisations and the state is pictured by the last equation in the equation system (5.15):

$$c_1 p_1 + c_2 p_2 + \ldots + c_m p_m = w_n k \qquad (5.20)$$

The economic meaning of this relation emerges more clearly if account is taken of the spending coefficients defined as demand per profit-sector labour unit (relation (5.16a) above):

$$\Sigma c_i p_i = \Sigma (Q_{if}/N_f) p_i = w_n k \qquad (5.21)$$

Taking account of the price equations (5.17) in relation (5.21), we get the definitions

$$\Sigma (N_i/N_f) w_n k = w_n k \qquad (5.22) \qquad \Sigma (N_i/N_f) w_n k N_f = w_n k N_f = Y \qquad (5.22a)$$

From these relation immediately follows

$$\Sigma (N_i/N_f) = 1 \qquad (5.23)$$

To recall, N_i is total – direct and indirect – labour used to produce good i, N_f is the full employment labour force in the productive sector of an economy.

Definition (5.23) indicates the distribution of the profit-sector labour force within an economy which represents a most important proportion in a monetary production economy. Indeed, the distribution of economically productive labour depends upon the way in which incomes are spent, if labour productivity is given; in fact, definition (5.23) has been derived from relation (5.20). The way of spending incomes depends, in turn, heavily upon income distribution.

The quantity system

$$\begin{bmatrix} 1 & 0 & \cdots & 0 & -c_1 \\ 0 & 1 & \cdots & 0 & -c_2 \\ \vdots & \vdots & \ddots & \vdots & \vdots \\ 0 & 0 & \cdots & 1 & -c_m \\ -n_1 & -n_2 & \cdots & -n_m & 1 \end{bmatrix} \times \begin{bmatrix} Q_{1f} \\ Q_{2f} \\ \vdots \\ Q_{mf} \\ N_f \end{bmatrix} = 0 \qquad (5.24)$$

informs us, first, about the demand for and the circulation of goods (the first m lines of the matrix are multiplied by the quantity vector):

$$Q_{if} = c_i N_f \qquad (5.16)$$

second, about the production and the supply of goods:

$$n_i = N_i / Q_{if} \text{ or } Q_{if} = (1/n_1) N_i = A_i N_i \qquad (5.25)$$

and, third, about the ‚macroeconomic equilibrium of demand and supply':

$$n_1 Q_{1f} + n_2 Q_{2f} + \ldots + n_m Q_{mf} = \sum N_i = N_f \qquad (5.26).$$

Relations (5.25) and (5.26) obtain from multiplying the last line in the above matrix (5.24) by the quantity vector. In relation (5.26) supply is on the left-hand side, demand appears in the form of ‚real' income (labour time) on the right-hand side of this equation.

Relation (5.25) implies that in a social production (or labour) economy, technical progress is always labour saving: less direct and indirect labour is required to produce a certain good. This renders possible an increase in money wages, with prices and mark-ups given, or enables to cheapen production, *given money wages* and mark-ups, or to realise higher profit rates (an increase in the mark-up).

The determinant of the price system (5.15) and of the quantity system (5.24) is given by the following expression (Pasinetti 1986, p. 422, relation 16):

$$c_1 n_1 + c_2 n_2 + \ldots + c_m n_m - 1 = 0 \qquad (5.27).$$

Taking account of the definition of the demand coefficients c_i (relation 5.16a) and of the labour (production) coefficients n_i (relation 5.25) yields, again, an expression picturing the sectorial distribution of profit-sector labour:

$$N_1 / N_f + N_2 / N_f + \ldots + N_m / N_f = 1 \qquad (5.28)$$

These relations tell us that the distribution of direct and indirect labour among the various sectors of an economy, as is indicated by definition (5.28), is governed by two elements [relation (5.27)], first, the size of the demand for the different goods (c_i), and, secondly, the quantity of labour required to produce a unit of some good (n_i). Both relations, (5.27) and (5.28), thus express fundamental proportions prevailing in any monetary production economy.

The fact that the determinant of the coefficients matrix of the systems (5.15) and (5.24) is zero (relation 5.27) has important economic implications. This condition guarantees economically meaningful solutions for the equation systems (5.15) and (5.24), that is, *positive* prices and quantities. In fact, in both equation systems the last equation is not independent of the other equations. This implies that only *relative* prices and quantities, p_i/p_j and Q_{if}/Q_{jf}, are determined.

As has already been suggested, absolute prices are determined once distribution is regulated: the level of money wages w_n and the normal rate of profits implied in the mark-up k must be fixed in advance. This goes on through complex social processes. Hence, in principle, distribution ought to be determined *before* production can start. In a way, distribution is the primary and fundamental problem in political economy (Ricardo 1821, p. v).

Absolute quantities are determined once the level of employment (N) is given. Until now we have postulated the ideal case, i.e. full employment (N_f). In the next section, the determination of the long-period level of employment, governed by persistent factors, i.e. technology and institutions, will be considered. This amounts to looking for the factors governing the breadth of the economic circuit or the scale of economic activity in the long term.

The scale aspect of classical-Keynesian political economy

The scale of long-period economic activity is governed by long-period effective demand, which depends, in turn, upon the institutional and technological system, made up of the material basis and of the institutional superstructure, i.e. upon the socio-economic structure. Institutions partly determine behaviour through formal and material restrictions and incentives, as is the case with social institutions like enterprises, associations, state administration, the legal system or ‚individualistic' institutions, consumption habits, for example (on this see Bortis 1997, chapters 2, 3 and 4). The long-period or trend level of domestic output may get established well below full employment, giving thus rise to *permanent long-term involuntary unemployment*. The existence of persistent involuntary unemployment is empirically well founded. For example, from the early 1980s onwards the

trend unemployment rate was about 12% in France and 10% in Germany for more than a decade.

Formally, involuntary unemployment as is determined by the socio-economic system, is represented by the definitions (5.29 – 5.32) below. The coefficient (u) is the rate of unemployment (5.29) and the expression $(1 - u)$ is the rate of employment (5.30). Now, the quantity vector in system (5.24) must be multiplied by the coefficient $(1 - u)$ to obtain a new quantity vector (5.31) with the level of employment N lower than the full employment level N_f (5.32). Hence the coefficient $(1 - u)$ could be termed the *employment scalar*.

$$u = (N_f - N)/N_f \qquad (5.29) \qquad\qquad 1 - u = N/N_f \qquad (5.30)$$

$$[Q_1, Q_2, ..., Q_m, N] \qquad (5.31) \qquad\qquad N < N_f \qquad (5.32)$$

Definitions (5.31) and (5.32) imply that the structure of final output does not change as the level of employment varies. This, of course, is only valid as long as principles – independent of space and time – are considered. Considering principles enables to separate the analysis of the pure (classical) proportions model (previous section) and the pure (Keynesian) scale model. In the real world (of phenomena) structures (proportions) will, of course, change as the level of employment or the scale of economic activity varies.

In definition (5.33) total supply equals total demand, whereby demand *governs* supply. Supply is given by the gross domestic product Q, which equals labour productivity A times employment in the profit sector N. The real wage rate is $w = w_n/p$, that is, the money wage rate w_n divided by the money price of a bundle of necessary consumption goods p. Normal wages wN are supposed to be entirely consumed. The surplus is made up of profits P and of land and labour rents R, with labour rents accruing on account of special abilities and dispositions; c_S is the fraction of the surplus (privately) consumed. I is gross investment, G state expenditures, π stands for the terms of trade $[X/M = ep_M/p_X]$, p_X represents export prices in domestic currency, p_M import prices in foreign currency, e is the exchange rate, and X and M are export and import quantities respectively.

$$AN = Q = wN + c_S(P + R) + I + G + X - \pi M \qquad (5.33)$$

Imports M as a fraction b of GDP or domestic income $Q = Y$ are of two kinds. Necessary imports $M_1 = b_1 Q$ (raw materials, necessary consumption goods, machines to produce necessaries) are related to production, while non-necessary imports $M_2 = b_2 Q$ are related to consumption out of the surplus.

$$M = bQ = M_1 + M_2 = b_1 Q + b_2 Q = (b_1 + b_2)Q \qquad (5.34)$$

In the price equation

$$p = (w_n / A)k \qquad (5.35)$$

the mark-up k governs the size of the surplus.

Distribution, i.e. the division of domestic income into ordinary or normal wages and the surplus (profits, land rents and labour (ability) rents) and the structure of normal wages, profits, land and labour rents is, in a normative perspective, a social ethical issue of immense complexity associated with the issue of distributive justice; in a positive vein, distribution is a matter of social power:

$$W/Y = 1/k \text{ and } (P + R)/Y = 1 - (1/k) \qquad (5.36)$$

In the long run, the *volume* of gross investment I is *governed* by trend GDP (Q) and its evolution, with Q, in turn, being determined by the whole socio-economic-cum-technological structure. (The *single* investment project depends, however, on more or less certain expectations about the future.)

$$I = (g + d)vQ = (g + d)K \qquad (5.37),$$

$(v = K/Q$ is the capital coefficient)

Hence the long-period *volume* of gross investment I represents *derived or induced* demand; only the capacity effect of investment is taken into account in a situation in which overall long-period effective demand equals long-term aggregate supply.

Net trend investment (gK) is governed by the *long-period or trend* growth rate g of the *autonomous* variables, G and X [see for some implications (Bortis 1997, pp. 155-75 and 204-

220)]. ‚Replacement' investment (dK) depends on the depreciation ratio d, that is, the fraction of the total capital stock to be replaced for physical, economic and technological reasons. The coefficient d indicates, therefore, the extent of the technical dynamism of the entrepreneurs in the sense of Schumpeter, i.e. regarding the introduction of new techniques of production and of new products.

Saving (private and state saving, t being the tax rate)

$$S = sQ + tQ - G \qquad (5.38)$$

adjusts to investment through changes in output. This is particularly evident if we consider ratios:

$$s + t - (G/Q) = (g + d)v \qquad (5.39)$$

Given an equilibrium of the balance on current account, a higher output can only be achieved if government expenditure increases, or, if private consumption increases, because of a decline in the saving/income ratio s or in the tax/income ratio t. Government expenditures (or exports) are of particular importance because they set economic activity into motion. The level of government expenditures G greatly contributes to determining the scale of economic activity. This is evident from our basic relation, the supermultiplier relation, which can be derived from equations (5.33) to (5.37).

$$Q = \frac{G + X}{z_S[1 - (1/k)] + \pi(b_1 + b_2) - (g + d)v} \qquad (5.40)$$

$$z_S = 1 - c_S = s_S + t_S \qquad (5.41)$$

Relation (5.40), the supermultiplier relation, shows how output $\boldsymbol{Q}$ and employment $\boldsymbol{N}$ are governed *in principle*. Hence this relation represents the pure theory of output and employment in a monetary production economy.

Definition (5.41) represents the leakage coefficient z_S, which indicates the fraction of the surplus over ordinary wages that is *not* consumed, the fraction consumed being c_S. Consequently, the leakage coefficient is the sum of the fractions of the surplus paid for taxes (t_S) and saved (s_S). Since the long-period consumption coefficient c_S and the long-period tax

coefficient t_S are both determined by institutions - consumption habits and tax laws -, the long-period saving propensity s_S is a *pure residual* varying with the normal level of output and employment, *given* the rate of profits as is implied in the mark-up (Bortis 1997, pp. 166-68). This is perfectly analogous to Keynes's short-period theory of saving but different from the Pasinetti equation where, *given* the level of employment, the savings propensity of the capitalists and the rate of growth *determine* the rate of profits in a Keynesian *Treatise on Money* way (see again Bortis 1997, pp. 166-68).

Following Hicks, equation (5.40) may conveniently be called a supermultiplier relation "which can be applied to any given level of [autonomous demand components] to discover the equilibrium level of output [Q] which corresponds to it" (Hicks 1950, p. 62). Hence the autonomous demand components, G and X, set economic activity in motion, similarly to the expenditure of rents by the landlords in Quesnay's extended *tableau économique* (on this see Oncken 1902, p. 394).

Once output and employment are determined through the supermultiplier relation (5.40), the output and employment scalar $1 - u$ (definition 5.30) is also fixed. In principle, the normal quantities corresponding to a specific output and employment level obtain if the full employment quantity vector in the quantity system (5.24) is multiplied by the employment scalar. The determination of *normal output and employment is equivalent to fixing the output and employment trend* around which cyclical fluctuations occur (Bortis 1997, pp. 149-51). It has already been suggested that the position of the output and employment trend is of considerable socio-economic and political importance because this determines the extent of long-period – system governed – permanent involuntary unemployment. The latter is, in turn, an important element governing the social and political climate in a country.

Methodologically speaking, the supermultiplier relation (5.40) represents, as suggested already, the pure long-period Keynesian employment theory, picturing how output and employment are determined *in principle* by the various demand variables and parameters on the right-hand side of this equation (Bortis 1997, pp. 142-204). In a way, this relation is a metatheory - a metaphysical theory - of employment to determine what is – probably – essential about employment determination in a monetary production economy (see on this the methodological introduction in Bortis (2003a, pp. 411-15) and the subsection on *principles and theories* in section 4 above). Determination *in principle* of some socio-economic phenomenon attempts to capture the essential features of the causal mechanism at work, which are timeless and invariable. Moreover, in a pure or 'ideal-type' model, the *ceteris paribus* clause is automatically implied, which is to say that the predetermined variables on the right-hand side

of the supermultiplier relation (5.40) are considered independent of each other. This, as a rule, will not be the case if some real world situation is considered.

In principle, normal output Q, and, hence, trend employment N, are positively linked to the autonomous variables G and X, and to the gross investment-output ratio $I/Q = (g + d)v$. This ratio depends on the rate of growth of the autonomous variables $(G + X)$, g, which is also the rate of growth of long-period or normal output and employment, and upon the replacement coefficient d. In an open economy, the rate of growth of exports is crucial, as Nicholas Kaldor has always insisted upon [see on this (Bortis 1997, pp. 155-56, 185-89 and 190-98)]. The (Schumpeterian) d is an indicator of the technical dynamism of entrepreneurs. The effect of exports (X) on output and employment will be particularly strong if exports mainly consist of high-quality manufactured products with a large value added, i.e. a high content of direct and indirect labour (Kaldor 1985, pp. 57-79). However, normal output will be lower if, given exports X, the technological and cultural dependence on the outside world is strong, as would be reflected in large import coefficients b_1 and b_2, and if the terms of trade (π) are unfavourable, which would show up in a high value of π. Very importantly, normal output (Q) is negatively linked with the property share in income, $1 - (1/k)$, and with the leakage coefficient, z_S, associated with this share; as a rule, z_S will be larger if the distribution of property income is more unequal. Given government expenditures and gross investment, *a higher leakage* out of income $(z_S[1 - (1/k)])$ reduces effective demand, because *consumption is diminished*. Fundamentally, unemployment occurs because the saving-income ratio, $s_S[1 - (1/k)]$, exceeds the investment-output ratio, $(g + d)v$, at full employment. Full employment could only be maintained if private and/or public consumption were increased. A redistribution of incomes, i.e. raising the share of normal wages $(1/k)$, would lead to higher private consumption through enhancing spending power. In principle, a higher level of public expenditures, G, would require a tax increase: the tax rate, t_S, would have to be raised to preserve budget equilibrium, which would reduce the saving coefficient s_S. If these measures are not undertaken, output, employment, and tax receipts will decline, and, given government expenditures, budget deficits will occur. These will reduce the saving ratio until it equals the investment ratio at some long-period equilibrium level of output and employment involving persistent involuntary unemployment. Hence the negative association between distribution and employment emerges, because the property share and the saving and the leakage ratio associated with it are too high; and s_S, and thus z_S will be the higher the more unequally property income is distributed. Thus, the notion of unequal income distribution has a double

dimension: the property share is high, and property income is itself unequally distributed. This leads to a high leakage out of income, given by $z_S[1-(1/k)]$ to which corresponds a reduced level of output and employment.

This crucially important relationship between unequal distribution and involuntary unemployment represents, according to Schumpeter, the essence of the Keynesian revolution: "[The Keynesian doctrine] can easily be made to say both that 'who tries to save destroys real capital' and that, via saving, 'the unequal distribution of income is the ultimate cause of unemployment.' *This* is what the Keynesian Revolution amounts to" (Schumpeter 1946, p. 517). Indeed, Keynes held that the "outstanding faults of the economic society in which we live are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes. [Up] to the point where full employment prevails, the growth of capital depends not at all on a low propensity to consume but is, on the contrary, held back by it [and] measures for the redistribution of incomes in a way likely to raise the propensity to consume may prove positively favourable to the growth of capital" (Keynes 1936, pp. 372-73; on this see also Garegnani 1978/79). The inverse long-period link between employment and distribution is *the* crucial feature of the supermultiplier relation. On the empirical level, Galbraith and Berner (2001) represents an important effort to deal comprehensively, in a Keynesian spirit, with inequality, unemployment and development on a global level.

Finance and money – interactions between the real and the financial sector

The clue to understanding the role of finance and the nature of money in a monetary production economy is to examine the macroeconomic significance of saving in a monetary production economy. Here the distinction between saving and finance is crucial. Banks, that is, the *banking system,* provide finance. This is the *monetary* financing of investment (*I*) through bank credits (*B*) and through financial means of the enterprises themselves, for example, reinvested profits; part of current or past saving may also participate in the financing of current investment, for example, through subscribing *new* shares or loans. However, when considering principles, all financial means *must* ultimately equal current saving (*S*) since (*S* = *I*) must always hold, and, ideally, (*S*) should represent the *monetary* and the *real* financing of investment.

Let us denote the fraction of *current or new* saving used by firms and households to finance *current or new* investment by (bS). Hence the equation for the *monetary* financing of investment:

$$B + bS = I \qquad\qquad (5.42).$$

In the Keynesian, post- and classical-Keynesian vision, finance precedes investment. Since we are dealing with principles we may nevertheless relate finance to current saving. Principles are reconstructions of constitutive or essential elements of reality telling us how the causal forces considered work in pure form. Given this, time-lags do not play any role since relations involving principles always hold as do the following relations which are about principles, too.

To complete the picture we already mention at this stage the *real* financing of investment, which is given by

$$I = S = sQ \qquad\qquad (5.43):$$

saving makes available the resources (labour, capital equipment and land) required to produce investment goods. And, crucially, with the *real* financing of investment through saving, investment *precedes* saving, which, in turn, *adjusts* to investment (I) through changes in output (Q), employment (N) and distribution. Thus, the whole sequence of monetary and real financing of investment is given by

$$B + bS = I = S = sQ \qquad\qquad (5.44)$$

This relation already shows that in a monetary production economy *investment* stands at the centre of events. The left-hand side pictures how, in principle, the *monetary* financing of investment goes on, the right hand side how the *real* financing goes on. It must be noted that, in relation (5.44), saving (S) on the right-hand side of investment has not the same meaning as (S) on the left-hand side. Saving on the right of (I) is non-consumed income that makes available real resources, present and past labour, for producing investment goods. Saving on the left of (I) are saving or term deposits, which represent the basis for granting long-term credits by banks to finance part of investment (B) and are the source for financing part of investment by own financial means (bS), that is, by retained profits and subscription of *new* shares by households, for instance. In fact, non-consumed income is almost immediately transformed into saving or term deposits.

Given this, the amount of credits granted (B) also depends on saving (S), or must be related to (S). Indeed, banks may provide credits on the basis of excess reserves represented by the saving net of the amount used to finance investment (bS) by firms and households. In fact, the net saving of households and enterprises – $(1 - b)S$ – appears on the debit (liabilities) side of bank accounts and as excess reserves on the credit (assets) side. Now, taking account of relation (5.44), the banks must hold a fraction (r) of the *new* credits granted ($B = I- bS$) as reserves for practical or legal reasons; as a rule (r) is rather small (0.1, 0.05, or, in practice even less). Since in the real sector saving (S) must equal investment (I), the amount of credits granted by the banking system is, on account of equation (5.42), $B = (I- b)S$; the reserves to be held are $rB = r(1 - b)S$; the credit and money multiplier relation is $[B = (1/r)r(1 - b)S]$. Hence the amount of money created through bank activities is

$$\Delta M = B(1 - r) = (1 - b)S(1 - r) \qquad (5.45)$$

This relation exhibits the *principle* of money creation by the *banking system,* which is always valid, and time plays no role. Again, there would be no point in introducing time-lags to argue, for example, that some credits have been granted on the basis of surplus reserves related to past saving. These would simply drive out surplus reserves associated to current saving by the same amount. To find how (endogenous) money is created in principle, it is essential to relate *flows* of saving and investment, that is, new saving, saving as deposits providing the basis for new financial means, and new investment, made possible through real saving having released the resources, present and past labour, to produce the new investment goods.

The Basel agreements (Basel I 1988, Basel II 2007 and Basel III 2010) have replaced reserve requirements by prescriptions on own capital to be held as a percentage of assets. This implies that, in principle, there is no upper limit to the credit volume the banking system can provide. Now, according to classical-Keynesian theory, the investment volume is strictly limited in the long run through long-period effective demand, which emerges from the supermultiplier relation (5.40). However, it is likely that, in order to maximise profits, banks will attempt to finance as much of the new investments as possible with credits (B) at the expense of directly reinvested saving, for example, new shares to be subscribed by households.

At this stage, a remark on the nature of money is to be made. In the form of finance, *money* is *endogenous* since it may easily adjust to whatever investment volume the banks are ready to finance. However, in the course of the *process of production,* where values are created, that is, goods are produced, services rendered and incomes are created, finance is transformed into *money proper* and becomes in a way *exogenous*. As such the quantity of money M is given and can, as such, not be destroyed. In a Keynesian vein, money may circulate in two distinct spheres: in the real sector, where Keynes's *industrial circulation* takes place, and in the financial sector, where Keynes's *financial circulation* occurs (on both types of circulation, see Keynes 1930, vol. I, chapter 15). Money, if circulating in the real sector, *represents* values, and, as such, expresses values in money form. Hence, in the real sector, money has *always* a value equivalent, goods and services to wit. However, once money leaves the real sector to enter the financial sector, money becomes a store of value *without* real value equivalent.

Relation (5.45) implies that the potential of money creation through the banking system is enormous since (b) is likely to be rather small; indeed large parts of saving, including retained profits, increasingly move into the financial sector to reap quick profits there. Since, in the long run, investment is limited by effective demand through the supermultiplier (5.40), the banking system remains with excess reserves amounting to the right hand side of relation (5.45). This large part of saving corresponds to the newly created money (ΔM). The amount ΔM is now no longer needed to finance investment (I), as is governed by expectations in the short-term, the profit-investment mechanism in the medium term and by the institutional system in the long term (Bortis 1997/2006, chapter 4). In fact, due to the capacity of the banking system to create money, the financial resources available, saving S and newly created money ΔM, necessarily exceed investment (I): ($\Delta M + S > I$).

However, in the real sector, saving (S) must always equal investment (I). Indeed, with I determined, saving adjusts to investment through changes in output and employment ($I = sY = sQ$) to secure the *real* financing of investment: saving makes available the resources (labour, capital equipment and land) required to produce investment goods. Hence since investment (I) must always equal saving (S), part of saving, equivalent to ΔM, will flow into the financial sector:

$$\Delta M + (S - \Delta M) = I \qquad\qquad (5.45a)$$

Now, since $S = I$, saving (S) and investment (I), taken by themselves, do not affect the quantity of money, which circulates in the real and in the financial sector respectively. In fact, saving (S) leaves the real sector and moves to the financial sector, and appears there in the form of saving and term deposits; on the other hand, an amount of money equal to investment (I) leaves the financial sector for the real sector in the course of the monetary financing of investment: hence $fM = fM + (S - I) = fM$, and $rM = rM + (I - S) = rM$; here, (f) is the fraction of the quantity of money (M) which is in the financial sector, and r the fraction of money in the real sector ($M = fM + rM$) and ($f + r = 1$). Hence it is the money created by the banks in excess of saving (ΔM), which moves from the real to the financial sector, bringing about a rise of the ratio of money in the financial sector to money in the real sector (f/r). Money creation (ΔM) may be enhanced if the banking system finances part of state and private budget deficits by credits or if the central banks finances parts of budget deficits or buy existing treasury bonds through quantitative easing. Given this, the capacity to create money through the banking system, banks and central banks, is simply enormous. As a consequence, the ratio (f/r) has increased dramatically. Indeed in the last thirty years or so, the quantity of money M in the real sector (rM) has been multiplied by *four*, the quantity of money in the financial sphere (fM) by *forty*! This increase in potentially profit-seeking financial capital leads on to a *financialisation* of an economy if the profit-cum-rent-share in income increases and money is shifted from the real to the financial sector. In a way, with *financialisation* the real economy becomes ancillary to the financial sector of that economy; finance dominates production. As Marx and Keynes both perceived, this may lead to instability and possibly crisis.

Another indicator of the size of the ratio (f/r) is the number of transactions. On the world level around 97% of all transaction take place in the financial sector, where no value added occurs, only a redistribution of already existing values. From this we may infer that the velocity of circulation associated to (fM) is very high, and is fuelled by interbank credits. These credits imply, in part, an interbank shifting of excess reserves, which, in turn, provide the basis for bank credits to finance *financial transactions*. Given the immense amounts of financial means available worldwide, speculative bubbles may come about very frequently since the prices of *already existing* financial and real investment objects are determined by relative strength of bulls and bears. Even if one bubble explodes, the next may immediately follow since the size of (fM) is not affected by bubbles and their explosion. At the end the speculative game, (fM) has only been shifted around or redistributed in the course of

financial speculation: the winners are those who sell at high prices, the losers those who have bought when prices had reached a top. Borrowing does not affect the final outcome since credits have ultimately to repaid. In the financial sector borrowing means *temporary* money creation, and repayment of credits, implies destruction of money, leaving (fM) constant. Indeed, "[all] money which is anywhere, must be somewhere" (Robertson 1963, p. 350). And (fM) cannot flow into the real sector because the amount of *new* investments is ultimately limited by effective demand emerging from the supermultiplier relation (5.40) above. In fact, destruction of wealth may only take place in the real sector. Real wealth is destroyed in the real (industrial) sector in the course of a business downswing, when firms go bankrupt. This has of course repercussions in the financial sector: share prices fall or, in the case of bankruptcy, stock is even wiped out. However, the massive destruction of wealth in the downswing of a Kondratiev cycle is the *precondition* for a new upswing associated with the creation of new wealth (Bortis 1997/2006, pp. 204-20).

The terrain is now prepared to draw some tentative conclusions that have to be explored further. First, a large part of (fM) may be considered profit-seeking financial capital. This fact goes far to explaining the rise of land prices, houses, gold, old masters, and, very importantly, share prices. As a consequence profits have to increase absolutely to ensure an acceptable profit rate. This leads on to an increasingly unequal distribution of incomes (and wealth). The *financialisation* of an economy is thus intensified. As a consequence, the spending power of the population diminishes, which, in turn, results in reduced effective demand and in an increase of persistent involuntary unemployment. This link between income distribution and employment is perhaps the most important feature of the relationship between the real and the financial sector.

Second, the banking system has the capacity to expand very quickly the credit volume in the cyclical upswing, enhancing thus the interaction between profits and investment, which is basic to the income effect of investment; in the downswing banks tend to reduce credits, accelerating thus the downswing. Hence the financial sector renders cyclical movements more pronounced (see on this Bortis 1997, pp. 204-20).

Third, the monetary value of already existing forms of real and financial wealth, is, in principle, broadly determined if (fM) is *invested* - Keynes uses the term *enterprise* - or more or less undetermined if (fM) is used for *speculative* purposes (Keynes 1973/1936, pp. 158/59). In fact, the money value of investment objects is, in the case of speculation, governed by the relative strength of *bulls* and *bears*. Investment in existing equipment, through buying shares for example, may take on two forms, normal (placement) or

unfriendly. Investing finance (fM) by buying shares and accepting the dividend proposed by the management would be a normal or placement investment. The management would keep its liberty of action, including, above all, long-term - strategic - planning. This would broadly coincide with Keynes's *enterprise* mentioned above. Moreover, in the case of badly managed firms, take-overs associated with restructurations may lead on to a improvement of the performance of the firms taken over, although, on a European level, the results seem to be rather poor.

However, even a placement investment of profit seeking finance capital (fM) in existing assets has an impact on the real economy, most importantly on distribution. In fact, if (fM) is large, even very large, as has been the case in the last decades, the prices of real and financial assets, medium sized and small enterprises, land and real estate, and shares of large enterprises are likely to rise to high and very high levels, far above the real value of these assets governed by the costs of production of the real assets and expanded returns, which, in turn, govern their financial counterparts. This permanently leads to a more unequal income distribution which, on account of the supermultiplier relation (5.40) above, will lead on to increasing involuntary unemployment; and, very importantly, in spite of rising share prices investment will not increase because output and employment are limited by effective demand. Unfriendly investment of (fM) reinforces these effects. There may even be a qualitative change in that parts of the real sector now move in the service of the financial sector, which is literally fed by surpluses produced in the real sector. The rents paid by tenants of flats, houses and restaurants may become exorbitant. In the case of restaurants, for example, even in the case of well-run restaurants, very hard working tenants can hardly make their living, because of the very high rents to be paid. Again, with increasing inequality of income distribution, involuntary unemployment is bound to rise.

Fourth, on a world level the question arises in which currency the monetary wealth (fM) is to be held. Is it the US dollar, the Euro, or the Swiss franc and the Japanese yen? With doubts about the debt servicing capacity of the US and some European countries, large exchange rate variations have occurred in 2010-12 for reasons mainly related to the financial sector. Indeed, the value of the US dollar and of the Euro have declined sharply against the Swiss franc and the Yen. Given this, Switzerland who has a strong real and financial sector is now in a most difficult situation: in the medium and long run significant parts of her export industries might be threatened. Or, in 2011, some weeks after the Tsunami-cum-Nuclear Catastrophe, the Yen started to rise sharply, thus creating enormous problems for the Japanese car industry. These

are just examples of how turbulences in the globally huge financial sector may threaten even the most solid parts of the real economy.

There are many other aspects of financialisation to be investigated. This section merely aims at explaining to some extent a famous proposition Keynes made in 1930 already: "Depressions arise, Keynes wrote in his *Treatise on Money* [1930], when money is shifted from the industrial circulation [the real sector] to the financial circulation [the financial sector]" (Skidelsky 1992, p. xxiv).

Links with Keynesian and post Keynesian political economy

The preceding section deals with principles, that is, with the fundamental forces governing prices and quantities in a classical-Keynesian view. As such, this section exhibits aspects of the pure long-period classical-Keynesian model of production, value, distribution, and employment. However, concretely existing prices and quantities are governed by a great many factors, circumstances or causal forces, fundamental and accidental. Among the accidental factors, some features of the conditions of production, for example, the relation between fixed and circulating capital, of cyclical movements of output and employment, and of the functioning of the market – the sphere of circulation – are particularly important.

To see how the classical-Keynesian strand of thought is linked with Keynesian and post Keynesian thinking on economic problems, it is important to note that, in this section, the *functioning of the socio-economic system* is investigated. The technical-institutional system *partly determines* the *behaviour* of individuals and collectives because the system imposes *restrictions* upon behaviour. For example, through the supermultiplier relation the system sets a restriction to all workers and employees: no more than $(1-u)100$ percent of the workforce can find a workplace (definition 5.30 and relation 5.40); however, *who* will be employed or unemployed depends on the *behaviour* of the various individuals. In the medium term and in the short run, behaviour of economic agents takes place within the – institutional – system, giving thus rise to specific behavioural outcomes that differ from the system outcomes (Bortis 1997, pp. 83-117). The issue of institutions and behaviour is, in fact, a central tenet in Bortis (1997).

Post-Keynesianism prominently deals with the *behaviour* of consumers and producers in the medium term, whereby behaviour is co-ordinated by the system, represented by effective demand (Harcourt (2006) provides an excellent exposition of post-Keynesian economics). A significant example of this interaction is the double-sided relationship between profits and investment (Joan Robinson, Michal Kalecki): profits influence investment behaviour, and the

level of investment governs profits. This gives rise to a theory of employment determination in the medium term, in fact, in the course of cyclical growth, with the income effect and the capacity effect of investment interacting (Bortis 1997, pp. 204-20); long-term fluctuations of economic activity, associated with Kondratiev cycle could be brought into the picture, too, as is suggested in Bortis (1997, p. 219). The cyclical variations of output and employment may go along with a specific ‚pricing in the business cycle'. The domain of Keynesians is the determination of economic activity in the short term, where productive capacities are given and only the income effect of investment is relevant. Here, each investment project is associated with uncertainty and expectations, which, as a consequence, govern the short-period volume of investment, in contrast, to the long-period investment volume, which is determined by the evolution of trend output, and hence by the entire technical and institutional system. Finally, money and finance can be brought into the picture without any difficulty, starting, for example, from the concepts of *industrial circulation* and *financial circulation* in Keynes's *Treatise on Money* (vol, I, ch. 15) and the whole of the *General Theory* (for a broad sketch see Bortis 1997, pp. 220-35).

Basically, the role of money is threefold. First, as has already been alluded to, *money is indispensable to run the whole system of production and circulation* in which money is always 'exchanged' against goods; there is never 'neoclassical' exchange of goods against goods, with the intermediation of money. Second, and equally important, *money is a means to mobilise the resources of a country*, above all the most precious resource, that is *labour*, through generating sufficient effective demand, in the form of government expenditures in the main (on this issue L. Randall Wray's *Understanding Modern Money – The Key to Full Employment and Price Stability* is fundamentally important (Wray 1998); see also the amusing discussion between Keynes and an architect, Keynes 1980/1942, pp. 264-266). This means creating full employment in the sense that involuntary long-period and system-caused unemployment is eliminated; structural unemployment, due to technical change or to changes in the structure of demand will be unavoidable in the medium term, as is voluntary unemployment in the short run. Both these roles of money relate to the functioning of the socio-economic *system* of production and circulation in the short, medium and long term, while a third role of money relates to the *behaviour* of individuals facing an uncertain future. Here, *money as a store of value* is indispensable.

Since money is *endogenous* in classical-Keynesian theory, there is no point of speaking about the 'quantity of money'. With the foreign balance equilibrium in the long run, the government must, according to the internal employment mechanism, permanently spend money in the form

of government expenditures G to set the economy into motion and to bring normal or long period output into being, creating thus the tax incomes required to 'finance' institutionalised government expenditures: $G = T = tQ$ (Bortis 1997, pp. 152-54 and p.190). Thus, normal or long-period government expenditures, through the functioning of the socio-economic *system,* permanently generate the tax revenues required to finance them, in the same way as investment I generates the saving required ($I = sQ$) in each short-term period through the system-coordinated *behaviour* of producers and consumers. Once full employment is reached the state budget must of course be in equilibrium so as to prevent inflation. To determine the size and the structure of socially appropriate government expenditures and the tax rate such that full employment obtains and inflation is prevented represents the backbone of long period socio-economic policy. In the short and medium term exceptional expenditures and budget deficits, possibly associated with profits above normal and some inflation, may be required to increase employment. However, the 'quantity of money', to use this expression nevertheless, always passively adjusts to economic activity.

A second possible short- and medium term source of inflation would be distributional conflicts as are expressed through the relation between money wages and prices. Given money wages, which is, together with employment, the second variable to be determined to close the classical-Keynesian system, a permanent incomes policy is a further indispensable requirement to prevent inflation in the long run.

Given these brief remarks on money and inflation, we may conclude by saying that *classical-Keynesian political economy appears as a synthesis, an elaboration and an extension of post-Keynesian political economy; and it must be reiterated that Sraffa and the neo-Ricardians are, via Ricardo and Pasinetti, included in the classical-Keynesian synthesis.*

However, the majority of post-Keynesians would not see things in this way. Given this, before going on, the crucially important issue as to the necessity to work out a complete and coherent fundamental classical-Keynesian *long-period* framework, as is aimed at in this essay, has to be dealt with. In fact, most post-Keynesian economists would agree with Joan Robinson who argued that *historical time* and *uncertainty about the future,* and all the consequences associated to this, are *the* hallmarks of Keynes's economics. Given this, it seems impossible to elaborate a complete and consistent fundamental *long-period* model exhibiting the classical-Keynesian principles required to understand the functioning of monetary production economies and constituting an alternative to neoclassical-Walrasian economics. Indeed, Joan Robinson would have called a classical-Keynesian long-period model yet another toy besides the already existing mainstream toys. In fact, the large majority

of post-Keynesians advocates, explicitly or implicitly, Geoffrey Harcourt's *horses-for-courses* approach. We should like to suggest that, while the horses-for-courses approach is very useful as far as applied theory is concerned, it is far from being sufficient to bring about a system of post-Keynesian economics that could rival with neoclassical-Walrasian economics. In fact, post-Keynesian economics is bound to remain eclectic and serious problems of coherence and even contradictions may arise. Moreover, uncertainty about the future favours the behavioural elements in post-Keynesianism at the expense of the system aspect, exhibited by institutional and technological structures, and the principles regulating the functioning of a modern monetary production economies as are set out in Bortis (1997).

Let us first have a look at possible problems and contradictions. First, many post-Keynesians would use Sraffa's *Production of Commodities by Means of Commodities* for critical purposes but reject the surplus principle as regulating distribution; the Cambridge post-Keynesians, Nicholas Kaldor, Joan Robinson and Luigi Pasinetti in the main, have linked the rate of profits to the rate of growth. In Bortis (1997, chapter 4), we have suggested that this Cambridge relation between rate of profits and rate of growth may be most appropriately used to explain the income effect of investment in business cycle theory; the *fundamental* rate of profits associated to the institutional trend, however, would have to be explained by social and political forces on the basis of the surplus principle. Given this, it is doubtful whether the post-Keynesian theory of distribution linking profits to growth is fundamental enough to always explain distribution in the real world. For example, a worsening environmental situation may require zero growth, which, in Cambridge post-Keynesian view, implies a zero rate of profits. What will, in this case, happen to the capitalist system? In Bortis (1997, pp. 168-69), it is suggested that, within the classical-Keynesian surplus approach, a rate of profit is possible in a stationary economy.

Second, the Keynesian Fundamentalists and other post-Keynesians, emphasising uncertainty about the future, reject the relevance of the capital theoretical critique, but overlook that this means ruling out uncertainty in neoclassical models. Well-behaved associations between factor prices and factor quantities linked with the law of diminishing returns inevitably leads on to the possibility of stable equilibria on all factor markets, including the market for new capital goods. Specifically, with $I(r)$ and $S(i)$ well-behaved in the neoclassical sense, a strong tendency towards an $S = I$ equilibrium at $r = i$ necessarily exists *in principle*. Smoothly working markets eliminate uncertainty through the iron law of supply and demand! Third, what are the post-Keynesian micro-foundations if Sraffa is rejected? Pragmatic mark-up theories of value and distribution imply the surplus principle of distribution as emerges

from Bortis (2003a, pp. 436 – 45). Given this, distribution becomes, in a positive vein, a problem of social and political power; in a normative perspective an issue of social ethics.

Most importantly, however, acting in historical time and being uncertain about the future greatly favours the dominance of behavioural aspects in economic models; here the notion of rationality but also psychology and behaviour shaped by the social forces play an important role. Now, the possible contradictions within post-Keynesianism alluded to above and the domination of behaviour blur the difference between Keynesian and post-Keynesian economics and the neoclassical mainstream, which is, precisely based on behaviour and, consequently, microeconomics; in the extreme case, Keynes and large parts of post-Keynesianism get absorbed by the neoclassical-Walrasian system as is demonstrated by New and Neo-Keynesianism; however, Austrian economics also greatly absorbs Keynesian and post-Keynesian theories; for example, Alain Parguez sees Hyman Minsky as a post-Keynesian Hayekian (Parguez 2003). This leads to a chaotic situation in the domain of economic theory. Given this, economic policies can no longer be grounded on principles as was the case for the post-war period; for example, relying on the principle of effective demand, Maynard Keynes and Lord Beveridge, advocated permanent incomes and employment policies to keep employment levels high in monetary production economies with no tendency towards full employment. Consequently, economic policies now become grounded on econometrics or on empirical laws, like the Phillips curve. This raises important problems; for example, the same empirical fact may be interpreted differently: at the beginning of the 1930s real wages rose, due to the stickiness of money-wages and the collapse of prices, while unemployment increased sharply. The neoclassicals triumphantly stated the high real wages were the *cause* for the high unemployment levels. In his *General Theory* Keynes argued to the contrary: effective demand collapsed due to a dramatic breakdown of investment, prices and quantities declined sharply, while, as is normal in a monetary production economy, money wages were only slightly reduced. Hence, in Keynes's view, the high money wages were the *consequence* of the crisis, and not the other way round as the neoclassicals claimed. Given this, to interpret real world phenomena set in historical time and evolving towards an uncertain future solid theory based on fundamental principles is required. And, very importantly, *principles always hold and are therefore independent of time and of uncertainty*. We have already suggested that principles are about essential or constitutive features of real world phenomena; or, conversely, principles are realised by real world phenomena set in historical time and subject to uncertainty; for example, on the level of theory, the labour value principle gives rise to price theories, first, to Sraffa's prices of

production, and, subsequently, to Marshall's market prices determined by supply and demand may deviate from normal prices. In the concrete real world of phenomena, labour values are realised by normal prices emerging from normal cost and price calculation within enterprises, which, in turn, may be modified by market prices established on really existing markets.

All the great political economists, Marx, Keynes, Walras, and Marshall, have taken it for granted that a basic theoretical framework is needed to come to grips with the immense complexity of the modern world. Perhaps, the best example is provided by Keynes's logical multiplier, a principle, which may get realised in most diverse real world situations (Keynes 1973/1936, pp. 122-25); we could add his *Treatise on Money,* which is divided into two volumes; the first, *The Pure Theory of Money,* is on principles, the second, *The Applied Theory of Money,* is about real world applications of principles. Given this, economic policies must be based on principles, for example, incomes and employment policies ought to rest on the principle of effective demand. Keynes had perceived very clearly that, ***in an uncertain and quickly evolving real world about which we have probable knowledge only, the most appropriate way to act rationally is to act on the basis of principles***, and *not* on the basis of empirical laws or, by now, even of econometric results. This means that, in a classical-Keynesian perspective, long-period incomes and employment policies ought to be grounded upon the supermultiplier which is entirely governed by objective factors; most importantly, the long-period investment *volume,* is derived demand, and as such *determined* by long-period effective demand, as appears from the supermuliplier (5.40) and the related investment equation (5.37); however, the *individual investment projects* are all subject to uncertainty: which projects will be successful, which ones are going to fail? The neoclassical mainstream economist, however, would suggest that economic policies be based on the principle of supply and demand, taking for granted *well-behaved* supply and demand curves.

All this leads us to make some suggestions to remedy the nearly hopeless theoretical situation actually prevailing. The point is to return to the historical foundations of economic theory. François Quesnay, David Ricardo, Alfred Marshall, Léon Walras, and the Austrians all wrote on principles. We have already mentioned Schumpeter who stated that neoclassical was based on a single principle, the marginal principle to wit, and that Walras's General Equilibrium Model represented the *Magna Charta of Economic Theory*.

The Walrasian General Equilibrium model is thus particularly important for us, because this model represents the fundamental model of neoclassical theory. Significantly, Walras's model is devoid of stochastic elements and of uncertainty. Indeed, *Walras wanted to show how a market or an exchange economy was working in principle.* This is equivalent to

elaborating a *long-period* equilibrium model with profit rates being equal in all sectors of production. In such a long-period model, implicitly relying on *Marshall's principle of supply and demand,* prices and quantities would be governed by objective factors, constant or slowly evolving preferences and technology, with uncertainty about the future entirely absent; the smooth functioning of markets associated to well-behaved supply and demand curves on all markets implies that the great economic problems, value and price, functional distribution and employment, are, *in principle,* all solved on competitive and self-regulating markets; uncertainty is thus eliminated because market forces (supply and demand) *govern* or determine the (rational) actions of consumers and producers; in equilibrium the rational actions thus represent a social optimum, the Pareto-optimum; hence the normally functioning market mechanism transforms the rationality of all economic agents into a social optimum. This vision of the functioning of the economy provides the basic principle for neoclassical economic policies, which, fundamentally, is competition policy (Wettbewerbspolitik) – incidentally, globalisation and large free-trade areas are all based on the postulate of self-regulating markets. In a way, the long-term general equilibrium model dealing with constant or slowly evolving magnitudes becomes, on account of its basically behavioural approach, a hard or natural science. Indeed, the (natural) market forces govern the behaviour of the rational economic agents. The long-period market equilibrium is a kind of centre of gravitation, which irresistibly attracts prices and quantities, with the natural law of supply and demand guiding prices and quantities into the right direction. It is not by chance that Léon Walras, right at the end of the preface to his *Eléments d'économie politique pure,* compared economics with astronomy!

Walras's project has failed. Two fundamental strands of critique emerged (both will be taken up in the next section). First, there is the Debreu-Sonnenschein critique: if we are not in equilibrium, then market forces can impossibly bring about a tendency towards equilibrium, even if supply and demand curves were well-behaved, since markets are interrelated; a tendency towards equilibrium in one market may deepen disequilibria in other markets; for example, a fall in the wage rate may shift the labour demand curve to the left because the demand for consumption has declined. Given this, Alan "Kirman argues that by a process of rational reconstruction, he and other general equilibrium theorists like him imposed an auctioneer on Walras's analysis as this was the only *logical* way to make his general equilibrium system coherent and equilibrate (in the sense of proving existence)" (Harcourt 2001, p. 192). In this context, Harcourt makes a highly relevant remark: "[It has increasingly] been realised that, *even in general equilibrium systems,* the whole is more than just the sum of

the parts, so that starting analysis from isolated individual behaviour virtually ensures that there is a *lacunae* between individual's behaviour, on the one hand, and the collective outcome of all the individuals' behaviour taken together" (Harcourt 2001, p. 191).

Second, the capital-theoretic critique showed that, *in principle*, no well-behaved associations between factor prices and factor quantities exist, if the social process of production is considered in a Walrasian model (Harcourt 1972, Bortis 1997, pp. 281-93). And the social process of production must be considered, because real capital goods are produced goods, having prices of their own. These prices can only be known if the long-period equilibrium rate of profits is known, which, as Sraffa showed, has to be determined from outside the production system. Garegnani rightly argued that the capital-theoretic critique definitely cleared the way to effective demand, enabling thus the classical-Keynesian political economists to work out a fundamental theoretical framework of their own. The system of classical-Keynesian political economy would constitute a very robust alternative to the neoclassical Walrasian general equilibrium model made operable through the Marshallian demand-and-supply framework.

The Debreu-Sonnenschein and the capital-theoretic critique has indeed created a very serious situation for the neoclassical mainstream. The original Walrasian project of a long-period equilibrium associated to a uniform rate of profits and with prices and quantities governed by constant or slowly evolving factors, preferences and technology to wit, had now to be abandoned in favour of a sequence of temporary equilibria with profit rates differing in the various sectors (Garegnani). The behaviour of economic agents in an uncertain world set in historical time now moves to the fore, as does the necessity to form expectations about the future. It is not by chance that the *dynamic stochastic general equilibrium model* now dominates the theoretical mainstream scene (Caballero 2010). As suggested in the above, behaviour-based mainstream economics now gets extremely complex, also due to links with other disciplines, such as psychology, sociology and social psychology, philosophy, policy, and even physics; moreover, alternatives like post-Keynesian economics partly overlap with mainstream economics; in this context it is significant that the Sraffians – dubbed determinists – have recently been excluded from post-Keynesian economics and replaced by the institutionalists (King 2003, p. 219). Given this, the theoretical situation gets chaotic. Since there are no invariable principles underlying theories, policymaking cannot be based upon principles, the principle of effective demand for example, but has to rely on econometric results.

This highly unsatisfactory theoretical situation requires strong remedies. The *behavioural-cum-micro* approach of the actually domination mainstream must be abandoned in favour of a theoretical *macro*-framework describing the functioning of a modern monetary production economy. The socio-economic system has laws of its own that *cannot* be derived from the behaviour of the individuals active in the material basis, comprising the social process of production, the finance sector in the main, and in the institutional superstructure, made up of political, legal, social and cultural institutions. There can even be contradictions between the behaviour of individuals and the functioning of the system. Keynes's paradox of saving is a case in point: in the face of uncertain future it may be rational for every individual to save more; however, an increase in saving implies a reduction of consumption, this may, in turn, lead to a reduction of investment; as a result the economy may be precipitated into a depression with rising involuntary unemployment.

Now, the *macro*-framework provided by classical-Keynesian political economy set out here precisely pictures the functioning of a monetary production economy. In the classical-Keynesian vision, the starting point of economic theorising is thus macroeconomics and the functioning of the socio-economic system, *not* microeconomics associated to the behaviour of individuals (economic agents). Hence, Keynesian, post- and classical-Keynesian political economy start from macroeconomics, and the behaviour of individuals is captured by the macro-models. In fact, Keynes called his multiplier a *portmanteau* relation, which captures the consumption and investment behaviour, rational or irrational to various degrees, of households and enterprises; hence behaviour may be any kind, and it would be up to empirical studies how the social individuals behave; incidentally, it is on this level that interdisciplinary work may come in. Similarly, in the classical-Keynesian system of political economy, the behaviour of the social individuals in *all* spheres of activity (production, circulation, price formation, distribution, state activity, the social and cultural activities of individuals) is captured by the supermultiplier relation (5.40), the price system (5.15), and the quantity system (5.24); and all these relations, the supermultiplier relation in particular, may be applied to the secular long run, dominated by institutions and technology, the long-, medium- and short-term business cycles, and to the sphere of circulation, that is, various markets (Bortis 1997, chapters 3 and 4). This may be represented in a very simple way by figure 1:
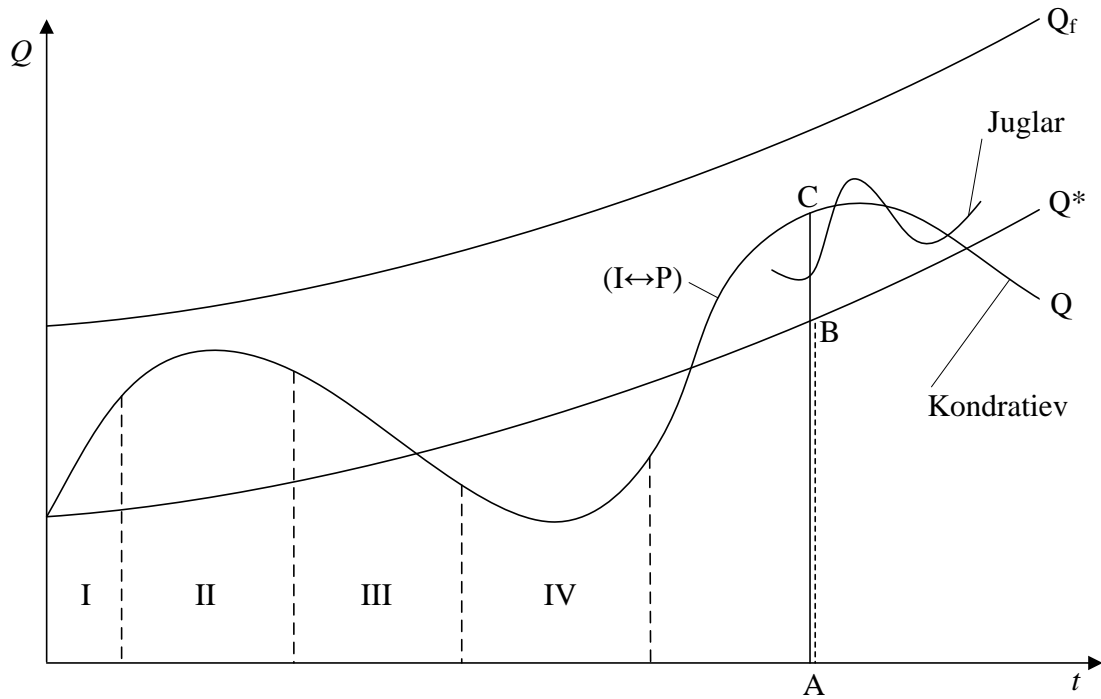
Figure 1

In this diagram Q^* represents *trend output* as is determined *in principle* by constant or slowly changing elements of the real world, institutions and technology to wit, by the supermultiplier relation (5.40) above. The trend or long-period output is associated to a fully adjusted situation, where stocks and flows are in equilibrium, and the rate of profits is the *same* in all sectors of production. This fully adjusted situation, as set forth in the preceding sections of this chapter, represents the fundamental classical-Keynesian framework picturing how the relevant causal forces work in principle.

In the real world of phenomena, the trend output Q^* cannot be directly observed as it is hidden by the cyclical movements taking place around the trend; given this, real or observable output is represented by Q, which can also be pictured by a supermultiplier relation (Bortis 1997, chapters 3 and 4).

Now, the supermultiplier relation (5.40) tells us how the socio-economic system functions in principle to determine trend output Q^* in figure (1) above. As has been suggested already, the long-period supermultiplier in association with the price and quantity equations (5.15) and (5.24) pictures how all prices and quantities are determined in a monetary production economy. In fact, all these relations represent a classical-Keynesian *system equilibrium,* in contrast to the Walrasian *market* equilibrium. The system corresponds to the institutional-technological system contained in the material basis and the institutional superstructure,

encompassing thus the economy, society and the state *as a whole* (Bortis 1997, chapter 3); as a consequence, classical-Keynesian political economy deals with the functioning of the entire socio-economic-cum-political system with the behaviour of economic agents being given. However, Walras's General Equililibrium Model, only depicts the functioning of the market or exchange system in isolation, based on the rational behaviour of the economic agents.

As emerges from figure (1), the classical-Keynesian long-period employment model, the long-period supermultiplier (5.40), determines an *employment trend below* the neoclassical-Walrasian full employment trend. *This is crucially important, since, in the theoretical system of classical-Keynesian political economy, involuntary system-caused unemployment is possible also in the long run (see on this the supermultiplier relation (5.40) above, and its explanation).* This classical-Keynesian result has been obtained on the basis of three principles: the *labour value principle, the surplus principle of distribution* and the *principle of effective demand*. On these principles, post-cum-classical-Keynesian *theories* of prices, distribution and employment may be developed; these theories would be reflections of real world phenomena (here we have to reiterate that principles are *not* reflections, but *reconstitutions* of real world phenomena (Bortis 2003a, pp. 411-15). All these issues and their implications are extensively discussed in Bortis (1997).

Three final remarks regarding method have to be made. First, the fundamental classical-Keynesian long-period model set out in this essay, is entirely independent from time and space and as such devoid of uncertainty. This model pictures how the institutional-technical system functions *in principle* to determine prices, distributional outcomes, and output and employment levels, and to allow the integration of endogenous money (see the section on money and finance in chapter 5 above). Piero Sraffa has rightly argued that the *basic long-period model* in political economy must entirely be built on *objective* factors devoid of psychology and uncertainty. This also holds for the long-period investment *volume*, which is *strictly determined* by long-period effective demand (relation (5.37) above). The individual investment projects, however, remain of course subject to uncertainty, and space and time plays a crucial role in the medium and short term. Relevant questions are, for example: which investment projects survive in the long run, which ones are squeezed out of the production and market system in the course of cyclical downswing?

A second methodological remark relates to the form of causality in neoclassical-Walrasian models and in classical-Keynesian models (see Bortis 1997, pp. 259 - 72, based on Pasinetti). In neoclassical-Walrasian models there is *simultaneous* determination of all unknowns (prices and quantities). These models are inherently complex and inoperable (in his 1926 article on

The laws of returns under competitive conditions Piero Sraffa even refused to criticise the Walrasian system because he considered it to be completely irrelevant). Classical-Keynesian models, however, are very simple and straightforward *causal* models. This method allows to solve *separately* the fundamental problems of political economy; there is, in fact, no need for a supermodel of the Walrasian type. Examples for simple causal relations would be the following: effective demand always governs output and employment in a monetary production economy; the prices of production are governed by technology and institutions; income distribution is regulated by the surplus principle, implying that, in a positive perspective, social and political power governs distribution, which, in a normative vein, is a problem of social ethics, of distributive justice more precisely; the principle of distributive justice would be broadly implemented through the evaluation of work places within enterprises, bringing about socially appropriate wage differences between industries, through determining a socially appropriate profit rate.

Given this, the principles of classical-Keynesian political economy – the fundamental complete and coherent system of principles set out here – may, taking account of what already exists, become the starting point for elaborating a very rich set of theories in a *horses-for-courses* vein (Geoffrey Harcourt); moreover, the classical-Keynesian system of principles may give rise to most relevant empirical-historical investigations and, very importantly, to policy making based on principles, not on the results produced by econometric models; again, these issues are discussed extensively in Bortis (1997).

A third methodological remark relates to the scientific status of economics and political economy. There is little doubt that Walras considered the market system a kind of natural institution embodied in nature. Hence, in spite of its normative character, the Walrasian system is, in a way, part of the great system of nature. Given this natural market mechanism, the rational behaviour of consumers and producers leads, under competitive conditions, to a rigorous determination of all prices and quantities within the framework of a real-exchange economy. Hence the engineer Léon Walras undoubtedly considered economics a natural science as emerges most clearly from the final lines of the preface to his *Eléments d'économie politique pure* written at the very end of the 19th century: "Le XXme siècle, qui n'est pas loin, sentira le besoin, même en France, de remettre les sciences sociales aux mains d'hommes d'une culture générale, habitués à manier à la fois l'induction et la déduction, le raisonnement et l'expérience. *Alors l'économique mathématique prendra son rang à côté de l'astronomie et de la mécanique mathématiques;* et ce jour-là aussi, justice nous sera rendu" (Walras 1952/1900, p. xx, our emphasis). This goes far to explaining why for many

mainstream economists it goes without saying that economics is a hard science! Moreover, ethics is, quite naturally, excluded from economics: how could we influence natural forces, to which the market forces belong, by actions based on ethical considerations?

However, for most political economists, Keynesian, post- or classical-Keynesian, political economy is a *moral* science. Indeed, once, on account of the capital-theoretic debate, the idea of self-regulation has to be abandoned, the moral character of the political economy immediately appears. The main reason is that, as alluded to in the above, in positive analysis, distribution becomes a socio-economic and political problem, in fact a problem of social and political power; normatively distribution becomes a problem of social ethics, encompassing the very complex issue of distributive justice. Here, central problems would be the determination of the wage structure within enterprises through the evaluation of work places, the determination of socially appropriate wage differences between industries; establishing a socially appropriate rate of profits also constitutes a problem of social ethics (Bortis 1997, pp. 158-75). Aiming at the elimination of involuntary system-caused unemployment is also an eminent issue of social ethics. It is evident that moving in the direction of full employment requires a very solid theory of output and employment, which, in a classical-Keynesian view, would be given by the supermultiplier relation (5.40) above. Keynes always insisted on the fact that ethically appropriate action requires knowledge, that is, theory, a point also dealt with extensively in Bortis (1997).

From the above considerations emerges that the presently dominating neoclassical-Walrasian mainstream is, on the theoretical level, being challenged mainly by post-cum-classical-Keynesian political economy. The question now arises as to which of the two approaches to economic problems is more plausible. To this question we turn in the next section.

6 Classical-Keynesian political economy versus neoclassical-Walrasian economics

As has just been suggested, economic theory is, at present, still dominated by (Neoclassical) Walrasian General Equilibrium Theory as far as fundamentals are concerned. This has very important implications at the level of economic theorising and of policy making. In fact, the idea of *self-regulation* of an economy is put to the fore. To be sure, a full employment equilibrium only obtains if conditions are sufficiently competitive; hence the endeavour to weaken or to eliminate all the obstacles to competition, for example, monopolies, cartels, even trade unions. To establish competitive markets has become the hallmark of liberal

economic policies in the present age of globalisation. Of course, this is the liberal doctrine of sound competition, which forces producers to constantly improve techniques of production and to introduce new products in order to obtain the best possible price-quality relationship. This may also hold in a capitalist reality where, however, there is also a struggle for survival forcing even very large enterprises into alliances to maintain or to increase market shares or to ensure survival.

The self-regulating mechanism of liberal economics is the market, i.e. the mechanism of supply and demand, or the price mechanism, based on exchange. Specifically, production becomes a market problem in the sense that factor price ratios govern factor proportions through the minimum-cost combination. In fact, there are factor markets, which, in principle, regulate the employment of resources, their proportions, and the distribution of incomes. Behind the demand and supply curves of goods and factor markets stands the marginal principle in various forms, as marginal utility, marginal costs and, most importantly, marginal productivities. An important implication of equilibrium economics is that economic activity is supply-determined and that prices are scarcity indicators. For theoretical and (empirical-) historical reasons, we strongly believe that, probably, there is no tendency at all towards a full employment of resources, above all of labour, although such a tendency might exist at times. The theoretical reasons are associated with the interrelatedness of markets and with the nature of the process of production. In interrelated markets in disequilibrium there may be no tendency towards equilibrium, since the tendency towards equilibrium in one market may deepen the disequilibrium on other markets (this is the tenet of the Debreu-Sonnenschein critique advanced in the early 1970s). For example, when there is unemployment and money wages fall, the demand for consumption goods, and, subsequently, for investment goods may decline, increasing thus the amount of unemployment; or, increasing volumes of investment do not reduce, but raise rates of profit (Kalecki). Moreover, with production being a social process, no regular, well-behaved associations between ‚rates of interest' and ‚quantities of capital', in general between factor prices and factor quantities, exist in principle; this is the main result of the capital-theoretic discussion (Harcourt 1972). This result implies that the concept of factor markets stands on very shaky foundations.

It has already been suggested, that the capital-theoretic discussion culminated, in the mid-sixties, in the publication of several important articles, which are gathered in the *Quarterly Journal of Economics,* vol. 80 (1966); for a brief summary of events see Pasinetti (1977, pp. 169–77, especially footnote 9 on p. 171). Samuelson sums up the discussion in a crucial statement: "Lower interest rates may bring lower steady-state consumption and lower capital–

output ratios, and the transition to such lower interest rate can involve denial of diminishing returns and entail reverse capital deepening in which current consumption is augmented rather than sacrificed.

There often turns out to be no unambiguous way of characterizing different processes as more 'capital intensive', more 'mechanized', more 'roundabout' [...] If all this causes headaches for those nostalgic for the old time parables of neoclassical writing, we must remind ourselves that scholars are not born to live an easy existence. We must respect, and appraise, the facts of life" (Samuelson 1966, p. 250). This statement is of absolutely crucial importance. Indeed, if there are no well-behaved associations between factor prices and factor quantities, the whole edifice of neoclassical economics breaks down. In fact, well-behaved associations between factor prices and factor quantities is a prerequisite for the smooth functioning of all markets. This is particularly important for the market for new capital goods, because here, the smooth functioning of the markets eliminates uncertainty. Indeed, with $I(r)$ downward sloping and $S(i)$ upward sloping, a stable equilibrium may be reached at $S^* = I^*$ and $r^* = i^*$ (r is the profit rate or the marginal productivity of capital); with $I < I^*$ and $r > i$, entrepreneurs would invest more until equilibrium is reached, and vice versa.

However, if the demand curves of factor markets are not well behaved, equilibrium prices and quantities cannot be determined, implying that each investment project and the entire volume is associated to uncertainty about the future as is the case in Keynes's short-period model. In neoclassical theory, a tendency towards a long-period equilibrium, associated to a uniform rate of profits in all sectors of production, is now impossible. Given this, the neoclassicals are forced to replace the long-period equilibrium notion through a sequence of temporary equilibria with profits rates being different in the various sectors of production, a fact emphasised time and again by Pierangelo Garegnani. This may explain with the stochastic dynamic general equilibrium model has, at present, become the basic neoclassical model.

However, the post-Keynesians and neo-Ricardians could *not benefit from this total theoretical victory because they could not offer a coherent and complete alternative system of economic theory.* The neoclassical economists admitted that there are serious problems with their neoclassical- Walrasian system; for example, money and finance could be disturbing factors, resulting in bubbles in the financial sector and to crisis situations in the real sector. However, the post- Keynesian and neo-Ricardian critics had no convincing answer to the neoclassical question: What kind of comprehensive and coherent theoretical system have you to offer? Indeed an alternative to liberal neoclassical-Walrasian economic theory is only

beginning to emerge at present in the form of social liberal classical-Keynesian political economy (Bortis 1997/2006, 2003a, 2003c, 2012).

The historical reasons for abandoning neoclassical theory are, of course, given by the very heavy crises in the last quarter of the 19th century and in the 1930s, and by the present, 2008-09, crisis. During the crisis of the thirties the faith in the self-regulation of market economies was very seriously shaken, even among many liberal social scientists. To a large extent, this is also the case presently.

Given the obvious fact that neoclassical equilibrium theory was incapable of coming to grips with the great economic problems, reactions developed. Around 1900 the doctrine of New Liberalism (Hobhouse) emerged, suggesting that the state should intervene to relieve socio-economic problems, mainly associated with socially inappropriate inequalities in income distribution, associated, as a rule, to persistent involuntary unemployment. Maynard Keynes took up this idea and struggled for the whole of his life to formulate a theory of the Middle Way between Liberalism and Socialism. The doctrine of Social Liberalism, scattered all over his work, was the social philosophical result of his efforts. Moreover, in the 1930s, in the midst of the heavy crisis, he published his great work, *The General Theory of Employment, Interest and Money.* In this book, Keynes showed that, in a monetary production economy, an underemployment equilibrium, involving the existence of system-caused involuntary unemployment could exist. This and other ideas, regarding value, distribution, and money, for instance, have been taken up by the post Keynesians. Classical-Keynesian Political Economy may be considered an elaboration and a synthesis of post Keynesian political economy. This system of Political Economy now broadly stands and is ready to replace neoclassical economic theory as the dominating paradigm.

On the other hand, even prominent mainstream economists admit that neoclassical theory totally fails to come to grips with crises that occur in modern monetary production economies as have become into being since the Industrial Revolution in England about 250 years ago. In this vein, Ricardo Caballero, a most eminent MIT economist writes: "What does concern me about my discipline […] is that its current core – by which I mainly mean the so-called dynamic stochastic general equilibrium approach – has become so mesmerized with its own internal logic that it has begun to confuse the precision it has achieved about its own world with the precision that it has about the real one. This is dangerous for both methodological and policy reasons. On the methodology front, macroeconomic research has been in 'fine-tuning' mode within the local-maximum of the dynamic stochastic general equilibrium world, when we should be in 'broad-exploration' mode. We are too far from absolute truth [!] to be

so specialized and to make the kind of confident quantitative claims that often emerge from the core. On the policy front, this confused precision creates the illusion that a minor adjustment in the standard policy framework will prevent future crises, and by doing so it leaves us overly exposed to the new and unexpected" (Caballero 2010, pp. 85-86). To be sure, Caballero acknowledges that "an enormous amount of work at the intersection of macroeconomics and corporate finance has been chasing many of the issues that played a central role during the current crisis, including liquidity evaporation, collateral shortages, bubbles, crises, panics, fire sales, risk-shifting, contagion and the like. However, much of this literature belongs to the periphery of macroeconomics rather than to its core. […] So we are left with the tension between a type of answer to which we aspire but that has limited connection with reality (the core) and more sensible but incomplete answers (the periphery)" (p. 86). "I cannot be sure that shifting resources from the current core to the periphery […] is the next best step. However, I am almost certain that if the goal of macroeconomics is to provide formal frameworks to address real economics rather than purely literature-driven ones, *we better start trying something new rather soon* [our emphasis]" (p. 87). "The root cause of the poor state of affairs in the field of macroeconomics lies in a fundamental tension in academic macroeconomics between the enormous complexity of its subject and the micro-theory-like precision to which we aspire" (p. 100). And Caballero concludes: "The challenges are big, but macroeconomics can no longer continue playing internal games. The alternative of leaving all the important stuff to the 'policy'-types and informal commentators cannot be the right approach. I do not have the answer. But I suspect that whatever the solution ultimately is, we will accelerate our convergence to it, and reduce the damage we are doing along the transition, if we focus on reducing the extent of our pretense-of-knowledge syndrome" (pp. 100-1).

We have really to be grateful to Ricardo Caballero for this honest statement on the highly unsatisfactory state of *mainstream* macroeconomics. We do feel that Schumpeter, who considered Walras's general equilibrium model as the *Magna Charta of Economics,* is to some extent at least responsible for the neoclassical-Walrasian pretense-of-knowledge syndrome. At present, there is a strong feeling, even among mainstream economists, that a change of paradigm is required. Indeed, neoclassical-Walrasian economics has to give way to classical-Keynesian political economy. The basis for the new paradigm has been laid by Keynes and Sraffa in the course of the classical-Keynesian counterrevolution 1926-1960. Subsequently, the neo-Ricardians led by Pierangelo Garegnani and Luigi Pasinetti have decisively contributed to building up the classical-Keynesian system set forth in section 5 of

this paper; this process of working out the new paradigm has been done in association with various post-Keynesians, Geoffrey Harcourt being a prominent representative.

7 Classical-Keynesian economic policies

A fundamentally important feature of a monetary production economy is that there is no tendency towards a full-employment equilibrium at all, even if there are competitive conditions. On the contrary, unfettered Capitalism may lead on to growing disequilibria through processes of cumulative causation as have been pictured by Nicholas Kaldor and Gunnar Myrdal: growing involuntary unemployment, increasing disparities in income distribution, widening wealth gaps between countries and regions; in a classical-Keynesian world competition may become a struggle for survival and may result in destructive socio-economic consequences; social entities, even the small family, may break up; crime and corruption may increase.

In the presence of a long-period institutional trend well below full employment and of long-term Kondratiev cycles occurring around this trend, short-period employment policies along traditional Keynesian lines may prove to be largely inefficient. If governments incur large budget deficits, capacity utilisation and the level of employment may grow somewhat and profits considerably increase. However, investment is not likely to increase substantially because long-term expectations are bad, as is very likely to be the case in a Kondratiev downswing, and entrepreneurs know that the deficits cannot be sustained because of the public debt rising sharply; as a consequence, additional profits are likely to move into the financial sector. This is, incidentally, typically a case of Keynesian-type rational expectations. Hence, in a classical-Keynesian vein, employment and incomes policies must be of a long-period nature. However, higher long-period employment levels, eventually even long-term full employment, can only be sustained if there is *institutional reform, also in the domain of distribution*. This is, in principle, in line with Kalecki (1943): Political Aspects of Full Employment.

In the long run, the relationship between unequal distribution and involuntary unemployment is of *crucial* importance. Indeed, Keynes held that the "outstanding faults of the economic society in which we live are its failure to provide for full employment and its arbitrary and inequitable distribution of wealth and incomes. [Up] to the point where full employment

prevails, the growth of capital depends not at all on a low propensity to consume but is, on the contrary, held back by it [and] measures for the redistribution of incomes in a way likely to raise the propensity to consume may prove positively favourable to the growth of capital" (Keynes 1936, pp. 372-73). Moreover, the positive association between unequal income distribution and higher system-caused involuntary unemployment represents the essential feature of the classical-Keynesian supermultiplier relation (3) above. (Many authors claim that, in economically underdeveloped countries, unemployment is not involuntary and Keynesian, but Marxian: there are not enough means of production. We do not believe in Marxian unemployment which is supply sided and implies Say's Law; indeed, if there is sufficient effective demand, then full employment would be reached by using – very simple – traditional technologies.)

From all this follows the basic postulate of classical-Keynesian policy making: *A permanent incomes policy and a permanent employment policy* is required to enhance social harmony, which goes along with reducing system-caused alienation; in chapter 8 of Harcourt 2006, excellent suggestions on these policies can be found; to suggest incomes and employment policies implies of course a fundamental critique of the Washington Consensus. However, such policies are *not* possible at present because the *external (outward directed)* development mechanism associated to free trade and globalisation utterly dominates, forcing countries to adopt Washington Consensus policies to remain competitive on world markets. To be able to pursue classical-Keynesian socio-economic policies, the external mechanism ought to be replaced by the *internal (inward directed) development mechanism* (Bortis 2003c, pp. 72ff.).

Both employment mechanisms are embodied in the supermultiplier relation (Bortis, 1997, pp. 190-98). The internal employment mechanism is based upon the macroeconomic equilibrium condition $S = I$, the external employment mechanism is grounded upon the balance on current account, $X = \pi M$ (Bortis 1997, pp. 190 ff.).

As a rule, output determined by the internal mechanism (Q_I) and by the external mechanism (Q_E) diverge. This will be reflected in a current account surplus or deficit appearing in the numerator of relation (17) below. Various possibilities exist to adjust both employment levels to each other. For example, (Q_I) and (Q_E) may adjust mutually to each other through variations in government expenditures (G) or through variations in the propensity to import non-necessary goods related to consumption (b_2). As a rule, however, the external mechanism will, in a Kaldorian vein, govern economic activity in the long run, implying that (Q_I) will have to adjust to (Q_E) (Bortis, 1997/2006, p. 169 and pp. 190-99).

With the internal employment mechanism government expenditures, income distribution and gross investment will be crucial in governing economic activity:

$$Q_I = \frac{G + (X - \pi M)}{z_S[1 - 1/k] - (g + d)v} \qquad (7.1)$$

This mechanism will, as a rule, determine economic activity in large countries like Brazil, China, Russia, and the United States. Hence, the foreign balance will, in normal circumstances, play a secondary role. At present, China seems to be a temporary exception to this rule.

The internal employment mechanism (7.1) is politically exceedingly difficult to manage. There is, first, an inherent difficulty. The internal employment mechanism in fact requires establishing socially sound proportions between the state and the private sector, reflected by the ratio G/Q, *and* a socially acceptable distribution of incomes, such that economic activity is near to, or, ideally at, the full employment level. And, second, internal policies must be such that the external balance ($X = \pi M$) is broadly preserved. In view of the difficulties associated with the internal employment mechanism it is natural that, with the creation of large free-trade areas and with globalisation, almost all countries are forced to rely upon the external employment mechanism to secure levels of employment as high as possible. Given this, remaining competitive on world markets becomes all-important. Densely populated countries lacking primary resources (agricultural products, raw materials and energy resources) are, as a rule, naturally outward oriented. Obvious examples are Germany, Japan, Singapore, Switzerland, and Taiwan. Producers of primary goods are invariably forced to rely on the external mechanism, because the production of primaries is determined by the stocks given by nature and cannot be changed as can the productive capacities in the industrial or service sectors; an example would be stock of oil-reserves; these stocks given by nature cannot, as a rule, be whole used domestically and the excess of production, however determined, over domestic requirements *must* be exported:

$$Q_E = \frac{X}{\pi(b_1 + b_2)} \qquad (7.2)$$

(X = exports, M = imports, π = terms of trade, b_1 = coefficient of necessary imports required in production, b_2 = coefficient of imports, not necessary in production, but associated with

private and public consumption out of the surplus). Here $1/[\pi(b_1 + b_2)]$ is the export multiplier.

With the external employment mechanism, economic activity is governed by exports, the import coefficients and the terms of trade. Exports constitute an autonomous variable setting the economy into motion. The import coefficients reflect outside dependence and the terms of trade would constitute a kind of international reduction coefficient. Favourable terms of trade (π is low) would imply that the labour of some country is highly valued abroad, since in exchange for given exports, large quantities can be imported.

The employment effect of foreign trade will be particularly strong if the bulk of exports consists of high-quality industrial products and services and if imports are, in the main, made up of primary goods; in this case the terms of trade will, as a rule, be favourable. High-quality industrial goods and services are, as Nicholas Kaldor has emphasised time and again, labour-intensive – if account is taken of direct and indirect labour – while primaries are land-intensive. Here the employment effect of foreign trade will be weak and heavy outside dependence occurs as a rule.

Now, there is a *contradiction* between the external and the internal employment mechanism at the world level (Bortis 2003b, pp. 76-77). In fact, world economic activity (Q_W) *must* be governed by the internal employment mechanism (7.3) since the world as a whole is a closed system.

$$Q_W = \frac{G}{z_S[1 - 1/k] - (g + d)v} \tag{7.3}$$

This means that not all countries can develop on the basis of the external mechanism. Some countries must import and eventually incur import surpluses.

However, the share of world economic activity attributed to each country is governed by the external employment mechanism (relation (7.2) above). Hereby, the shares in world industrial production and services activities are, of course, of particular importance. In order to successfully set to work the external employment mechanism, countries and regions have to offer favourable conditions in order to attract firms, which create additional work places and, subsequently, export the bulk of their production. The work force has to be of good quality, but wages not too high, the infrastructure should be in a good state and should be available at low costs to the users, public services, education in the main, should be of high quality, but taxes not too high. Taxes may, in turn, be lowered if state activities are privatised. Given the

endeavour to create, in each country, a favourable environment for exporting firms, it is likely that government expenditures (G) stagnate or even decline at the world level. Even more importantly, income distribution has become markedly more unequal in the last twenty years or so, and the distribution of wealth even more so. According to relation (7.3) a more unequal income distribution and stagnating or eventually declining government expenditures both imply that, in principle, long-period world economic activity – output and employment – remains more or less constant or even declines. As a consequence, the struggle for world market shares, mainly of industrial goods and services, will intensify. Through the external employment mechanism the successful exporters of high-quality industrial goods and services may nevertheless enjoy a satisfactory, even a booming economic situation. The losers, however, will be precipitated into the abyss of mass unemployment and of social and political instability. Owing to the law of increasing returns and to the principle of effective demand, Kaldorian cumulative processes may be set into motion resulting in larger inequalities of income, wealth and employment opportunities worldwide.

Hence the external employment mechanism associated with large free-trade areas and with globalisation is entirely inadequate, since so-called market economies do not produce any tendency towards full employment whatever. Given this, the internal employment mechanism would be urgently required to substantially improve the socio-economic and political situation worldwide.

Relying on the *internal development mechanism* implies that each state must have its own currency to be able to mobilise its resources. Governments must first spend in order to get taxes subsequently. In fact, government expenditures (G) set the economy into motion; incomes are created part of which are consumed, saved and paid in taxes; in the long run investment demand is derived as emerges from relation (7.1) above. The role of government expenditures as an engine emerges more clearly if, in relation (7.1), the leakage coefficient $z_S[1 - 1/k]$ is replaced by $(1 - c)$, bearing in mind that the consumption-income ratio (c) crucially depends upon income distribution and that $(g + d)v$ represents the gross investment-income ratio. Equation (7.1) could now be written as $Q = G/[1 - c - (g + d)v]$ or simply as $Q = (1/t)G$. The inverse of the institutionalised tax rate simply emerges as the multiplier associated to government expenditures.

Hence, in an entirely Keynesian vein, government expenditures (G) *create* the taxes ($T = tQ$) that bring about the *real* financing of these expenditures ($G = tQ$): in fact, taxes release the resources required to produce public goods and services; fundamentally, these resources are

direct, indirect and past labour. This is analogous to the famous Keynesian formula: investment precedes saving and, precisely, brings about the saving required to ensure the real financing of investment ($I = sQ$) through releasing the resources required to produce I. In the Keynesian short term, the resources are there and idle except at full employment. However, in the classical-Keynesian long period, ($G = tQ$) *implies building up an appropriate institutional system* (keeping suitable existing institutions and creating new institutions), while fixing (G) and (t) in a way such that permanent involuntary unemployment is gradually absorbed.

Given this, the relation between government expenditures and social product ($t = G/Q$) implies that *a carefully thought out composition and size of government expenditures* and *a solid tax system* (indirect taxes and taxes at source) represent the backbone of a modern monetary production economy and the associated institutional system. In fact, to determine the size and the composition of government expenditures and to set up a tax system such that full employment obtains is a fundamental, but also most difficult task governments would be *permanently* facing in a social liberal world. In fact, $t = G/Q$, is not just a technical matter. To determine $t = G/Q$ requires a comprehensive vision of society and the state. Which kind of society is to be brought about, what should be the role of the state, what is to be private, what should be public? In the context of the last question we would say that an *entirely public* education system is fundamental to any society – private grammar schools and universities should remain exceptions. This would greatly facilitate the unconditional striving after Truth, and render more difficult the domination of ideologies, possibly protected by powerful interest groups of an economic, financial or political nature.

Since money is *endogenous* in classical-Keynesian theory, there is no point of speaking about the 'quantity of money', which always passively adjusts to economic activity. With the foreign balance equilibrium in the long run, the government must, according to the internal employment mechanism, permanently spend money in the form of government expenditures G to set the economy into motion and to bring normal or long period output into being, creating thus the tax incomes required to 'finance in real terms' institutionalised government expenditures: $G = T = tQ$ (Bortis 1997, pp. 152-54 and p.190). Once full employment is reached the state budget must of course be in equilibrium so as to prevent demand-induced inflation. In the short and medium term exceptional expenditures and budget deficits, possibly associated with profits above normal and some inflation, may be required to increase

employment. In a situation with export-led growth it will be easier to establish a long-period budget equilibrium or to reduce budget deficits in the short and medium terms.

Two important policy points related to money and finance have to be mentioned here (see the subsection *Finance and Money – interactions between the real and the financial sector* in section 5 above). The first point concerns the way of financing old age and retirement pensions. The funding method or capital cover system implies that huge sums of money flow into the financial sector, increasing thus the quantity of money (fM) and resulting in a more unequal income distribution and larger involuntary unemployment. Therefore, the pay-as-you-go system is far more expedient. In fact, contributions are immediately channelled back into the real sector. The spending of the pensions represents effective demand, which contributes to securing work places. Since pensioners are likely to have higher marginal propensities to consume than workers and employees paying contributions, effective demand will increase on account of this transfer process.

The second point concerns the forms of holding wealth, particularly in the form of money, that is, holding money as a store of value, (fM), as mentioned in the section *Finance and money* (chapter 5) above. The analysis carried out in this section suggests that it would be desirable to have a specific stable relation between the quantity of money in the financial sector (fM) and the quantity of money in the real sector (rM); that is, (f/r) ought to be fixed at a desirable level. This (f/r)-relation might imply that (fM) be held for precautionary purposes in the main, preventing thus the excessive accumulation of money for purely speculative purposes or in the form of profit seeking financial capital. This would imply that a fraction r of the newly created money $\Delta M(r\Delta M)$ should be channelled back into the real sector through financing a budget deficit. If there is long-period involuntary unemployment this permanently occurring budget deficit would contribute to gradually approaching the full employment path. Given this, a major part of monetary wealth would be held in *treasury bonds*. This remains true once full employment is reached. If at full employment private saving exceeds investment $(S > I)$, then the excess saving would have to be channelled back into the real sector through a budget deficit to prevent unemployment and the accumulation of money in the financial sector. This is immediately evident from $S-I = G-T$. Private saving minus public dissaving would now equal investment: $S + (T-G) = I$. Since treasury bonds are almost perfectly liquid wealth owners could dispose of their wealth as they please.

Let us now briefly turn to the foreign balance aspect of the internal employment mechanism. Indeed, when output (Q) and employment (N) increase on account of a permanent increase of government expenditures G, deficits in the current account might arise:

$$X < \pi(b_1 + b_2)Q \tag{7.4}$$

This requires a slight management of imports: the coefficient of imports, not necessary in production (b_2), must be adjusted such that, broadly, equilibrium in the balance of current account obtains in the long run. Given this, a first central task of the IMF would be to assist all countries to bring about a broad equilibrium in the balance of current account. The other fundamental IMF task would be the transfer of resources from higher developed to less developed countries. In the case of foreign investment, the terrain in the recipient country must be prepared by increased effective demand, through rising G for instance; otherwise, foreign resources may simply displace domestic resources (Bortis 1979). To enable the IMF to carry out these tasks, a supranational world currency, the *Bancor*, should be set up along the lines proposed by Maynard Keynes at Bretton Woods in 1944 (Keynes 1980). The management of the world currency would be the basic task of the World Bank, of course in close collaboration with the IMF.

Let us now make a specific policy proposal for countries possessing large reserves of primary products, raw materials and energy resources in the main, specifically Russia. All the policy measures alluded to in the above would also hold for Russia. In this country, however, three specific policy conclusions would add.

First, and quite evidently, Russia must decentralise if the internal development mechanism is to be applied successfully. In cooperation with the central government, the regional authorities would promote the policies outlined in this section.

Second, Russia ought to deal adequately with her immense resources of primary goods (raw materials and energy resources). The relevant policy point could be made as follows. Imagine two Russia: Russia I with primary goods, and Russia II without primary goods. *In principle, Russia I ought to develop according to the internal development mechanism in the same way as Russia II.* However, Russia I ought to be permanently richer than Russia II, because there would be the additional wealth brought about by the stocks of primary goods that produce a flow of exports. Indeed, the imports rendered possible through these exports (consumption and investment goods) would add to Russia's domestically produced consumption and investment goods. Hence, more consumption goods would be available increasing Russian

material welfare; the imported investment goods, possibly embodying advanced technologies, would speed up the process of development and growth. Given this, Russia II would be separated from Russia I through a permanently growing wealth gap. It is well known that this process does, as a rule, not take place in countries richly endowed with primary goods. The reason is, of course, that primaries are exported and industrial goods imported. This hampers the growth of the industrial sector, which heavily depresses the level of employment; indeed, as Nicholas Kaldor argued, primaries are land-intensive, industrial goods labour-intensive. On the other hand it is equally well known that countries with no or little primaries belong to the richest countries in the world. Germany, Japan and Switzerland would be cases in point. This situation is not normal. Indeed, considering the very long run, Russia, on account of her immense natural resources, ought to be one of the richest countries in the world.

Third, Russia ought, in association with other countries richly endowed with primary goods, to restrict the output and the export of primary goods as much as possible and to fix high prices for primaries. This would have to be done for three reasons. In the first place, the natural environment would be preserved as much as is possible. Second, alternative energies, solar energy for example, would become highly profitable. Third and finally, precious primary products, oil for instance, would be preserved for future generations and would also constitute strategic reserves for Russia.

A world economic and financial order along these lines would have a very important cultural implication: *each* country and region would be able to set up *a way of life of its own,* based upon implementing the fundamental values in a specific manner: that is, the good state and the good life, guided by a sense of life; the pursuit of truth in the natural, social and human sciences; the realisation of beauty in all spheres. In this way the cultural diversity would be restored and maintained worldwide, enabling global mutual enrichment on the spiritual, intellectual and material levels. Hence globalisation should not end up in a uniform world along Western lines but in a rich and diversified world in which traditional ways of life would be preserved and gradually adapted to Modernity in line with these ways of life.

The internal employment mechanism in a social liberal world would be intimately linked with the issue of sustainable development, which, in turn, is closely linked with the nature of economic growth. In the long run, sustainable development will most probably mean *zero* (quantative) growth for countries and regions having reached a level of development, sufficient to comfortably ensure "the possibility of civilisation" (Keynes, quoted in Harrod 1951, p. 194). A zero growth rate would imply that there would be no net investment and no net profits in the post-Keynesian view. However, according to classical-Keynesian political

economy the normal rate of profits does not depend on growth, but is governed by the surplus principle (Bortis 1997, pp. 158-75). In fact, with socially necessary wages entirely consumed, the social surplus equals government expenditures and consumption out of the social surplus *if net investment is zero*. This classical-Keynesian result is the long-period equivalent to the short- and medium term post-Keynesian-Kaleckian proposition: profits equal investment and consumption out of profits; of course, in the case of positive growth the social surplus would equal government expenditures, consumption *and* investment (Bortis 1997, pp. 168-69). Hence even in the zero-growth case a normal rate of profits, an essential precondition for the proper working of a monetary production economy and of a social liberal society, is possible. Technical progress introduced through replacement investment would enable a society to reduce working time (Marx's *Reich der Notwendigkeit* - realm of necessity) and to expend leisure time (Marx's *Reich der Freiheit* - realm of freedom), potentially associated with civilisation (Marx 1973/74, vol. III, p. 828).

Finally, regarding *Full Employment* we are, in principle, in full agreement with Michal Kalecki (1943). Technically it may be possible to get at full employment, above all in the course of a Kondratiev upswing as occurred from around 1950 to the oil crisis 1973. To stay there is, however, an entirely different matter. Indeed, permanently remaining at full employment would require profound institutional changes. Instead of man and society being in the service of the economy, of the financial sector to wit, the economy would have to become ancillary to man and society. In terms of this chapter this would mean moving from neo-liberal Capitalism in the direction of Social Liberalism as is suggested in the concluding lines of Bortis (1997, p. 417). Indeed, "glance at the current state of the world economy would seem to suggest that the chrematistic feature of capitalism, characterized by the conquest of markets by all means and by financial speculation on a huge scale, has reached its limits. Could it be that the present age of unlimited accumulation is coming to an end and that an era of *oikonomike*, of political economy, is about to begin? In view of the immense socioeconomic and ecological problems worldwide and given the justified aspiration of the poor countries for a higher level of material well-being, less chrematistics and more political economy could prove a historical necessity."

8 Implications for political philosophy

Social Liberalism, we mentioned above, is the political philosophy underlying classical-

Keynesian political economy. The crucial feature of this doctrine is to conceive of Man as an *essentially* social being. This necessarily implies seeing *man* and *society* as entities. And it does *in no way* imply totalitarianism where the individual is, essentially, an exchangeable part of the social machine. On the contrary, according to the doctrine of *Social Liberalism,* society and the state are *indispensable, but ancillary* for the social individuals who can realise their potentials only *based on* and *through* society. *Based on* society means that there must be preconditions or social foundations that have to be there if *all* social individuals are to be given the possibility of a good and decent life: full employment, fair distribution of incomes, a *public* education system, an appropriate legal system, a diversified and large set of cultural institutions. *Through* society signifies that the degree of perfection of the social individuals is enhanced through social activities, for example, going to school, to university, discussing, reading, contemplating works of art and architecture, practising sports, and, last, but not least, the enhancing of manual skills; in a world with ever more scarce natural resources, skilled trades – craftsmanship – might become of crucial importance again (on this see Bortis 1997/2006, chapters 2 and 7); Richard Sennett's very important book *The Craftsman* is highly significant in this context; indeed, the fundamental theme of the book is to reconcile Man and the world of Labour again.

The relationship between classical-Keynesian political economy and social liberal political philosophy can be brought to the open most appropriately through the classical vision of the economy, society and the state. The economy forms the material basis of society and the state. At the heart of the economy is the social process of production, complemented by financial institutions and institutions ensuring the circulation of goods and services. Now, within the social process of production, direct and indirect labour, assisted by past labour (real capital) the social product is produced. Part of the social product, socially necessary consumption to wit, is used up by labour in the social process of production. The remainder of the social product constitutes the *social surplus*. From a distributional perspective, the *social surplus* may, as already suggested, be interpreted in a wider, macroeconomic sense, to include gross profits, surplus wages over socially necessary wages, labour rents as are due to exceptional abilities or privileges, land rents and profits. The *use* of the social surplus, ideally, provides the *material basis* for all the persons active in the non-profit sector in the widest sense, including the state, to create *political, social, legal and cultural* values through the actions of individuals and collectives within the institutions established in the institutional superstructure. *These values cannot, in principle, be measured in money terms*.

Hence in the social liberal view, the economy is a means to reach cultural ends. This is reversed in the present materialist era, where economic values (per-capita income, growth, efficiency) dominate and cultural values are frequently a means to reach economic aims more efficiently, for example, managers retiring in monasteries for some time to enhance their capacity to work. However, Maynard Keynes has perceived with incomparable clarity that the materialist capitalist era must be followed by an epoch dominated by ethics and culture if modern civilisation is to survive. On this, the Italian Keynes biographer Piero Mini writes: "[Even the] most superficial reading of Keynes's writings […] should convince anybody that Keynes was not an economist as we understand the term. He was primarily a social philosopher, a cultural leader interested in the cultural amelioration of society. Throughout his life he prodded the people and their leaders to set for themselves standards worthy of men […]: the promotion of solidarity among people (the opposite of Benthamite individualism and egoism) and the extension of the realm of beauty (the opposite of Benthamite 'push-pin'). Attainment of full employment – via the agency of the state and through substantial reforms of the system – was to be the way of attaining these […] ends" (Mini 1991, pp. 102/3). Keynes was greatly influenced by "an anti-rationalistic current associated with certain critics of the emerging commercial England [e.g. Coleridge and Carlyle, who]" (Mini 1991, p. xvii) "stressed the primacy of the spiritual over the material, of ends over means, of intuition over the narrowly logical. They were humanists who opposed the claims of [materialistic] individualism with the claims of community and tradition and who had a positive view of the state and of the binding value of culture" (Mini 1991, p. 2).

This vision implies that the role of the state in Social Liberalism is, on the one hand, a very important one: creating as much social harmony as possible and reduce system-caused alienation, involuntary unemployment and socially unacceptable inequalities in the distribution of incomes and wealth above all, as far as is humanly possible (Bortis 1997/2006, chapter 6). On the other hand, the citizens should hardly realise that there is a state. Indeed, government activity must, in the first place, be directed towards organising the social system, i.e. towards setting up, or encouraging the coming into being, of socially appropriate institutions, *such that the scope of liberty for the social individuals is maximised*. This can only be done properly if there is a very solid economic theory from which appropriate policy conceptions may be derived. As has been suggested in the preceding parts of this chapter, this theory can only be classical-Keynesian political economy.

And, very importantly, underlying theory, there must be a vision of the society to be aimed at, and a vision implies, in a Keynesian vein, values, most fundamentally, the good state and the

good life of the social individuals on the basis of a sense of life; the pursuit of truth in the natural, social and human sciences; the realisation of beauty in all spheres. Ideally, with alienation (mainly involuntary unemployment and the social problems resulting from this) reduced to a minimum, the state would be almost imperceptible. Contrariwise, with heavy alienation – involuntary unemployment and social unrest, in the main – the state would have to be a law and order state, interfering heavily with the behaviour of individuals, reducing thus the scope of liberty. External threats, and the resulting "war on terror" also have grave implications for the freedom of the individual.

The fundamental values, the good state and the good life, the pursuit of truth and attempts to achieve beauty, can be realised in very different ways. This gives rise to cultural diversity, which, through the exchange of ideas may lead on to the mutual enrichment of the social individuals of the various countries or regions.

To set up a good society in line with human capacities requires good government. Aristotle says at the outset of his *Politics* that governing is the most difficult of all the arts, the central problem being to bring about social justice, distributive justice in the main. The difficulty of governing has dramatically increased since the coming into being of modern monetary production economies with their very extended division of labour and the crucial role taken by money and finance. Without understanding how monetary production economies function and how they are related to society and the state, appropriate political action is not possible. Political economy had become and has remained *the key social science* of the modern era.

To put it in a nutshell: Involuntary (mass-)unemployment and a very inequitable distribution of incomes lead to a *struggle for survival,* concretely to a struggle for raw materials, markets, and, ultimately, workplaces. This may lead to conflicts between social, ethnic and religious groups, and even states. Full employment and a reasonably equitable distribution, however, render possible the peaceful living together of most diverse social and political formations, associated with the possibility of mutual spiritual, intellectual and material enrichment. However, the aim is not to create an ideal society, but to set up a reasonably good society, in which the social conditions are such that *all* social individuals can, potentially, prosper, that is, unfold their dispositions and perfect and broaden their capacities.

The immense complexity of modern monetary production economies and modern societies at large, alluded to in the above, leads to a case for the small and medium sized-state: the state should not be too large to be governable. Given this, large states (Brazil, China, India, Russia, the United States) would have to decentralise substantially on the basis of the *Principle of Subsidiarity*. Stability within each country would produce stability on the continental and

global levels. This is not a case against Europe or against globalisation. Stable socio-economic and political conditions within countries are the most solid basis for co-operation in Europe and for conceiving supranational institutions, dealing with common European problems and with coordinating activities.

Conclusion: the necessity for a new economic and financial, and political world order

The present world economic and financial order is based on the neoclassical-Walrasian assumption of a self-regulating economy: if there is sufficient competition a tendency to a full-employment equilibrium is supposed to come into being. The creation of large free-trade areas, in Europe for example, and globalisation are evidently based up the neoclassical-Walrasian view of the economy.

In this paper we have attempted to argue that in a classical-Keynesian perspective free and competitive markets do not produce a tendency towards a harmonious full employment equilibrium at all. Quite the contrary, neo-liberal capitalism brings about increasing involuntary unemployment, and growing inequalities between individuals, social groups, regions and countries. This can actually be observed in Europe, above all since the onset of the 2008-09 crises. The economic situation is quite satisfactory in Central Europe, whilst, simultaneously, Southern Europe, even France, find themselves in an increasingly difficult situation. On a world level, the gap between the highly developed countries and the least developed seems to widen; in any case, the gap is not narrowing. In Marxian terms this would represent a huge amount of system-caused alienation. To reduce alienation and to get nearer to a broadly harmonious natural a new economic, financial and monetary world order is required.

Some characteristics of this new world order have already been alluded to in the policy section 7 above. The economy of each country must be run in line with the internal employment mechanism, according to which private and public consumption are the main determinants of the level of employment. The size and a carefully thought out structure of government expenditures are therefore of the highest importance. Equally important is a reasonably equitable income and wealth distribution such that the spending power of the population is such as to bring about full employment. The ultimate policy aim is to bring about a harmonious society such that the social individuals can prosper. This implies that

governing consists in creating or favouring the creation of institutions such the space of liberty for the social individuals is maximised.

This implies that in a social liberal perspective, the state is by far the most important social institution since its concern ought to be the common good, i.e. a matter related to *all* aspects of social life. In the socioeconomic sphere, the most important tasks of the state ought to relate to securing full employment and a fair distribution of incomes. Both aims embody the *principle of solidarity*: nobody ought to be excluded from society or to be treated in an obviously unfair way therein. Other important aims to be pursued by the state relate to increasing national wealth such as is compatible with the preservation of the environment, to spending tax incomes in a socially useful way and to contributing to organizing international trade relations in a way that is beneficial to all trading partners. In doing so, the state ought to co-operate with non-governmental institutions, which might be subsumed under the heading of *non-profit organizations*. Examples are various associations and co-operatives of workers, employers and consumers and non-profit organizations in the social and cultural sphere. However, the state ought to intervene in socioeconomic affairs only if some individual or some social entity is not in a position to solve some vital problem by itself. This is the *principle of subsidiarity,* which implies that state intervention must be such as to leave the greatest possible scope for freedom of action for all citizens. Hence, the policy problem is, positively formulated, to create appropriate social foundations, not to influence the behaviour of the social individuals. The latter ought to be regulated by individual ethics, i.e. *Individualethik*. This implies, as Keynes has insisted upon time and again, that the social and human sciences are *essentially* moral sciences. The social individuals ought to aim at realising the fundamental values of Goodness, Truth and Beauty in all domains as far as this is possible for imperfect and fallible human beings.

Given this, governing obviously becomes very complex and requires an integral or global consideration of man and society (ganzheitliche Betrachtung von Mensch und Gesellschaft). Both must be seen as very complex entities, and the overall policy problem consists in bringing about as much harmony as possible between the various parts of society: the material basis and the institutional superstructure, comprising a legal, political, social, scientific, cultural and spiritual dimension; the cultural dimension would include, for example, the whole education system. Harmony between the various institutions would be associated with a natural state, within which the social individuals could prosper, that is, realise the potentials embodied in human nature as fully as possible. Moreover, the peaceful living together of most diverse social, ethnical and religious groups is rendered possible.

Diversity appears as a social and cultural wealth, producing new social relations and new ideas. However, a dominating cultural and social element, like a common language, a certain way of life, or a large ethnic group, is required to bring about stability in the various countries, above all in large polities.

Obviously, social reality is always more or less alienated from the natural state (in the Aristotelian sense), which, as a consequence, constitutes a social ethical norm. Alienation thus implies a gap between the natural state and socioeconomic reality. Alienation in the material basis of a society, that is, the socio-economic system will, basically, show up in heavy involuntary unemployment and a very unequal distribution of incomes. Socio-economic alienation will, as a rule, lead on to alienation in the institutional superstructure: increasing violence and crime, a heavy law-and-order state, corruption, malfunctioning in the education system, and so on. In an alienated situation life becomes a struggle for survival; this may lead on to conflicts between social, ethnical and religious groups. Here, the very long-term nature of governing appears; in fact, the basic policy aim emerges in the gradual reduction of system-caused alienation. Once again the immense complexity of governing is brought to the open.

Given this, the ideal size of the state is given by the small and medium-sized states as have come into being in Europe. Large countries like Brazil, China, India, Russia and the United States will have to decentralise substantially to be governable in the social liberal sense sketched in the above.

This leads on to a case for a new economic and financial world order. Each country should have its own money. Since there is no tendency toward full employment in monetary production economies, money and finance are indispensable means for permanently pursuing incomes and employment policies. International real and financial transactions should be carried out by the intermediation of a supranational world money, Keynes's *Bancor* (Keynes, CW, vol. XXV) to be managed by the World Bank and its subsidiaries. This would enable each country to bring about a current account equilibrium in the long run without getting indebted.

Politically, each region and continent, and, thus, the entire world would constitute a family of nations, eventually structured through historical-geographical federations. The problem is that history has not produced a harmonious world where all the states can coexist in peace. For example, Europe had to go through a large number of conflicts culminating in two World Wars until a politically reasonably stable situation could be reached in Western and Central Europe. Nevertheless, many frontiers still seem fragile. Moreover, in the Balkans the break-

up of Yugoslavia has created a new area of conflict. Similarly, the break-up of British India into three states has produced the Kashmir conflict and the division of the Punjab, with great problems for the people of Kashmir and the ethnic community of the Sikhs. More generally, problems arise because of population movements resulting in a differing ethnic composition in some region, the division of former political entities, the creation of new states claiming the same territory, common resources to be shared, water and oil-fields, for example. And certainly there are other factors producing conflicts, for example, new frontiers drawn after a war.

International conflicts, above all related to frontier problems, might possibly be solved to a greater or lesser part, according to the circumstances, and the conflict potential greatly reduced, as well as potential conflicts prevented, through structuring the world family of nations through forming *sub-families of nations* having a common historical experience; to this geographical factors may add, for example Euphrates and Tigris linking Turkey and the Eastern part of the Fertile Crescent; here the main common problem would be the sharing of water resources. Hence to prevent conflicts for some natural, political or historical reason, *historical-geographical federations* with more or less strong supranational institutions should be created.

If present in the mind of the people of some historical-geographical sub-family of nations through history manuals, commemoration of great events, the cultural heritage, architectural and literary for example, the common historical experience may create a very strong feeling of community among most diverse social, ethnic and religious groups. For example, there are large historical intersections between Germany and Poland (Silesia, Pommerania, and East Prussia, with the northern part of East Prussia also belonging to another Historical Federation, that is the Community of Independent States). These intersections might become a very strong link, not a source of conflict, if both countries, Germany and Poland, were to join a historical-geographical Federation, the activities of which would, to start with, be historical-cultural in the main.

Bangladesh, India and Pakistan would be another prominent example of a historical-geographical entity, and so would, for example, Turkey and the countries of the Fertile Crescent, and last, but not least, most of the countries that have made up the former Soviet Union and the Russian Empire, that is, the Community of Independent States. This historical-geographical criterion to form sub-families of nations seems to underlie Alexandre Adler's *l'Odyssée américaine* (Adler 2004). On p. 173 Adler speaks, tentatively, of six powers that could ensure the stability of our world: North America, China, Europe, Iran and Turkey,

South America, and the Centres of the Islamic-Arab World (Saudi-Arabia, Egypt and others). Other criteria to form sub-families of nations are possible, most importantly along religious or ethnic or religious-ethnic lines. This seems to be the criterion underlying Samuel Huntington's *The Clash of Civilizations and the Remaking of World Order* (New York, Simon & Schuster – Touchstone, 1997), who considers the following civilizations: Western, Latin American, African, Islamic, Sinic, Hindu, Orthodox, Buddhist, Japanese (pp. 26-27).

This historical-geographical criterion to form sub-families of nations is, it seems to us, the appropriate criterion, whilst the religious or ethnic or the religious-ethnic criteria are highly dangerous, ethnic purifications being one possible implication. However, in the historical-geographical view, religious, cultural and ethnic diversity appears as an asset, favouring an exchange of ideas, which, in turn, constitutes a factor of enrichment, and provides the basis for a larger social potential, that is a socially and culturally richer society. Just let us remember here that in the social liberal view, the basic policy aim is of a social ethical nature, that is, to approximately realise the good society. The way to the good society will differ, according to the concrete circumstances, shaped, for example, by ethnic, cultural and religious factors.

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