



## Garegnani and the surplus approach

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**Abstract:**

*The article reviews Garegnani's 2024 book (Capital Theory, the Surplus Approach, and Effective Demand: An Alternative Framework for the Analysis of Value, Distribution and Output Levels, Springer), collecting his most important essays, carefully edited by Roberto Ciccone. Pierangelo Garegnani (1930-2011) was one of the main exponents of the surplus approach. The review article recalls his important contributions to the critique of the marginalist theory of value and distribution, and provides a critical overview of his contributions to the construction of a Classical-Sraffian approach based on the notions of a 'core' of economic theory and of 'long-period positions', suggesting the possibility of an alternative Sraffian-Keynesian construction.*

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Thirteen years after his death, an extensive collection of Pierangelo Garegnani's writings, selected by the author himself and with an extensive introduction by him, has now been published. The writings, which cover a span of half a century, range from the doctoral thesis discussed at Cambridge in 1958 to an article interpreting the early developments of Sraffa's theory published in 2005, in a version that the author considers "strictly provisional" (Garegnani, 2024, p. 491n). Alongside the critique of marginalist capital theory, to which the author has made fundamental contributions, other works concern the interpretation of the classical theory of value and distribution, the theory of aggregate demand and accumulation, and the interpretation of Sraffa's thought (Garegnani was his literary executor).

With the help of Mrs. Luisa Garegnani, editor Roberto Ciccone has carried out a rigorous work of checking the texts, limiting his interventions to a minimum. He has thus respected the criteria of philological rigour indicated time ago by Sraffa: in transmitting the thought of a master, published texts take precedence over unpublished ones, and these over oral tradition; the editor's interpretative contribution must be carefully distinguished from the texts themselves. The meticulous care with which this work was conducted explains, at least in large part, the years that

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elapsed before the volume was published.<sup>1</sup> The only observation that can be made in this regard is the absence of a complete bibliography of Garegnani's writings, which could have been placed as an appendix to this volume. But, even in this case, perhaps a reason can be found in Garegnani's desire to highlight, with respect to the rest of his scientific production, the writings selected for this volume, focused on the critique of marginal productivity theories, on the revival of the classical approach, and on Sraffa's contributions to these themes.<sup>2</sup>

The collection of essays reflects the objectives Sraffa had set himself for his research: critique of the marginalist approach; reconstruction of the conceptual foundations of the classical approach (mainly with his edition of Ricardo's works); and a foundational positive contribution to the analytical construction of an alternative to the marginalist approach.<sup>3</sup> For all three of these aspects, Garegnani offers original contributions, provoking interesting debates in each case. Let us try to consider them separately.

### 1. Criticism of the marginalist conception

Garegnani's first contribution in this field is his doctoral thesis, republished as the first part of this volume (pp. 3-143).<sup>4</sup> It should be emphasised that it was written and discussed before the publication, in 1960, of Piero Sraffa's *Production of Commodities by Means of Commodities*. Garegnani therefore reached his results autonomously: Sraffa, who supervised his work, will undoubtedly have contributed criticism but not positive indications, as was his custom – as all his students can testify. The first part of the thesis deals with the difficulties encountered by Smith, Ricardo and Marx with the labour theory of value. Garegnani's original contribution in this respect is to show that classical theories of distribution do not necessarily require the measurement of capital in terms of a single quantity, unlike what will be shown for marginalist theories, with specific reference to Walras and Wicksell. In elaborating the critique of marginalist theories of capital, Garegnani encounters the phenomena of the "return of techniques" and "reverse capital deepening" that played such a large part in the debate of the 1960s and to which we will return later.

A minor remark on the reconstruction of classical theory is that, both in the doctoral thesis and in the introduction (p. vii) and in subsequent chapters, Garegnani attributes the origin of the surplus approach of the classical school to the physiocrats and Turgot, without mentioning William Petty. The latter precedes them by a century, and he presents the interesting peculiarity of preferring to the labour-value theory, which he also mentions, a theory of "physical costs",<sup>5</sup> in

<sup>1</sup> On some occasions, the editor goes so far as to correct some (minor, largely irrelevant) analytical errors.

<sup>2</sup> Among Garegnani's papers not included in this volume, let me recall Garegnani (1990), discussed below, and especially Garegnani (1962): although published by Svimez as a mimeographed volume as a "Provisional edition for internal use", it had a wide circulation and influence on Italian economists and, together with a theoretical part (later published as Garegnani, 1964-65, and included in an abridged version in this volume, pp. 387 ff.), it included a quite interesting section III on "Applicazioni alla situazione italiana del periodo 1950-60", which represents, as far as I know, Garegnani's only contribution to applied economics. (I recall receiving a copy of the Svimez volume from Claudio Napoleoni in 1968, with the recommendation to study it; and, later on, of illustrating section III to Krishna Bharadwaj, who did not read Italian).

<sup>3</sup> For an illustration of Sraffa's contribution, cf. Roncaglia (1975 and 2009b).

<sup>4</sup> Here and in the following, page references refer to Garegnani (2024); for the articles that make up its chapters, the year of first publication is given in square brackets.

<sup>5</sup> On p. 79, Garegnani, analysing Wicksell's theory, recalls the search for a "par" between land and labour that was an important point in Petty's analysis, but without naming him. On Petty's theory of value, see Roncaglia (1977, pp. 101-

various aspects analogous to that which Robert Torrens (1821) would later propose in opposition to Ricardo. Such a choice, that of “physical costs”, later adopted by Sraffa (1960) and permitted in the classical approach precisely by the fact that in it the measurement of capital in terms of a single quantity is not necessary.

Garegnani’s doctoral thesis, later published in Italian (1960), gave rise to a debate concerning some aspects of his criticism of Walras’ theory of capital.<sup>6</sup> Not even in these debates, however, was the central thesis questioned: Walras’ disaggregated model only apparently circumvented the criticism of the aggregate notion of capital. In fact – as Garegnani argued – the balance between savings and investment necessary to ensure the determination of an equilibrium interest rate requires an inverse relationship between the interest rate and the value of the capital goods as a whole; such a relationship necessarily obtains in a world with only one basic commodity (i.e., directly or indirectly present in all production processes), while in a multi-commodity world it may well be violated (specifically, whenever real Wicksell effects occur). In reality, the shadow of the axiomatic general economic equilibrium model then recently published by Debreu (1959) loomed behind the debate on Walras’ theory.

The fourth chapter of the collection (Garegnani, [1976] 2024, pp. 209-228), which originated from an exchange with Samuelson, is dedicated to the critique of the equilibrium notion adopted in Debreu’s model and, more generally, in axiomatised models of general economic equilibrium. The fifth chapter is also on this theme (Garegnani, [2003] 2024, pp. 229-294, later cleansed of various misprints in the mathematical formulae, first in a 2011 reprint, which Garegnani had not been able to revise, and most recently in the current reprint, thanks to the editor’s careful revision). Compared to the traditional marginalist approach, in the instantaneous or intertemporal equilibrium models the notion of a uniform profit rate in the various productive sectors linked to the assumption of free competition disappears: a notion that, like the classical notion of perfect competition, constitutes a necessary link between the various productive sectors in a market economy.

The debate, which has seen the intervention of many economists, appears at times to be a dialogue between the deaf, since the claim of internal logical coherence of general economic equilibrium models, entirely justified given their premises, is countered by Garegnani with the logical incoherence that manifests itself when the notion of the uniform profit rate is attempted to be reintroduced into such models. As a matter of fact, the criticism should not concern the internal coherence of Debreu’s (and many others’) axiomatic treatment but, rather, the substantial loss of heuristic value implicit in the new set of assumptions, which distance the new conception from the entire previous marginalist tradition (including Walras), in which stability and uniqueness of equilibrium – hence a uniform rate of profits – were considered necessary basic features. On another important aspect of this work, the proposal of a notion of “long-run positions”, we will return later, discussing Garegnani’s contribution to the re-proposal of a classical approach.

More clearly delimited is the field of debate on the theory of capital “between the two Cambridge”, the English and the American, which followed the publication of Sraffa’s *Production of Commodities by Commodities* (1960). This work was intended at the same time as a basis for a critique of the traditional marginalist theory of value and distribution and as a solution to the problem of value left open by the classical tradition. The critical contribution concerns, firstly, the demonstration of the unacceptability of the “Austrian” attempts to measure capital through the

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21); on that of Torrens, see Roncaglia (1972). Another minimal notation: Garegnani (p. 7) erroneously considers Turgot a physiocrat.

<sup>6</sup> Among the various interventions, let us mention the exchange between Graziani (1964, 1966) and Garegnani (1966b).

notion of the “average period of production”, once one replaces the simplifying but untenable assumption of a simple interest rate with that of a compound interest rate (Sraffa, 1960, p. 38). Secondly, it concerns the possibility of the so-called “return of techniques”: as the rate of profit increases, a technique initially adopted may be replaced by another technique, but may then be adopted again following a further increase in the rate of profit.<sup>7</sup> This possibility contradicts the assumption, common to the entire traditional marginalist theory of value and distribution, of an inverse relationship between the profit rate and the capitalist intensity, however defined, of the production processes: it therefore deprives of value the interpretation of the profit rate as the price of a “capital” factor of production (again, however defined and measured).<sup>8</sup>

Attempts to respond to these criticisms took two forms: Samuelson’s (1962) proposal of a “surrogate production function”, presented as an enlightening parable, useful for interpreting the functioning of the economic system; and Levhari’s (a student of Samuelson) thesis (Levhari, 1965) that the “return of techniques” is only possible within an industry, but cannot concern the economy as a whole. Levhari’s thesis was immediately answered by Pasinetti (1966, but already presented in Rome in September 1965 at the congress of the Econometric Society); Garegnani’s contribution ([1966], 2024, pp. 195-208), provides an independent demonstration of Levhari’s error and stresses the importance of the question, which determines the logical failure of a central pillar of the marginalist approach. Samuelson’s “parable” is instead at the centre of an extensive work by Garegnani, reprinted as the second essay in the volume (pp. 147-193), published in 1970 but submitted to the *Review of Economic Studies* in 1963 and widely circulated among the practitioners (an independent work by Luigi Spaventa, 1968, is dedicated to the same topic). Samuelson’s error consists in considering a model apparently with multiple commodities, but in reality with only one basic commodity; as a consequence of this fact, the wage-profit frontiers relative to the various techniques are linear, with the consequence of excluding the phenomenon of the return of techniques.

In this long elaborated work, Garegnani distinguishes three different questions: whether an aggregate production function, in which the level of production can be expressed as a function of the capital and labour employed, is conceivable as having general validity; whether such a function is conceivable for a single commodity considered in isolation; and whether the thesis of an inverse relationship between the profit rate and the capitalist intensity of production processes is acceptable. The answer resulting from Garegnani’s analysis is negative for all three questions. The last, in particular, is decisive for the rejection of the traditional marginalist theory of value and distribution.

At the conclusion of the article, Garegnani emphasises how the methodological choice of the classics, to distinguish the study of value from the study of the forces that govern the distribution of income and the decisions on production levels, allows us to continue adopting their approach beyond the flaws of the labour-value theory (pp. 173-175).

Garegnani’s criticisms, along with those of Pasinetti and Spaventa, are decisive on the analytical level and are universally recognised as such. Attempts to defend the marginalist approach concern the thesis already mentioned above, according to which these criticisms do not apply to axiomatic models of general economic equilibrium. In this regard, a distinction must be made between (i) the criticism of the aggregate concept of capital (already proposed by Joan

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<sup>7</sup> Sraffa (1960, pp. 81-87). It should be emphasised that the question concerns the alternative techniques available at a given time, not the evolution of the economic system over time.

<sup>8</sup> Thus the wage rate and the rate of profits cannot be interpreted as stable full employment equilibrium solutions stemming from the interplay of supply and demand in the labour and capital markets. This negative result also holds for the so-called neoclassical synthesis: cf. Roncaglia and Tonveronachi (1985).

Robinson in 1953, on the declared basis of a suggestion by Sraffa, which, however, appears misunderstood in the light of the subsequent debate) and (ii) the criticism of the inverse relationship between the profit rate and the capitalist intensity of production processes. In a 1983 edition of his very popular text, Samuelson (1947, new ed. 1983, p. 568n.) indicates that he accepts Robinson's critique, while curiously ignoring the second and more devastating critique. And it is this attitude, which seems to have been adopted by many in defence of mainstream macroeconomics, that incorporates, in all its variants, the thesis of a stable full employment equilibrium in the absence of obstacles to the full functioning of competition, in the long if not the short run, based precisely on the inverse relationship between the profit rate and capitalist intensity.

In the terms of the prevailing theory, denying convergence towards full employment, unless due to a downward rigidity of the real wage (whereby unemployment would be attributed to trade unions' excessive claims), concerns the stability, and possibly the uniqueness, of the general economic equilibrium. This thesis is therefore not a critique of the axiomatic models of Debreu and analogues, which do not deal with these aspects (even going so far as to recognise the possibility of multiple and unstable equilibria), but it should entail the abandonment of all mainstream macroeconomics. In this context, Solow (1963, p. 12) suggested the idea that there exist a "high-level" economic theory (that of general economic equilibrium) and a "low-level" theory (that which uses the aggregate production function); let us notice in passing that this dichotomy would also relegate the neoclassical growth theory with all its variants to the low level. However, this means utilizing low-level theories (mainstream macroeconomics, the foundations of which are wrong), which is unacceptable when one considers their relevance for economic policy choices. The substance does not change with the malicious retort attributed to one of the greatest general equilibrium theorists, Frank Hahn, which probably cost him the Nobel Prize, according to which the distinction concerns not highbrow and lowbrow theories but highbrow and lowbrow economists. General equilibrium theorists, by limiting themselves to the highbrow level, save logical coherence while remaining within the framework of a marginalist conception based on the equilibrium between supply and demand, but they cannot escape the heuristic limitations mentioned above. It is no coincidence that in the contemporary debate, apart from purely cosmetic references (e.g., to models with multiple goods but only one basic good, or of pure exchange), general economic equilibrium theory appears relegated to a corner, as if it were even more heterodox than post-Keynesian analysis.

## **2. The interpretation of the classical approach: the "analytical core" and the "long-period positions"**

After the first part of the book, dedicated to the Ph.D. thesis, and the second part on the criticism of the marginalist theory of value and distribution, the third part of the book collects Garegnani's contributions on the classical approach. It comprises four papers. The most extensive is the second, *Value and Distribution in the Classical Economists and in Marx*, published in English in 1984, and originally in Italian in 1981, reworking a paper presented at a 1972 conference (here on pp. 305-40). In it, Garegnani proposes both the analytical method of "long-period positions", characterised by a uniform rate of profits, and the notion of the "core" (analytical nucleus) with the distinction between two logical stages of analysis.

The analytical core, as defined by Garegnani, consists of the relationships between prices and distributive variables analysed in Sraffa (1960). This notion is considered common to the surplus theories of the classical economists Marx and Sraffa. Such theories

have [...] a *core* which is isolated from the rest of the analysis because the wage, the social product and the technical conditions of production appear there as already determined. It is in this 'core' that we find the determination of the shares other than wages as a residual: a determination which [...] will also entail the determination of the relative prices of the commodities.<sup>9</sup>

In addition to the relations indicated as internal to the core, other relations may exist between the variables considered (dependent and independent), which are "left to be studied outside the core", insofar as they cannot be reconducted to the "necessary quantitative relations", such as those established between the variables within the core, and thus constitute "distinct logical stages". Outside the core, in fact, "the multiplicity of [...] influences and their variability according to circumstances [...] make it impossible to reconduct them to *necessary* quantitative relations like those, studied in the "core", between distributive variables and relative prices and between outputs or techniques and the dependent distributive variables and prices" (ibid, p. 312). Moreover, the notion of the "core" of theories of surplus remains substantially unchanged when, in a second phase of his research activity, Garegnani considers the possibility of substituting the profit rate for the wage as an independent variable determined exogenously, i.e., outside the core itself.<sup>10</sup>

Let us open a parenthesis here. The choice of the profit rate as an independent variable is explicitly suggested by Sraffa (1960, p. 33): once the notion of the wage as "consisting of specified necessities determined by physiological or social conditions which are independent of prices or the rate of profits" has been abandoned, it must be admitted that it "does not acquire a definite meaning until the prices of commodities are determined". Instead, "The rate of profits, as a ratio, has a significance which is independent of any prices, and can well be "given" before the prices are fixed. It is accordingly susceptible of being determined from outside the system of production, in particular by the level of the money rates of interest". This choice opens the door to a connection with Keynesian theory: through the influence of the monetary interest rate on the profit rate, Sraffa recognises, more generally, the influence of monetary events on real variables, in contrast to theories considering money as a veil. In fact, trade union bargaining concerns money wages, whereas real wages depend on price trends and can only be defined when a price index is unambiguously identified. Sraffa raised doubts about this possibility as early as his degree dissertation (Sraffa, 1920), followed by Keynes (1923); that doubt was reiterated by both of them in the *General Theory* (Keynes, 1936, pp. 39-40) and in *Production of Commodities* (Sraffa, 1960, pp. 42-43).

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<sup>9</sup> (Garegnani, [1984] 2024, p. 311; cf. more generally pp. 307-14). The concept is repeatedly taken up in Garegnani's writings; cf., e.g., pp. 301 and 344 (from works originally published in 1983 and 2002, reprinted here at pp. 297-303 and 341-52).

<sup>10</sup> In his early work Garegnani chooses the real wage as an exogenous variable in the wake of the classics and Marx (see, e.g., [1958] 2024, p. 7 or [1983] 2024, p. 301). See also Garegnani (1978, p. 31). In the 1984 text, the assumption is adopted at the beginning (p. 311), only to show at the end (p. 338) that the definition of "core" does not change substantially when adopting the profit rate as an independent variable. However, immediately before (p. 337, fn), it is recalled that "the treatment of the wage as a residual need not [...] entail the treatment of the wage as an abstract value quantity. Commodities which play a primary role in workers' consumption may provide a more significant measure of the wage than is provided by other commodities". After the trade union's strikes in Sixty-Eight, the issue had taken on a political significance: the slogan of the "wage as an independent variable" was chosen to indicate the possibility for workers' struggles to determine the level of the real wage. The preference for the assumption of the wage as an independent variable remains in later works: see, e.g., Garegnani (1990, pp. 122-123). It is perhaps worth emphasising that, for this as for other aspects, we must treat separately the issue of the greater or lesser fidelity to the texts of the classical economists (an aspect we are not concerned with here) from the issue of the validity of the assumptions adopted (or the theses sustained) in the context of contemporary economic debate.

The results of the “core” analysis are interpreted as “long-period positions”, not “equilibria”, which would imply a reference to equality of supply and demand. The reference to “long-period positions” is of fundamental importance in establishing the primacy of the “core” in the two-stage method of analysis suggested by Garegnani. For this, “long-period positions” must have “persistence” characteristics (Garegnani, 2024, p. xvii),<sup>11</sup> with natural prices constituting a “centre of gravity” with respect to market prices. Garegnani (*ibid.*, p. 349) also recalls “the stability that the wage derives from its socio-institutional determinants”: forgetting, for this aspect, the variability that can be found in the real wage (however defined and measured), even in the short run, due to changes in money prices.

In order to develop the classical approach in the wake of Sraffa’s contribution, Garegnani therefore builds on the distinction between the core (corresponding to Sraffa’s contribution) and “the rest” of economic analysis, which concerns aspects for which a rigorous theorisation is not considered to be possible because they are dominated by variable and contingent factors. Hence, as we shall see better in the next section, the attempts to define a “‘normal’ effectual demand” (*ibid.*, p. 373) within the classical approach.

A number of perplexities have been expressed about this line of analysis. In short, other sets of logically necessary relations between economic variables can be constructed (to give just one example, think of Harrod’s 1939 growth model).<sup>12</sup> In this regard, the writer has proposed a method of constructing separate “logical building blocks”, but blocks linked by reference to a common conceptual foundation (Roncaglia, 1975, chap. 6, taken up and developed in various subsequent works). Furthermore, the centrality attributed to the core depends on its purported “persistence”, particularly of technology; in this respect, it can be remarked that technical progress can take place at a very rapid pace in some sectors, with the consequence of changes in relative prices that can be much more rapid than the “convergence” of market prices towards natural prices (think of the field of information technology, or of phases of technological paradigm change such as the discovery of Crispr techniques for genome analysis in the field of biomedicine).<sup>13</sup>

The line of analysis followed by Garegnani differs from that chosen by Luigi Pasinetti in various writings to develop Sraffa’s analytical contribution. Various of Pasinetti’s writings, beginning with his early work on the post-Keynesian theory of distribution (Pasinetti, 1962) and then those presenting his models of growth (notably, Pasinetti, 1981), privilege the extension of

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<sup>11</sup> The persistence character of the core is reiterated several times; e.g., on p. 313 the core is spoken of as consisting of “known functional relations of sufficient generality and persistence”. In a work not reprinted in this collection, Garegnani (1990, p. 153) indicates that the persistence does not concern the variables under analysis, but the “determining forces”: it is not clear whether this indicates relative stability of the independent variables (technology, real wages) or of the analytical relations; in the first case, the criticism recalled above applies (the rate of technical change is different in different sectors of the economy, and in some sectors at least it may be high; real wages are far from stable when inflation is high and variable), while, in the second case, we are faced with a tautology, which concerns any analytical relation established within any theory. If “determining” implies univocal cause-and-effect relations intended as statements concerning the real world, we should remark that these are not stated in either Harrod’s or Sraffa’s texts.

<sup>12</sup> Garegnani (1990, p. 154) replies that “it is clearly different to see [Harrod’s equation] as *determining* the rate of growth of the economy in the same sense in which the price equations may be said to determine prices and the dependent distributive variables in classical theories”. However, in both cases – Sraffa and Harrod – we are confronted with two sets of logically necessary relations, given the assumptions.

<sup>13</sup> For a critique of long-period positions, see Roncaglia, 1990a; for a critique of the notion of the core, see Roncaglia, 1990b. (Garegnani’s reply, 1990, which is three times longer than my comment, does not recall the changes he made to the original text on which I had to prepare my comment; it seems to me, however, that despite the greater caution about the centrality of the notion of the core, which was in any case emphasised in various passages of his writings even later, my criticism remains substantially valid).

the relations between distributive variables and prices to consider the analytical requirements of growth at full employment: a theory therefore not interpretative but prescriptive.

Another approach, which we merely recall here, is the one initiated by Sylos Labini and, as far as the connection with Keynesian analysis is concerned, by Kregel and others. Among other things, this approach rejects the assumption of “persistence” in the relative price system. In this context, let us recall that the Keynesian theory of own rates of commodity returns (Keynes, 1936, ch. 17) is focused on changes in relative prices within a declaredly short-period analysis: in other terms, according to Keynes, entrepreneurs take into account changes in relative prices in their decisions on production levels, employment and investment – all this, in a short-period context (cf. Kregel, 1976, 2024). Also, the notion of “long-period positions” is opposed to that of a “snapshot” (or “photograph”) of an economic system at a given moment. The photograph metaphor is linked to the importance of the assumption of given levels of production, rather than constant returns to scale as assumed by the many interpreters who have attempted to bring Sraffa’s analysis back within marginalist theory as “half” – the production side – of a general equilibrium system.<sup>14</sup>

### 3. Interpreting Keynes

The five chapters of the fourth part of the book are devoted to proposing a notion of aggregate demand internal to the classical approach, as a foundation for a theory of accumulation, contrasting it with the Keynesian notion that is considered polluted by residues of marginalist theory as well as limited to the short run. Here we will focus on the issue of how to interpret Keynes; as far as the interpretation of the classics is concerned, Garegnani provides a treatment focusing on the basic theoretical framework relating to real variables, which can be complemented by the in-depth work of a student of Sraffa, Tucker (1960), with regard to their monetary theories and the link with distribution and growth.

Garegnani identifies the positive core of Keynesian theory in the thesis, according to which it is savings that adjusts to investment and not the other way around, as the marginalist theory but also the classical tradition held. Garegnani (cf., e.g., pp. 222-223, 417-418) defends Keynes’s thesis; at the same time, however, he follows a broad tradition (established in the most popular textbooks, which take up the so-called neoclassical synthesis of Hicks, Modigliani and Samuelson) in interpreting his analysis as limited to the short period.<sup>15</sup> He therefore considers it necessary to supplement the thesis of the causal link from investment to savings with the critique of the traditional marginalist theory of value and distribution referred to in the preceding pages, in order to affirm its validity in the long run as well. In this way, the importance, on the positive side, of the

<sup>14</sup> This metaphor was proposed since my dissertation (1969, p. 73), then in Roncaglia, 1975, p. 27 (and in Roncaglia, 2009b, pp. 50-51). From this point of view, we may recall that the decisive step in the decades-long elaboration of *Production of Commodities by Means of Commodities* can be identified around 1928 when, as Sraffa himself reports (1960, p. vi), Keynes suggested that he emphasise the absence of assumptions about returns (cf. Roncaglia, 1999, pp. 25-26). (Incidentally, Roncaglia, 1975, was the first work to emphasize the importance, for Sraffa’s constructive analysis, of the absence of assumptions about returns.)

The interpretation of Sraffa’s analysis synthesised in the notion of photograph (or snapshot, or relations isolated in vacuo) has been criticised by various advocates of “long-period positions” (e.g., Ginzburg, 2000, p. 126). It later turned out, however, that, in a letter from Sraffa to Rüdinger Soltwedel dated 24 February 1968 (Sraffa Papers, C294/2), identified by Bellofiore and Potiers (1998, p. 64), after Sraffa’s papers had finally been made available, precisely the same metaphor was used. Cf. also Kurz and Salvadori (2018).

<sup>15</sup> In this sense, Garegnani’s clear statement should be interpreted: “Marshall’s variant of [the marginal] theory constituted the entire horizon within which Keynes received his training and beyond which, in a sense, he never went” (p. 532).

Keynesian theory of the interest rate linked to the concept of liquidity preference, and more generally of its treatment of monetary and financial issues, is overshadowed in his reconstruction.

The notion of “long-period positions” is in fact linked, as far as the theory of output levels is concerned, to a notion of “long-period levels of investment”, which directly contradicts Keynes’ view of investment as having a considerable degree of instability. Consider, for example, the following passage (from a 1983 paper, reprinted on pp. 435-44): “A satisfactory long-run theory of output does not require much more than (a) an analysis of how investment determines saving [...]; (b) a study of the factors affecting the long-period levels of investment; and (c) a study of the relation between consumption expenditure and aggregate income” (p. 441).

The construction of a “long-run theory of aggregate output” (p. 440) remains only outlined in passing. The “persistence” required for a “long-period” theory obviously cannot be referred to output levels that would emerge as the average of short-term fluctuations, in the presence of investments that increase productive capacity. In reality, what may emerge as an average of oscillations is a normal degree of capacity utilisation (such as that considered by Sylos Labini, 1956, in his oligopoly theory). Garegnani’s reply (1990, p. 158) to this objection of mine (“To say that the current percentage degree of capacity utilisation oscillates around a ‘normal’ degree of capacity utilisation appears to me not to differ from saying that the current output oscillates around a ‘normal’ output”) is valid only under the assumption that production capacity remains constant over time, i.e., in a stationary economy.

The interpretation of Keynes’s analysis in the *General Theory* as referring to a short-period Marshallian type has non-negligible textual foundations, and it has been adopted as self-evident in mainstream macroeconomics. It is supported not only by Keynes’s explicit utterances but also by the influence of the doctoral thesis of Kahn, Keynes’s pupil and later literary executor, which was not published until decades later but whose preparation had been followed by Keynes: *The Economics of the Short Period* (Kahn [1929] 1983). As mentioned, this interpretation paved the way for a compromise (the so-called neoclassical synthesis) whereby the traditional marginalist theory continues to be recognised as generally valid for the long run (and under the assumption of perfect competition), while the validity of the Keynesian criticism of the possibility of equilibria characterised by underemployment of the available labour force is limited to the short run. In this way, Keynesian innovations in the field of economic policy are restricted to monetary and fiscal policies to stabilise the economy in the short term, whereas in reality they have a much broader scope, also and in some respects mainly concerning the overall institutional set-up, including international relations and the need to avoid an uncontrolled expansion of finance and to limit systemic uncertainty. However, the interpretation of Keynesian underemployment equilibria as transitory runs counter to Keynes’s clearly stated thesis, that such underemployment equilibria could – indeed, are likely to – persist over time (Cf. Tonveronachi, 1983).

What is summarised here<sup>16</sup> is a different interpretation, one that justifies the references to the short period as being directed at concentrating the analysis on certain relationships by isolating them from the influence of technological change (including the effects of changes in the scale of production and the introduction of new machines). This is a justifiable choice from a methodological point of view. It recalls the discussions going on at the time at Cambridge (and not only), with the involvement of Sraffa in particular but also closely followed by Keynes, on the transition from the logical positivism of the early Wittgenstein (1921) to the theorisation of “language games” (Wittgenstein, 1953), i.e., the necessity (already foreshadowed by Keynes in the

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<sup>16</sup> For more extensive discussions, see Kregel, 1976; Tonveronachi, 1983; Roncaglia, 2001, ch. 13; Roncaglia and Tonveronachi, 2014; Kregel and Roncaglia, 2020.

*Treatise on probability*, 1921, p. 134, with his “theory of groups”) to circumscribe analysis to well-defined objectives. As mentioned above, a similar choice is made, in the clearest way, by Sraffa (1960) with his decision to exclude from his analysis the consideration of variations in the levels of production, hence the issue of returns to scale: a “photograph” of the economic system at a given moment in time.

The difference between the two methodological choices, Keynes’s and Sraffa’s, beyond Sraffa’s much greater clarity in this regard, is that Sraffa indicates the coexistence in his analysis of the two aims, critical and constructive, specifying that his assumption – the absence of assumptions on returns of scale – can be omitted when considering the critical aim, while it remains essential to indicate a basic difference between his conception and that of the marginalist tradition. For the criticism, the assumption of constant returns is admitted: a special case, certainly, but the criticism that applies under this assumption is *a fortiori* also valid under different assumptions, whose only effect is to complicate the analysis. Keynes, on the other hand, while clearly contrasting his analysis with that of the marginalist theory of money and employment, does not indicate that it can be understood both as a critique of the traditional theory and – through the attribution of a different role to the short-run assumption – as part of a reconstruction based on a different conceptual basis. The possibility, however, remains open and must be grasped.

One of the central points of this reconstruction concerns uncertainty. Long elaborated by Keynes between 1907 and 1921, when he published *A Treatise on Probability*, Keynes’s conception is one that considers perfect knowledge and absolute ignorance as extreme and unrealistic cases, while the general case is characterised by the presence of uncertainty more or less distant from the two extremes.<sup>17</sup> Of this uncertainty, as a fundamental component of reality, economic theory *must* take account, even distinguishing between situations characterised by radically different types of uncertainty. And this is precisely what Keynes does in the *General Theory*, establishing a logical sequence that links as successive steps the theory of liquidity (or the interest rate), then the theory of investment, and finally (via the multiplier) the theory of production and employment levels.<sup>18</sup>

In this regard it must be emphasised that the notion of uncertainty accepted in the *General Theory* is not the generic one used by some of his pupils, notably by Joan Robinson, to deny positive heuristic value to Sraffa’s analysis (see, e.g., Robinson, 1974). This stance was followed by a debate with Garegnani, who contrasted the distinction between historical time and logical time proposed by Joan Robinson with the notion of “long-period positions”.<sup>19</sup> However, Garegnani, rather than criticising the totalising nature of the dichotomy proposed by Joan Robinson, appears to counterpose it with a denial of the analytical role of expectations, and thus of uncertainty, within a classical theory of employment, for methodological reasons attributable to the need to eliminate from the theoretical reconstruction the subjective elements that characterise the marginalist approach.<sup>20</sup>

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<sup>17</sup> Keynes’ theory of probability has been occasionally classified as subjective, in that assessments of probability are made by each subject and may differ from one to the other, but it has a crucial objective foundation in the fact that each rational subject must base his or her assessment and operational decisions on the set of objective data at his or her disposal, taking into account their incompleteness as well (cf. Roncaglia, 2009a).

<sup>18</sup> In this way, Keynes follows his master Marshall’s methodological rule of favouring short causal chains, postponing feedback effects to a possible further analysis; but he applies it to a different reconstruction of the analytical cores on which he intends to focus attention.

<sup>19</sup> See the exchange published in the appendix to Garegnani (1979, pp. 117-143).

<sup>20</sup> All of Sraffa’s (and Sylos Labini’s) students are sensitive to the need to exclude subjective elements from the theoretical framework. However, we can observe that uncertainty, as Keynes conceives it, is an objective feature of

Moreover, Garegnani seems not to recognise the succession of logically separate theoretical steps indicated by Keynes when, for example, he does not grasp the distinction between the notion of aggregate demand and effective demand.<sup>21</sup> Or when, looking at the use of the instrument of own rates of return proposed by Sraffa (1932) and adopted by Keynes in the central chapters of the *General Theory*, he inverts the chain of cause and effect links in the process of adjustment towards equilibrium (p. 239n); in Keynes it is not the nominal interest rate that adjusts to changes in relative prices over time, but it is relative prices that adjust to own commodity rates when they are misaligned as a result of technological changes. Or when he seems to underestimate the role of expectations in determining the liquidity premium. Indeed, along with the reversal of the causal link between investment (effective demand) and savings, Keynes' main contribution lies precisely in the critique of the theory of money as a veil, i.e., in the thesis (independent of the short-run assumption) that monetary and financial events have a decisive influence on the performance of the real economy: an aspect that the neoclassical synthesis had attempted to relegate to the short run, and which is left in the shade in Garegnani's interpretation.

#### 4. The construction of an alternative to the marginalist tradition

Garegnani's proposal is therefore that reconstructing economic theory, after the crisis of the marginalist one, is better done by resting on the shoulders of Marx, "the highest point" of the classical tradition, to be resumed after the marginalist parenthesis, taking advantage of the contributions to the theory of value made by Sraffa. Keynes' contribution, on the other hand, must be accepted for an element that can be considered not incompatible with the classical approach, i.e., the thesis that it is savings that depend on income, while the rest of his analysis would be vitiated by the choice of a short-term framework. It should therefore be supplemented with a notion of "long-period effective demand", the limitations of which were discussed above. For the theory of distribution, after a long initial phase in which the real wage is preferred as an exogenous variable, determined by the "class struggle", the possibility of a choice of the profit rate as an exogenous variable is also admitted, but without developing it. Garegnani does not consider the thesis (proposed by Sylos Labini) of a "historically determined" theory of distribution (as well as for the theory of income and accumulation): namely, the opportunity to analyse these issues not as equilibrium levels of the relevant variables (profit rate and real wage, income and its growth rate) but focusing on the factors that determine their path over time.

The consequences of the sharp dichotomy between the analytical core, the only one admitting rigorous theorising, and "the rest of economic theory" are manifested here in all their strictness. In this way, various "analytical building blocks" that constitute useful *theoretical* contributions to reconstruction are rejected. To give just a few examples, Keynes' theory of money and interest rate, Sylos Labini's oligopoly theory, Minsky's theory of crises. But also Harrod's model or von Neumann's model indicate relationships between variables in the growth process that contribute to our understanding of economic phenomena. Then, as Keynes said, it will be "the art" of economists to put together, from time to time, the various analytical building blocks for the interpretation of the real world.

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reality, and that the importance Keynes attaches to the "state of knowledge" of agents constitutes a reference to objective reality.

<sup>21</sup> The notion of effective demand illustrates the point of view of the entrepreneur, who decides on production levels on the basis of a comparison of his assessments of total revenues and costs (cf. Roncaglia, 2005, pp. 400-401). Garegnani's criticism (e.g., on p. 442) does not apply to this notion.

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