

# Joan Robinson and the Reconstruction of Economic Theory

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## Abstract

Joan Robinson provided numerous contributions to economic theory, ranging from her earlier approach to imperfect competition to her participation in the Keynesian revolution, which had a significant influence in the Cambridge heterodox wing, and Post-Keynesianism. But towards the end of her life, her rejection of received theories was great enough to be often interpreted as a form of theoretical nihilism. However, at this stage she also outlined a radical project for a reconstruction of economic theory, drawing on her notion of historical time, while placing distribution at the centre of economic theory. This later project of a reconstruction of economic theory is revisited here, focusing on the various difficulties it faced, and its overall significance and impact.

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## 1. Introduction

Joan Robinson was a Cambridge economist, and perhaps, amongst the most prominent Cambridge economists, the one whose contribution and career more fully expresses what Cambridge economics was in the twentieth century. She started using a Marshallian framework (the dominant one at Cambridge at the time) while adapting it through her critique of models of perfect competition, leading to her book *The Economics of Imperfect Competition* (Robinson 1933). But she progressively abandoned the Marshallian framework, and was a key participant in the revolution brought by John Maynard Keynes, which challenged the Marshallian establishment (Harcourt and Kerr 2009; Marcuzzo 2003; Robinson 1974).

Robinson's contribution to the Keynesian revolution included a development of the Keynesian approach for long run analysis (Robinson 1937a, 1937b) – another contributor to this development was Roy Harrod (1948) – within a project that ultimately culminated in *The Accumulation of Capital* (Robinson 1956), her *magnum opus* (Harcourt and Kerr 2009). But while Keynes never fully abandoned key aspects of the Marshallian equilibrium framework (Hayes 2006), Robinson went further, drawing on ideas taken from Karl Marx (Alves 2022) – not least in her *Essay on Marxian Economics* (Robinson 1942) – which led her in directions that Keynes was not willing to go.

Marxist colleagues like Maurice Dobb and Michal Kalecki played an important role in Robinson's interest in Marx (Alves 2022; Harcourt and Kerr 2009; Kerr 2007; Marcuzzo 2020; Marcuzzo and Rosselli 2005), and she increasingly saw Kalecki's (1971) formulation of the principle of effective demand – which, in contrast to Keynes' (1936) was based on Marxian reproduction schemes – as the more appropriate one for advancing a new approach to economics (Marcuzzo 2020).

Robinson also provided a critique of the production function (Robinson 1953-4), which led to the debate known as the Cambridge controversies in the theory of capital (Cohen and Harcourt 2003; Harcourt 1972). In the course of the latter debate, important inconsistencies were found in marginalist equilibrium analysis, and Piero Sraffa (1960) concluded that the analytical framework of the classical political economists and Marx provides a more solid basis for economic theory. Robinson took much interest in Sraffa's revival of the standpoint of the classical political economists and Marx, not least given her interest in Marx (Robinson 1942).

An important consequence Robinson took from the Cambridge controversies in the theory of capital is that distribution is not determined by the marginal productivities of the various factors of production (labour, capital and land). Rather, distribution is best conceived of as an exogenous aspect from the point of view of economic theory, determined by political and conventional factors. To further advance this perspective, Robinson tried to bring together the analysis of distribution of Sraffa and Kalecki, within a framework consistent with Marx's overall vision. We find an outline of this project in a paper written jointly with Amit Bhaduri (Bhaduri and Robinson 1980, p. 103), aiming at a successful reconciliation of traditions based on "Marx, Sraffa and Kalecki". However, reconciling the theories of Marx, Sraffa and Kalecki into a unified framework proved no easy task.

In yet another article, suggestively titled "Spring Cleaning", (Robinson 1982, p. 182) and subsequently republished posthumously with the title "The Theory of Normal Prices and the Reconstruction of Economic Theory" (Robinson 1985, p. 157), she proposes a more minimalist theoretical framework based solely on Sraffa's (1960) theory, to be combined with "detailed studies of actual history" drawing on Keynes. The principle

of effective demand is one of the Keynesian elements to be retained in such a reconstruction, as it becomes clear in the article (Robinson 1982).

The latter reconstruction project is sufficiently minimalist from a theoretical perspective to be easily interpreted in line with the theoretical nihilism that some attributed to Robinson at the end of her life (Cohen 1993; Harcourt 1990). Here the goal is to revisit and reassess Robinson's (1982) project of a reconstruction of economic theory, while addressing the prospects for the development of the alternative economic theory she aimed at – within an analysis that takes into account other contributions and debates from a later stage of her career that help understanding her reconstruction project (Bhaduri and Robinson 1980; Robinson 1979a, 1979b, 1980a, 1980b).

The central theoretical problem driving Robinson's reconstruction is a conceptualisation of how distribution, set by political and conventional aspects, influences prices and quantities (of inputs and outputs). This reconstruction implies a radical break with the Marshallian approach, where prices and quantities are mutually determined by supply and demand schedules, within a technical (rather than political) approach to distribution based on marginalist principles.

While distribution is the key *theoretical* aspect of Robinson's reconstruction (which allows for important connections to *political* questions), the key *methodological* aspect behind her reconstruction is the distinction between logical time and historical time (Robinson 1980b). Logical time is reversible and amenable to a representation in a mathematical model. Historical time, in contrast, cannot be represented as a reversible process in a mathematical model.

Marshall tried to compromise between logical time and historical time through his partial equilibrium analysis of supply and demand schedules (Martins 2013). Robinson also did so for much of her career. But her reconstruction of economic theory at a later

stage of her career is fundamentally a rejection of theories that presuppose logical time, in order to more fully embrace a conception of historical time, as I shall argue.

The next section, section 2, explains the influence on Robinson of Sraffa's critique of Marshallian (marginalist) analysis (which was elaborated and further systematised by Robinson), and its implications for a revival of the political economy of the classical economists and Marx. Section 3 addresses the influence of Kalecki, Keynes and Sraffa on Robinson's project of a reconstruction of economic theory. Section 4 addresses distribution and effective demand. Section 5 provides an interpretation of the notion of historical time aimed at reconciling Robinson's and Sraffa's conception of time, within an analysis consistent with Keynes' methodology, and section 6 explains the distinction between logical time and historical time in terms of the distinction between closed systems and open systems. Section 7 discusses the Sraffian notion of a normal rate of profits, section 8 explains the connections between the latter and the activities of pricing and investment, and section 9 draws the implications of the previous two sections for Kalecki's notion of degree of monopoly, while noting the difficulties in reaching a consensus amongst the Cambridge Post-Keynesians. Some concluding remarks follow.

## **2. The critique of marginalist theory and the revival of political economy**

Alfred Marshall and John Maynard Keynes stand out as the two more prominent authors of Cambridge economics, who shaped the general academic atmosphere in which Joan Robinson developed her work (Harcourt 2003). The most influential aspect of Marshall's (1920) contribution, from a theoretical perspective, is his partial equilibrium framework, which engages in a study of the mutual determination of prices and quantities through supply and demand curves.

Marshall's overall vision, however, was based on an historically grounded analysis of the economy and society (Cook 2009) as a dynamic process, best explained drawing on biological analogies rather than using the static method of partial equilibrium analysis (Pratten 1998). While Marshall's partial equilibrium analysis was framed within what Robinson (1980b) calls logical time, Marshall's overall vision of the socio-economic process focuses on what Robinson (1980b) calls historical time.

Marginalist theory at Cambridge, when Robinson was shaping her own approach to economics, meant essentially Marshall's partial equilibrium analysis (Harcourt and Kerr 2009; Kerr 2017). Keynes' (1936) *General Theory of Employment, Interest and Money*, on which Robinson subsequently drew upon – while expanding it so as to address long run analysis (Robinson 1937a, 1937b, 1956) – also contained Marshallian foundations (Hayes 2006), and is presented, to a large extent, as a generalisation of the Marshallian point of view, rather than an outright rejection. Thus, Keynes' (1936) analysis of employment is presented in terms of supply and demand analysis, where the aim is to show that supply and demand forces, at the aggregate level, may lead to an equilibrium position below full employment. Hence, Keynes sees full employment equilibrium as a particular case, itself explained within Keynes' (1936) *General Theory*. Keynes' emphasis on equilibrium reflects also the influence of Richard Kahn in the making of the *General Theory* (Marcuzzo and Rosselli 2005).

Other colleagues of Keynes, like Piero Sraffa, had strong objections to this Marshallian influence (Kurz 2015). Sraffa (1925, 1926), in contrast to Keynes, provides not so much a generalisation, but rather a rejection of Marshallian (marginalist) equilibrium theory, in two important articles, one in Italian (Sraffa 1925) and a subsequent one in English (Sraffa 1926), leading to a debate with key Marshallian economists at Cambridge, like Dennis Robertson or Gerald Shove (Sraffa 1930). Robertson and Shove,

one may note, were both instrumental to Keynes' retention of Marshallian elements: Robertson by working closely with Keynes before the *General Theory*, and Shove through the intermediation of Kahn also. Hence, Sraffa's (1926) critique had an impact on the overall Marshallian establishment in which Keynes was brought up.

In his critique of Marshallian partial equilibrium analysis, Sraffa (1925, 1926) notes how the economy is an interconnected totality, in which factors of production are used across various industries. So if we use supply and demand curves in Marshallian partial equilibrium analysis, which presupposes each industry is isolated from others, we are led to inconsistencies (Sraffa 1926). Sraffa (1926) also notes various reasons why perfect competition may not exist.

Robinson notes her work on imperfect competition (Robinson 1933) was "inspired" by Sraffa's (1926) article (quoted in Harcourt and Kerr 2009, p. 206). Sraffa's subsequent contributions were also important to Robinson. In her correspondence to Sraffa, more specifically in a letter dated from 18 June 1960, Robinson writes that her work in the previous 10 years (that is, in the 1950s) was significantly influenced by Sraffa (Sraffa D3/12/111/340.recto, quoted in Harcourt and Kerr 2009, p. 6).

Sraffa's (1925, 1926) critique of the Marshallian framework was much later followed by Sraffa's (1960) critique of marginal productivity theory, brought to the public debate by Robinson's (1953-4) critique of the production function – the ideas were already being discussed privately before, not least in letters exchanged between Sraffa and Robinson that go back to the 1930s (Harcourt and Kerr 2009). Robinson's (1953-4) critique of the production function led to the Cambridge controversies in the theory of capital (Cohen and Harcourt 2003; Harcourt 1972), in the course of which Robinson (1953-4) and Sraffa (1960) found important inconsistencies in marginalist analysis.

Using a disaggregated formulation of capital, Sraffa (1960) shows that the prices of capital goods and final commodities depend upon the distribution of income between capital and labour, that is, between profits and wages. Once the rate of profits, and wages, are set (setting one of them is sufficient for Sraffa, since in his system they stand in an inverse relationship under a numeraire constituted by a mixed commodity), a certain set of prices (both for inputs and outputs) arises, depending on the relative quantity of labour time and commodities required along the (circular) production process (fixed capital and land are also taken into account by Sraffa). Any further determinants of prices are superfluous, and lead to an overdetermined and thus contradictory system (Sen 2003).

As Robinson (1953-4) notes, any attempt to calculate the interest rate (the return on capital) drawing on the production function (so as to find the marginal productivity of capital) presupposes that capital (an input in the production function) has already been aggregated according to a given interest rate (used either to capitalise past units of capital or to discount the expected returns from capital). More generally, the interest rate is necessary for finding the prices of capital goods so as to sum them into an aggregate measure of capital, as Sraffa (1960) shows. So marginal productivity theory leads to circular reasoning, and cannot be used to explain the distribution between the various factors of production, such as land, labour and capital, contrarily to what is argued in marginalist analysis – in a view usually attributed to John Bates Clark (1891), who Robinson saw essentially as a vulgariser of Marshall's views on distribution.

More fundamentally, the key issue at stake in the Cambridge capital theory controversies is a clash between two underlying visions of the economy: the marginalist vision, and that of the classical political economists and Marx. In the marginalist view, the driving force of the economic process are the “lifetime utility-maximising consumption decisions of individuals” (Cohen and Harcourt 2003, p. 208), and the

fundamental problem is the allocation of scarce resources according to marginal productivity. In the classical-Marxian vision, in contrast, the pursuit of profits by capitalists is the driving force of the system and the key problem is – as Sraffa (1951) notes in the Introduction to his edition of David Ricardo’s works – the distribution of the surplus between social classes, and its implications for socio-economic reproduction.

Even before Sraffa (1960) published his *Production of Commodities*, Robinson had been much influenced by Sraffa’s (1951) Introduction to Ricardo’s works (Harcourt and Kerr 2009), which helped her formulating her critique of the production function (Marcuzzo 2018). Sraffa’s (1960) subsequent book *Production of Commodities* is concerned with a problem that troubled Ricardo, and emerged clearly in Robinson’s (1953-4) critique of the production function: the fact that the value of the social product seems to change when distribution changes. Sraffa (1960) addresses this problem while providing a systematisation of the classical standpoint where distribution, the principal problem of Political Economy, can be addressed without falling into measurement problems.

In his revival of the standpoint of the classical political economists and Marx, Sraffa (1960, p. 33) seems to suggest that the financial sector acts as an external force “outside the system of production” and achieves a given rate of profit through the “level of the money rates of interest”, leaving the remaining part of the surplus as a subsistence wage for the reproduction of the labour force under certain “physiological or social conditions”. It is thus the conflict between (financial) capital and labour – which is not only an economic issue, but also a social and political one – that sets distribution.

For Robinson, the Cambridge controversies in the theory of capital lead back to Political Economy, understood as a field pervaded by normativity, rather than to a positivist conception of economics as a mere technical science, as economics has

increasingly become (Lawson 2003). This normative aspect was much valued by Robinson, who saw the aftermath of the Cambridge capital controversies as a context where Sraffa's (1960) revival of the standpoint of the classical political economists and Karl Marx emerged as a more solid basis for a reconstruction of economic theory.

### **3. The Kaleckian-Keynesian-Sraffian synthesis**

Sraffa's (1926, 1951, 1960) critiques of the marginalist framework, further elaborated and systematised by Robinson (1933, 1953-4), led her to a search for an alternative economic theory, which culminated – in the final stage of her career – in an attempt at a “reconstruction of economic theory” (Robinson 1985, p. 157). Robinson's project of a reconstruction of economic theory was outlined in an article that circulated as a mimeo at Cambridge in 1980 under the title “Spring Cleaning”, and was eventually published in 1982 in *Wirtschaft Und Gesellschaft* (Robinson 1982) – which is not the first journal to which it was sent for publication – to be subsequently republished posthumously in a book edited by George Feiwel under the title “The Theory of Normal Prices and Reconstruction of Economic Theory” (Robinson 1985). In this article, Robinson (1982, p. 182) suggests combining Sraffa's (1960) theory with studies of actual history.

Sraffa's (1960) revival of the theoretical framework of the classical political economists and Marx leads to a methodology radically different from what we find in Marshallian partial equilibrium analysis, or any type of marginalist equilibrium analysis that explains prices and quantities in terms of an equilibrium between demand and supply. For Marx and the classical political economists, economic phenomena are not theorised as an equilibrium between two autonomous forces (such as supply and demand), but rather in terms of the reproduction of an interconnected totality as a circular process (Martins 2013).

More specifically, in the conception of the classical political economists, especially as developed by Marx, prices and quantities are set so as to allow for the circular reproduction of the economy under a given distribution of the surplus amongst social classes. Supply and demand, in this context, are more superficial aspects that must themselves be explained in terms of deeper causes connected to the circular process of reproduction. Marx outlined quite explicitly the idea of a circular flow within his reproduction schemes (Marx 1978), while tracing its origins back to François Quesnay and the Physiocrats who, according to Marx, presented the circular conception of the economy more clearly than the mercantilists or Adam Smith.

Sraffa (1970, p. 93) also notes that the explanation of the system of production and distribution in terms of a “circular process” goes back to Quesnay. In his own analysis of the circular process of reproduction, Sraffa (1960) takes quantities (of inputs and outputs) as given data, while explaining prices only. For Sraffa (1960), prices are determined so as to allow for the reproduction of the economic system for a given distribution of income, itself determined either by setting the wage level, or the rate of profit, as noted above.

In her reconstruction project, Robinson (1982, p. 182) suggests combining Sraffa’s (1960) theory with studies of “actual history” drawing on Keynes. The reference to Keynes, and the analysis of Sraffa’s (1960) system that Robinson (1982) undertakes (which presupposes a role for the Keynesian principle of effective demand), points towards a Keynesian-Sraffian synthesis, which was undertaken in different forms by several Sraffian authors, such as Pierangelo Garegnani (1978, 1979a), Luigi Pasinetti (1993, 2007) or Alessandro Roncaglia (1978, 2000).

Effectively, if the principle of effective demand were to be dropped in Robinson’s reconstruction of economic theory, it would make little sense for Robinson (1982, p. 182)

to recommend Keynes as a basis for studies of “actual history” rather than Marx or even Marshall, for example. Robinson’s effort to produce an economics textbook – aimed at replacing Paul Samuelson’s economics textbook – with another Sraffian author, John Eatwell (Robinson and Eatwell 1973), shows again her strategy for an alignment with the Sraffian approach when advancing a reconstruction of economic theory (Harcourt and Kerr 2009) based on Sraffa and Keynes.

In the Keynesian-Sraffian framework (Garegnani 1978, 1979a; Pasinetti 1993, 2007; Roncaglia 1978, 2000), prices and quantities are not determined simultaneously through supply and demand curves, as in Marshall’s partial equilibrium analysis. Rather, prices and quantities are determined separately: prices are determined through the Sraffian (1960) system, which takes quantities (of inputs and outputs) as given data; and quantities of outputs are determined through the Keynesian principle of effective demand, leading also to a determination of the quantities of inputs through (the technology implied in) Sraffa’s (1960) system.

But when it comes to the principle of effective demand, it must also be noted that Robinson did not see Keynes’ (1936) own formulation as the more adequate. As noted above, Keynes’ (1936) principle of effective demand is construed as an equilibrium that may not occur at the point which ensures full employment (Hayes 2006). Robinson notes that Kalecki (1971), in contrast, does not rely on Marshallian equilibrium analysis, and formulates his conception of effective demand starting from a circular conception of the economy, drawing on the Marxian reproduction schemes, and subsequent developments by such authors as Rosa Luxemburg or Mikhail Tugan-Baranovsky (Kalecki 1971; Marcuzzo 2020; Toporowski 2013).

Thus, Kalecki’s (1971) vision embodies more clearly the synthesis Robinson was aiming at, a synthesis between: (i) a circular conception of the economy (where prices

and quantities are explained in terms of the circular process of reproduction); and (ii) the principle of effective demand (Martins 2017). Hence, when advancing a Post-Keynesian approach, Robinson (1980a, p. 122) notes that economic theory can be more fruitfully advanced drawing on “Kalecki’s version of the General Theory, rather than Keynes” (Marcuzzo 2020, p. 506).

A Kaleckian influence is manifest even in the reconstruction project, when Robinson (1982) notes how complications stemming from distribution and the measurement of the social product, which Sraffa (1960) tries to address, appear also at another level. Robinson (1982, p. 181) writes, regarding Sraffa’s system: “When part of profit may be consumed by capitalists it would be natural to suppose that physical output is influenced by distribution so that it varies with the rate of profit.”

Robinson (1982) notes here that distribution, and the rate of profit in particular, influences not only the prices of commodities, including those used as capital (Sraffa 1960), but also the physical quantities of output and, by implication, the physical quantities of inputs, both of which, as noted above, are taken as given in Sraffa’s (1960) theory. Robinson (1980b) also identifies this problem in Sraffa’s (1960) theory on other occasions, while presupposing a distinction between the income of workers and that of capitalist rentiers along Marxian-Kaleckian lines.

This means that, according to Robinson (1980b, 1982), Sraffa’s (1960) theory is not sufficient for a reconstruction of economic theory that places distribution at centre stage. For Sraffa’s (1960) theory neglects the effects of distributions on physical quantities. And it is here that the Kaleckian/Keynesian principle of effective demand becomes crucial for a possible reconstruction of economic theory, as argued in the next section.

#### **4. Distribution and the determination of quantities**

The problems concerning the uniformity of the rate of profits in Sraffa's (1960) system – which emerge once we consider changes in quantities – had been discussed by Robinson (1980b) shortly before her reconstruction. Robinson notes that if actual output turns out to be different from the standard rate of output which is expected under a normal rate of return, profits will be above or below normal profits (Bhaduri and Robinson 1980). A uniform rate of profit requires that past expectations turned out to be “exactly correct” (Bhaduri and Robinson 1980, p. 107), which seems an unrealistic assumption. One solution Robinson (1980b) considers is to assume a stationary state where all net output is consumed. But this presupposes that rentiers and workers' households take their share in the same proportions through time, which seems again unlikely.

However, as Robinson (1982) subsequently notes in her reconstruction, Sraffa (1960) does not consider a stationary state, for he avoids the problem above by focusing on an instantaneous photograph of the economy (Robinson 1982; Roncaglia 1978), where time is absent, or condensed into a single instant (Martins 2013). This means, according to Robinson (1980b), that there is no causality in Sraffa's system (Sen 2003). But for Robinson (1982), the instantaneous photograph of the economy that Sraffa (1960) focuses on must be the outcome of an historical process, within which subjective expectations become expressed in objective stocks that appear as physical quantities of inputs and outputs in Sraffa's (1960) system (Bhaduri and Robinson 1980; Robinson 1982).

However, the proportion between the physical quantities of inputs and outputs raises the Marxian problem of whether “proportionality” between sectors (such as the investment goods sector and the consumption goods sector) can be maintained throughout a historical process of circular reproduction for a given distribution between wages and profits (Bhaduri and Robinson 1980, p. 107). That is, the distribution between wages and

profits must be made in such a way that investment and consumption expenditure are in line with the proportion between the production of investment goods and consumption goods. This is a central problem for a conception that places distribution at the core of its analysis – as Robinson intended – which Robinson (1980b, 1982) finds insufficiently dealt with in Sraffa’s (1960) system.

This problem is addressed by Robinson (1956, 1980b, 1982) on various occasions relying on Keynes’ (1936) analysis of effective demand, and in later stages drawing especially on Kalecki’s developments of the principle of effective demand which, as noted above, she finds more adequate from a theoretical perspective. In Kalecki’s development of the Marxian approach, the driving force of capitalist accumulation is the pursuit of profit. Kalecki had noted an identity between profits on the one hand, and investment and capitalist consumption of the other hand. For if we divide national income (which must be spent in wage goods, capital goods and luxury goods) into wages and profits, and note that wages are spent on wage goods, then profits must be identical to investment in capital goods and the capitalist consumption of luxury goods.

The decisions taken by capitalists regarding investment and their own consumption (of luxury goods) lead then to a given level of profits and, through the multiplier, to a given output. Kalecki (1971, p. 80) also noted how “distributing factors” arising from a given social and political structure determine how much of the output constitutes the workers’ income (to be used in wage goods for subsistence and reproduction of the labour force).

Kalecki’s (1971) framework presupposes an analysis of social classes, since he distinguishes clearly the activities of capitalists and workers, while even noting how they consume different types of goods: luxury goods and wage goods, respectively. As Frederic Lee (2018, p. 215) notes, income distribution is an expression of the

segmentation of social classes in capitalism, which leads to producing luxury goods and services for some classes, and “cheap goods and services” for other classes so as to allow for social reproduction of the labour force at a lower wage.

Keynes (1936), in contrast, does not engage (at least systematically) in class analysis. But like Kalecki (1971), Keynes (1936) emphasises the influence of investment on output (through the multiplier), and also takes into account the impact of distribution on the magnitude of the multiplier. Keynes (1936) argues that since those with lower income have a higher marginal propensity to consume, higher inequality would remove income from those with a higher marginal propensity to consume, leading to a tendency for a reduction of effective demand (since, in Keynes’ theory, the additional saving by those with more income and a higher marginal propensity to save may not be reinvested). That is, the level of output, itself determined by effective demand, depends upon distribution.

This led Keynes (1936, p. 372) to conclude that his *General Theory* brings a radically different “social philosophy”, one in which inequality is seen as a constraint to full employment, since it reduces effective demand, by removing income from those who have a higher marginal propensity to consume. Keynes (1936) believed his new social philosophy could lead to a different macroeconomic policy aimed at a more adequate (that is, more equal) distribution, since he thought preconceived ideas by economists and political philosophers are the chief obstacle to full employment.

Kalecki (1971) notes, however, that a new social philosophy may not be sufficient for achieving full employment, since macroeconomic policy may be deliberately influenced by capitalist interests to prevent full employment. Kalecki (1971) notes that unemployment helps creating discipline in the labour force, thus regulating (through coercion) the conflict between capital and labour. In Kalecki’s (1971) analysis of effective

demand, distribution can be seen as a political aspect which, together with decisions taken by capitalists regarding their consumption and investment, leads to a given level of output and employment. Distribution and physical quantities, which are taken as given in Sraffa's (1960) analysis, are then ultimately determined by political forces in Kalecki's (1971) analysis.

But it is important to note that Kalecki's (1971) analysis, like Keynes' (1936), is conducted in terms of the value of macroeconomic magnitudes like consumption and investment, not in terms of physical quantities. The problems identified by Robinson (1982) regarding a reconstruction of economic theory, and more specifically regarding the determination of physical quantities in Sraffa's (1960) system, can then be addressed only through an adaptation of Kalecki's (1971) and Keynes' (1936) analysis, where the latter's place in the reconstruction would be to explain physical quantities in terms of effective demand caused by capitalist decisions regarding their consumption and investment, under a given distribution of income (itself determined by political forces). This would lead to a Kaleckian-Keynesian-Sraffian synthesis (Martins 2017), which seems presupposed in Robinson's (1982) reconstruction, in which distribution influences both prices and quantities.

## **5. From logical time to historical time**

The idea of a Kaleckian-Keynesian-Sraffian synthesis (such as the one outlined in the two previous sections) goes back at least to the 1960s, when Robinson considered reconciling Sraffa's analysis with Keynes', using Sraffa's analysis of prices for the study of the long period, and Keynes' analysis of prices for the short period, as we can find in a letter from her to Kahn dated from 19 May 1961 (quoted in Marcuzzo 2018, p. 131). But she saw Kalecki's theory as more general than Keynes' since it allows for reconciling imperfect

competition with the principle of effective demand (Marcuzzo 2018, 2020). Furthermore, Kalecki's (1971, p. 45) description of "semi-monopolistic price formation" provides an analysis of imperfect competition that, unlike Robinson's (1933) earlier contribution, does not rely on marginalist analysis.

But the resistance to Kalecki's (1971) theory of prices at Cambridge – especially by Keynes and Kahn, for example (Marcuzzo 2020; Toporowski 2013) – made it very difficult for Robinson to advance a reconstruction drawing on Kalecki's (1971) analysis of Marx's reproduction schemes. For example, it is significant that, when interacting with Kahn, Robinson refers to a synthesis between Sraffa and Keynes, but makes no reference to Kalecki, whose conception was seen by Kahn with much scepticism (Marcuzzo 2018, 2020; Toporowski 2013).

The aspects of Kalecki's thinking that were most criticised at Cambridge were connected to his notion of degree of monopoly, which is central to his approach to mark-up pricing. But despite the resistance to Kalecki's approach at Cambridge, a vision akin to Robinson's was embodied in several subsequent contributions to the reconciliation of the Sraffian idea of a circular flow and mark-up pricing (King 2021), so much so that Lee (1998, p. 171) argues that "by the 1980s the integration of the Sraffian circular production model with mark-up (or normal cost) pricing equations had been completed". For several contributors, the reality of mark-up pricing practices in various firms, was just too evident to be ignored (Eichner 1973). But Lee (2018: xii) also notes that the latter analysis made it difficult to explain the convergence "of actual market prices in historical time to long-period prices".

This difficulty led to a tendency to abandon the Sraffian approach to prices – interpreted as an approach focused on long period analysis of equilibrium processes – amongst several Post-Keynesian authors, not least within various subsequent

controversies between Sraffians, Kaleckians and Keynesians of a more fundamentalist persuasion (Hamouda and Harcourt 1988; King 2002, 2017, 2021). King (2021, p. 283) also notes that “Joan Robinson had turned against the Sraffians just before her death in 1983”, due to their tendency to make “a fetish out of long period positions” (King 2002, p. 209). So it seems that the use of Sraffa’s (1960) theory would have been a false start for a reconstruction of economic theory.

In order to understand Robinson’s distancing from the Sraffians just before her death, it is important to remember the (Marshallian) tendency to interpret the long period in terms of equilibrium positions. Equilibrium is a notion constructed drawing on what Robinson (1980b) calls logical time, where time is conceptualised as a reversible process, so that we can work backwards from a putative equilibrium towards a (typically mathematical) description of the path undertaken (in logical time) towards the equilibrium.

Sraffa’s (1960) prices are sometimes interpreted as equilibrium prices, towards which market prices are tending in logical time (Sinha 2016). If we interpret Sraffa’s (1960) theory in terms of equilibrium theory taking place in logical time, it becomes incompatible with Robinson’s (1980b) emphasis on an analysis conducted in historical time. In historical time, time is not reversible, as processes of cumulative causation are path-dependent and non-teleological, and so cannot be conceptualised in terms of a predetermined equilibrium towards which they may be tending.

But in her reconstruction of economic theory, Robinson (1982) does not interpret Sraffa’s (1960) equations as an expression of an equilibrium in logical time. Rather, she interprets Sraffa’s (1960) equations as a picture of the economy at a given instant in (historical) time – as Roncaglia (1978) suggests, an instantaneous photograph – given

past accumulation of capital and technical change, where the latter are the outcome of an historical process.

However, it is unclear how a notion where time is absent, or condensed into a single instant, can possibly be reconciled with Robinson's conception of historical time. This is, in fact, the *central methodological question* to address within Robinson's project for a reconstruction of economic theory based on Sraffa's (1960) theory, since it requires combining the latter with an analysis undertaken in historical time drawing on Keynes, as Robinson (1982) states explicitly.

A fruitful solution for reconciling Sraffa's and Robinson's conceptions of time is to interpret historical time as a time that manifests itself, at each *instant*, in *conventions* inherited from the past that ground *expectations* regarding the future. This approach is consistent with Robinson's (1982) reference to Keynes regarding studies of actual history: the connection between conventions and expectations, expressed at a given moment in time, is made by Keynes (1936) when addressing the state of long-term expectation in chapter 12 of the *General Theory*. As Keynes (1936, p. 148) argues, conventions arise from the past, while allowing us to "project" *at a given moment in time* an existing situation into the future.

While the theoretical aspects on Keynes' (1936) analysis are presented essentially as a generalisation of Marshallian supply and demand analysis, Keynes' (1936) methodology is the more revolutionary aspect of his work, with his emphasis on conventions as a source of stability for expectations when facing uncertainty, within a realist analysis of human activity (Lawson 2003). Earlier versions of the manuscript of the *General Theory* emphasise Keynes' methodological innovation regarding the role of conventions and uncertainty, which was watered down in subsequent versions of the *General Theory*, including the final one, but remained central in Keynes' (1936) analysis

of expectations in chapter 12 of the book (Favereau 1988). The emphasis on conventions and uncertainty is the revolutionary aspect of Keynes' methodology that lies at the basis of Robinson's reconstruction of economic theory. And it helps interpreting her conception of historical time as a time where each instant expresses the history that led to it.

## **6. Open systems and closed systems**

As Robinson (1980b) notes (also when discussing Sraffa's theory), historical time is also expressed in the physical quantities (and technology) that reflect the outcome of an historical process. Sraffa's (1960) system conceptualises, at a single instant in time, such diverse items as commodities (including not only final goods but also circulating capital), fixed capital and land. Notions like long period and short period, in this context, can be taken as expressions of the different rhythms presupposed in various processes at a given moment in time, connected, for example, to the present conditions of reproduction of circulating capital, fixed capital or land, which occur at different rhythms (Martins 2018).

Here it is important to note that logical time, like the notion of historical time outlined above, can also be interpreted under a conception where time is condensed into a single instant. The structure of a given mathematical model determines, at a given instant in time, all logical or mathematical possibilities once certain equations are given. This is the case concerning not only a mathematical description of an equilibrium, but also of an intertemporal equilibrium: the possibilities for the intertemporal equilibrium path – which takes place in logical time – are already determined, at an instant in time, in the mathematical structure of the model.

So what is then the difference between historical time and logical time, so construed? The difference is that in logical time, we have what Tony Lawson (2003) calls a *closed system*: a system of constant conjunctions of the form “if event X then event Y”,

in which all the possibilities are predetermined according to the equations of a mathematical model. In historical time, in contrast, we have an *open system* (Lawson 2003), since human choice means that any action could have been otherwise.

Although human choices, in historical time, are grounded on (past) conventions and (future) expectations, the possibility of human choice means that it is not possible to express human activity through a deterministic mathematical model. As Lee (2018, p. 211) notes: “The system changes when people make decisions.” Thus, in historical time there is no predetermined equilibrium towards which human actions (and history) are tending, but rather an endless process of cumulative causation in which present circumstances shape open-ended possibilities.

This is why the only theoretical framework Robinson (1982) finds necessary in her reconstruction is Sraffa’s (1960) broad description of the conditions for socio-economic reproduction – and even here, leaving aside some central constructs of Sraffa’s (1960) analysis, such as the Standard system or the Standard commodity, which Robinson (1982) finds unhelpful. In Sraffa’s (1960) system, the open-ended nature of socio-economic reproduction is expressed in the fact that the composition and distribution of the social surplus, the principal problem of Political Economy, is left undetermined. Robinson (1982) takes a minimalist version of Sraffa’s (1960) framework, one that is consistent with historical time, and argues that all that is needed beyond it are studies of actual history based on Keynes’ (1936) methodology.

Robinson’s reconstruction, which implies a rejection of all theoretical frameworks other than a minimalist version of Sraffa’s (1960) theory, is sometimes seen as a form of theoretical nihilism that characterised Robinson towards the end of her life (Cohen 1993; Harcourt 1990). Avi Cohen (1993) concludes, however, that what is at stake here is essentially a rejection of the marginalist theories construed around the notion of

equilibrium, and their unrealistic assumptions, rather than a rejection of theory and method in general.

Cohen (1993, p. 234) notes the analogy between Robinson's notion of "rules of the game" and Lawson's (1985) analysis of social practices as a basis for grounding theory, and writes: "A knowledge of social practices (like Robinson's 'rules of the game') can provide the stability of outcomes that uncertainty precludes in closed deterministic models." That is, any reconstruction must build theory on a more realistic basis, going beyond deterministic models that presuppose closed systems (Cohen 1993; Lawson 2003), while taking conventions and social practices as the basis for an analysis conducted in historical time, in a world characterised by fundamental uncertainty.

Robinson's positive appreciation of Marx or Thorstein Veblen can be read in light of this realistic orientation (Cohen and Harcourt, 2003). Robinson found Marx's analysis permeated by a greater sense of reality (Alves 2022), and she also saw Veblen's (1908a, 1908b, 1909) more realistic analysis of the problems of marginalist capital theory as a clearer explanation than her own (Robinson 1979b). And the overall methodology of focusing on a more realistic approach, which stands behind Robinson's reconstruction, can be found in Keynes' (1936) methodology too (Lawson 2003).

Keynes (1936, p. 297) criticises "symbolic pseudo-mathematical methods of formalising a system of economic analysis" that "assume strict independence between the factors involved", that is, presuppose closed systems (Lawson 1985, 2003). Keynes (1936, p. 297) notes the greater appropriateness of using "ordinary discourse" where, rather than "blindly manipulating" mathematical symbols, we know "what the words mean" and thus can take into account the "necessary reserves and qualifications".

The words we use to describe economic phenomena are semantically linked to the words we use to express (past) conventions and (future) expectations, and thus can

provide a description grounded in historical time, within an open system. Numbers and mathematical symbols, in contrast, are construed so as to be isolated (in a closed system) from semantic connections, and must themselves be integrated, or “grounded”, in ordinary discourse, within a narrative, in order to achieve meaning (Lee 2018, p. 17). A narrative can be fruitfully illustrated with numbers that describe facts (such as descriptive statistics). But what Keynes criticises is a case where the mathematical model drives the thought process, in logical time, while presupposing – explicitly or implicitly – that reality constitutes a closed system (Lawson 1985, 2003).

This aspect is related to the well-known Cambridge *dictum* that it is better to be vaguely right than precisely wrong which, as Shove (1942) notes, goes back to Wildon Carr. Carr, we may note, translated into English the work of Henri Bergson, whose conception of time, encapsulated in his notion of *duration* has interesting parallels to the notion of historical time outline above: Bergson describes a concrete time that contains the possibilities for creative (and thus non-teleological) evolution within an open system (Martins 2013). Using words, we may be vaguely right in the sense of expressing real (but underdetermined) connections within an open system – connections that are overlooked when using precise numbers and symbols that are designed for dealing with closed systems (Lawson 2003).

The meaning of words, in turn, depends on social practices and conventions (Lawson 1985; Wittgenstein 1963), within a conception where the basic constituents of social reality are *conventions* regarding what is *legitimate to expect*, as expressed in social rules which acquire meaning through social practices (Wittgenstein 1963). The constituents of social reality, so construed, are inherently normative, and their meaning, which is the very essence of social life, cannot be captured by mathematical or logical models (Lawson 2003).

The latter point, of how meaning cannot be reduced to formal logic, was made by Sraffa to Ludwig Wittgenstein, leading to a radical change in Wittgenstein's thinking (Davis 1988, 2002; Martins 2013; Sen 2003; Sinha 2016). Robinson's (1982) later views on a reconstruction of economic theory seem to imply an equally radical change at the level of economic methodology, which she increasingly saw as the central aspect of her contribution (Cohen and Harcourt 2003). And this different methodology has implications for how her reconstruction project can be interpreted, as argued in the next sections.

## **7. The normal rate of profits**

The interpretation of historical time outline above provides a possible solution to Robinson's (1979a) debate with Garegnani (1979b), which is central to understanding her distancing from the Sraffians just before her death (King 2017). The Sraffians would be, it seems, a key group to engage in a reconstruction of economic theory based on Sraffa's theory. Robinson (1979a, p. 180) argues that Garegnani's "conception of the long period, in particular of the normal rate of profit on capital, is not easy to grasp", since it is difficult to trace if it is a notion disconnected from historical time or whether, if it is to be placed in historical time, if it refers to a past rate of profit, or to an expectation regarding what the rate of profit on capital will be in the future.

In his reply to Robinson, Garegnani (1979b, p. 185) makes it clear that he means a rate of profit being realised in the "present", as an average "between firms and over time". The meaning of the word *normal*, employed by Garegnani, must then be interpreted as referring to past conventions that shape future expectations, at a given moment in time. The common tendency, however, is to interpret Garegnani's notion of a long period not in terms of historical time, but in terms of Marshallian equilibrium

analysis, where gravitation takes place in logical time (Sinha 2016). But this interpretation of gravitation and long period is inconsistent with the one presupposed by the classical political economists and Marx, whose contribution is the basis of Garegnani's (1984) analysis.

The classical political economists and Marx do not provide much more than a vague allusion to the idea of gravitation, which seems to refer merely to accidental variations around what happens ordinarily, or on average (Martins 2013). Under this interpretation, the normal rate of profit is merely an average rate of profit which reflects, at a given moment in time, the share of the surplus that the financial sector extracts from the productive sector, through the "money rates of interest" (Sraffa 1960, p. 33), which Garegnani (1978, 1979a) sees as conventional phenomena dependent on the political aspects that shape monetary policy.

Before the emergence of (Walrasian or Marshallian) equilibrium analysis, any classical notion of "normal" prices, or "normal" rates profit can be more adequately taken to mean "conventional" prices (Martins 2013, p. xiv), or "conventional" rates of profit. Under this conception, normal prices and normal rates of profits are an outcome of an historical process, and built into norms, conventions and expectations, which need not necessarily become manifest in any putative equilibrium in the long period (Harcourt 1981, 2021). Furthermore, the notion of gravitation is relevant for any time period (long or short), as it denotes merely the persistence of a given price, making it an ordinary or normal price in the sense of a conventional price that acts as a historical reference point (Harcourt 1981, 2021), set while taking into account whatever rate of profit is seen as normal or conventional.

Sraffa's (1960) system is not designed to capture conflicts between capitalists in different industries. Rather, Sraffa's (1960) system is meant to express the conflict

between capital and labour. To do so, it is convenient to refer merely to an average rate of profits which represents, as noted above, the share of the surplus that the financial sector extracts from the social surplus – through the “money rates of interest” (Sraffa 1960, p. 33) – leaving the remaining part as wages for the reproduction of the labour force.

However, at this stage it is important to remember that, for Sraffa, averages are not merely an “artifice” used by economists to describe facts; rather, averages are a “real event, which causes effects” (Sraffa D3/12/13/17, quoted in Martins 2013, p. 31). Moreover, Sraffa argues that “expectations” are based on averages (Sraffa D3/12/13/17, quoted in Martins 2013, p. 32). Sraffa sees the notion of an average, to the extent that it influences the *conventions* regarding what is *legitimate to expect*, as an objective fact with impact on capitalist decisions.

The notion of an average rate of profits refers, of course, to a quantification. The unit in which this quantification is made is money. In his *Treatise on Money*, Keynes (1930) regards this role of money, as a unit of account – which Keynes calls a money of account – as the fundamental one. This aspect is also noted by Sraffa (1932) who, when explaining the role of money, provides some examples of how money, as a standard or unit of account, regulates social relations, including conventions. Thus Sraffa (1932, p. 43) writes: “money is not only a medium of exchange, but also a store of value, and the standard in terms of which debts, and other legal obligations, habits, opinions, conventions, in short all kind of relations between men, are more or less rigidly fixed.”

This means that power relationships regarding the distribution of the social surplus are quantified whenever we are in a monetary economy. Sraffa’s (1960, p. 33) emphasis on the role of the “money rates of interest”, as a determinant of the rate of profits, can then be seen as a quantitative expression of the social relations that shape conventions

and expectations regarding the distribution of the social surplus. This quantitative form, which is the specific form power relations assume in a monetary economy, plays a role as a conventional fact or average that grounds (or even causes) expectations regarding the rate of profits (Martins 2013). This is the significance of the notion of rate of profits in Sraffa's (1960) system.

## **8. Pricing and investment**

In a vision where capitalism is driven by the pursuit of profits as measured in money units, which is the one behind Robinson's reconstruction, the rate of profits becomes a central aspect, as it becomes central to various decisions. In this connection, the relation between conventions and Sraffa's notion of a uniform rate of profits has also been noted by John Hicks (1985, p. 306), who argues that the uniformity of the rate of profits in Sraffa's (1960) system is simply a "uniformity of convention". And Hicks (1985) further adds that the conventional rate of profits in Sraffa's (1960) system can be seen as a basis for setting mark-up prices, since the rate of profit used for setting prices is typically a conventional one (Lee 1998, 2018).

The rate of profits can be seen more directly as a basis for the mark-up in cases of "mark-up oriented pricing" (Lee 2018, p. 111), in which the mark-up process itself (rather than the costing procedure) is the key distinguishing feature. Mark-up oriented pricing includes: "fair rate of return pricing", in which the mark-up is determined by "convention or a fair rate of profit"; and "target rate of return pricing", in which an organisation sets up a mark-up according to the rate of return it intends to achieve (Lee 2018, p. 111).

But the average or conventional rate of profits is not neglected in cases of "costing-oriented pricing" (Lee 2018, p. 110), that is, cases which are distinguished by their different costing procedures. Kalecki adopted what may be termed "direct cost

pricing” (Lee 2018, p. 110), in which a mark-up is applied to direct (or prime) costs, but in a way that covers overheads too (albeit the mark-up is not calculated as a percentage over overheads). Kalecki (1971, p. 51) contrasts his approach with “full cost theory”, where a profit mark-up is applied to total costs (including overheads). Sraffa’s (1960) theory can be applied to both cases, since he provides equations where the rate of profits is applied to circulating capital only, and also equations where the rate of profits is applied both to circulating capital and fixed capital.

But the point to note is not so much whether Sraffa (1960) is actually thinking in terms of mark-up prices as Hicks (1985) suggests, but rather that the abstract theory Sraffa (1960) sets out is consistent with a more concrete specification conducted in terms of mark-up prices (such as the ones outlined above), in a context where price-making is undertaken together with investment decisions, in order to achieve a certain rate of profits.

In this context, it is important to note that in various types of mark-up procedures the relevant quantity of output considered is the “budgeted flow rate of output” (Lee 2018, p. 110). But the budgeted flow rate of output is a conventional one, in the sense that it takes into account what is the expected, or *normal*, situation. That is, the mark-up is set in a way that, under a normal flow rate of output, leads to a surplus that allows for the reproduction of the business enterprise.

The key is to see both the rate of profits and the mark-up as quantitative expressions of the distribution of the social surplus in a monetised economy, more specifically the part that is appropriated, on average, by capitalists through socio-economic reproduction. As Lee (2018, p. xii) writes, once we abandon the supply and demand framework as an explanation for prices, we reach the conclusion that “prices do not coordinate economic activity or allocate inputs among productive activities”, rather

“prices reproduce the business enterprise”, which engages in various forms of (mark-up) price fixing to reproduce itself.

A central aspect for the dynamics of the reproduction process (both in microeconomic and macroeconomic analysis) is the distribution of the surplus – more specifically, whether it is reinvested in productive activities or wasted in luxury consumption. This classical-Marxian view of socio-economic reproduction is behind the vision Robinson wants to bring into economic analysis, and finds expressions in Sraffa’s more abstract analysis of the prices that allow for the reproduction of the socio-economic system, and Kalecki’s more concrete analysis of the reproduction of the business enterprise through pricing procedures aimed at financing (re)investment.

In Kalecki’s (1971) analysis investment draws primarily upon the firm’s internal resources – which Kalecki (1971, p. 105) calls its “entrepreneurial capital” – rather than on external funds obtained in the capital market – which Kalecki (1971, p. 105) calls “rentier capital”. For Kalecki, even external financing depends upon internal financing, since “the access of a firm to the capital market, or in other words the amount of rentier capital it may hope to obtain, is determined to a large extent by the amount of its entrepreneurial capital” (Kalecki 1971, p. 105).

Here, again, Kalecki’s approach – in this case, his approach to investment – is more in line with a circular conception of reproduction, with prices set (through mark-up processes) taking into account how much capital must be generated for (re)investment purposes, that is, to reproduce the business enterprise (Lee 2018). While Keynes’ (1936) analysis of investment presupposes equilibrium positions regarding the marginal efficiency of capital and the interest rate (Lee 2018) – albeit inconsistently so, as Garegnani (1979a) argues – Kalecki’s analysis of investment is, like his overall

conception in general (as noted above), more fully compatible with the circular conception of the economy Robinson aimed at in her reconstruction.

In his unpublished notes – more specifically, in a note designated as Sraffa (D3/12/9:7recto) in the reference system of the Sraffa Papers at the Wren Library, Trinity College, Cambridge, as of October 2022 – Sraffa actually also suggests, like Kalecki, that firms rely on internal financing, when noting that firms in industries where greater profits are accumulated will possess a greater capital and invest more than others. But quite curiously, Sraffa concludes that this mechanism leads towards a tendency for an equalisation of the rate of profits across industries.

To understand Sraffa's reasoning, it is important to note that Sraffa (1926, p. 540) writes, quoting Marshall (1923, p. 188), that “the economies of production on a large scale can seldom be allocated exactly to any one industry: they are in great measure attached to groups, often large groups, of correlated industries.” Thus, when firms in a more profitable industry reinvest their higher profits, the industry as a whole (as the firms that constitute it) cannot maintain a higher rate of profits (so as to expand indefinitely) at the expense of other industries (less profitable) that are not expanding at the same rate due to having less internal funds. For any economies of scale necessary for such a profitable expansion would require the expansion of the correlated industries too.

The greater magnitude of capital accumulated by a single industry (or a single group of industries that remain correlated with yet other industries that do not follow suit), and subsequent reinvestment, must then lower the rate of profit towards the normal (or conventional) level. Likewise, less profitable firms or industries, thus endowed with less internal funding, will also invest less and find the opposite effect. So the very fact that firms in a given industry draw on internal funds to reinvest along Kaleckian lines would

lead, under Sraffa's reasoning, towards a tendency for the equalisation of the rates of profits across industries, due to the correlation between industries.

One important reason why some firms and industries achieve a relatively higher rate of profits is their greater ability to control knowledge that is embodied in skill and technology, as showed by Veblen's (1908a, 1908b, 1909) analysis of the nature of capital – which, as noted above, Robinson (1979b) refers to as a clearer analysis than her own. But as Veblen (1908a, 1908b, 1909) notes, knowledge is developed in a community, which makes it difficult to prevent (at least indefinitely) other firms of obtaining it – including firms in other industries who may possess similar competences and may enter or exit a given market, as Sraffa (1925, 1926) notes in his critique of Marshallian equilibrium analysis.

The notion of a conventional rate of profits can thus be seen as a consequence of various factors noted before by Veblen (1908a, 1908b, 1909) in his own analysis of capital, including the communal nature of knowledge and the interconnected nature of the industrial system (which Veblen, like Marshall, also discussed). Veblen (1904, p. 52) refers to the “current or reasonable rate of profits” as “roughly, the rate of profits at which business men are content to employ the actual capital which they have in hand.” This is clearly a conception where conventions set the standard as to what is a “reasonable” rate of profit given the expectations of “business men”, which is connected to whatever is the “current” rate of profits (Veblen 1904, p. 52).

Veblen refers to the central role of credit and the interest rate (to be compared to earning capacity) in this process, an analysis which broadly in line with Keynes' (1936), and with Sraffa's (1960, p. 33) reference to the “money rates of interest”. Competition for money capital at a given rate of interest (Garegnani 1978, 1979a; Sraffa 1960) sets the

standard in which social relations are “rigidly fixed” (Sraffa 1932, p. 43), and influences various economic activities, including pricing and investment (Hicks 1985; Lee 2018).

But all the factors noted above can, at best, be seen as merely contributing towards a tendency, and countervailing tendencies may exist too. Competition for money capital may fail to obtain when a given corporation has non-competitive access to financial resources, not only through internal funding (as Kalecki stresses), but also through a bank connected to an industrial conglomerate, as Sraffa (1922) notes (in early writings on money and banking in Italy). And the fruits of knowledge – like natural resources that generate a rent (Sraffa 1960) – may be appropriated privately (for example through patent rights).

The uniform rate of profit is thus, to repeat, merely a conventional or average rate of profit that expresses (in historical time) underlying tendencies that are permanently disrupted, and cannot be taken as an exact mathematical regularity expressed in logical time. More specifically, the rate of profits set by the “money rates of interest” (Sraffa 1960, p. 33) is essentially an expression of the share of the surplus that, on average, the financial sector extracts from the productive sector, within the process of circular reproduction and distribution of the social surplus.

But once it becomes sufficiently ingrained in conventions and expectations for different periods of time (Harcourt 1981, 2021) – including business conventions as to what is “reasonable” (Veblen 1904, p. 52) – the rate of profits may play a role in pricing and investment decisions aimed at the pursuit of profits and capitalist accumulation. However, this is something that may occur in various degrees (depending also on the pricing procedure adopted), within the more general role played by the rate of profits in the description of the capitalist process, understood as a process where the central conflict is between capital and labour.

## **9. The degree of monopoly and other disagreements at Cambridge**

The rate of profits expresses the driving force of capitalist decisions under the quantified form that characterises monetised economies. The rate of profit that emerges in this context must be consistent with the circular process of reproduction, as argued by Ricardo and Marx. Robinson goes as far as attributing a similar vision to Marshall and Keynes too (Marcuzzo 2018, 2020), since she believes their conception of the rate of profit fits more easily with the classical conception of circular reproduction adopted by Sraffa and Kalecki (in line with Marx) rather than with marginalist analysis.

Robinson came to this conclusion after reading Sraffa's (1951) introduction to Ricardo's works, which led her to the belief that the notion of rate of profit is quite similar in Ricardo, Marx, Marshall and Keynes (Marcuzzo 2018). However, even if we may accept that the vision and original intuitions behind the contributions of Marshall and Keynes fit in well within Robinson's project of a reconstruction of economic theory at a broader level, the supply and demand framework in which Marshall and Keynes presented their analyses is incompatible with Sraffa's (1960) and Robinson's (1982) circular conception of socio-economic reproduction.

In the classical-Marxian conception of circular reproduction, supply and demand explain accidental variations only. But the latter can become quite significant in specific cases. As Kalecki (1971, p. 43) notes, it takes "considerable time" to increase the supply of natural resources, due to the different rhythms implied in their reproduction (Martins 2018). Under those circumstances, demand will play a greater role (on occasions more important than the rent natural resources yield under normal conditions). This is an aspect that was also noted by Kahn and Keynes (1938), who provided an analysis of the

fluctuations in prices of primary commodities, while suggesting a buffer stock scheme to avoid those fluctuations (Marcuzzo and Rosselli 2005).

According to Kalecki (1971, p. 43), short term price changes can be “classified into two broad groups”: those determined mainly by changes in demand, which is typically the case of “raw materials inclusive of foodstuffs”; and those determined mainly by changes in the cost of production, which is typically the case of “finished goods”. Robinson (1980b) also adopted at some point Kalecki’s separation between prices in commodity markets which depend upon supply and demand, and prices within corporate industry that are set by the producer in relation to the cost of production.

When analysing the latter type of price changes (that is, those determined mainly by changes in the cost of production), Kalecki (1971, p. 44) explains that, when fixing prices, firms add a margin of profit to their “average prime costs”, and in so doing, take into account the prices of other firms that produce similar products. The margin of profit, as the extent to which the firm takes into account the prices of other firms, both contribute to what Kalecki (1971, p. 45) calls the “degree of monopoly”, which is then what determines the mark-up over the average prime costs when fixing the price.

The degree of monopoly is an aspect of Kalecki’s (1971) theory that was not accepted in Cambridge by those influenced by the Marshallian approach to price determination. Kahn, for example, believed that the margin to be added as a mark-up remains undetermined (also when commenting on Wynne Godley’s approach to mark-up prices), and found Kalecki’s (1971) reliance on the notion of degree of monopoly unsatisfactory (Marcuzzo and Rosselli 2005). A possible reply to Kahn’s scepticism regarding the notion of degree of monopoly would be to say, as noted above, that the mark-up is determined just like the rate of profits in Sraffa’s system: as the surplus rate that allows for circular reproduction.

But as noted above, different business enterprises may have different market power (over natural resources, money capital or knowledge to be embodied in skill and technology), and thus different degrees of monopoly at a given moment. Thus, Kalecki (1971, pp. 51-52) writes that “changes in the degree of monopoly are not only of decisive importance for the distribution of income between workers and capitalists, but in some instances for the distribution of income within the capitalist class as well.” Since the degree of monopoly can be used to express both distribution between capital and labour and distribution within the capitalist class, it is a more general notion than the idea of a normal, or average, rate of profits.

However, this does not undermine the idea that the conflict between capital and labour, expressed in the notion of an average rate of profits, is the more fundamental aspect of capitalism. If we want to conduct our analysis in a mathematical model that presupposes logical time, we may find difficulties in reconciling Sraffa’s (1960) uniform rate of profits and Kalecki’s (1971) analysis of different degrees of monopoly. But if we conduct our analysis in historical time, as Robinson and Keynes suggest, it is meaningful to say that despite the coexistence of different degrees of monopoly across firms and industries, there is an average rate of profits that sets conventions and expectations regarding investment and pricing decisions, and expresses the key conflict between capital and labour in capitalist accumulation. This is also consistent with the idea that the “Kaleckian rate of profit is an aggregate or average one” (Toporowski 1999, p. 358)

Once we ground the theory of mark-up prices in a classical-Marxian circular conception of socio-economic reproduction, one may note – if we bear in mind the inconsistencies found in marginalist supply and demand analysis by Robinson (1953-4) and Sraffa (1960) – that Kalecki’s (1971) own use of Marx’s reproduction schemes appears to rest on a more solid basis than the Marshallian framework used by those who

rejected Kalecki's approach at Cambridge, like Keynes and Kahn. And so does Robinson's attempt of a reconstruction of economic theory, taking into account the contributions of Marx, Keynes, Sraffa and Kalecki (Bhaduri and Robinson 1980, Harcourt 2006), while using Sraffa's (1960) circular conception as a basis for such a reconstruction.

But despite the possibilities for some reconciliation between Robinson's more Kaleckian approach and Sraffian analysis, the outcome of the debate between Garegnani and Robinson was her dissociation from the Sraffians, not least because she believed her interpretation of Sraffa was quite different from that of Sraffians like Garegnani. This led to a split in the Post-Keynesian camp, understood broadly as a movement that would include the Sraffians, in addition to the Kaleckians and the Post-Keynesians who followed Keynes' own analysis more closely (Hamouda and Harcourt 1988).

And this situation posed obstacles to a broader engagement (that would include the Sraffians) with her project of a reconstruction of economic theory based on Sraffa's (1960) theory. The notion of historical time outlined above, to the extent that it may help reconciling Robinson's and Sraffa's respective conceptions of time within a Keynesian methodology, is a possible route for overcoming those obstacles.

The conception of historical time adopted above can also help reconciling Robinson's reconstruction project with other key Post-Keynesian contributors who also sought distance from her, while even showing some scepticism regarding her contribution. This includes not only Sraffa himself, but also Nicholas Kaldor, who found Robinson too close to the marginalist framework (Harcourt and Kerr 2009; King 2017), not least in her *magnum opus*, *The Accumulation of Capital* (Robinson 1956).

Kaldor (1985) was concerned with achieving a conception of economics without equilibrium, focused on development processes driven by cumulative causation. The

notion of historical time as an instant where conventions express past processes and ground future expectations – thus setting the conditions for circular socio-economic reproduction – can be fruitfully employed for grounding a study of cumulative causation in historical time (where, to repeat, cumulative causation is a path-dependent and non-teleological process, which cannot be conceptualised in terms of a predetermined equilibrium).

But despite those possibilities for a broad reconstruction of economic theory that would include Kaldor's analysis of development processes, the disagreements between Kaldor and Robinson prevented the emergence of a united front for the development of Post-Keynesianism at the Faculty of Economics and Politics at Cambridge. To assess the impact of the split between Robinson and Kaldor, one need only note that Kaldor and Robinson were the most prolific amongst the more prominent Cambridge Post-Keynesians after Keynes' death, not least when compared to other key contributors like Kahn and Sraffa (King 2017). So Robinson's project of a reconstruction of economic theory, possibly leading towards a unified basis for a Post-Keynesian approach – drawing also on the contributions of Marx and Veblen – remained underdeveloped, as Post-Keynesianism itself became fragmented into various branches (King 2002, 2021).

## **10. Concluding remarks**

Robinson's earlier career was much inspired in Marshall, but she later came to a radically different reconstruction of economic theory, where the main figure is no longer Marshall. The abandonment of the Marshallian framework led to various differences with other colleagues. Kahn, like Keynes himself, still retained Marshallian elements – in fact, Kahn was perhaps closer to Keynes' thinking than all the other main Post-Keynesians – but had also a decisive influence on Robinson (Harcourt and Kerr 2009).

Robinson's move away from Marshallian elements, however, was perceived as too slow by other colleagues like Kaldor, and Sraffa himself, who was quite reticent towards Robinson's ideas (Sraffa/ D3/12/111/337.recto, quoted in Harcourt and Kerr 2009, p. 6). But whatever misgivings Kaldor and Sraffa may have had on Robinson's earlier views would perhaps not apply to her later project of a reconstruction of economic theory (Robinson 1982), where we find a more radical abandonment of the received Marshallian view.

It is tempting to see Robinson's (1982) reconstruction of economic theory as a rejection of all economic theory previously adopted by Robinson other than Sraffa's (1960), to be combined with studies of actual history drawing on Keynes. To be sure, this is what she says she is doing (Robinson 1982). But it is important to note that, in her reconstruction, Robinson (1982) refers to problematic aspects in Sraffa's (1960) theory concerning the notion of a uniform rate of profits – in particular, its possible inconsistency with an analysis of proportionality between sectors through socio-economic reproduction.

Proportionality between sectors, in turn, is addressed by Robinson in other contributions at a final stage of her career through Kalecki's analysis of Marx's reproduction schemes (Bhaduri and Robinson 1980; Robinson 1980b). This Marxian vision, interpreted through Kaleckian lens, seems to permeate even her reconstruction of economic theory, as it can be inferred from the fact that Robinson (1982) draws clearly on a Marxian-Kaleckian analysis of socio-economic reproduction when criticising Sraffa's (1960) silence on the impact of distribution on the physical quantities of output.

This is a question which, we may note, only arises if we want to introduce time in Sraffa's analysis, as Robinson intends to. But the notion of historical time outlined above provides a possible way to do so which is consistent with Sraffa's methodology. The final picture that emerges in the reconstruction of economic theory is one in which social,

political and institutional forces, connected to the conflict between capital and labour, are the key determinant of the distribution of income between wages and profits.

Ultimately, Robinson is concerned with reaching an alternative vision, where the driving force of the economic process is not the “lifetime utility-maximising consumption decisions of individuals” (Cohen and Harcourt 2003, p. 208); nor is the allocation of scarce resources the fundamental problem, as in marginalist analysis. Rather, Robinson’s vision is one where the pursuit of profits by capitalists is the driving force, and the key problem to address is the distribution of the social surplus between social classes, together with its implications for socio-economic reproduction.

Quantities (of inputs and outputs) and prices are set in this context so as to be consistent with socio-economic reproduction given existing (social, political and institutional) forces that shape distribution, rather than to achieve an equilibrium between supply and demand. In fact, supply and demand must themselves be explained in terms of the circular process of reproduction, rather than seen as independent forces that bring about an equilibrium. More importantly, since the process through which reproduction takes place occurs in historical time, we cannot capture it through an exact formulation in equilibrium models that presuppose logical time.

If we believe that economic science must consist of equilibrium models that presuppose logical time and closed systems, then Robinson’s reconstruction is certainly a nihilistic one (Cohen 1993; Harcourt 1990). For she does suggest the rejection of all such models. But we can, alternatively, interpret Robinson’s apparent nihilism (Cohen 1993; Harcourt 1990) as an attempt to find a new basis for a reconstruction of economic theory, one that takes historical time seriously, as it manifests itself in conventions that ground expectations when facing fundamental uncertainty.

Under such a conception, it becomes clearer why Robinson (1978b) believed that the key problem to address in the Cambridge capital theory controversies does not consist in mathematical technicalities regarding the measurement of capital (Cohen and Harcourt 2003). Rather, the key question is the meaning of capital and capitalism, including the social practices through which conventions and expectations regarding the distribution of the social surplus acquire social meaning, and are politically enforced.

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