Joan Robinson from the generalization of the General Theory to the development of an 'Anglo-Italian' Cambridge tradition

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It is a commonplace between post-Keynesian economists to consider that the establishment of post-Keynesianism as an alternative paradigm can be traced back to Eichner's and Kregel's paper (1975) and to the creation of the *Journal of Post Keynesian Economics* in 1978. However, the idea of developing an alternative paradigm based on Keynes's findings can be traced way back before this moment. Joan Robinson's readers can agree that her intellectual project consisted on creating a general framework of economic analysis based on the "Keynesian revolution", which started as the extension of some of Keynes's findings to the long-period. Robinson's intellectual itinerary-and her change of methods (See Salanti (1996) or Harcourt (1996))- was marked by her several attempts to achieve this task. The latter turned out to be quite complicated, as it implied considering the effects of the variation of the stock of productive equipment on the economy[1]. Robinson was one of the first authors to advocate the integration of Keynes's short-period to Sraffa's long-period analysis in an alternative framework to neoclassical economics and "bastard Keynesianism"[2].

However, looking into the development of post-Keynesian economics in the later years, one must acknowledge that Robison's project came to failure in the extent that post-Keynesian economics has been disseminated into several strands[3], which often find it hard to communicate with each other. Following Arena (1992) and Lavoie (2011), one can make a broad distinction between "fundamentalist" and "dissident" streams of post-Keynesianism -or between narrow-tent and broad-tent approach (Lavoie 2014). While the former are mostly

[1] Lavoie states that Robinson's works are an illustration of the difficulty of integrating classical economy to Keynesian analyses (1996, 128).

[2] Robinson used this expression mainly to refer to American Keynesians, which didn't get Keynes's message according to her. Robinson considered that they only accepted deficit spending while ignoring Keynes's views on the instability of capitalism and the importance of time in economic analysis. "Bastard Keynesianism" can be broadly defined as the approach which integrates Keynes's analysis in a Walrasian general equilibrium setting, following Hicks (1937).

[3] For the most usual classifications, see Hamouda & Harcourt (1988), Arestis (1996) or Lavoie (2014)

interested in Keynes's monetary production economy and questions of uncertainty, the latter have a more "open" approach which integrates the contributions of Sraffa, Kalecki or institutionalist authors. The correspondence between Robinson on none side and Davidson and Kregel on the other as documented in *Joan Robinson and the Americans* (Turner 1989, 185-199) illustrates well the tension between "fundamentalists" post-Keynesians who were mainly Americans and Robinson's Keynesianism which she referred to as "Anglo-Italian economics". Hence, several attempts to bring Keynesians and neo-Ricardians together have failed to do so, notably the International Summer School of Trieste (Arena 1992). Arena argues that although a synthesis between "constituted" versions of the two streams are nearly impossible, the "dissenting" versions offer a lot of similarities.

However, even among the advocates of a classical synthesis integrating neo-Ricardian and Keynesian economics, there are two opposing interpretations concerning Robinson's position. Harcourt (1981) considers that she rejected the approach of normal prices as centers of gravity, while Asimakopulos (1984) and Lavoie (1996) criticise her recourse to long-run positions as being paradoxical with her distinction between history and equilibrium.

Those opposing interpretations can be explained by three factors. Firstly, Robinson's synthesis was formulated in different versions over the years[4] and her writing style consisted in presenting a given theory and the difficulties related to it, then trying to solve them before giving her own account of it[5]. Secondly, she had a particular interpretation of Keynes's "main message"- which differed from Keynes's own view concerning his "revolution"[6]- as well as of Sraffa's contribution-which he was very critical of[7]. Her reading of the two authors was in fact largely influenced by her own views. Finally, she assumed that Marshall's long-run normal prices and Marx's prices of production were the same -ignoring the fact that the former prices are determined through demand and supply curves- and was not very clear on her definition of short period.

[4] Harcourt (1996) argues that Robinson's last accounts of Sraffa's book (1960) can be found in the paper she wrote with Bhaduri (1980) and in her last paper entitled "Spring cleaning" (1982). I argue that the paper "Keynes and Ricardo" (1978) can be added to the list as all three present Robinson's last development of her analysis framework for post-Keynesian economics, which includes insights from Kalecki, Keynes, Marx, and Sraffa. Hence, those three papers constitute in my opinion her latest version of post-Keynesianism.

[5] Harcourt (1996) explains how this writing style was prejudicial to the comprehension of Robinson's analyses and positions in the debates she participated to.

[6] As early as in 1933-before the publication of *The General Theory*-, Robinson states that Keynes did not get the main point of his message right (Robinson 1933).

[7] Marcuzzo (2005) provides archival evidences showing that Sraffa disapproved of Robinson's interpretation of his work.

Hence, the objective of this paper is to shed a new light on Robinson's project, while retracing the path that led her from the extension of Keynes's findings to the long-period (Robinson 1937) to the integration of Sraffa's analysis to post-Keynesian economics. The paper shows that Robinson thought such an integration possible based on what she thought was the main point of each of their contributions.

The first section of this paper traces down Robinson's attempts to develop an analysis framework starting from her extension of *The General Theory* (1936) in 1937 to promoting a post-Keynesian analysis framework integrating Keynes's and Sraffa's contributions (especially in "Keynes and Ricardo" (Robinson 1978b)). The second section will discuss the difficulties arising from Robinson's efforts to conciliate Sraffa and Keynes's approaches, which has come to be known under her distinction between Equilibrium and History. I argue that this distinction was not meant to criticise Sraffa's approach, because Robinson did not regard his production prices as resulting from a gravitational process. Moreover, Robinson's own interpretation of Keynes's "main point", which partly stems from her view on money and partly from her rejection of any universal "complete theory", will help clarifying the coherence of her project. However, this section shows that Robinson did not stick to one interpretation of normal prices and did not define the concept very clearly. Finally, the last section will discuss Bhaduri and Robinson's "sraffaesque" model (Bhaduri & Robinson 1980) in the tradition of Marx, Kalecki and Keynes. This model, which was meant to be a model of "pure theory"[8], can be considered as Robinson's last version of her general framework for post-Keynesian economics[9], illustrating the particularity of her approach.

I- Joan Robinson's project: from the extension of Keynes's approach to the long period to the creation of an alternative framework to "bastard Keynesianism"

[8] Robinson wrote in a letter to Bertram Schefold (1980): "The idea is to lay down a solid foundation for pure theory and then seal it up and so clear the ground for discussing real life problems in historical terms." (JVR/VII/398/241)

[9] Assuming that the task of post-Keynesian economics was to reconcile Keynes and Sraffa's approaches as Robinson argued in "Keynes and Ricardo" (1978) two years before the publication of her paper with Bhaduri.

It is no secret that Joan Robinson assisted Keynes in all the steps surrounding the preparation, publication and dissemination of *The General Theory of employment, interest and money* (1936) as part of her implication in the activity of the *Circus*. As soon as it was published, Robinson gave herself the mission of vulgarizing Keynes's *General Theory* in order to gain the largest number of "disciples". Her mission was twofold: she wanted to explain Keynes's approach on one side, but mainly tried to extend this approach to long-period analysis (Robinson 1937). Keynes's *General Theory* is based in the Marshallian short period, which "is not a length of time, but the position at a moment of time" (Robinson 1978). The Marshallian short period does not therefore correspond to a defined time lapse. It is the period in which the stock of productive equipment remains constant. Consequently, extending Keynes's approach to the long-period supposes the consideration of the effects of the variation of this stock. This raises the issue of the determination of a long-run profit rate and the value of a "quantity of capital". In her *Essays in the theory of employment* (Robinson 1937), Robinson uses the elasticity of substitution[10] in order to develop long-period consumption and saving functions that would validate some of Keynes's conclusions such as the paradox of thrift and involuntary employment. In the same year, Hicks presented his interpretation of Keynes's theory, in the form of the IS-LM model. Kregel (1983) draws the parallel between Robinson's and Hicks's 1937 works-especially their use of the elasticity of substitution tool-, showing that the Hicksian interpretation of the *General Theory* (Hicks 1937) initiated the development of "bastard Keynesianism"[11].

Robinson's attempt to generalize Keynes's approach to the long period was criticized by Keynes himself, along with other members of the *Circus* (Asimakopulos 1984; Harcourt in Gibson 2005). The main criticism concerned the use of the concept of marginal productivity of capital "as a whole", since the latter is constituted of heterogenous equipment goods. The use of elasticity of substitution also implies perfect substitutability between labor and capital, which Robinson rejected later in her criticism of the neoclassical production function (Robinson 1953).[12]

[10] The elasticity of substitution was used to represent the effect of change in relative prices of capital and labour on the change of their relative quantities. Thus, Robinson used this tool to determine income distribution for the economy as a whole, an approach that she will later reject.

[11] "Bastard Keynesians" include according to Robinson all the economists-mainly Americans- who took Keynes's tools and used them in creating models with malleable capital (Turner 1989, 112)

[12] Hence, the discussion surrounding the publication of Robinson's *Essays* (1937) dealt with issues related to capital heterogeneity and the relevance of the marginal productivity distribution theory way before the Cambridge controversies.

Robinson did not abandon her project although she rejected the method she used in 1937. Her *magnum opus*, *The Accumulation of capital* (1956), was another attempt to extend *The General Theory* to the long-run following Harrod.

> The problem presented itself to me as a generalization of the *General Theory*, that is, an extension of Keynes's short-period analysis to long-run development. (Robinson 1969 [1956], vi)

In this book, she recourse to classical economics in order to achieve her task.

> Much in the following pages will be startlingly familiar to learned readers. I did not myself arrive to these ideas by studying the classics. But I was very much illuminated by Piero Sraffa's Introduction to Ricardo's *Principles*. (*ibid*, vi)

She explains this influence of classical political economy by the influence of Sraffa, who arrived to Cambridge in 1926. Sraffa's introduction to the reedition of Ricardo's *Principles*, published in 1951, got her acquainted with Ricardo's "corn economy". By then, she had read Marx -after reviewing Strachey's book in 1937- and wrote her *Essays on Marxian economics* in 1942. There, she states that Marx's analysis should be stripped out of the "metaphysical" concept of value and completed with Keynes's principle of effective demand. Her reading of Marx also made her realize the importance of history and consider capitalism as her object of analysis. Marx's influence shaped Robinson's interpretation of Keynes's approach as she attributed its importance to three reasons: first, that it dealt with the development of a capitalist economy; second, that it represented an economy of production where investment decisions taken by entrepreneurs are the lifeblood of economic activity; and finally, because it took time into account (Robinson 1962a, 71; Turner 1989, 62).

Robinson's idea of extending Keynes's short-period to the long term hence consisted in finding a theory of profits that would fit it with such an interpretation. As stated by Harcourt (2005, 22), "she felt she had in Sraffa's introduction to volume one of the Ricardo volumes, the clue to an alternative and more satisfying theory of the rate of profits—the classical concept of the surplus already familiar to her from reading Marx but tightened up and made more precise without any metaphysical overtones of the labor theory of value (in her view!) in Sraffa's exposition". In *The Accumulation of capital*, her analysis of accumulation in the long-term hence integrates Keynes's short-period to a classical setting. She considers a capitalist industrialized economy with different social classes, where evolving “rules of the game” condition capital accumulation.

In Robinson’s opinion, Ricardo’s approach was close to Keynes’s in the sense that they were both “observing a historical process of accumulation going on through time” (Robinson 1978, 15), away from the Walrasian conception of economic activity as the result of exchanges between independent producers. Moreover, she argued that Ricardo used equilibrium as an initial position, and not as a self-adjusting mechanism. In a Walrasian setting, individuals start off with an initial endowment from which they make independent allocation choices according to the substitutability principle. The variation in quantities modifies relative prices in a means that assures equilibrium on all market. Hence, the Walrasian conception of equilibrium does not involve any adjustment mechanism, only a variation in relative prices due to the change in quantities (Bharadwaj 1991). Hence, Robinson found in the classical theory the tools that would allow her to complete the “Keynesian revolution” with a long-period theory of profits.

After the publication of Sraffa’s *Production of commodities by the means of commodities* in 1960, Robinson became more convinced of the necessity of integrating Sraffa’s analysis to her general framework. She found in Sraffa’s book a new tool for discussing income distribution away from marginal distribution theory, a task she failed to achieve in her 1937 *Essays*. The importance of the question of distribution appears in Robinson’s 1982 article “Spring Cleaning” where she reproduces a passage from Sraffa’s preface to *Production of commodities by means of commodities* (PCMC) without citing him about the criticism of marginal distribution theory. At the same time, she felt the obligation to explain what Keynes’s revolution was really about with the development of Keynesianism in the United States. Robinson viewed it as not getting Keynes’s message right, as she repeatedly claimed during the years of the Cambridge controversies (1950’s-1970’s) and after that. She saw in the distinction between macroeconomics and microeconomics, that emerged in the United States in the 1970’s, a real threat as she considered it as a way of integrating Keynes in mainstream economics. She must have thought then that the only way to prevent this was to develop an alternative paradigm in the tradition of Cambridge UK, which should integrate the Sraffian approach.

For a long time, Robinson even referred to this alternative as the Anglo-Italian school (Turner 1989, 244-5), in a clear attempt to seal this integration. Her paper, “Keynes and Ricardo” (Robinson 1978b), presents a clear statement in favor of her definition of post-Keynesianism.

> To me, the expression *post-Keynesian* has a definite meaning; it applies to an economic theory or method of analysis which takes account of the difference between the future and the past. (*ibid*, 12)

> The book [*Production of commodities by means of commodities*] was not published until 1960. Keynes evidently did not make much of it and Sraffa, in return, never made much of the *General Theory*. It is the task of post-Keynesians to reconcile the two. (*ibid*, 14)

In “Keynes and Ricardo”, Robinson’s objective is clear: to build a framework for Keynesian economics integrating Keynes’s short-period to Sraffa’s long-period analysis. The coherence of her project stems from her rejection of neoclassical equilibrium.

> The post-Keynesians must make use of Sraffa to build up a type of long-period analysis which will prevent neoclassical equilibrium from oozing back into the General Theory. (*ibid*, 15)

Hence, the link between Sraffa and Keynes is Ricardo as the starting point of this framework should be the explanation of the historical process of accumulation of a capitalist economy in opposition to the timeless Walrasian equilibrium:

> …the essential difference between these [Ricardo, Marx, Marshall, Keynes], on the one side, and Walras, Pigou and the latter-day textbooks on the other, is that the Ricardians are describing an historical process of accumulation in a changing world, while the Walrasians dwell in timeless equilibrium where there is no distinction between the future and the past. (Robinson 1978a, XI)

It has already been argued that Robinson’s rejection of equilibrium is the rejection of the Walrasian general equilibrium which relies upon the expectation of uninterrupted market clearance (Burstein 1991). Hence, she rejected this conception because she thought that it cannot explain accumulation as an historical process. However, as the following section will show, she tended to confuse normal prices *à la Marshall*-determined by the equilibrium of supply and demand curves- with prices of production in the classical tradition where long-run positions are the "outcome of the persistent forces of the economy" (Eatwell 1979, 4). This made her confuse "normality" and "equilibrium" which tended to blur her explanation of long-run position and her exposition of her framework for post-Keynesian economics.

II- Normal prices between equilibrium and history

Indeed, building such a framework was not an easy task. The main difficulty seems to be the incompatibility between long-run positions and sequential analysis with succeeding short-periods (Lavoie 2013). Post-Keynesians generally agree that a path-dependent analysis based on a sequence of short-periods where expectations play an important role is more appropriate to represent an economy evolving in historical time than a gravitational process[13]. However, it is not the case if long-run positions (centers of gravity) are not considered to be static but in movement[14]. In order to understand the working of long-run position, one should discuss the manner in which they are determined. Hence, the coherence of Robinson's synthesis project depends largely on her discussion of what she calls normal prices. Robinson's analysis of normal prices does not seem to be all that coherent as the study of her main two contributions on the subject- *Essay on normal prices* (1962), "Keynes and Ricardo" (1978)- show.

Robinson starts her discussion of normal prices in her 1962 essay by opposing two types of theories of value and distribution identifiable, in a broad way, as Walrasian and neo-Ricardian. What emerges as the principal difference between the two systems of prices described by Robinson is the kind of economy they represent[15]. Normal prices in Robinson's conception cannot be defined independently from the type of economy that is studied.

> The difference between this system of prices and the Walrasian system is that here the equilibrium stock of means of production is determined by the flow of output, given the technical conditions and the rate of profit, whereas in the Walrasian system there is an arbitrarily given stock of means of production and outputs are determined by the

[13] According to Cohen (1990), Robinson had the intuition of path-dependency since 1953. Path-dependency consists in considering that the actual situation is the consequence of past decisions, and that the future position will be shaped by present decisions.

[14] See Harcourt (1981, 41) for an account of the different conceptions of centers of gravity.

[15] This echoes the idea developed in the first section, regarding the difference between the Walrasian and classical representations of society.

> technical and psychological conditions which govern the pattern of supply and demand. (Robinson 1962b)

In a general equilibrium setting representing independent producers with different endowments, starting off in "an arbitrary set of conditions, an arbitrary quantity of factors and an arbitrary number of owners of factors", there is no general level of prices, only relative prices governed by supply and demand. On the other side, normal prices[16] (which Robinson identifies as Marshall's 'normal long-run supply prices' or Marx's 'prices of production') are those obtained when a "normal rate of profit" prevails, when the degree of utilization of the productive capacity is at its normal level. Robinson links the establishment of normal prices with a normal degree of capacity utilization. This is obtained when a uniform rate of profit prevails, which Robinson explains by capital mobility (competitive conditions) in the classical tradition. According to Robinson, this uniformity requires competitive conditions to be fulfilled as well as the economy being in a state of tranquility [17] in order to be achieved. Competition here concerns long-run investment plans and is defined as "no limitation on access, given time, to any market, so that an equal rate of expected profit on investment tends to be established throughout the system" (Robinson 1962b). In a nutshell, normal prices correspond to a certain level of capacity utilization which establishes a uniform rate of profit in all sectors. However, this cannot be achieved unless competition allows for the establishment of a uniform *expected* rate of profit on one side, and expectations are fulfilled such as the rate of net profit is actually uniform in all sectors and corresponds to the normal level of capacity utilization. It seems henceforth that in Robinson's conception, normal prices can only be established in a state of tranquility. This can be attributed to her criticism of equilibrium. According to Robinson, an economy cannot get into equilibrium unless it was already in it (Robinson 1953-54). In fact, she considered that in order for an economy to get into equilibrium, expectations should be such as to allow it. This means that past expectations should be fulfilled which results in the fact that they would continue to be. Hence, in Robinson's equivalent of equilibrium-tranquility- expectations are such as they are always fulfilled. This particular specification of equilibrium made her consider Marshall's long-run normal prices as similar to Marx's prices of production. Indeed, since she confined the

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[16] "When normal prices obtain, each seller receives, over any period, sums equal to the costs that he has incurred in production of the goods sold, including a notional charge for interest, at a rate equal to the ruling rate of profit, compounded over the interval from the moment when cost was incurred to the moment of receiving payment." (Robinson 1962b)

[17] Robinson develops the concept of state of tranquility in *The Accumulation of Capital* in order to refer to a situation where expectations are fully realized.

realization of normal prices to the state of tranquility, she may have confused prices of production with prices resulting from the confrontation between supply and demand. The following statement confirms the fact that she seemed to treat normality as equilibrium,

> The analysis of the meaning of normal prices must certainly not be taken as a prediction that normality will be a usual state of affairs. (Robinson 1962, 17)

Robinson opposes historical analysis to equilibrium, defining a historical process as one where “the system [is] continually lurching from one out-of-equilibrium position to another”. One may be skeptical about Robinson’s synthesis project since the definition she gives to normal confines normal prices to Marshall’s understanding of prices as resulting from the confrontation of supply and demand mechanism. In her 1962 essay, Robinson mentions three limits to her analysis: uncertainty (especially since she confined normal prices to the state of tranquility), the price policy of firms (Kalecki’s “degree of monopoly”) and the nominal wage rate which she viewed as determined by bargaining and social conditions.

She tries to integrate the price policy of firms by using Kalecki’s mark-up principle for determining firms’ pricing decisions in “Keynes and Ricardo”.

> The same flow of profits is compatible with different levels of profit margins, a higher level being consonant with lower real wages, less employment, and a lower level of utilization of the plant in existence. Each firm is assumed to reckon its costs on the basis of a standard [normal] ratio of utilization of its plant. (Robinson 1978b, 16)

Lavoie (2013) argues that Robinson’s statement is consistent with some of the dissident Sraffian authors’ views.[18] Robinson’s statement implies that firms assess their cost according to a normal degree of utilization, but that doesn’t mean that their productive capacity (equipment) is always employed at its normal degree. This allows the interpretation of normal prices as administered prices that are fixed by the firm according to their costs (which corresponds imperfectly to a normal degree of utilization). Robinson’s understanding of value might help shed some light on her use of the term “normal”:

> The 'natural price' that Adam Smith believed in is a contradiction in terms. The existence of prices entails exchange. Exchange entails specialization. Specialization

[18] Notably Boggio and Roncaglia, “Actual prices are imperfect prices of production, the level of which is administered by firms according to normal costs. If one avoids the so-called process of gravitation, it then becomes clear that production prices and cost-plus prices are compatible with each other and part of the same conceptual framework.” (*ibid*, 42)

> entails an organized society. Value is a social phenomenon and 'natural' technical costs cannot determine prices independently of the social form in which production is organized. (Robinson 1978a, 148)

Normal prices are "normal" in her conception when they entail a uniform rate of profit that corresponds to the level of capacity utilization appropriate to a specific organization of production. In other words, there is a "normal" capacity of utilization for each type of society, since it is determined by the way in which production is organized. From this standpoint, equilibrium can be established at different price levels. This idea appears as early as in "The theory of money and the analysis of output" (Robinson 1933) but is also expressed in the 1962 essay on normal prices. Although this position has been interpreted as resulting from a dichotomy between money theory and the analysis of output in Robinson's thought (Dillard 1989), it can be considered as her way of leaving the model "open" to historical events by postulating that "normal" positions are determined by the social organization of production.

Hence, in her 1978 paper, Robinson provides an explanation of pricing decisions which is different from the view of normal prices as determined by supply and demand. However, she still maintained the assumption of correct expectations, arguing that "This is the link between the future and the past which is required for long-period analysis." (*ibid*, 16) This assumption was important for Robinson as she considered that correct expectations guarantee that the short-period level of effective demand would be in "balance" with the long-period situation with a normal ratio of utilization (and normal prices) in a way that would ensure market clearance. It is not clear however why she was so attached to achieving this "balance" nor to what extent is this term different from that of tranquility. In any case, Robinson articulates long-run positions with the Keynesian short period by making them (and investment plans) governed by the short-term level of effective demand. This implies that there are no forces that could bring effective demand to its level of balance once it changes. Long-period balance can only be maintained on a steady state with correct expectations, although Robinson reaffirms that "This is not something that actually happens." (*ibid*, 16) Robinson's recourse to the assumption of correct foresight (which is clearly contradictory with her definition of historical time) is as already stated the consequence of her criticism of equilibrium. Nevertheless, she considered having presented in this 1978 paper a sketch of a general framework of analysis:

> Post-Keynesian theory has plenty of problems to work on. We now have a general framework of long-and-short-period analysis which will enable us to bring the insights of Marx, Keynes and Kalecki into coherent form and apply them to the contemporary scene, but there is still a long way to go. (Robinson 1978b, 18)

Surprisingly enough, Robinson does not mention Sraffa nor Ricardo in the concluding statement of the paper where she advocated the reconciliation of Keynesian and Sraffian economics. Her 1980 model elaborated with Bhaduri clearly had as an objective to pursue that task.

III- A model of "pure theory"

Robinson mainly found in Sraffa's *PCMC* a tool for "knocking out the "marginal productivity of capital"" (*ibid*, 15). She complained that Keynes's approach lacked a theory of profits for the long run and deplored that he did not study the long period well enough to assess the effects of investment in the modification of productive capacity. Hence, Keynes took from Marshall the idea of a "normal" rate of profit that would prevail in the long run. According to Robinson, Marshall only used this concept as a benchmark determining the supply cost of capital. Moreover, his analysis stemmed from a conception of capital as a sum of saved monetary fund, which makes interest the reward of waiting and the supply cost of capital[19]. A conception rejected by Robinson as she viewed it as a means for legitimating income from property (Robinson 1969 [1956], 393). In addition, the view of supply costs as determined by the efforts of the workers and the "sacrifices" of capitalists -who refrain from consumption- "lent itself to being vulgarized [through the concept of marginal productivity] by J.B. Clark" (Robinson 1978, 14). Robinson wanted to develop an alternative to the marginal distribution theory that would not explain relative shares with the marginal productivity of each factor. Sraffa's rehabilitation of Ricardo's theory, according to which the rate of profit is determined, in physical terms, by the technical conditions and the share of wages in net output, was of great help for her. However, Robinson found Ricardo's analysis insufficient because he considered real wage as expressed in physical terms, leaving no place for wage bargain nor

[19] "the capital must not be regarded as a stock of things in general. It must be regarded as a stock of one particular thing, money, which is taken to represent them." (Marshall 2013 [1890], 62)

for monopolies in his distribution theory. She found that it was not the case of Sraffa's *PCMC* where real wage was a share of net output, although he did not discuss the determination of income distribution.

Robinson considered this as "a challenge to attempt to diagnose what forces do determine the distribution of income between profits and wages" (Bhaduri & Robinson 1980, 103). She takes up this challenge with the help of Marx's rate of exploitation. She already had mentioned it in her *Essay on normal prices*[20], but in "Keynes and Ricardo" she defines it as a determinant of bargain power as it "may be pushed up or down with the fortunes of the class war" (Robinson 1978, 15). Robinson determines the rate of exploitation as being the share of net profits over the wage bill. The variation of this rates depends upon trade union strength and monopoly power[21]. She considers that the share of profits in wages determines the uniform rate of profit corresponding to a certain price pattern (Bhaduri & Robinson 1980, 111). In other words, the proportion of relative shares result from social, historical or political factors and is compatible with any technical conditions -the exploitation rate is not determined by technical conditions. From the established exploitation rate and specific given technical conditions, a uniform rate of profit can be drawn that would yield normal prices, which are, following Robinson's 1978 paper, determined on the basis of production costs relative to a normal degree of capacity utilization. In a nutshell, the profits share in output is determined by the social factors that set the exploitation rate, upon which the normal rate of profit is determined according to technical conditions. In addition to opening the discussion of income distribution to historical factors, it provided Robinson with a tool for analyzing the problem of surplus realization. Robinson makes an important distinction between potential productivity, which depends upon technical conditions, and the current level of utilization which depends on the effective demand. This implies that the actual level of capacity utilization is governed by the level of effective demand, since it is the latter that determines the level of production[22]. The exploitation rate sets the level of the potential surplus (share of profits in income), as determined by social factors. However, this does not guarantee the realization of this surplus

[20]"But what determines the rate of profit? Marx closes his system sometimes (following Ricardo) by postulating a real-wage rate governed by the conventional standard of life (the value of labour-time), and sometimes by taking as given the share of net profit in the value of net output (the rate of exploitation)." (Robinson 1962, 11)

[21] In "Spring Cleaning" (1982), Robinson assumes this rate to vary from zero -thus only permitting to reproduce the stock of capital- and a certain maximum value that corresponds to the level of real wages allowing the survival and reproduction of the class of workers. Hence, the level of real wages depends first on technical conditions and second on the share of profits in output that is limited by the exploitation rate.

[22] "In Marx's system of analysis, the problem of 'realizing the surplus' – that is of effective demand — is somehow separate from the process of accumulation." (Robinson 1978a, XVI)

as profits. Capitalists should invest in such a way as to create a sufficient level of effective demand that would turn the potential surplus into profits.

In this framework, income distribution is discussed away from marginal analysis. In addition, the realization of potential surplus as profits is not guaranteed and depends upon investment decisions of capitalists. The latter are made according to an expected uniform profit rate (as Robinson argues in her 1962 essay), which is a 'subjective normal' rate of net profit corresponding to a normal capacity utilization. However, the actual 'ex-post' rate of profit will not necessarily be equal to the normal rate of profit, as it is conditioned by the realization of a normal rate of output (corresponding to a normal level of capacity utilization). Thus, the normal rate of profit corresponds to a normal degree of utilization, but it doesn't have to be realized as over and under-utilization of productive capacity are possible. The only assumption regarding normal capacity concerns the determination of the 'subjective normal rate of profit' which is reckoned on the basis of normal costs (when the plant is producing at its normal capacity). Nevertheless, unless the economy is in a steady state -which describes "a pure thought experiment", "it is unreasonable […] to postulate that an absolutely uniform rate of profit is ever realized even in fairly tranquil conditions, for expectations can never be exactly correct" (Bhaduri & Robinson 1980, 117).

Conclusion

Robinson's attempt of synthesis and the consequent 1980 model raise some difficulties that haven't been completely dealt with in this paper. First of all, her treatment of normal prices is ambiguous and not always coherent. This explains why she assimilates Marshall's "long-run normal prices" to Marx's prices of production, since she presents normality as similar to some sort of equilibrium position at times, or as describing a specific social organization (which reminds us to a certain extent of Marx's characterization of normal conditions of production). Secondly, Robinson's criticism of equilibrium confined her in a position where she considered that normal prices could only be established when expectations are fully met. This implies that she might not have understood the distinction between short-run and long-run positions as reflecting the difference between transitory and sustainable forces of the economy but rather as different periods of time. Although she considered that Marshallian short-period was not a length of time but rather a situation at a given moment, her question "*When* are normal prices going to obtain?" (Robinson 1982, 179) suggests otherwise. This confusion maybe arises because the Marshallian short-period corresponds to a given fixed situation and not to a transitory state, which makes Marshall’s long-run positions and Marx’s prices of production differ by definition.

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