This paper examines Joan Robinson’s writings on Marx in order, first, to elucidate the nature of her interpretation of Marx, and, secondly, to consider the significance of Marx for her own research agenda. By focusing on the topics of value theory, effective demand and accumulation, the paper argues that Robinson’s numerous criticisms of Marx are best viewed as being constructive, rather than destructive. She not only drew upon Marx for inspiration, but also endeavoured to pull Marx back into a position of prominence within economics so that his contributions can be put to use by those seeking to augment our understanding of capitalism.

1. Introduction

Joan Robinson’s contributions to economics are manifold and traverse an impressive number of the discipline’s many fields. Among her constructive contributions, her early work on imperfect competition (Robinson, 1933) and her subsequent work concerning the dynamics of capital accumulation (Robinson, 1962, 1969) are the most renowned and esteemed. She was also a formidable critic. Much of her criticism was directed towards neoclassical theory, but she also sustained a critical engagement with Marxian economics.

According to G. C. Harcourt (1995, p. 1232), Robinson’s interest in Marx was kindled in the 1930s by her review (Robinson, 1936) of Strachey’s The Nature of Capitalist Crisis (1935) and then further nourished by her friendship with Michał Kalecki. She began to read Capital (Marx, 1867–94) ‘just as one reads any book, to see what was in it’ (Robinson, 1966, p. vi). This led to the publication of her 1942 Essay on Marxian Economics, a substantive critique of Marx. Elements of that critique reappear in numerous subsequent publications by Robinson, and they also served as a focal point for the ensuing debates and controversies between her and the so-called ‘Marxists’. However, her critical stance towards Marx differs in important respects from her criticisms of neoclassical theory.

With regard to neoclassical theory, Robinson finds very little that is of use in terms of either her own research agenda or the pressing policy issues confronting contemporary economies. She advocates the abandonment, if not the
utter destruction, of the entire neoclassical edifice. Her position on Marx is different. Robinson always insisted that economists have much to learn from Marx, and her own work, from the 1940s to the end of her life, bears witness to that conviction. This long-term association with Marx constitutes more than what Pasinetti (1987, p. 215) refers to as a ‘flirtation.’ Robinson worked hard to understand Marx and to render his work intelligible to other economists. In this sense, she undoubtedly was, as Marco Lippi (1996, p. 101) has noted, an important ‘interpreter of Marx’, but the relationship extends beyond this. For example, Robinson endeavoured to find ways to ‘operationalize’ Marx so as to bring his powerful analytical apparatus to bear on applied research. Marx’s influence on Robinson also operates at a deeper level. After her early immersion in his writings, Marx’s influence enters at the ground floor of Robinson’s research and contributes to the distinctive hue of much of her subsequent output. Marx penetrated to her cognitive core and infused the character of her work. ‘I have Marx in my bones’ she once wrote (1980d, p. 265). Robinson’s many criticisms of Marx should therefore be seen not as an indication of how far apart she stands from Marx, but on the contrary, of how close she is to him.

This paper examines aspects of this deep relationship of Robinson to Marx. Section 2 looks at Robinson and the labour theory of value, where the gulf between Robinson and Marx is most pronounced. Section 3 then examines the Robinson–Marx connection in terms of effective demand and crisis, issues upon which they appear to be more compatible. In Section 4 the discussion takes up the issue of accumulation and crisis in the long run.1

2. Robinson, Marx and the Labour Theory of Value

Marx regarded the labour theory of value as the core of his analytical framework. It has been ardently debated and defended over the years, and has sparked numerous critiques from economists situated both inside and outside the Marxist tradition. It was also the subject of some of the most critical remarks that Robinson directed towards Marx and the Marxists. For example, she referred to Marx’s contention that the value of a commodity consists of the labour time necessary to produce it as ‘a purely dogmatic statement’ (Robinson, 1966, p. 12), a ‘mere assertion, disguised as argument’ (Robinson, 1980a, p. 148). In *Economic Philosophy* (Robinson, 1964) she calls the whole argument about labour as a source of value ‘metaphysical’. Notwithstanding the apparently dismissive tone of these comments, Robinson had a lot to say about the labour theory of value, and the evolution of her understanding of the issues involved helps illuminate her relationship to Marx.

Robinson recognized that, for Marx, the labour theory of value comprised

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1 This paper does not undertake a comprehensive examination of all aspects of Robinson’s relationship to Marx. In particular, topics that are not systematically addressed in the paper include: wages, wage determination and the aggregate price level; the economics of socialist and centrally planned economies; the economics of developing countries; and questions of ideology and methodology in economics. For a discussion of Robinson and Marx on the latter issue, see Hunt (1983).
the framework for the analysis of prices and for the analysis of exploitation. She argued that the latter was a far more important issue than the former:

Prices are the most obvious surface phenomena in economic life. Every school of economic theory was obliged to give some account of the determination of prices, but each school was concerned with wider questions; a theory of value was merely incidental to a general view of how the economic system operates. (Robinson, 1980d, p. 59)

Robinson appears not to have been very interested in the theory of relative prices. She believed that Marx also considered this to be a matter of secondary importance, and she thought it unfortunate that so much attention and effort had been directed to the issue of the relation between values and prices. Robinson never accepted that there was a contradiction between Volume I of Capital, where prices are assumed to be proportional to labour values, and Volume III, where the equalization of the rate of profit across industries with different capital-labour ratios results in prices deviating from values. Although she originally remarked that ‘the conflict between Volume I and Volume III is a conflict between mysticism and common sense’ (Robinson, 1966, p. 15), she later wrote that the theory of prices in Volume III is better viewed as a ‘modification’ rather than an ‘inconsistency’ (Robinson, 1964, p. 37). Acknowledging that Marx’s treatment of the transformation of values into prices in Volume III is unsatisfactory, she saw its major consequence as the opportunity it provided for neoclassical economists to score a number of cheap points at Marx’s expense. Commenting on Bortkiewicz’s alleged correction (see Bortkiewicz, 1907), Robinson remarks that ‘The point at issue is purely formal and of no importance’ (Robinson, 1980a, p. 149). In the Preface to the second edition of An Essay on Marxian Economics, Robinson wrote that ‘This ancient puzzle has now been cleared up by the publication of Sraffa’s [1960] Production of Commodities by Means of Commodities; the famous problem of the transformation of values into prices has been laid to rest’ (Robinson, 1966, p. x). Furthermore, the prices of production that are served up in Volume III are, according to Robinson, really quite straightforward. With an equalization of the rate of profit, these prices are equal, in monetary terms, to the long-run costs of production (Robinson, 1980a, p. 139). As Robinson noted elsewhere, most theories of long-run prices amount to pretty much the same thing (Robinson, 1964, p. 41).

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2 Robinson wrote that ‘Marshall turned the meaning of Value into a little question: Why does an egg cost more than a cup of tea? … [This question] kept all Marshall’s pupils preoccupied for fifty years. They had no time to think about the big question, or even to remember that there was a big question …’ (Robinson, 1980d, p. 267). She suggested, as part of a proposal to reform the teaching of economics, that the theory of relative prices be displaced and emphasis given instead to the process of production, accumulation and distribution, considered from the perspective of the economy as a whole (Robinson, 1980c, p. 5).

3 In his review of Robinson’s Essay on Marxian Economics, Gerald Shove (1944, p. 48) wrote that ‘Mrs. Robinson rather glozes over the conflict between the theory of “value” in Vol. I of Capital and the theory of “prices” in Vol. III.’ Unlike Robinson, Shove insisted that this difference constituted ‘a flat contradiction’.
Robinson claimed that, for Marx, the analysis of exploitation was of much greater significance than the issue of relative prices, and on this point she fully concurred with him. In order to give exploitation the emphasis that she felt it needed, Robinson tried to separate it from price theory. She does not take issue with the position of Marx and the other classical economists that labour is the source of value. Well before the capital controversy, Robinson noted that ‘Marx’s refusal to treat capital as a factor of production seems well founded’ (Robinson, 1980b, p. 19). The expenditure of labour in the production process yields the flow of value comprising national income. Marx argues that workers receive in wages the value of their labour power. In terms of labour hours, this is only a portion of the total time worked, the difference constituting surplus value, which accrues to capitalists in the form of profits. In Volume I of *Capital*, Marx presents the analysis of exploitation and the creation of surplus value at a highly abstract level in which the working day is divided into the number of hours needed to produce a value equivalent to the value of labour power (or variable capital, \(v\)) and a number of hours that produce surplus value, \(s\). This division of the working day between paid and unpaid labour time is expressed by the ratio \(s/v\), the rate of exploitation.

Robinson has no quibble with this. However, the labour time that Marx is referring to is socially necessary labour time and, as such, it implies a process through which the specific variations and circumstances experienced by individual workers collectively determine the social standard. Thus, concepts such as the value of labour power and surplus value are macro concepts, not micro ones, and Robinson rightly reminds us that the rate of exploitation is meaningful only at an aggregate social level, and not at the level of the individual firm or individual worker (Robinson, 1979b, p. 693). Having discerned its essential social character, Robinson opts to express the rate of exploitation as the ratio of profits to wages in national output.

Although Robinson was aware of the importance of this ratio for an analysis of accumulation, she only gradually came to appreciate its significance for Marx’s view of prices and income distribution. Specifically, she perceived that, with given technical conditions, once the rate of profit is known, we can determine prices and the rate of exploitation. Thus, in her *Essay on Marxian Economics*, she wrote that ‘The fact of exploitation makes profit possible, but there is no reason why the rate of exploitation should be treated as either logically or historically prior to the rate of profit’ (Robinson, 1966, p. 16). The publication of Sraffa’s *Production of Commodities by Means of Commodities* (1960) reinforced this position, since, as Sraffa himself suggested, the rate of profit could be taken as a datum, and the wage rate determined as a residual in the process of solving the system of equations. Thus, Robinson did not revise or qualify her stance in the second edition of the *Essay*, published in 1966. However, she was nevertheless in the process of rethinking this position. In a 1965 article entitled ‘A Reconsideration of the Theory of Value’, she notes that Sraffa ‘tells us nothing about what determines the rate of exploitation or the rate

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4 Robinson viewed the issue of exploitation as essentially identical to the question of distribution of the social product between labour and the owners of capital.
of profit’ (Robinson, 1980c, p. 176). In this article, Robinson investigates this issue, which she poses in the following terms: ‘Is there some mechanism in the system that establishes the rate of profit so that, in given technical conditions, the real wage rate emerges as a residual, or is there some mechanism that determines the behaviour of real wages, so that the rate of profit emerges as a residual?’ (Robinson, 1980c, p. 177). She goes on to consider some possible mechanisms that might act to establish the rate of profit, such as the rate of interest or the reward for saving. Robinson finds neither of these persuasive, and in fact finds herself gravitating towards Marx. This shift is confirmed in her later writings, as in the following statement on the matter:

In 1942, I argued that there is no reason to treat the ratio of exploitation (net profit over the wage bill) as ‘either logically or historically prior’ to the rate of profit on capital. I now think that this was a mistake. The forces which govern the distribution of the product of industry between wages and profits are the central features of a capitalist economy. Marx was right, quite apart from ideology, to put the ratio of exploitation into the centre of the picture, while leaving the relative prices of commodities and the overall rate of profit somewhat hazy … . Thus it seems to me that, whether it is expressed in terms of value or not, the Marxian theory provides the best foundation that is available for a system of analysis to be elaborated and applied to actual problems. (Robinson, 1979a, pp. ix–x)

Robinson’s comment that ‘Sraffa provides an illumination of Marx, rather than a critique’ (Robinson, 1980e, p. 277)5 similarly reflects her gradual appreciation of the central role of exploitation in Marx’s system.

There is, however, an aspect of exploitation which neither Sraffa nor Robinson particularly illuminates, but which is integral to Marx. This concerns the labour process and the production of surplus value. There is almost no discussion of the labour process in Robinson’s Essay or in most of her other papers on Marx. By contrast, the labour process figures prominently in Volume I of Capital, and it is absolutely crucial for Marx’s analysis of exploitation. Surplus value is unpaid labour time, and Marx’s analysis lays bare the process by which it is generated. The purchase of labour power is only the first step. The extraction of labour in production gives rise to the possibility of surplus value, but is never a straightforward and unproblematic process. It involves an ongoing struggle between capital and labour over work. Lengthening the working day, increasing the intensity of the labour performed, substituting cheaper workers (such as children) for more costly ones, introducing machinery, and reorganizing

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5 This statement does not imply that Robinson came to believe that labour values were essential for the calculation of relative prices. Robinson maintained that ‘in order to find out the value of commodities, we need full information about the physical conditions of production and the flows of money payments. If we had that information, calculation in terms of value would add nothing to it and where that information is inadequate, value cannot supply the lack’ (Robinson, 1979a, p. ix). Thus Robinson accepts the point made by Steedman (1977) that the transformation from values to prices is at best an unnecessary detour, but, since she considers the whole issue of relative prices to be of little significance to her or to Marx, she does not view Sraffa as a critic of Marx. ‘The importance of the Marxian theory does not lie in the calculation of value but in Sraffa’s demonstration that the rate of profit on capital is determined by the technical conditions of production and the ratio of exploitation (correlative to the share of wages in value added)’ (Robinson, 1979a, p. ix).
the production process are all methods by which capitalists try to raise the rate of exploitation and increase the production of surplus value. For Marx, the class struggle associated with exploitation in capitalism revolves not so much around the value of labour power, as expressed monetarily in wages, but more importantly around the quantity and quality of the labour performed. Capital exerts its power not only by driving a hard wage bargain, but also in its attempts to control work and coerce workers to perform additional labour. The dynamics of the class struggle affect not just real wages, but also the amount of work performed. For Marx, changes in the degree of exploitation entail not only changes in the shares of national income that accrue to labour or capital, but also in the magnitude of output itself. Marx would not have been able to emphasize this point as effectively if he had presented his analysis of exploitation in terms of the division of the net social product.

There is some evidence that, just as Robinson gradually came to appreciate the primary importance of exploitation for the sort of analytical questions that interested her, she was also—towards the end of her life—becoming more aware of the significance of the labour process and the struggles in the sphere of production. In one of her last papers on value theory, she wrote that ‘The factory system was a means of getting more work out of a given labour force than they would have been willing to perform as self-employed artisans…’ (Robinson, 1980e, p. 291). In the same article, she writes that ‘Profit is surplus value extracted from the toil of the producers, or unpaid labour…. A class war arises from the struggles of workers over the share of wages and conditions of work’ (Robinson, 1980e, p. 292). Robinson also alludes to the same issue in her 1978 article on ‘The Organic Composition of Capital’, where she notes that a strong trade union movement has been able to win a share of the ‘fruits of advanced technology’ in the form of a reduced working day and increased holidays (Robinson, 1980e, p. 270) and where she criticizes Okishio for failing to distinguish between the number of workers and the hours performed (p. 270). But she had not yet worked out the implications of these insights for her previous research on accumulation, employment and technical change. If the nature of the capitalist labour process is ignored, exploitation can formally manifest itself only in aggregate income shares. The wage and profit shares were important variables in Robinson’s own theoretical framework but, although she claims affinity with Marx in this regard, she rejected an important dimension of his analysis.

According to Robinson (1980e, p. 282), ‘Along with the broad historical and political arguments, there are a number of “models” in Capital, set out in terms of values’. She acknowledges that Marx’s decision to conduct his analysis in terms of values confers some practical advantages. For example, it allowed Marx to ‘think quantitatively’, without either having to worry about ‘an exact treatment of relative prices,’ or, more generally, ‘the problem of measurement’ (Robinson, 1980e, pp. 281–282). The obvious alternative, which is to measure quantities in terms of money, carries with it problems associated with disentangling real and nominal magnitudes as well as the complications that prices rarely, if ever, present themselves as equilibrium prices and hence often contain all sorts of ‘white noise’ that makes them singularly unreliable indicators of
economic forces. Labour values seemed to offer a promising way out: ‘If you
cannot use money, what unit of value do you take? A man hour of labour time.
It is the most handy and sensible measure of value, so naturally you take it’
(Robinson, 1980d, p. 268).6

Despite these advantages, Robinson believed that applied research conduc-
ted in terms of Marx’s system of labour values would face a number of
difficulties that would make further progress especially hard to achieve. For
example, in order to calculate the amount of value added over a specific period
of time in an economy, we cannot simply add up the total number of labour
hours performed. In order to obtain value added (net national income) in a
Marxian framework, it is also necessary to distinguish between productive and
unproductive labour, to settle on a method to quantify the value produced by
labourers with different levels of skill, and finally to recognize that there is a
difference between the actual quantity of labour performed in any line of
production and the amount of labour time socially necessary for the production
of those commodities. Furthermore, to find the value of total output it is
necessary to tackle the complex questions of depreciation and valuation of stocks
(Robinson, 1964, pp. 43–44).

A second set of concerns about the operational usefulness of the Marxian
framework relates to the point that labour time doesn’t neatly reflect the physical
flow of output or the physical output per man hour. With the productivity of
labour in continual flux due to changing workplace circumstances, measuring
output in terms of labour value is, as Robinson (1980a, p. 138) puts it, ‘to
measure with a piece of elastic’: ‘In terms of value, an hour is an hour. A
constant quantity of labour-time, year after year, produces the same value. But
who cares? What we want to know is how much stuff it is producing’ (Robinson,
1964, p. 44).7

These pointed criticisms are revealing. Although she was primarily a
theorist, theory for Robinson did not belong in a hermetically sealed environ-
ment. Her evaluation of theory ran in terms of whether that theory was able to
account for actual economic phenomena, and whether it could address economic
issues of social and political concern.

3. Effective Demand and Crisis

Keynes’s General Theory of Employment, Interest and Money (1936) addressed
the problem of effective demand in the short run, in which the capital stock,

6 Unlike Marx, Robinson was not especially interested in the question of the nature of money in
capitalism. That is to say, she was not a monetary theorist, and, as a result, she paid scant attention
to Marx’s discussion of money in Part I, Volume I of Capital his extensive but unpolished discussion
of financial capital in Volume III.

7 Significant progress has been made on a number of these issues within the Marxian framework;
see, in particular, Shaikh & Tonak (1994). Measurement of labour productivity and the physical flow
of output are, of course, problematic in themselves, quite apart from questions about the usefulness
of Marx’s value analysis. National income accountants, working squarely within an orthodox
framework, have in recent decades found their work greatly complicated by the rapid growth of the
service sector in advanced capitalist economies.
technology and the labour force are taken as given. Robinson was part of the famous Cambridge ‘Circus’ that discussed Keynes’s various drafts of The General Theory, and she played an important role in elaborating and defending his ideas from the outset of the Keynesian revolution. Reflecting back on that period, she noted that, while Keynes’s argument was confined to the utilization of resources already in existence, ‘it opened up the question of long-term accumulation’ (Robinson, 1980f, p. 1475). This became a central issue in Robinson’s own research, and her debt to Marx in this regard is substantial. In the aftermath of Keynes, Robinson observed, there has been an ‘infiltration of Marxian ideas into economic theory … . For a discussion of the questions nowadays found to be interesting—growth and stagnation, technical progress and the demand for labour, the balance of sectors in an expanding economy—Marxian theory provides a starting point where academic teaching was totally blank’ (Robinson, 1980c, p. 149). In other words, Keynes had created some intellectual space for Marx; in view of Keynes’s avowed antipathy to Marx, Robinson’s point is more than a little ironic. Marx was interested in long-run dynamics. What he wanted to explain were changes in productive capacity, technology, the labour force and employment. But all three volumes of Capital also contain discussions of short-run crises, and Robinson (1980c, p. 162) argued that Marx had in fact anticipated most of Keynes’s theory. But, ‘Keynes could never make head nor tail of Marx. … [H]e maintains that his new theory is going to cut the ground from under the feet of the Marxists. But starting from Marx would have saved him a lot of trouble’ (Robinson, 1980c, p. 96).

Kalecki developed a theory of effective demand independently of Keynes. Robinson recognized that Kalecki’s system was based on Marx’s reproduction schemes. These schemes, set out in Volume II of Capital (Marx, 1884, Part III), depict the delicate interconnections between output and demand in a two-class (workers and capitalists), two-sector (consumption goods and capital goods) model of the economy. Marx emphasized that although it is possible for exchange between the two sectors to occur in a proportion that would allow for smooth, continuous economic expansion, it is highly unlikely that the uncoordinated private production decisions of capitalists would be such as to achieve this delicate balance in practice. Failure to get the proportions right would result in sectoral imbalances, unsold goods and subsequent disruption of production. Robinson (1966, p. 48) is right to claim that Marx is not a crude underconsumptionist. However, influenced by the work of Keynes and of Kalecki, Robinson interpreted Marx’s reproduction schemes as pointing towards the view that the ‘maldistribution of consuming power is the root of the trouble,’ and she argued that Marx intended to work out a theory along those lines (Robinson, 1966, pp. 48–49).

It is at this point, however, that, according to Robinson, Marx falters and consequently fails to establish the short-run theory of effective demand. For if capitalists always invested the surplus in the production of capital goods, there need not be any demand shortfall. The actual level of investment spending,

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8 Robinson (1980c, pp. 95–96) remarked that ‘Kalecki had one great advantage over Keynes—he had never learned orthodox economics. … The only economics he had studied was Marx.’
however, undergoes short-run fluctuations and so a short-run theory of effective demand needs to ‘deal with the problem of the inducement to invest’ (Robinson, 1966, p. 50). The inducement to invest can be tied to the profit rate, but that rate, in turn, must be linked back to the level of consumer spending for the ‘maldistribution of consuming power’ to have its effect: ‘It is necessary, in short, to supply a theory of the rate of profit based on the principle of effective demand’ (Robinson, 1966, p. 50). Robinson argues that Marx did not take this final but crucial step because he had developed a different theory of the rate of profit, which is linked to the long-run dynamics of accumulation and the tendency of the rate of profit to fall (see Section 4 below). Thus, ‘The theory of the falling rate of profit is a red herring across the trail, and prevented Marx from running the theory of effective demand to earth’ (Robinson, 1966, p. 51). As a result, the theory of effective demand eluded Marx, and Kalecki had to show how it could be built up from Marxian foundations.\footnote{Robinson reports Sraffa’s teasing comment that she ‘treated Marx as a little-known forerunner of Kalecki’ (Robinson, 1966, p. iv).}

Robinson’s discussion of Marx and effective demand in the Essay, however, was not her final comment on this topic. She continued to reflect on the issues involved over the decades that followed. In particular, she continued to question whether the theory of investment referred to above was in fact the most appropriate one for a capitalist economy. For Robinson, the ‘problem of the inducement to invest’ remained paramount and not wholly resolved. For example, although investment is a crucial variable in a short-run theory of effective demand, investment may in fact be primarily determined by long-run structural considerations.

Robinson realized that this concern was in fact shared in some degree by Keynes, Kalecki and Marx. Keynes’s solution ultimately boiled down to the psychological influence of animal spirits. This did not satisfy Kalecki, who explicitly acknowledged that he was engaged in a ‘continuous search for new solutions in the theory of investment decisions’ (quoted in Robinson, 1980d, p. 90). New inventions, he argued, enhanced the prospects of future profits, and thereby operated as a spur to investment. Marx’s position was that the drive to accumulate, fuelled by capitalist greed and the pressures of inter-capitalist competition, would compel capitalists continually to reinvest. In her assessment of Marx, Kalecki and Keynes, Robinson finds much that is persuasive in Marx’s approach. Marx’s explanation of the inducement to invest is an important element in his theory of crisis, which he situates in a dynamic context of accumulation and technical change. Robinson’s keen interest in these topics is explored in the next section.

4. Accumulation, Technical Change and Crisis

Marx argued that economic crises, conceptualized as severe disruptions of the process of accumulation, were inherent features of the capitalist economy. Since the completion of the circuit of any individual capital can be jeopardized by a host of obstacles and unforeseen developments, and since the failure of a single
capital to complete its circuit carries potentially adverse consequences for other capitals, numerous factors can precipitate a crisis. Furthermore, Marx also identifies an important systemic element in capitalism, which increases the susceptibility of the economy to crisis: in the Marxian framework, accumulation itself will, by inducing continual changes in the conditions of production, result in a tendency for the rate of profit to fall. The key analytical concept here is the organic composition of capital, whose rise, consequent to the ongoing transformation of the conditions of production, results, *ceteris paribus*, in a secular decline in the rate of profit.

Robinson viewed the organic composition of capital as a central concept in the Marxian framework along with the rate of exploitation and the rate of profit. But she was not satisfied with Marx’s definition of this concept. The organic composition of capital, \( c/v \), refers to the ratio of constant capital (the means of production, raw materials and semi-processed goods used in the production process) to variable capital (the value of labour power). Robinson’s concern is whether \( c \) and \( v \) are to be conceptualized as flow variables (as would be the case when the value of gross national output is represented as the sum of \( c + v + s \), where \( s \) stands for surplus value),\(^{10}\) or in terms of the stock of capital (Robinson, 1980b, pp. 20–22). In her reading of *Capital*, she noted that Marx was not always consistent in his use of these terms. But since the concept of the organic composition of capital is a crucial element of Marx’s analysis of accumulation and crisis, she thought it important to come up with a coherent notion of the organic composition:

Marx thought of the stock of capital as consisting of two parts: one part was the physical means of production and the other part somehow represented labour employed, organic composition of capital being the ratio between them, but there does not seem to be any way of representing this in his notion as \( c/v \).

An alternative definition of organic composition is ‘the ratio of dead to living labour’, that is the quantity of labour embodied in the stock of the means of production, required for a particular technique, per man employed on current production. Here, as we shall see, we can find a clue to guide us through the mazes of ‘capital theory’, but it has to be handled with care. (Robinson, 1980e, p. 263)

These remarks indicate that Robinson recognized two distinct conceptual issues regarding the interpretation of \( c/v \) as the organic composition of capital. The first issue is whether the share of final output corresponding to the values of \( c \) and \( v \) is equivalent to the respective components in the ratio defining the

\(^{10}\) Note that gross national product as used here refers to the value of output as the sum of constant capital used up in the production process over the time period considered, the variable capital expended as payment to productive workers and surplus value created (i.e. \( c + v + s \)). This is not the same as conventional notions of national output as measured by GDP. In the Marxian framework, the constant capital, \( c \), includes the value of raw materials and intermediate goods used up in the production process, as well as the value of the depreciation of the fixed capital stock. A closer approximation to the conventional notions of GDP would, in Marxian terms, be equal to \( (v + s) + (\text{depreciation}) \). \( (v + s) \) represents value added, and (abstracting from indirect business taxes and net investment income from non-residents) is analogous to net national income at factor cost.
organic composition of capital. In general, these values are not the same. In raising the issue, Robinson identifies another aspect of the qualitative difference in Marx’s analysis as it is laid out in Volumes I and III of *Capital*. In Volume I the constant capital component of a commodity’s value represents the values of the raw materials and intermediate goods that are transferred to the product, as well as that portion of the fixed capital stock that is also transferred to the product as a consequence of depreciation. In this case, the ratio \( c/v \), insofar as it refers to the constituent elements of value embodied in the final commodity, can be conceptualized in terms of flow variables. Marx wants to establish that changes in the productivity of labour will, in general, alter this ratio, and the portion of the value of any commodity that represents newly-created value \((v + s)\) tends to fall over time. Marx’s objective in Volume III is different. In Parts II and III of this volume, he is expressly interested in the formation of the general rate of profit and its long-term tendencies. As is well known, in Part II, he assumes different \( c/v \) ratios for different industries. Together, \( c \) and \( v \) comprise the capital advanced for which the capitalist demands a return. If all the constant capital is used within a single period, the \( c/v \) of the capital advanced is equal to the \( c/v \) contained in the final product. However, as Marx (1894, pp. 156–160) points out, when fixed capital is present it will probably have a productive life that lasts beyond a single production period. Consequently, the \( c/v \) of the capital advanced will differ from the \( c/v \) of the product. Marx uses the notion of the organic composition of capital in this section, and in Part III, to refer to the capital advanced, since it is with respect to the latter that the capitalist strives to claim his aliquot share of the total mass of profit. Robinson thus correctly rejects the ratio \( c/v \), conceived as a ratio of output flows, as a measure of the organic composition of capital and concludes that the significance of the ratio is to be found in terms of the composition of what Marx (1884, p. 28) refers to as productive capital.

Marx recognized the difficulties involved in obtaining an unambiguous conceptual grip on the form that the stock of productive capital actually takes. The problem, insofar as it concerns trying to quantify a heterogeneous stock of machines, equipment, raw materials and labour power while allowing for the possibility that their individual values may change, is analogous to many of the issues raised in the notorious capital controversy that bedevilled neoclassical economics and in which Robinson played an important part. Marx’s solution was to introduce the concepts of the technical composition of capital (TCC) and the value composition of capital (VCC), along with the organic composition of capital (Marx, 1867, p. 574; 1884, pp. 145–146). Marx’s TCC conceptualizes this stock of capital in terms of its physical elements, or use-values.\(^{11}\) Robinson, as indicated in the remarks quoted above, realized that the ratio \( c/v \) is problematic, so she opts for the ‘dead to living labour’ ratio. Since dead labour refers to the ‘labour embodied in the stock of the means of production,’ the labour values involved are, in effect, ‘old’ values, so this measure abstracts from the fact that ongoing changes in the conditions of production result in a change in the current

\(^{11}\) As noted by Simon Mohun (1983, p. 356), ‘there is no way in which heterogeneous means of production and concrete labour can be measured,’ so the ‘TCC is purely a theoretical ratio ….’
labour values of existing capital goods. The ongoing revolution in values is expressed in the VCC, but the old labour values are what Marx is referring to in his use of the OCC (Mohun, 1983, p. 356), and this is in fact the concept that Robinson adopts.

With this definition in hand, Robinson sought to assess Marx’s theory of crisis. In presenting the implications of a rising organic composition, Marx initially assumed a constant rate of exploitation, $s/v$\textsuperscript{12} In that case, changes in the production process will increase the TCC and, insofar as the value composition of productive capital reflects this change, the OCC will increase as well. This rise in the OCC will lower the rate of profit. Robinson describes these changes in the sphere of production as capital-using (labour-saving) technical progress (Foley & Michl, 1999, call it Marx-biased technical change). In the mainstream literature, labour-using (capital-saving) technical progress and Hicks-neutral (factor-augmenting) technical progress\textsuperscript{13} are also real possibilities. Since technical change is usually deemed exogenous in orthodox theory, there appears to be no a priori reason to assume capital-using technology rather than one of the other two possibilities. Robinson seize upon this to point out that, in Marx’s framework, neutral or labour-using technology would imply no crisis at all: ‘If there is a fundamental defect in capitalism it must have deeper roots than in a mere accident of technique’ (Robinson, 1980a, p. 143).

For Marx, however, the character of technical change in capitalism was not at all a mere accident, but was inextricably linked to the nature of the labour process. Production is undertaken by wage labour but it is under the control of capital. The purpose of production is the production of surplus value, the extraction of unpaid labour by capital. The class-based structure of capitalism is defined by these relations of production and, as a result of their inherent tensions and struggles, the production of surplus value is never a smooth or unproblematic process. In Marx’s analysis, technical change is a means by which capital attempts to increase its control over the labour process and thereby increase the production of surplus value. The development and implementation of new techniques by capital are thus designed to increase the productiveness of labour, facilitating the substitution of labour by machinery. Thus, technical change in capitalism will have an inherent capital-using, labour-saving bias.

As noted in Section 2 above, Robinson paid relatively little attention to the labour process, so it is not surprising that she failed to investigate this essential Marxian link between the labour process and technical change. Robinson’s

\textsuperscript{12} Robinson argued that, with technical progress that increased the productivity of labour, the assumption of a constant $s/v$ could not be reconciled with an assumption of constant wages. She noted that, in Volume III, Marx did in fact conduct his analysis on both of these assumptions, and thus was faced with a stark contradiction (Robinson, 1966, pp. 36–39). Marx opened his discussion of ‘The Law of the Tendency of the Rate of Profit to Fall’ by ‘Assuming a given wage and working day … .’ (Marx, 1894, p. 211). Since his analysis is conducted in value terms, it is the value of the wage in terms of labour hours which he assumed to be given; thus the value of labour power is constant, but real wages are rising. Robinson (1966, pp. 36–39) argued that the contradiction stems, ironically, from the fact that Marx conducted his analysis in value terms.

\textsuperscript{13} Hicks-neutral technical change occurs when there is a proportionally equal increase in both capital and labour productivity.
neglect of this link bears striking resemblance to a similar weakness on the part of her Cambridge colleague Maurice Dobb in his interpretation of Marx’s economics.¹⁴ Like Dobb, Robinson maintained that the character of technical change in capitalism need not display any intrinsic bias.

Two other important theoretical concerns were raised by Robinson about the connection between the organic composition of capital and the rate of profit. The first returns to the question of the impact of technical change on the rate of profit. In her 1978 essay on ‘The Organic Composition of Capital’, Robinson considers another case where technical change increases the OCC and the productivity of labour. In the conventional case of Marx-biased technical change, the increase in the OCC and output per worker would also imply a decrease in output per unit of constant capital (i.e. a decrease in ‘capital’ productivity). Robinson, however, points out that it is possible for technical change to raise the output to a constant capital ratio as well as increasing labour productivity and the OCC. In this case, if real wages are constant, profit rates will rise. According to Robinson, this is one of the main tendencies that counteract the tendency for the rate of profit to fall, and it is one that, in her words, Marx ‘failed to notice’ (Robinson, 1980e, p. 272). She also indicates that even Marx-biased technical change (i.e. where the output to constant capital ratio falls) with constant real wages will imply higher rates of profit. Of course this is essentially an endorsement of Okishio’s (1961) point that technical change that raises the OCC will require an increase in real wages to cause a fall in the rate of profit. Robinson (1980e, p. 270) acknowledges that ‘Marx was correct in saying that, if the rate of exploitation (in terms of value) was unchanged, a rise in the organic composition would lower the rate of profit’, but this of course implies that the real wage would be variable.¹⁵

Robinson’s second point was that the organic composition of capital can vary not only due to changes in the technique of production, but also as a result of fluctuations in the level of capacity utilization (Robinson, 1966, p. 41). She is quite right to regard Marx as generally assuming a constant, and presumably full, level of capacity utilization. The models of Keynes and Kalecki, on the other hand, designed as they were for the analysis of short-run fluctuations in economic activity, were both premised on variations in capacity utilization. In view of her close association with Keynes and Kalecki, it is not surprising that Robinson should be cognisant of the issue of capacity utilization while thinking about Marx. For Robinson, this additional influence on the organic composition

¹⁴ See Shaikh (1978, pp. 236–238). Shaikh summarizes his objections to Dobb’s position as follows: ‘the basic drive towards automation arises independently of movements in real wages: out of the very fact that capital controls the labour process. … The tendency towards substitution of machinery for living labour, which Dobb sees as merely one of many equally likely controlled outcomes, is according to Marx an absolutely necessary outcome of the capitalist-labour process. … [A]utomation is both intrinsic to capitalism and is its dominant form of technical change. It is the technological expression of the social relations of production under capitalism’ (Shaikh, 1978, p. 238).

¹⁵ Assuming no change in the length of the working day, an increase in labour productivity in conjunction with a constant rate of exploitation implies no change in the value of labour-power, but it does imply that the real wage, measured in terms of the worker’s commodity bundle, rises. This could apply to a situation where workers routinely secure a share of the productivity gains that result from the application of the new technology in the production process.
of capital underscored the limitations of a model of accumulation in which variations in the OCC were deemed to reflect only changes in technology and the valuation of $c$ or $v$.

Robinson regarded these points as technical emendations to Marx’s theory of the tendency of the rate of profit to fall. Moreover, she was sceptical about the empirical validity of some aspects of Marx’s crisis theory. In particular, she was not convinced that the organic composition of capital tends to rise over time:

So far as the evidence goes, it does not seem to suggest that in developed industrial economies there is any clear and continuous bias of accumulation to the capital-using side. When capitalism invades a peasant economy, certainly, it introduces capital-using techniques. But then, by the very same process, it is reducing employment and raising output per head, so that the rate of exploitation is raised and there is no reason to expect the rate of profit on capital to be falling—rather the reverse. (1966, p. xiii)

Marx may have been correct to claim a rising organic composition in his own era but, for the second half of the twentieth century, Robinson (1980e, p. 39) claims that the organic composition is more or less constant. Without a rise in the organic composition, the rate of profit would not be expected to fall, and this is indeed what the evidence says (Robinson, 1980c, p. 177).

It is not the intent of this paper to evaluate the empirical record on Robinson’s or Marx’s stylized facts. Despite her reservations about some of its particulars, Robinson considered Marx’s approach to the investigation of the long-run tendencies of capitalist economies to be a powerful one. Although she believed that Marx’s labour theory of value was difficult to ‘operationalize’, this problem did not, in Robinson’s mind, apply to his theory of accumulation and crisis. She argued (Robinson, 1980e, p. 297) that ‘The broad sweep of Marx’s analysis of accumulation and the development of crises provides the basis for understanding the history of capitalism ….’ Testable hypotheses could easily be derived from it and then tested against the empirical record. Some elements, such as Marx’s argument that the organic composition of capital tends to increase and hence depress the rate of profit, were not borne out by the evidence. But Robinson considered the broad analytic framework to be sufficiently robust to permit the replacement of an assumption of Marx-biased technical change with alternative assumptions that had stronger empirical grounding. With this emendation, the important analytical work could then proceed.

5. Conclusions

This paper offers no definitive answer to the question of whether Joan Robinson merits a spot in the pantheon of Marxist economists. Nevertheless, Robinson’s intellectual connection to Marx was close, sustained and constructive. She considered Marx to be a great economist but not a flawless one. Her many critical comments on Marx’s errors, ambiguities and limitations were ultimately

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16 It is worth noting that all of Robinson’s empirical claims cited here were made in the mid-1960s, by which time the rate of profit in the advanced capitalist nations had recovered somewhat from its low pre-war level. The 1970s and 1980s tell a different story; see, for example, Brenner (1998).
intended to show how these flaws might be rectified or sidestepped, so that real progress could be made on the issues that were important not only to Marx, but to Robinson and other socially concerned economists. Over the better part of four decades, Robinson drew heavily on Marx’s ideas as she formulated and reformulated her own constructive contributions to economics. Robinson was fortunate to have had personal contact with such giants as Keynes, Kalecki and Sraffa. It is not surprising then that elements of their work shaped her own thinking. But Marx’s influence dominates, and it is into a Marxian vessel that Robinson poured what for her were the constructive elements of Marshall, Keynes, Kalecki and Sraffa: ‘With the light that Sraffa has thrown on the theory of value and Kalecki on the process of realization of the surplus, we can develop a complete system, not of neo Marxism but of intelligible Marxism, and, what is more important, adapt it to the analysis of contemporary problems of capitalism, socialism and so-called “development”’ (Robinson, 1980e, p. 253).

References


