The Cambridge Contribution to the Revival of Classical Political Economy
Nuno Ornelas Martins
Azores University and Centro de Estudos de Gestão e Economia

Abstract
The idea of a revival of political economy has been pervasive throughout the development of Cambridge economics. Thomas Robert Malthus, who was seen at some point by John Maynard Keynes (1933[1973]) as “the first of the Cambridge economists”, claimed he was recovering Adam Smith’s approach, against David Ricardo’s development of it which had, according to Malthus, led to a distortion of Smith’s perspective. However, Malthus did not establish a school of thought at Cambridge. This was done by Alfred Marshall, who established in 1903 the Cambridge Faculty of Economics and Politics. And like Malthus, Marshall also thought he was recovering the essence of Adam Smith’s thought, and also of classical political economy. So much it is so that Thorstein Veblen called Marshall’s approach ‘neo-classical’ economics, in order to distinguish it from the ‘Austrian’ approach of other marginalists like Carl Menger.

Marshall believed he was continuing classical political economy as developed not only by Smith, but also as continued by Ricardo and John Stuart Mill. It may seem that Marshall was already in contradiction with Malthus, who wanted to recover Smith’s analysis against Ricardo’s alleged distortion of it. But in truth, what happened is that in Marshall’s days, ‘Ricardian’ economics meant something very different from what Ricardo himself thought, so much so that we may say that in Marshall’s days Malthus would have been more of a ‘Ricardian’ than Ricardo himself. The supply and demand analysis that Marshall develops is fully in line with Malthus, and with Malthus’ early criticism of Ricardo’s emphasis on cost of production as the ultimate determinant of value. Malthus, like Marshall later, focused on supply and demand forces as the ultimate determinants of value, unlike Ricardo who focused on cost of production.

But Marshall’s interpretation of Ricardo was just the standard interpretation that had been developed throughout the nineteenth century in Britain. The difference between Ricardo and the nineteenth century ‘Ricardians’ was elaborated by Karl Marx, and became again clearer after Piero Sraffa provided his own interpretation of Ricardo, which clearly showed the difference between Ricardo’s study of production and the ‘neo-classical’ supply and demand analysis. In so doing, Sraffa interprets Ricardo in a very different way from Marshall, who in turn had interpreted Ricardo in a very
different way from Malthus. And just like Marshall’s approach generated an important stream of thought in Cambridge, so did Sraffa’s approach, combined with John Maynard Keynes’s and Michal Kalecki’s, lead to the emergence of another central stream of economic thought within the Cambridge tradition, namely Post-Keynesianism, which gained prominence during the Cambridge controversies in the theory of capital, in which authors like Joan Robinson and Piero Sraffa criticised the marginalist framework, developing the classical theory of value according to their own interpretation of it – see Harcourt (1972, 1976) and Cohen and Harcourt (2003, 2005).

The Marshallian neoclassical approach, and the Post-Keynesian approach, emerge thus as attempts to a revival of classical political economy. But these two traditions, which are the two key branches of the Cambridge economic tradition, are very different traditions. In fact, both advance incompatible and opposing interpretations of classical political economy. But both aim at recovering classical political economy, each in its own way. The revival of classical political economy is thus a recurring theme in the Cambridge economic tradition, which influenced its two key streams of thought. In this chapter I intend to address the Cambridge contribution to the revival of classical political economy, a contribution which was most significant not just for the revival of classical political economy, but also for the development of the Cambridge economic tradition itself.

**Keywords:** Classical Political Economy, Cambridge tradition, neoclassical economics

**JEL classifications:** B10, B20, B41
Classical political economy

Before addressing the various attempts to revive classical political economy at Cambridge, we must first understand what classical political economy is. The term “classical” political economy was first used by Karl Marx, in order to distinguish the contributions of the classical economists from the contributions of the “vulgar” economists which, according to Marx, were transforming the scientific analysis of classical political economy into a superficial analysis of commonplaces and worse, a mere apologetic for the existing bourgeois economy and society.

For Marx, a scientific study of underlying causes must look beyond supply and demand forces, at the underlying conditions of production, when explaining value (Ricardo made the same point to Malthus). Thus, for Marx the classical economists were those that looked at the process of (re)production in order to find the causes of value, determined in terms of cost of production. Vulgar economy, in turn, does not go beyond supply and demand analysis (which Marx saw as mere superficial phenomena), and takes it to be the ultimate determinant of value.

We can identify William Petty, Richard Cantillon, François Quesnay, Adam Smith and David Ricardo as the more influential authors who fit into Marx’s definition of classical political economy. Petty looked at labour and land as the ultimate causes of wealth. For Petty, the cost of a commodity could be defined in terms of the land and labour that is necessary to produce it. However, Petty also noted that we can find a relationship between labour and land, by finding the quantity of land which is necessary to provide sustenance to a labourer for a given quantity of time. This means we can measure cost ultimately in terms of quantity of land necessary to produce a commodity (where this quantity of land includes a part which is necessary to provide food for the labourer).

Cantillon agreed with this procedure of converting labour into land, which provided an objective measure of cost in terms of the quantity of land. Quesnay and the Physiocrats also adopt an objective conception of value, focusing on land. In the Tableau Economique, Quesnay provides the first systematic account of the circular process of economic reproduction. For Quesnay and the Physiocrats, agriculture is the only activity which generates a surplus, while other activities merely reproduce the capital they use. In Quesnay’s Tableau, the surplus is consumed by the landlords, who do not contribute to the production process. The surplus is then the part of production which is not necessary for the reproduction of the existing economic system. According
to Quesnay, prosperity occurs when the surplus is used mainly in productive activities, and decadence comes when the surplus is used mainly in luxurious consumption.

Adam Smith leads to an important change in the theory of value, switching the emphasis from land to labour. For Smith, the value of a commodity is measured ultimately in terms of human labour. Because Smith focuses on labour, rather than land, he sees all sectors where productive labour is performed as sectors that generate a surplus, rather than seeing agriculture as the only sector where a surplus is produced, as Quesnay did. Smith concedes that agriculture is the most productive activity, and he notes that this fact led Quesnay to the exaggerated claim that agriculture is the only productive activity, that is, the only activity that produces a surplus above what is necessary for the reproduction of the existing economic system. But Smith notes that other sectors also produce a surplus. Like Quesnay, Smith believed that the economy and society will flourish when the surplus is used in productive activities, and decadence arises when the surplus is used in luxurious (non-productive) consumption.

However, Smith’s analysis of cost in terms of human labour was somewhat ambiguous, leading to opposing interpretations. The difference at stake here is between commanded labour, which is how much labour a given commodity can purchase, and embodied labour, which is how much labour was spent in the production of the commodity. Ricardo argued that value consisted of embodied labour. Malthus, in contrast, argued that Smith’s measure of cost was commanded value. In so doing, Malthus claimed to be recovering Smith’s approach against Ricardo’s alleged distortion of it.

The fact that Smith argued both for commanded labour and embodied labour is connected to the difference between the measurement of value, where Smith used commanded labour, and the cause of value, which can be taken to be embodied labour. To understand the debate between Ricardo and Malthus, we must understand their different approaches to the theory of value, which are connected to the fact that Malthus focused on the measurement of value, while Ricardo wanted to go beyond the measurement of value, to its underlying causes, as Marx did more explicitly.

According to Ricardo, the value of the commodity tends to the cost of production, which depends upon embodied labour. Ricardo (1817) presupposes an economy where there is no full employment of labour, that is, where labour is available for further production. Ricardo argues that if demand drives the price above the cost of production, the quantity brought to the market can be increased using the labour which
is available for further production. If demand drives the price below the cost of production, the quantity brought to the market can be reduced until the price reaches the cost of production.

For Ricardo, as for Smith, the cost of production includes the surplus, since it is constituted by wages, profits and rent. Thus, the cost of production is the natural price. The market price, which is the price that is actually observed, is permanently gravitating towards the natural price, that is, towards the cost of production, due to the activity of supply and demand. But for Smith and Ricardo, supply and demand forces merely explain the gravitation of the market price which tends towards or fluctuates around the natural price. Smith defined effectual demand as the demand of those who can pay the natural price, and are willing to do so. This means that the natural price is not determined by supply and demand. Rather, the natural price is a determinant of effective demand, since effective demand is defined in terms of the natural price itself. The natural price, in turn, is explained in terms of the cost of production.

Malthus (1820), however, argued that the cost of production of a commodity should be measured in terms of commanded labour which is, remember, how much labour can be purchased using a given commodity. Malthus notes that Smith himself had made reference to commanded labour as a measure of value. But the value that a commodity can command in a market is determined precisely by supply and demand forces. In fact, Malthus noted that the cost of production is, for Smith, constituted in terms of the sum of wages, profits and rent required to produce one unit. And Malthus argued that each of these components of the cost of production is, in turn, explained by supply and demand forces. For Malthus, supply and demand are the ultimate determinants of value and wealth, and he argues that if we follow this line of reasoning, this must also be the case in Smith’s analysis.

Ricardo, in turn, was critical of Smith’s ambiguity concerning commanded labour and embodied labour, and argued that the cost of production must always be interpreted in terms of embodied labour, that is, how much labour-time was actually consumed in the production of a commodity. This means that instead of looking to market exchange in order to find commanded labour, as Malthus did, Ricardo looked at the production process in order to find embodied labour.

Moreover, Ricardo did not explain wages, profits and rent in terms of supply and demand forces. For Ricardo, wages were set in terms of the subsistence level. Here Ricardo accepts the so-called Malthus’s principle of population (which was also present
in many other previous authors like Smith, Steuart and Cantillon) according to which the increase in population and the ensuing competition between workers leads wages towards the subsistence level. But the subsistence level did not denote merely the minimum threshold for bare physical survival for the various classical authors. Rather, the subsistence level constitutes the standard of living which is customary and acceptable according to existing habits and conventions. The level of wages is thus set by institutional factors.

The surplus is defined as the difference between total production and wages, each measured in terms of embodied labour. For Smith, the surplus is the excess of what masters receive at the end of each production period over their advances (wages, tools, raw materials, and the like) at the beginning of the period of production. Ricardo develops this scheme, defining profit as the surplus value obtained in the worst land. Rent is the difference between value obtained in a given land, and the value obtained on the worst land.

Ricardo did not take wages, profits and rent to be independent factors, which can be merely added up in order to obtain the natural price. Since profits are the difference between the value of production and the value of wages, the latter set by institutional factors, then an increase in wages will decrease profits. Wages and profits are thus interdependent. Moreover, if the worst land increases its productivity, while other lands maintain their productivity, profits increase and rent decreases, since rent is the difference between the productivity of these lands (this simple example presupposes that the worst land does not cease to be the worst land in virtue of this improvement, but if it does the interdependence between rent and profits just becomes even more complex).

We can then see that while Malthus looks at market exchange, and the interaction between supply and demand, as the ultimate determinants of value (of commanded labour), Ricardo looks at the production process as the ultimate determinant of value (measured in terms of labour embodied in the production process). Ricardo criticised Smith’s lack of clarity on these matters, and developed Smith’s approach in an attempt to make it a coherent one. Malthus felt that in so doing, Ricardo was moving away from Smith’s thought. Thus, Malthus presents his contribution as a return to Smith, away from Ricardo’s developments of Smith’s thought. Rightly or wrongly, Malthus believed himself to be Smith’s most faithful disciple.
Malthus’s contribution is the first attempt at a revival of Smith’s thought (or what Malthus believed to be Smith’s thought) by an influential author associated with Cambridge. If we follow Keynes’s (1973) acknowledgement of Malthus as “the first of the Cambridge economists”, we can then see that the Cambridge economic tradition seen in such broader terms starts as a revival of Smith’s classical analysis.

**Vulgar economy and the marginal revolution**

As Anthony Waterman (1996) notes, one could go further back than Malthus as, Waterman argues, Keynes eventually did, taking into account chapter XI of William Paley’s 1785 book *Principles of Moral and Political Philosophy*. In this chapter, Paley addresses the connections between agriculture and trade, noting how a surplus is generated in agriculture, which sustains those who engage in trade and produce articles to be sold to those engaged in agriculture. In this sense, it is the agricultural surplus which leads to a given level of population living under a given standard of living, as it was the case for the classical authors from Petty to Ricardo, and for Malthus too, despite of the differences between Malthus and Ricardo on the theory of value.

The seeming differences between Malthus and Ricardo can be traced back to Smith’s ambiguities, which Ricardo sought to clarify into a coherent theory where value is explained in terms of the process of production. Smith, by asserting that value comes from human labour without clarifying whether it was commanded labour or embodied labour, moved away from a strict and objective analysis of the production process which had been developed by Petty, Cantillon and Quesnay. Ricardo focused again on the production process and on agriculture as the key to an understanding the surplus in objective terms, as Petty, Cantillon and Quesnay had done.

However, the economists who claimed to be the successors of Ricardo, often termed “Ricardian” economists, abandoned the attempt to measure value in objective terms. Even before that, Jean-Baptiste Say had already interpreted Smith differently than Ricardo, resorting to supply and demand analysis to determine value as Malthus did. John Stuart Mill gave an important step into the consolidation of the idea that supply and demand are the ultimate determinants of value, as Malthus had argued against Ricardo. Nevertheless, Mill seemed to believe he was following Ricardo, like many other “Ricardian” economists throughout the nineteenth century who explained value in terms of supply and demand.
Moreover, the middle of the nineteenth century witnessed also the introduction of subjective elements in the measurement of the cost of production. William Nassau Senior argued that interest of capital is the remuneration for the abstinence of someone who decides to save and invest in order to obtain a future income, abstaining from present consumption. John Elliot Cairnes stresses that this abstinence is a sacrifice, on equal terms with the labour of the worker. For Senior and Cairnes, the cost of production is measured not only in terms of human labour, but also in terms of abstinence (the “sacrifice” of waiting).

Senior outlines four postulates from which economic laws can be deduced. The first of those postulates is that human beings attempt to obtain additional wealth with as little sacrifice as possible. The psychological notion of sacrifice takes thus centre stage in economic analysis in the middle of the nineteenth century. With the introduction of subjective elements into cost of production undertaken by Senior and Cairnes we are thus removed far away from the analysis of economists from Petty to Ricardo, where costs were measured in terms of objective factors that can be observed by looking at the production process, such as the quantity of land necessary for production (stressed by Petty, Cantillon and Quesnay) or the quantity of labour embodied in the production process (stressed by Ricardo).

When the cost of production starts to include subjective elements, it becomes impossible to measure it by looking only at the production process. Rather, we must look to market exchange to find how subjective aspects are being valued in market exchange. In this context, supply and demand start to be seen as the ultimate determinants of value and wealth. It is simply not possible to measure value in objective terms (in terms of objective quantities of land and labour) once the cost of production includes subjective elements. The analysis developed by Mill, Senior and Cairnes is thus much more in line with Malthus’ supply and demand approach, rather than with Ricardo’s objective analysis of the process of production (by Mill I mean always John Stuart Mill, since his father James Mill seems to have adopted a more objective analysis, more in line with the classical authors from Petty to Ricardo).

The analysis of Malthus, Say, Mill, Senior and Cairnes constitutes what Marx called “vulgar economy”, that is, a superficial study of supply and demand which, unlike classical political economy, does not go into the underlying causes that are to be found in the process of production. According to Marx’s distinction, “classical political economy” is the period from Petty to Ricardo, as noted above, and “vulgar economy” is
the period from Malthus to Cairnes. In both periods we find ambiguous figures, like Adam Smith, who was, however, more in line with the classical analysis, and John Stuart Mill, who was more in line with the vulgar analysis despite his hesitations.

It is not only in the study of supply, but also in the study of demand that subjective elements are brought into economic analysis throughout the nineteenth century. During this period, Augustin Cournot formalised supply and demand analysis through supply and demand curves. And authors like Jules Dupuit and Hermann Heinrich Gossen studied demand in terms of subjective preferences, introducing essential aspects of the notion of marginal utility.

However, it is only in the 1870’s that value starts to be measured in terms of marginal utility, within the so called ‘marginal revolution’ undertaken by Carl Menger, Stanley Jevons, Léon Walras and Alfred Marshall. The ideas advanced by these authors were not very different from the ones advanced by Dupuit and Gossen. And the differential method recommended by them (with the exception of Menger who did not advocate the use of mathematical methods) had already been used in order to address the theory of value by Cournot (who had a great influence on Walras and Marshall) and by Johann Heinrich Von Thünen (who Marshall acknowledges as a central influence in his own work). But it is only in the 1870s that we find a widespread acceptance of the marginalist ideas.

**The development of Marshall’s method and theory**

The marginal revolution was perceived as a break with classical political economy. Following Marx’s distinction, however, we may question whether the break with classical political economy (as defined by Marx) occurs actually earlier, when the “classical” analysis of value in terms of the production process is substituted by the “vulgar” study of supply and demand, which emerged within “vulgar economy”, and was later developed by the marginalists.

This would then explain why Marshall sees no great difference between his analysis, and the analysis of the authors who came before him like John Stuart Mill. In Marshall’s days, the term “classical” was employed in order to denote the whole period from Smith to Cairnes, rather than to designate the period from Petty to Ricardo. That is, classical political economy, as defined by Marx, was not distinguished from vulgar economy, as defined by Marx. Rather, both the classical and the vulgar approach were subsumed under the category “classical”, which corresponded to what Marx called
“vulgar” economy, since Smith and Ricardo were interpreted in a way that made them conform to “vulgar” theory. And the neglect of the contributions of Petty, Cantillon and Quesnay, who clearly had an objective conception of value, while focusing on Smith, who had a more ambiguous conception, only contributed more to the failure to distinguishing classical theory from vulgar theory.

Thus when the term “neo-classical” economics emerges, used by Thorstein Veblen (1900), it is used to designate Marshall’s approach, which Veblen saw as an example of the best work undertaken in continuity with the “classical” tradition from Smith to Cairnes. Marshall (1890) himself presented his contribution as being in continuity with the tradition of Smith, Ricardo and Mill, but one may wonder to what extent he really believed in this – Harcourt (1981: 251) notes that many scholars thought that “Marshall was foxing on this”. Furthermore, if we distinguish between “classical” and “vulgar” economy using Marx’s criterion, we are then led to the conclusion that Marshall continues Malthus’ supply and demand analysis rather than Ricardo’s analysis. Just as Malthus saw himself as a restorer of what he saw as Smith’s supply and demand analysis, so did Marshall also see himself as a continuator of what he saw as the “classical” supply and demand analysis.

Marshall was not merely an economist who happened to be at Cambridge at some point in his life, as Malthus. Rather, Marshall played a decisive role in the foundation of Cambridge economics as a consistent and continuing tradition which rejected the widespread use of mathematics in economics, and provided an alternative to Jevons’s marginalism. But whoever we take to be the first influential economist of the Cambridge tradition, Malthus or Marshall, we can agree that both stressed continuity with what they believed to be classical political economy stemming from Smith. Both Malthus and Marshall believed their approach was some sort of a recovery of Smith’s classical approach, against the distortions it had suffered in other contributions. Malthus chief target here was Ricardo, as noted above, and Marshall’s chief target was the marginalists who stressed discontinuity with the classics.

Where Ricardo’s (1817) text seems to contradict the supply and demand approach that Marshall develops, Marshall (1890) simply notes that this is the consequence of Ricardo’s “careless” writing. So Marshall does not find great differences between Ricardo and Malthus, taking both to be within the supply and demand analysis Marshall develops. But Marshall’s development of supply and demand analysis went much further beyond the stage in which Malthus, Say, Mill, Senior and
Cairnes had left it. Marshall was an extraordinarily competent mathematician, trained in the Cambridge Mathematical Tripos which maintained a geometrical approach to mathematics much different from the symbolic approach that was dominant elsewhere in the Continent – I discuss this issue in more detail in Martins (2013, chapter 5). Marshall’s use of mathematics enabled him to address important philosophical problems he perceived early on, with important implications for supply and demand analysis.

An important philosophical problem was the problem of internal relations. Internal relations can be defined as relations which are constitutive of the related entities – see Tony Lawson (2003). Internal relations are a central notion within the philosophy of Friedrich Hegel, which greatly influenced Marshall and the Cambridge atmosphere of Marshall’s days. The emergence of the twentieth century school of analytical philosophy within Cambridge, led by Bertrand Russell and G. E. Moore, was to a large extent a reply to Hegelian philosophy, against the idea of internal relations, or at least against the idea that all relations are internal.

Russell thought that if everything is connected to everything else, we can never gain exact knowledge of a given component without knowing also the other components of reality which are internally related to it, and thus constitutive of it – I discuss this issue in more detail in Martins (2013: chapter 9). But this means that exact knowledge is impossible, since we can never grasp the whole as a whole (whole *qua* whole), since that would mean having full knowledge of everything. Thus, Russell advocated that relations must be external, that is, not constitutive of the related components, which are then independent atoms. Russell’s logical atomism, which also influenced the young Ludwig Wittgenstein, was thus the rejection of Hegelianism.

Marshall, however, did not reject Hegelianism. Marshall tried instead to solve the problem of how to grasp knowledge of a given component of reality, while accepting that everything is internally related. Walras’s general equilibrium analysis focused on the economic system as a whole. However, Marshall wanted a method that not only takes into account internal relations, but is also suitable and adequate for a practical analysis of concrete problems. Marshall’s solution was the method of particular equilibrium analysis, or partial equilibrium analysis, as it is now called. Marshall’s partial equilibrium analysis allowed the analysis of a specific aspect of reality, rather than focusing on an abstract general equilibrium system as a whole. But it
raises the question of how can knowledge of a part of reality be achieved, if it is connected to everything else?

Marshall’s solution was to assume that everything else remains constant, for a time, in the famous pound of ceteris paribus. Marshall found the methodological justification for this assumption in the differential calculus of Newton and Leibniz, as he writes in Industry and Trade (Marshall 1919: 667-668). Marshall distinguishes the direct effects of a change from the indirect effects of a change. While in a case of direct effects A influences B directly, in the case of an indirect effect we have A influencing C, and it is C in turn which influences B. Marshall notes that as Newton and Leibniz had shown, in the case of small changes, a very small thing of a very small thing is actually a negligible thing. If A has a small effect in C, which in turn has a small effect on B, the overall effect of A on B will be negligible. Just as the product of two infinitesimal changes can be neglected, so can the indirect effects be neglected, in the pound of ceteris paribus, while focusing on the direct effects only. Using this method, Marshall could then obtain supply and demand curves for a specific market, while assuming everything else remains constant. Supply and demand curves are the exogenous data used for the mutual determination of prices and quantities under partial equilibrium.

Infinitesimal calculus, which Marshall grasped early on in his mathematical studies, provides Marshall with a solution to the philosophical problem of internal relations. Cournot’s principle of continuity and Von Thünen’s principle of substitution, which played a great role in Marshall’s supply and demand analysis, were also developed using infinitesimal calculus. By using infinitesimal calculus to solve the problem of internal relations, Marshall was following two of the economists he admired the most, Cournot and (Von) Thünen. Henry Sidgwick, who Marshall called his intellectual father and mother, and played a key role in the early development of the Cambridge economic tradition, also referred to the same idea in his unpublished writings – there is a manuscript written by Sidgwick mentioning this at the Wren Library, Trinity College, Cambridge; the manuscript has the reference Add Msc 96/2.

Of course, Marshall notes that as time goes by, the indirect effects may become very significant. Marshall’s method (or actually, Newton’s method, and Leibniz’s calculus) is the more appropriate the smaller is the time interval, which will make changes small, and indirect effects negligible. Marshall argues that supply and demand are the ultimate determinants of value in all periods, analogously to Malthus who
argued that supply and demand are the ultimate determinants of value not only for market prices, but also for natural prices. But Marshall did not put as much emphasis on partial equilibrium analysis of the long period through supply and demand as his successor, Arthur Cecil Pigou, did.

**Sraffa, Keynes, and the Post-Keynesian revival of classical political economy**

The Marshallian approach soon received criticisms within the Cambridge tradition. The most famous critiques of the Marshallian framework were made by Piero Sraffa, who came to Cambridge after publishing his critique, and John Maynard Keynes. Sraffa’s criticism was much more devastating than Keynes’s because it undermined not only Marshall’s theory, as Keynes did, but also Marshall’s method, something Keynes did not do, at least not as consistently as Sraffa did. Sraffa noted that Marshall’s method was developed with the problem of internal relations in mind, as we can see from Sraffa’s (D3/12/11/11) unpublished manuscripts kept at the Wren Library, Trinity College, Cambridge, where Sraffa discusses the passages from *Industry and Trade* mentioned above, where Marshall explains his method. Sraffa finds Marshall’s use of the method of Newton and Leibniz an intelligent, but fallacious effort.

Sraffa (D3/12/42/10, sixth proposition) argues that Newton’s method is not applicable to economics, and that Marshall must have been short of arguments to use such an unfair trick. The method Marshall adopted was used by Newton and Leibniz for the study of infinitesimal changes. But Sraffa notes that in economics, we do not deal with infinitesimal changes. Thus, we cannot rely upon the method of Newton and Leibniz, which presupposes them. In economics, we must consider not only the direct effects, but also the indirect effects, which are not negligible if changes are not infinitesimal.

In two famous articles, Sraffa (1925, 1926) shows that we cannot use supply and demand curves while assuming that everything else remains constant. Movements in the demand curve will lead to changes in the quantities of factors of production used. These are used also in other markets, leading to changes in the prices of the factors of production across several markets, and to changes in the supply curve of the market under analysis. We cannot assume that everything else remains constant, or that these effects are negligible, since we are not dealing with infinitesimal changes. Thus, supply and demand curves cannot be taken to be independent determinants of prices and quantities. And we cannot assume that one curve moves while the other curve remains
constant. Furthermore, changes in prices leads also to changes in the number of firms operating in the market, contributing to further changes in the supply curve, which cannot be known using only the information provided by the supply and demand curves.

What Sraffa’s critique implies is that Marshall’s method does not really solve the philosophical problem of internal relations, which had been perceived early on by Marshall, and by Cambridge philosophers like Russell, Moore and the young Wittgenstein. The problem of internal relations had been addressed in Cambridge in the early twentieth century by assuming that we could look at components of reality while assuming those components to be isolated from everything else. We can see this both in Marshall’s economics (and in the Cambridge economic tradition he founded), and in Russell’s and Moore’s philosophy (and in the Cambridge school of analytical philosophy they founded).

Sraffa rejected Marshall’s solution to this problem, and also influenced Wittgenstein’s later works, where Wittgenstein abandoned his early approach to this problem. Sraffa’s rejection of Marshall’s partial equilibrium analysis, together with Wittgenstein’s abandonment of his earlier logical atomism (which was, in turn, influenced by Frege and Russell), are connected to the problem of internal relations.

The solution Sraffa found for the problem of internal relations was to look at the conditions for the reproduction of the economy and society as a whole, at a given moment in time. By focusing on the whole economy, we can take into account that reality is deeply interconnected. And by focusing on a given moment in time, we can abstract from changes that lead to complex processes through time which we cannot fully grasp analytically.

However, the question arises as to which moment of time we should look at in order to understand the economy. Reality is permanently changing, and different configurations appear at different moments. Pierangelo Garegnani (1984) suggests that we look at the normal position of the economy, which is simply an average of various positions that take place over time. Over a sufficiently long period of time, we can then have a firmer grasp of the more persistent elements that constitute the underlying conditions of reproduction of the economy and society – see also Harcourt (1981) on how this idea appears also in Marshall, Keynes and Sraffa.

Sraffa (1960) stressed that the method he adopted was simply the old standpoint of the classical political economists like Smith and Ricardo, which had been developed by Marx. Ronald Meek (1961) quickly interpreted Sraffa’s 1960 book as a revival of
classical political economy. Sraffa (1960) provided a system where prices are
determined by the cost of production, for a given distribution of income. Marshall’s
(1890) theory of value was a development of the supply and demand framework that
had been advanced by Malthus in his critique of Ricardo. Sraffa’s (1960) theory of
value, in contrast, is a revival of Ricardo’s theory of value, where prices depend upon
the cost of production, and supply and demand merely explain deviations from the cost
of production, and cannot provide a systematic account of the underlying causes of
value, as Sraffa (1925, 1926) shown in his critique of Marshallian supply and demand
curves.

Keynes (1936), in the first footnote of his General Theory, writes that although
Marx invented the term “classical political economy” to denote Ricardo and his
predecessors, Keynes became accustomed to use the term “classical” to designate those
he believed were developing Ricardian economics, namely John Stuart Mill, Francis
Ysidro Edgeworth, Alfred Marshall, and Arthur Cecil Pigou. For this reason, Keynes
(1936) presents his General Theory as a critique of classical theory, where classical
theory is understood as a project that was to be found in its most advanced form in the
writings of Marshall and Pigou. We can then see that while Sraffa presented his
approach as a revival of classical political economy, Keynes presents his theory as a
critique of classical political economy.

This happens because Sraffa and Keynes had very different, or indeed opposing,
conceptions of classical political economy in mind. Keynes, like Marshall, interprets
classical political economy as being no different from what Marx called vulgar political
economy. And like Marshall, Keynes also sees Ricardo as part of this project. Sraffa
(D3/12/4/10), in contrast, follows Marx’s distinction between classical political
economy and vulgar political economy, and sees Marshall’s approach as a further
development of vulgar political economy, with a more sophisticated technique. Thus
Sraffa saw Malthus, rather than Ricardo, as the true precursor of Marshall’s supply and
demand analysis. The confusion is even greater because Keynes also believed that
Malthus was the most important precursor of Keynes’s own theory.

For Keynes, the defining feature of classical political economy was the adoption
of Say’s Law, that is, of the idea that supply creates its own demand. Keynes (1936)
notes that authors like Sismondi, Malthus and Marx had rejected this idea, and sees
Malthus as the author who most clearly anticipated Keynes’ own ideas. According to
Keynesian theory, we cannot presuppose that the economy will tend automatically to
full employment of labour. Rather, the economy may fail to achieve full employment for an indefinite period of time.

Keynes’ own contribution was much influenced by the economists with whom he met regularly to discuss his ideas, such as Richard Kahn, James Meade, Joan Robinson, Austin Robinson, and Piero Sraffa, the so called “Cambridge circus” (before the 1930’s, Keynes worked mainly with Dennis Robertson). Ralph Hawtrey and Roy Harrod are also important in this connection. Michal Kalecki also developed the same ideas as Keynes, which appeared in articles written before the General Theory was published. Coming from a Marxist background, Kalecki developed the same ideas as Keynes in a way which shows more clearly how those ideas are clearly compatible with the classical surplus theory as developed by Marx.

But the fact that Keynes presented his theory as a critique of what he saw as the classical theory, and the fact that he followed the vulgar interpretation of classical theory, obscured important connections between Keynes’ theory of employment and the classical theory of value. In fact, if we interpret the classical theory in line with Sraffa’s perspective (which is in line with Marx’s original distinction between classical and vulgar theory), we find that Keynes’ theory is much more compatible with Ricardo’s perspective than with Malthus’ perspective, contrarily to what Keynes himself thought. Malthus’s perspective is a forerunner of the theories that Keynes is really criticising, developed by Marshall and Pigou.

This issue can be seen more clearly if we note that Ricardo’s theory actually presupposes that there is no inherent tendency towards full employment, as it must be the case in Keynesian theory, while the marginalist supply and demand analysis that follows from the vulgar approach that stems from Malthus presupposes a case of full employment. Ricardo assumes Say’s identity between supply and demand, but there is nothing in Ricardo theory to sustain such an assumption, and the theory can do equally well without it, or in fact it becomes much more consistent without it, since Ricardo’s theory of value presupposes that there is no full employment of labour.

Walras saw this point, but used it to criticise Ricardo’s theory. Walras notes that, for Ricardo, the price tends to the cost of production because if demand drives the price above the cost of production, more commodities can be produced so that the price is brought back to the cost of production. The reason why more commodities can be produced, Ricardo argues, is because he presupposes that labour is available to do so. Walras criticised this Ricardian assumption, that more commodities can be produced to
respond to demand and bring the price back to the cost of production. While Ricardo presupposed an economy where typically there is not full employment of labour, that is, labour is available for further production, Walras presupposed an economy where typically there is full employment of all factors of production, including labour, and so labour is not available for further production. There will be only redistribution of fully employed supplies of factor services between the production of different commodities, according to supply and demand. Hence, prices will be determined by supply and demand, since variations in demand cannot be offset by variations in quantity produced. Demand is thus an independent determinant of prices, explained in turn in terms of marginal utility.

Marshall and Pigou further developed this supply and demand analysis, where prices and quantities are determined mutually. Keynes’ critique is targeted at the belief that supply and demand brings automatically full employment (while integrating theories of money and finance and prices with the determination of income and employment), not at what Ricardo actually wrote. Ricardo, like classical analysis in general, did not even address the determination of quantities that Keynes is focusing on. Rather, the classical authors focused on the determination of value while taking quantities as given (and in the case of Ricardo, clearly presupposing that full employment cannot be taken for granted, as Keynes also did). Thus, the classical theory can be more readily combined with a theory that explains quantities, such as the Keynesian theory.

The contributions centred around the work of Keynes, Kalecki and Sraffa led to the emergence of a new branch within the Cambridge economic tradition, the Cambridge Keynesian tradition – see Harcourt (2006) and Pasinetti (2007). Of course, depending on whether the emphasis is on Keynes, Kalecki, or Sraffa, we find differences within various sub-branches of the Cambridge Keynesian tradition. But the writings of the various authors of the Cambridge Keynesian tradition consistently reject the neoclassical approach of Marshall and Pigou. The Cambridge controversies in the theory of capital show us a moment where Keynesians, Kaleckians and Sraffians stand united in the rejection of neoclassical economics, while advancing a perspective in line with Marx’s interpretation of classical political economy – see Harcourt (1972, 1976) and Cohen and Harcourt (2003) on the Cambridge controversies in the theory of capital.

A central theme within the Cambridge Keynesian tradition was a study of cumulative causation processes, undertaken by Michal Kalecki, Joan Robinson and
Nicholas Kaldor who, like the classical economists, saw how the distribution of the surplus is an essential aspect of the circular process of reproduction and accumulation of capital.

**The Cambridge welfare tradition vs the Cambridge Keynesian tradition**

While Keynes, Kalecki and Sraffa, together with many others, were providing the key contributions for the development of the Cambridge Keynesian tradition, Pigou continued the tradition of Sidgwick and Marshall, focusing on human well-being, which was the central theme in economics for Sidgwick and Marshall too. Marshall defined economics as the study of mankind in the ordinary business of life while focusing on the material requisites of human well-being. Like Sidgwick, Marshall acknowledged a distinction between wealth and well-being, which was developed more systematically by Pigou (1912, 1920).

Pigou’s analysis of human well-being, grounded on the work of Sidgwick and Marshall, led to the development of what we may term, following Harcourt (2003), the Cambridge “welfare” tradition – see also Harcourt’s Foreword in Martins (2013). Needless to say, the authors that developed each tradition, the Cambridge welfare tradition, and the Cambridge Keynesian tradition, present themselves as a continuation of classical political economy, but each possessing opposing views on what classical political economy is, as noted above.

The Cambridge welfare tradition adopted a marginalist framework in the analysis of human well-being. Thus, Sidgwick, Marshall and Pigou noted that wealth and welfare need not coincide because different human beings possess different marginal utilities, and thus achieve different levels of well-being even if all possess the same wealth. Pigou drew upon the utilitarian framework also to argue that a more equal distribution of income and wealth leads to a higher level of social utility. The individuals who have lower income and wealth have also a higher marginal utility for an additional unit of income or wealth. Thus redistribution of income and wealth towards those who possess a lower level of income and wealth (and thus a higher marginal utility) leads to an increase in total utility within society.

One cannot help noting the striking similarities between Pigou’s reasoning on marginal utility, and Keynes’s reasoning when studying the marginal propensity to consume. Keynes (1936) argues, in the final chapter of the *General Theory* (which is on the social philosophy towards which the *General Theory* could lead to) that
redistribution of income towards those with lower incomes leads to a greater level of total consumption, since those with lower incomes have also higher marginal propensities to consume. Thus, Keynes saw a more equal distribution of income as a means to increase effective demand, as Kalecki also did. Keynes’s argument is formally analogous to Pigou’s, but Pigou focuses on utility, and Keynes on consumption.

Pigou’s argument for redistribution was soon challenged by Lionel Robbins’s (1932) questioning of the possibility of interpersonal comparisons of utility. Much work on social choice theory was undertaken in order to challenge Robbins’s doubts, most notably by Amartya Sen (1982), who became the key contemporary exponent of the Cambridge welfare tradition, developed also by authors like James Meade and A.B. Atkinson. Sen (1982) argued that partial comparisons of well-being are possible in many cases. Sen’s contribution was much stimulated by the central theme of the Cambridge welfare tradition, namely the distinction between wealth and welfare. But Sen’s analysis of this distinction leads him to reject the use of utility as a measure of human well-being. Influenced by Maurice Dobb and his notion of “rich description”, Sen (1985) came to study human well-being in broader terms, focusing on human capabilities, which are what a person can be or do.

Hilary Putnam and Vivian Walsh (2011) argue that in so doing, Sen is simply bringing back the rich philosophical anthropology of the classical political economists. Putnam and Walsh (2011) argue that while Sraffa’s contribution can be best interpreted as a first stage of a revival of classical political economy, centred on the analytical economic framework of the classical theorists, Sen’s contribution can be best interpreted as a second stage of a revival of classical political economy, centred on the philosophical anthropology of the classical authors.

The role that Sen’s (1985) capability approach can play within the Cambridge Keynesian tradition can be seen more clearly if we look at the theory of value and distribution. A central feature that emerges in the Cambridge controversies in the theory of capital, and is taken into account in the subsequent developments undertaken within the Cambridge Keynesian tradition, is that distribution is not determined by marginal productivities of factors of production as in neoclassical economies.

For Sraffa, distribution of income is an exogenous determinant of prices, and of the choice of the methods of production. For Keynes and Kalecki, distribution is a determinant of consumption, and of effective demand, as noted above. Sraffa’s revival of classical political economy left quantities as an exogenous variable, and can be
combined with the Keynesian-Kaleckian principle of effective demand, as argued by Pasinetti and Garegnani, amongst others, who provide a Keynesian-Sraffian synthesis – see Harcourt (2006). But the Keynesian-Sraffian framework leaves distribution as an exogenous variable from the point of view of economic theory, and can be fruitfully complemented with Sen’s capability approach, as argued in Putnam and Walsh (2011) and Martins (2013).

The fact that the contributions of Sraffa, Keynes, Kalecki and Sen can be seen as part of a coherent project signals also an approximation between the Cambridge Keynesian tradition, and the Cambridge welfare tradition, which has Sen as its greatest contemporary exponent. But this approximation is possible only because Sen rejected the elements of the Cambridge welfare tradition that were not accepted by the Cambridge Keynesian tradition, in particular the use of marginal utility to study human well-being, and the theory of value – see Martins (2013, chapter 6) for elaborations.

That is, Sen developed the key theme of the Cambridge welfare tradition, the distinction between wealth and welfare, in a direction which is actually compatible with, or indeed complementary to, the revival of classical political economy undertaken within the Cambridge Keynesian tradition. But even being the greatest contemporary exponent of the Cambridge welfare tradition, Sen is the only influential author of that tradition who abandoned marginal theory and utilitarianism. Sen is an exception since there remains indeed a great theoretical gap between the Cambridge Keynesian tradition, and the Cambridge welfare tradition.

Sen is also closer to the modern Cambridge Keynesian tradition than to those authors who developed the Cambridge welfare tradition after Pigou in respect to the methodological issues he explores. Sen (1989) noted, quite famously, that in economics it is better to be vaguely right than precisely wrong. In so doing, Sen is paraphrasing Keynes, who in turn was paraphrasing Wildon Carr, who translated the work of Henri Bergson to English, and was much influenced by his philosophy.

The role of language is essential here. Keynes criticised the differential method used by Marshall and Pigou, which Sraffa also criticised, and the use of symbolic mathematics. Keynes (1936: 297-298) noted that symbolic mathematics presupposes the independence of the various factors involved, while ordinary discourse does not, since when using ordinary language we can keep at the back of our heads the complexities and interdependencies of the real world. That is, in a world which is internally related, ordinary discourse is a more adequate language than symbolic mathematics, which

The problem at stake here is the problem of internal relations, which was faced by Marshall early on, and led to Sraffa’s and Keynes’s critique of Marshall. Keynes believed the world was internally related, and stresses the need to address the economy as a whole. As Harcourt (1987, 2003) explains, there are three aspects in Keynes thinking which are closely connected to the Cambridge tradition as a whole: the whole is more than the sum of the components; agents act in a context of inescapable uncertainty; and the need for a plurality of languages for expressing reality.

These elements of Keynes’ thinking are something that goes back to the foundation of the Cambridge economic tradition with Marshall. The Cambridge Keynesian tradition provided a very different interpretation of classical political economy than Cambridge welfare tradition of Marshall and Pigou. The economic theories developed by the Cambridge Keynesian tradition and the Cambridge welfare tradition are radically different. However, despite the very different theories developed within the Cambridge Keynesian tradition and the Cambridge welfare tradition, which spring from different interpretations of classical political economy, the underlying philosophy of the Cambridge Keynesian tradition and the Cambridge welfare tradition is the same. It is a philosophy aimed at developing a realistic theory of an internally related world, with the aim of improving human well-being.

**Concluding remarks**

Neoclassical economics did not maintain Marshall’s realist approach throughout the twentieth century, not even within the Economics Faculty that Marshall founded at Cambridge, as Harcourt (2003) noted 100 years after its foundation. The emphasis on the use of mathematico-deductivist methods, which had been criticised by Keynes early on, is now the central characteristic of mainstream economics, as Lawson (2003) notes.

Economics was always shaped by the mathematical methods used. The classical political economists, from Petty to Ricardo, used only arithmetic (as Marx and Sraffa also did later). The marginalists relied on differential calculus, and Marshall even found in it a justification for his partial equilibrium method, a justification which Sraffa and Keynes criticised. The twentieth century witnessed the further development of calculus, and the appearance of econometrics (criticised early on by Keynes), and of fixed point theorems which shaped two central mathematical developments within mainstream
economics, namely general equilibrium theory, and game theory. The use of the mathematical methods developed through the twentieth century presupposes, of course, independence of the factors involved, that is, the absence of internal relations, which is the same thing as presupposing atomism, as Keynes saw.

Keynes’ critique of the use of mathematical methods that presuppose atomism has been developed at Cambridge especially by Tony Lawson (1997, 2003). In so doing, Lawson recovers the fundamental notion of the philosophy of the Cambridge tradition, namely the notion of internal relation. Effectively, it is the recognition that economic reality is internally related that leads Lawson (1997, 2003) to the development of a realist perspective, and of a critique of mainstream economics. Although Lawson started his analysis of these themes through a study of Keynes’s *Treatise on Probability*, the method of study developed by Lawson is quite in line with Sraffa’s own approach. Just like Sraffa focused on the conditions of possibility for the reproduction of economic structures as a whole, so does Lawson focus on the conditions of possibility for the reproduction of social structures as a whole. The need of focusing on conditions of possibility for the reproduction of a whole stems from the recognition that reality is internally related, so much so that we cannot focus on the analysis of a given component while assuming everything else to remain constant, as Marshall did when addressing the problem of internal relations.

Lawson (1997, 2003) notes that in the natural sciences, we often can insulate and thereby identify a given mechanism though engineering an experimental closure in the laboratory, allowing the application of mathematical methods. But in the social realm, we are in an open system, where mathematical methods that presuppose closed systems are not effective. In the social realm, the best methodological procedure available consists in finding partial regularities that persist through time. Nicholas Kaldor misleadingly labeled these as “stylized facts”, and they were subsequently more appropriately reformulated as demi-regularities (or partial regularities) by Lawson (1997, 2003). The closest analogue to a mathematical constant which can be found in economics are those persistent demi-regularities. But most often the only mathematics we need to study them is arithmetic, used by classical economists since Petty.

The method of focusing on enduring regularities, that persist through time as a centre of gravitation, and can be observed as such in the real world, was the classical method, as Garegnani (1984) notes. As Harcourt (1981) explains, it was also the method used by different Cambridge economists who shaped the Cambridge economic tradition,
like Marshall, Keynes and Sraffa. But at the level of economic theory, those economists had conflicting interpretations of classical theory: the Marshallian one, which is the dominant interpretation (which Keynes also followed, leading him to criticise classical theory); and the Sraffian one, which is simply Marx’s original interpretation. The Cambridge contribution to the revival of classical political economy followed those two divergent interpretations, which remain today the most influential interpretations of classical political economy.

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