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Sraffa's Silenced Revival of the Classical Economists and of Marx

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Sraffa's Silenced Revival of the Classical Economists and of Marx

Guglielmo Chiodi[*]

Abstract

The standpoint of the old classical economists as well as of Marx "has been submerged and forgotten since the advent of the 'marginal' method" – to borrow Sraffa's own words. The neoclassical (or 'marginal') paradigm, in fact, triumphantly dominated over the twentieth century (and is still dominating even now).

A serious step towards the rehabilitation of the paradigm of the old classical economists was made by Sraffa (1951) with his remarkable 'Introduction' to Ricardo's *Principles*, his seminal 1960 book *Production of Commodities by Means of Commodities* (*PCMC*) followed a few years later, as a logical completion of his long-standing work.

The paper here proposed argues that Sraffa's 1960 contribution has so far been mainly interpreted and used as a highly powered tool for *destroying* the foundations of neoclassical theory from a *logical* point of view, with the confident belief that attacking the logical side of the theory would have been sufficient to bring about its definite dismissal, which, instead, did not happen. As a consequence of all this, the revival of the classical economists and of Marx – which is one of the most characterizing feature of Sraffa's 1960 contribution – was automatically *silenced* and this very fact precluded Sraffa's theoretical framework from being used in a *constructive* way as a real alternative 'vision' to that proposed by the neoclassical market-centered paradigm.

The aim of the paper is to underscore the crucial importance of Sraffa's revival referred to above, by emphasizing its usefulness in providing a genuine alternative perspective and a radically different representation of the economy, compared with that provided by neoclassical theory. An attempt will be made to show the main features of the Sraffian framework in providing such an alternative 'vision' which, it will be argued, is now much needed, not least for suggesting far more sensible alternative economic policies than those so far pursued in the ceaseless turmoil of present day world economies.

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JEL Classification:A10, B12, B14, B24, B51

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Sraffa's Silenced Revival of the Classical Economists and of Marx[1]

Guglielmo Chiodi[2]

The ultimate tragedy is not the oppression and cruelty by the bad people but the silence over that by the good people. Martin Luther King, Jr.

1. Introductory remarks

Over the years, I have repeatedly asked myself the question: Why Sraffa's 1960 seminal contribution *Production of Commodities by Means of Commodities* (*PCMC*) has been so little influential, if at all, in the *way of thinking* in contemporary economic theory? After all, it paved the way for an *alternative* paradigm to the neoclassical one, which triumphantly dominated over the twentieth century and is still dominating even now – certainly in the western economies and (perhaps and quite sadly in my opinion) all over the world.

The concise and only apparently easy-readable little book by Sraffa does contain a neat representation of an economy within a logically well founded theoretical framework, reminiscent of the point of view taken by the classical economists and thus by Marx as well. Sraffa, in fact, made a very great breakthrough: on the one hand, he rehabilitated the 'vision' of the classical economists and of Marx; on the other, he proved their analysis *amendable*, *viz.* not 'irremediably wrong', up to the point of structuring a new theory of value *from that same standpoint* in an analytically robust framework.

In the sequel, an attempt will be made by showing that that part of Sraffa's contribution, which rehabilitated the 'vision' of the classical economists and of Marx, has been severely *silenced* by most Sraffians who used Sraffa's 'prelude to a critique of economic theory' in the early 1960s and in the following years for mainly criticising specific *tools* and *concepts* typical of neoclassical theory (as, for example, the production function and the notion of 'capital').

By contrast, since the publication of *PCMC*, a few scholars have indeed explored and extended Sraffian suggestions to *different directions* from those taken by the 'capital theory' people. Notable examples, in this regard, are Parrinello (1983), (2001),Velupillai (1989), (2008), (2010), Velupillai and Zambelli (1993), Pasinetti (1993), Schefold (1997), Zambelli (2004), Edwards (2008), Cesaratto (2008), Fredholm (2009).

However, the kind of critique made by most Sraffians[3] had incontestably the merit of putting to the fore some *irremediable flaws* which the neoclassical theory was supposed to

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[2] Sapienza Università di Roma, <guglielmo.chiodi@uniroma1.it> I am most grateful to Leonardo Ditta and Kumaraswamy Velupillai for their extremely useful comments and suggestions on preliminary drafts of the paper. Needless to say, none of them is responsible for misleading interpretations and infelicities still contained in the paper. I thank also Mr Jonathan Smith for the kind assistance given at the Trinity College Library (Cambridge) whilst working through Sraffa's Papers.

contain, and thus it was essentially addressed to the *logical inconsistencies* characterizing that theory. That approach, to be fair, turned out to be extremely useful in the very first instance, for it went quite deeply into the roots of the neoclassical theory, thus shaking quite strongly the theoretical foundations on which that theory was based.

Supposedly, at the bottom of the approach adopted by most Sraffians there exists their firm confidence that by destroying the theoretical foundations of the neoclassical theory *from a logical point of view* would have been sufficient to destroy the entire paradigm outright, thus making possible, in that way, the triumphant coming into being of a new way of thinking in economic theory. In effect, the logical structure of a theory is extremely important in *any* discipline, and the economic discipline should not be an exception in this respect.

But *that* kind of critique, however, was evidently not enough, because in the economic discipline (which is basically a *social* discipline) *any* logical structure would be altogether *meaningless* irrespective of the 'vision' it wants to convey. Having a 'vision' of a society, in fact, essentially means possessing a specific key-reading of it, characterized by a variety of cultural, social, institutional and political elements, all entering, and contributing to forging, that 'vision'. This same thing might equivalently be expressed by saying that the economic discipline cannot be but *dependent upon* value-judgements, and that therefore ethical and moral values must ultimately come in, explicitly or implicitly, in any kind of discussion.[4]

The critique advanced by most Sraffians had – in the opinion of the present writer – the serious drawback of being altogether *detached* from the far more general new 'vision' of the society brought about by *PCMC*, as contrasted to the market-centred 'vision' of the neoclassical theory, or, at most, of leaving it at the very background of the issues discussed.

As is widely well known, the actual development of economic theory, and the corresponding policy prescriptions based on it over the last fifty years, went in a completely different direction with respect to that envisaged by the critics of the neoclassical theory. Supporters of the latter, in fact, although partially acknowledging most of the critiques, put them quite rapidly under the carpet by holding the strong conviction that they were ultimately not-influential on the tenet of the neoclassical paradigm. In other words, the neoclassical economists maintained the strong belief that the core of their theory was still robust enough in explaining the working of a market economy in the most appropriate way than any other theory, and thus it continued undaunted its dominance in the economic *culture* all over the world.

2. Community *vs* Automatons

Before discussing some general features of Sraffa's 'vision', as it seems to emerge from his *PCMC*, whose approach, as already been said, 'is reminiscent of certain points of view taken by the old classical economists from Adam Smith to Ricardo'[5], it should be duly emphasized that the sub-title of the book is: *Prelude to a Critique of Economic Theory*. This immediately recalls the analogous sub-title of Marx's Capital: *Critique of Political Economy*.[6]

The opening page of *PCMC* starts by considering 'an extremely simple *society*', p. 3, italics added. Adam Smith's book *Wealth of Nations* (1970) does have the 'nation' from the very beginning as the main subject of his enquiry and then this *collective* subject is at the centre of the whole book. Ricardo's opening sentence of the 'Preface' to his *Principles* refers to the

[3] Cfr. the 'classic' review by Harcourt (1972); and Harcourt (1976), Pasinetti and Scazzieri (1990).
[4] Cfr. Chiodi and Ditta (2008), Putnam (2003).
[5] See the flyleaf of Sraffa's book (1960).
[6] This is the English literal translation from the original German sub-title of *Das Kapital*.

division of the produce of the earth as ‘divided among three classes of the *community*’, (1951), p. 5, italics added. Marx’s opening sentence of his *Capital* Vol. I is: ‘The wealth of those *societies*...’ (1974) p. 43.

In each of the above references a ‘collective’ subject is taken into account, just because each of the above analysis refers to a *community* of human beings – in opposition to the micro perspective of neoclassical theory, which constantly takes into account an ‘automaton’ (being a single individual or a single agent) and contemplates at most ‘the interaction of the agents’, Debreu (1959), p. ix – whose subjects are basically considered as a set of ‘automatons’ on the basis of a purely ‘additive’ conception.

3. Some characterizations of Adam Smith’s *Wealth of Nations*

The above ‘word-characterization’ is not at all trivial or unimportant.[7] It acquires a profound meaning in the context of the analysis performed by each author. In the case of Adam Smith, he wanted to investigate the *nature* and the *causes* of the wealth of a nation, which substantially means – as Hicks aptly put it – ‘what the social product is, what is meant by its being large or small; what is meant by its growing [...] why the social product is large or small, and why it grows’, Hicks (1976), p. 7. Adam Smith (1970), in the opening sentence of his book, writes:

> The annual labour of every nation is the fund which originally supplies it with all the necessaries and convenience of life which is annually consumed, [...], p. 1.

It contains key-words such as ‘labour’ and ‘necessaries and conveniences of life’ which reflect the essential characteristic of all his inquiry, ultimately devoted to investigating the wellbeing and the welfare of a community.

A huge number of books and papers have been written on Adam Smith’s *Wealth of Nations*, most of them centred on his ‘labour theory of value’, on the much quoted ‘invisible hand’ and on the superb merit of the ‘division of labour’.

Viewed from a different perspective, one can equally well say that Adam Smith’s *Wealth of Nations* brought systematically to the fore the very notion of ‘social product’ – a key-concept characterizing the subsequent analyses distinctly made by Ricardo, Marx and Sraffa. The ‘social product’ was intended as a common denominator *linking* the human beings as a *community* and one of the basic elements of their life.

The notion of ‘social product’ immediately evokes the analogous notion of *produit net*, first introduced by Quesnay and the other Physiocrats in the middle of the eighteenth century. But – as is well known – not only did they refer to that notion exclusively with respect to the agricultural sector, but they did not possess a proper theory of value for quantitatively defining it in a rigorous way.[8]

Adam Smith felt the necessity of extending the notion of ‘social product’ to *all* the sectors of the economy and, at the same time, to provide a general theory of value – imperfect and

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[7] As Lakoff (2014), xii, put it: “All words are defined relative to conceptual frames”.

[8] In an unpublished manuscript, however, Sraffa writes that “It was only Petty and the Physiocrats who had the right notion of cost as «the loaf of bread», Sraffa Papers D3/12/4. And, in another unpublished manuscript titled “Degeneration of cost and value”, he writes: “A. Smith and Ricardo and Marx indeed began to corrupt the old idea of cost – from food to labour. But their notion was still near enough to be in many cases equivalent”, *ibidem*. It should be noted that in *PCMC*, in the initial tables representing the economy, Sraffa includes “the necessaries for the workers” as *physical quantities*, and therefore he is there adopting the Petty-Physiocrats notion of cost. On the full significance of this, I will return later in the paper.

wrongly circular in so many respects – to the effect of giving analytical form and substance to the notion of 'social product'.

An important feature of Adam Smith's *Wealth of Nation* has been generally undervalued by economists, if not practically ignored, so much attracted they have been by the most immediate 'analytical' parts of Adam Smith's work.[9] This consists in the equally important ethical and moral content, inextricably disseminated throughout the whole *Wealth of Nation*, up to the point of pervading all the arguments and discussions therein contained. It is hardly possible, in fact, to make sense of many Smithian concepts and sentences without systematically taking it into account.

The notion of 'wage' in Adam Smith, for example, as in any other classical economist, like Ricardo, as well as in Marx and in Sraffa, is taken to be as 'given'. This obviously means**,** as far as the effect on the analytical framework considered**,** each physical component of the wage is known beforehand. Adam Smith, however, is far more specific in this respect. After having defined in Book I of his *Wealth of Nations* the 'real recompense of labour' as 'the real quantity of the necessaries and convenience of life which it can procure to the labourer', p. 69, in Book V he comes back again on the concept of 'necessaries' by specifying:

> By necessaries I understand not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for creditable people, even of the lowest order, to be without. Smith (1970), pp. 351-352.

This is to be considered apart from the *effective* determination of the wage. Two aspects are worth putting forward in this respect.

The first of these aspects regards the determination of the *money* price of labour which, according to Adam Smith, is regulated by 'the demand for labour, and the price of the necessaries and conveniences of life', p. 76 whose eventual changes, according to the circumstances considered, must not have any effect whatsoever on the purchasing of the commodities composing workers' subsistence. This aspect is duly emphasized by Adam Smith towards the end of his *Wealth of Nation*:

> As the wages of labour are everywhere regulated, partly by the demand for it, and partly by the average price of the necessary articles of subsistence, whatever raises this average price must necessarily raise those wages so that the labourer *may still be able to purchase that quantity of those necessary articles* which the state of the demand for labour, whether increasing, stationary or declining, requires that he should have. Smith (1970), p. 352, italics added.

The second aspect of the effective determination of the wage regards the actual process of its negotiation, from which Adam Smith is explicitly careful in bringing about the *conflicting* as well as the *asymmetric* positions of the two parties, the workers and the employees. He writes:

> What are the common wages of labour, depends everywhere upon the contract usually made between the two parties, whose interests are by no means the same. […] It is not, however, difficult to foresee which of the parties must, upon ordinary occasions, have the advantage in the dispute, and force the other into a compliance with their terms. *Ibidem*, pp. 58-59.

However, note, in the first of the two last sentences quoted above, the *use* Adam Smith is making of the concept 'the demand for labour'. As in any other analogous circumstance, when dealing with 'demand and supply of a commodity' as elements causing *deviations* from the natural price, he is always referring – like Ricardo and the classical economists and Marx – to *proportions of known and given quantities* and *never to functions* (in the sense of 'standard mathematics'), as it was subsequently made instead by the neoclassical tradition.

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[9] For an exception see Sen (1987).

It is also important to emphasize the careful attention devoted by Adam Smith to the social and institutional characterization of the wage – a circumstance which, once more, underlines the *external* determination of the wage, as being independent of any problem of value and independent also of any problem concerning the production process. An echo of this view can later be traced in a letter by Ricardo to McCulloch dated 13 June 1820 in which he maintains that 'the proportions in which the whole produce is divided between landlords, capitalists and labourers [...] are not essentially connected with the doctrine of value'. Quoted in Sraffa (1951), p. xxxiii.

4. Ricardo's continuity and discontinuity with Adam Smith's *Wealth of Nations*

Ricardo, in the 'Preface' of his book, although 'found it necessary to advert more particularly to those passages in the writing of Adam Smith from which he sees reason to differ', specifies that 'he hopes it will not, on that account, be suspected that he does not, in common with all those who acknowledge the importance of the science of Political Economy, participate in the admiration which the profound work of this celebrated author so justly excites'. Ricardo (1951), p. 6.

It is well known that among the 'passages' from which Ricardo differs from Adam Smith one encounters the theory of value. On this issue, in fact, he was tenaciously adherent to an *embodied* labour theory of value. He summarizes his own view by stating 'I know no other criterion of a thing being dear or cheap but by the sacrifices of labour made to obtain it'. Ricardo (1951a), p. 397. But, more importantly, Ricardo's main preoccupation – as clearly evidenced by Sraffa's 'Introduction' to his *Principles* – was to state a *rigorous* theory of value because in his view the division of the 'social product' between classes was the 'principal problem in Political Economy'. Ricardo (1951), p. 5. To successfully perform that task, however, needed to find a *measure of value* having the property of being invariant to changes in distribution. These changes, in fact, by 'distorting' the very object of distribution, would have rendered impossible an *exact* measure of the shares between classes.

Measuring distribution *exactly*, however, was not an analytical problem *as such*: the most profound problem hidden in that task was to bring about the *conflicting relation* existing between employers and employees, *i.e.*, from an analytical perspective, the existence of a *negative* relation between wages and profits – once the role of rents has been made passive. As Ricardo (1951) concisely put:

> I have endeavoured to shew, first, that a rise of wages would not raise the price of commodities, but would invariably lower profits, p. 127.

From the point of view here considered, it might be said that between Adam Smith and Ricardo there coexist a continuity and a discontinuity. The former, in fact, had already made evident, in a *qualitative* mode, the inherent conflicting views between employers and employees on the settlement of the wage contracts – as has been made evident in Adam Smith's quotations reported above. The latter, instead, wanted to *quantitatively* establish the *exact measure* of that conflict. Thus, Ricardo's approach on the issue of value turns out to be not only far more complex and articulated than Adam Smith's but also far more 'refined'.

On many other issues, Ricardo does *not* significantly differ from Adam Smith's *Wealth of Nation*. In the case of wages, for example, he seems to follow Adam Smith almost to the letter. Although the opening passages of chapter V, On Wages, 'appear to be derived from Torrens's *Essay on the External Corn Trade*, 1815, p. 62', as Sraffa (1951), p. 93, fn., noted, nevertheless the substance of the whole chapter recalls quite evidently what Adam Smith had already said on wages. The 'natural price of labour', in fact, continues to be 'that price which is necessary to enable the labourers, one with another, to subsist and perpetuate their race', its physical composition being given by 'the quantity of food, necessaries, and conveniences [...] essential to him from habit', Ricardo (1951), p. 93. And the conceptual distinction and the numerical difference between the 'market' and the 'natural' price of labour continue to come about 'from the natural operation of the *proportions* of the supply to the demand', *ibidem*, p. 94, italics added.

What Ricardo emphasises more, compared with Adam Smith, is the important 'dynamical' component concerning the labourer, that is his *family*. That component, on reflection, reflects the function attributed to the wage, *viz.* that of making possible the *social reproduction* of the working class, besides the most obvious, but not exclusive, function of 'natural recompense' of labour, using the words of Adam Smith (1970), p. 57.

5. The relevance of Marx's *Capital* nowadays

Too much weight has often been given to Marx's labour theory of value, as if it were the only pivotal element of *Capital* Vol. I and, more generally, of the whole Marx's thought. Witness the much debated 'transformation problem', still alive occasionally in the literature.

One of the consequences of that approach has been that of limiting or, even worse, that of reducing drastically the very importance of Marx's contribution to the social and political disciplines generally**,** and to the economic one, in particular.

In other words, the acceptance or rebuttal of Marx's thought, especially within the profession of the economic discipline, has crucially been taken dependent upon the 'rightness' or the 'wrongness' of his labour theory of value.

The final judgment still prevailing today on Marx's thought – looking at the latter from the above perspective – might be a combined result of an *analytical* and *ideological* judgment mixed together, sometimes with the prevailing weigh of the one, sometimes of the other.

One of the thesis of the present paper is that Marx's contribution to the understanding of the capitalist society should instead be looked at independently of the validity of the labour theory of value *as a theory of prices*. Marx's perspective and insights, in fact, go far beyond the restricted conceptual boundaries imposed by any social discipline and, particularly, far beyond the highly disputable conceptual framework designed by traditional economic thought. His own *language* and the new *terminology* employed in *Capital* and elsewhere are all designed to give a new conceptual form to ideas, to bring about aspects of social life otherwise hidden or hardly noticed.

There are at least two aspects of Marxian thought traceable through *Capital* Vol. I (with obvious extensions to his many other writings as well) which are worth considering today because they are still able to cast light on many structural phenomena of the present-day world economies:

(i) his notion of 'vulgar economy',
(ii) his perspective on 'labour',

The above two aspects are strictly linked together for they are highly suggestive of a new perspective in representing the economy. They are also of an utmost importance and relevance for interpreting and evaluating some critical changes which occurred in most economies over the last century, in the light of the ever-increasing pervasiveness and dominance of present day neoclassical economic theory, which can properly be dubbed *neo-vulgar economy*.

In *Capital* Vol. I, Marx (1974) neatly introduces the distinction between 'classical Political Economy' and 'vulgar economy':

> [B]y classical Political Economy, I understand that economy which, since the time of W. Petty, has investigated the *real relations of production* in bourgeois society, in contradiction to vulgar economy, *which deals with appearances only*, ruminates without ceasing on the materials long since provided by scientific economy, and there seeks plausible explanations of the most obtrusive phenomena, for bourgeois daily use, but for the rest, confines itself to systematising in a pedantic way, and proclaiming for everlasting truths, the trite ideas held by self-complacent bourgeoisie with regard to their own world, to them the best of all possible world. Marx (1974), p. 85, italics added.

It may be of some interest, in this connection, to consider some Sraffa's notes. In an unpublished manuscript, he writes:

> Classical Political Economy (The age of Ricardo) or A. Smith? from Petty to Ricardo. Right conception fundamental assumptions primitive, rudimentary technique". Then "Vulgar Political Economy (the age of Mill) from Malthus to Stuart Mill. All wrong here: they have the wrong conception of modern economics and the rudimentary technique of the classical". Finally, "Economics, (the age of Marshall) since Jevons and Co., and Marshall. Highly refined technique, rotten conceptions and fundamental assumptions. But technique so highly perfected that sometimes compels them unconsciously to modify their conscious assumptions (justly contradicting themselves) and thus reaching partially true conclusions". <u>Note</u> that at the end of the classics developed socialism (Owen, Hodgskin) and <u>caused</u> Vulgar P.E. At the end of vulgar period came Marx and <u>caused</u> economics." Sraffa Papers D3/12/4, underlined in the original.

In the previous quotation by Marx, although he credits classical Political Economy with having investigated 'the real relations of production', in opposition to vulgar economy, he remains unsatisfied with the former. And the reason to be unsatisfied lies basically in the fact that, for him, the capitalist mode of production is not 'eternally fixed by Nature for every state of society', Marx (1974), p. 85. The most dangerous consequence of this point of view, so explicitly criticized by Marx, would be that of perilously considered Political Economy as a *neutral* science, that is as completely detached by any *value-judgement* (be it social, political, religious, ethical or whatsoever) as well as by any historical context, much like disciplines such as mathematics or physics (and even in this case, the latter disciplines should not be considered 100% neutral, as commonly believed).

Unfortunately, however, what happened last century at the beginning of 1930s was even worse than that potential danger, for Robbins (1932) published a sort of 'new constitution' for the economic discipline, by proclaiming it a 'Science' and by showing its foundational characteristics as essentially based on the individual rationality of optimal choice, maximization principle, efficiency and general equilibrium – in explicit opposition to the classical economists' approach and by openly criticizing the use they have been made of notions such as 'social product' and income distribution, which sounded completely nonsense to him.

More recently, the widespread use of econometric techniques in economic analysis and the uncritical reference to macroeconomic parameters having no logical foundations at all may perhaps induce one to think the economic discipline as being characterized by a technical and neutral structure. But the issue of the identification problem in econometrics and the generally catastrophic results produced by the austerity measures adopted in most European countries in recent years are both examples of facts which bring to the fore the very impossibility of disposing of value-judgements and that the social relations among people are not indeed governed by 'laws of Nature', as are the planets in the universe.[10]

[10] Cfr. Pasinetti (1998), Nuti (2013).

6. Marx's steps ahead of Adam Smith and Ricardo

As has been seen in sections 3. and 4 above, Adam Smith's and Ricardo's works were characterized (i) by the *centrality of labour* within their respective theories of value, and (ii) by the *antagonism* between classes. The 'quantity of labour' (commanded for Adam Smith, embodied for Ricardo), was in fact the most reliable instrument for valuing the 'social product', and thus for measuring, respectively, the wealth of a nation and the distribution of income between classes. And Ricardo's endless search for an invariable measuring rod was precisely directed *to exactly measuring* the antagonism between workers and capitalists.

Marx considered the classical economists' analysis *incomplete*. The invariably negative relation between the wage rate and the rate of profit, which Ricardo thought of having put forward rigorously, was judged by Marx insufficient for *completely* revealing the 'real relation' existing between workers and capitalists in a capitalist economy.

He wanted to go far deeper than what the classical economists had achieved with their analysis of capitalism and, above all, he wanted to go far beyond the analysis of 'vulgar economy', whose *mystification* in representing the economy through the glasses of *market* relationships he wanted to unravel.

In this connection Marx should be credited for having perceived long before the initial signs of an extremely dangerous transformation in the economic thought through the coming into being of a 'vulgar' representation of the economy, which later in the years would have produced not only the oblivion of the classical economists' thought but also, on practical grounds, the adoption of inappropriate and even dangerous policies for entire communities of human beings – as has been hinted at in the immediately previous section.

It is again worth pointing out some of Sraffa's considerations on features characterizing the transition from Classical Political Economy to what Marx called 'Vulgar Political Economy'. Sraffa points out that after the 'corruption' of the old idea of cost made by the Classical economists, and by Marx(as reported in the quotation from Sraffa's manuscripts in § 5 above)**:**

> a much bigger step was taken in the process of shifting the basis of value from physical to psychical processes: Jevons, Menger, Walras. This was an enormous breach in the tradition of Pol. E.; in fact, this has meant the destruction of the classical P. E. and the substitution for it, under the old name, of the calculus of Pleasure and Pain (Hedonistic). […] When the Jevonians turned back to write their own history, they found with pride (it ought to have been with dismay) that they had no forerunners amongst P. E.; their forerunners were mainly two or three cranks, an engineer, Dupuit, a mathem., Cournot, a Prussian Civil servant Gossen, who had only cultivated P. E. as a hobby. […] They had not the slightest knowledge of the works of the Classical economists. They drew it out of their fancy. […] It is unfortunate that so much time has been taken to change the name of P. E. into Economics: but it is appropriate: it marks the cleavage, or rather the abyss, between the two. Sraffa Papers, D 3/12/4.

Marx repeatedly pointed out that the workers, *as human beings*, although have constantly been *exploited* by other human beings in different historical contexts and periods, have nonetheless been exploited in a *visible* way, in contrast to the capitalist economy whose *exploitation*, instead, has been rendered *invisible* by the complex set of market exchanges. It was precisely *this* which Marx found *peculiar* to the capitalist economy, and the use he made of the labour theory of value was *uniquely directed to bring about capitalist exploitation and not to explain exchange relationships*.

At the end of *Capital* Vol. I, Marx illustrate**s** the historical origin of that *peculiarity*, which came into being since the advent of 'the so-called primitive accumulation', defined by him as 'the historical process of divorcing the producer from the means of production'. Marx (1974), p. 668.

Notions like ‘labour force’ as distinguished from ‘labour’, ‘constant capital’ as distinguished from ‘variable capital’, ‘necessary labour’ as distinguished from ‘surplus labour’ were all devised to make evident the fact that the workers, in a capitalist economy, are *forced* to sell the only commodity they possess (labour force) and *forced* to perform labour inside the economic process, because they are all deprived of any decision concerning *what* society should produce, *which methods of production* it should employ, if *any surplus* should be produced at all and *for whom*. Decisions regarding all these circumstances are taken by people who have instead full control of the economic processes.

The feature of capitalist exploitation of being *obscured* and *hidden* by market relationships can perhaps be put to the fore by considering the mechanism of demand and supply through which the wage is determined – a mechanism still characterizing any model pertaining to what I called before *neo-vulgar economy*. Within this context *it appears* that *quantities* of labour demanded and *quantities* of labour supplied (and therefore *objective* entities) jointly determine in the market ‘the most appropriate value’ of the labour force, completely free of any value-judgement. In fact, the most immediate consequence of the market mechanism determining the wage is that the latter loses any kind of connection with the necessaries of life of the workers and of their families, and therefore also any ethical principle behind wage setting is definitely lost as well.

Interpreted in this way, Marxian labour theory of value, in the way he used it in *Capital* Vol. I, should only be an *analytical instrument* to bring about *capitalist exploitation*, a phenomenon which no theory of prices, not even that characterizing the classical economists’ analysis, could be able to put forward.

The analytical effort he made in trying to build a coherent transition from the ‘system of values’ to the ‘system of prices’ is amply documented in his *unpublished* notes during his life, which only *after* his death were published as to be materialized as *Capital* Vols. II and III.

The main and ultimate purpose of Marx, however, was *not* that of providing a correct theory of prices, to the effect of furnishing a proof of the ‘validity’ of his theory of exploitation made in *Capital* Vol. I. His analysis of the capitalist economy and of capitalist exploitation stands on its own, and any further proof to validate it turns out to be altogether *unnecessary*.

Marx’s ‘system of values’ of *Capital* Vol. I should properly be considered the required *complement* to the ‘system of prices’, for each of them casts a different light on the workings of an economy from different perspectives. It would then be incorrect to look at his effort to possibly build a transition from one system to the other as a ‘step forward’, or as ‘an almost complete approach’, to the ‘right solution’ to the price system – as Garegnani (1981), for example, maintains. This way of looking, in fact, would drastically scale down the positive contribution of Marx’s *Capital* Vol. I.

7. Sraffa’s breakthrough

The connection of Sraffa’s *PCMC* to the classical economists and Marx has been amply recognized and analysed in the literature, thanks also to the explicit statements by Sraffa himself (1960), p.v, and to the highly informative Appendix D of his book.

It is also well known that long before Sraffa, at the end of the nineteenth century, Dmitriev (1974) had successfully reshaped the Ricardian theory of labour value and von Bortkiewicz (1906), (1907) has also reshaped Marx’s equations, whereas von Neumann (1937) had already published a model whose structure captures with clear evidence the basic features of the classical economists' standpoint, and that therefore it seems formally to anticipate some features of the analogous structure of *PCMC*.

The works by Dmitriev, von Bortkiewicz and von Neumann, however, have all been designed to analytically take up and solve *specific* problems, until then not yet taken up or solved, whereas Sraffa's *PCMC* was *intentionally* designed to lay the foundations for a *critique* of economic theory from the classical economists' standpoint by means of *a genuinely new way of thinking* in the economic discipline and *a completely new vision* of the society.

Sraffa's *PCMC* should thus be looked at as an extremely complex work for more than one reason.

In the first instance, it shows that the classical economists' *standpoint* can be brought to the light again as the basis of a meaningful representation of the economy, without incurring in any sort of analytical and conceptual infelicity. This is because the inescapable and fundamental theory of value, which characterizes that vision (and which was neither successfully accomplished by Adam Smith, nor by Ricardo), can instead be shaped and solved meaningfully.

The solution to the system of production prices provided by Sraffa seems to imply *no necessity* to make explicit reference to *labour values*. This circumstance, at first sight, might have two conflicting interpretations. The first – which I personally reject – would state that Sraffa's approach seems to have definitely cut any connection whatsoever with Marx, because labour values, having no explicit analytical role to play within the framework considered, are altogether redundant. Quite reasonably, therefore, they are bound to disappear completely from the scene.

A different and opposite interpretation of Sraffa's approach in providing the correct solution to the system of production prices seems however possible.

In shaping his own framework, Sraffa takes as *given* the quantities of commodities used and produced in the production processes of the system, not more, nor less, than the classical economists and Marx did.

This initial feature should be seen not only in patent contrast to the 'marginal approach', which instead 'requires attention to be focused on change' Sraffa 1960, p. v. It should also be viewed as a radical change of perspective. In *PCMC*, in fact, the 'given quantities' standpoint reflects the very important circumstance that some crucial *decisions* must be taken *before* the production processes gets started, which implies that they are completely divorced from *any outcome of production* as from *any price-based valuation*. Therefore, being situated *outside* the 'core', they are essentially characterized, by their own nature, by social, political and institutional elements. This is in striking contrast to the *simultaneous determination* of quantities *and* prices by the same anonymous and undifferentiated 'market laws', typical of neo-vulgar economy.

Among those decisions, the sustenance, in dimension and composition, for those who work must already be fixed; decisions regarding the methods of production to be used and which and how much commodities shall be produced must be taken; if any surplus shall be produced at all must also be known; and the basic institutional features characterizing the economy must obviously be known as well. The quantitative relations between those 'given quantities' thus summarises the most relevant flow of events which occurs in the system till the moment considered.[11]

[11] Cfr. Chiodi (2010) and (2013).

Thus, production prices – which necessarily do need ‘given quantities’ for their determination – are *unable* to convey or to reveal anything concerning the above decisions. The essential function of production prices rests on their making possible the *reproduction of the system*. Only in this case the system can be said to be ‘viable’, which means the possibility of the system to at least reproduce those commodities necessary *for the livelihood of the community* and in making possible the distribution of the surplus, if it exists, according to criteria reflecting the antagonism between classes and essentially based on social and political elements *outside* the production system.[12] This is actually the *meaning* and the *function* Sraffa attributes to production prices, which thus merely appear as numerical reflections of far deeper social and political relationships among the people.

In an unpublished manuscript Sraffa writes:

> The old conception of cost and value was designed to solve this fundamental problem: what is the relation, if any, between *the importance to the community* […] *of a commodity* and *its price* (exchange value). They assumed that there was a relation of some sort between the two, and they expressed this mysterious relation by such words as “cause” or “measure” – but obviously they did not mean what is their appropriate sense (analyse). […] The modern conception is derived from the erroneous belief that the classics were literally looking for the “causes” of value, and not its relation with importance, i.e. its “meaning”. Sraffa Papers D3/12/4: 3, italics added.

Thus, Sraffa finely and rigorously traces the boundaries of what should be the ‘core’ of the economy to be analysed, by showing, at the same time, the *impossibility* of its own autonomy, *without making necessary reference to other elements outside the ‘core’*. The *invisible* elements outside the ‘core’ are thus as important as the *visible* ones inside it.

8. Sraffa’s ‘core’

Sraffa’s reconstruction of a ‘core’, with its inherent ‘openness’, thus seems to show quite evidently that the economic discipline does need flows of information and sets of decisions based on principles coming necessarily from other different disciplines, and that therefore no universal law or objective rule can ever be envisaged for the economic discipline in particular, with the exception for the logical relations and statements which can only be drawn *from within* the ‘core’. This is in sharp contrast to neoclassical theory, which has repeatedly stated the existence of universal economic laws, independently of the historical context considered. By contrast, for this very reason, Sraffa’s viewpoint here under discussion exactly reflects the classical and Marxian ‘vision’ of the society. At the same time, it implicitly emphasized the very importance and necessity of the Marxian ‘system of values’, as contrasted to the ‘system of prices’, each of them being able to cast light on *different* crucial aspects of production.

The possible existence of a ‘surplus wage’ – a novel characteristic of *PCMC* which Sraffa with great care takes *conceptually* and *practically* distinct from the ‘subsistence wage’ – reflects a remarkable aspect of the antagonism between classes. The very existence of a ‘surplus’ and its origin cannot be revealed by the system of production prices. In so far that it does exist, it potentially belongs to the community as such, *whatever be its class division and group segmentation*. In fact, even in the case in which the workers were the owners of the means of production *and* labour were of different qualities, there would necessarily be ‘antagonism’ between the workers, because to solve the system of production prices, *either* differences in quality must previously be reduced to differences in quantity, *or* proportions between different

[12] Cfr. Chiodi (1992), (1998) and (2010)

level of wages must be fixed in advance. In the former as well as in the latter case, decisions of *genuinely institutional character* must be taken *before* any determination of prices.

Sraffa's *PCMC*, however, does also possess a 'pedagogical' feature which in my opinion has passed almost unnoticed. Concepts, definitions notions which are found in *PCMC* are all in perfect synchrony with the classical economists' and Marx's languages. Any single word, which might even evoke some feeble connection with neoclassical theory, is carefully avoided in their use, as in the case with the term 'cost of production' and especially with the much-debated tricky term 'capital', Sraffa (1960), p. 9. It is worth noticing, in this connection, Sraffa's view on this expressed in the late 1920s:

It is terrific to contemplate the abysmal gulf of incomprehension that has opened itself between us and the classical economists. Only one century separates us from them: […] how can we imagine to understand the Greeks and the Romans? […]

The classical economists said things which were perfectly true, even according to our standards of truth: they expressed them very clearly in terse and unambiguous language, as is proved by the fact that they perfectly understood each other. Sraffa Papers D3/12/4:14.

The hidden pedagogical feature of *PCMC* is perceived in the way in which Sraffa, chapter by chapter, introduces and explains his propositions. Simple numerical examples are generally given before any generalization. This style of writing is also in perfect line with the mathematical language used by Sraffa and with his own way of reasoning in proving the statements contained in *PCMC*. The mathematics employed by Sraffa is 'constructive mathematics', as Velupillai (1980), (1989) and (2008), who was the first scholar to rightly draw attention to this very important aspect, has persuasively shown. Space does not allow us to go further on this interesting and important issue. Suffices it to say that through his 'constructive proofs' Sraffa wanted to take due distance even from the way in which until then mathematics was used in neoclassical theory. On reading, for example, the long sequence of lemmas and definitions in the seminal paper by Arrow and Debreu (1954), it seems that economic theory should *conform to* mathematics, whereas Sraffa wanted to do exactly the other way about. In this connection, in a passage in his unpublished manuscript Sraffa writes:

Our metaphysics is in fact embodied in our technique; the danger lies in this, that when we have succeeded in thoroughly mastering a technique, we are very liable to be mastered by her. Sraffa Papers D3/12/4:15.

The 'pedagogical' approach of Sraffa here put forward gives the strong perception that he wanted *to completely reset* from the very beginning the entire setting of the economic discipline and of its teaching as well. In the flyleaf of his book it is written that '[a]lthough the reasoning is abstract it requires no knowledge of mathematics beyond elementary algebra' and, in the *Preface*, he states that the 'unusual' mathematical notation adopted goes in the direction of helping 'the non-mathematical reader', p. vii.

The use of that kind of mathematics by Sraffa sounded obviously quite strange to Solow (2014), as soon as he read Sraffa's book in 1960, as he expresses 'some astonishment that Sraffa has managed to learn so much about Leontief Models *with such primitive tools*', p. 63.

It is worth pointing out that Sraffa is also very careful in making a *direct* criticism of neoclassical theory. The long paragraph devoted to criticising economic theory for the wrong attempt it made by using the 'period of production' as a measure of 'the quantity of capital' is entirely written in parenthesis, to testify that it should be taken apart from the main part of the book. It should also worth pointing out that chapter XII 'Switch in the Methods of Production', which most inspired the initial capital theory controversy in the 1960s and 1970s, is the last chapter of *PCMC*.

9. Some critiques of economic theory independently of*PCMC*

It might perhaps be useful to recall that critiques on *specific* and crucial aspects of neoclassical economic theory have been made by several authors over the last century and some of them even before Sraffa's *PCMC*.

Long before Robinson's (1953) critique of the neoclassical production function, Wicksell (1901) – who should be considered a heterodox and quite peculiar neoclassical economist – made very clearly his critique of the notion of 'capital' employed in neoclassical theory.[13]

He writes:

> Whereas labour and land are measured each in terms of its own technical unit […] capital, on the other hand, […] is reckoned, in a common parlance, as a sum of exchange value" – whether in money or as an average of products. […] it is a theoretical anomaly which disturbs the correspondence which would otherwise exist between all the factors of production. *Ibidem*, p. 149.

> If capital also were to be measured in technical units, the defects would be remedied and the correspondence would be complete. But, in that case, productive capital would have to be distributed into as many categories as there are kinds of tools, machinery, and materials, etc., and a unified treatment of the role of capital in production would be impossible. *Ibidem*.

He directed his criticism against von Thünen, for having put on the same footing wages and interest as being determined on the same symmetrical principle of 'marginal productivity', *ibidem*, p. 147, but also against Walras, *for his dangerous arguing in a circle*, in so far as capital goods were not treated with extreme precaution:

> Again, it is futile to attempt – with Walras and his followers – to derive the value of capital-goods from their own cost of production or reproduction; for in fact these costs of production include capital and interest, whereas our analysis of the laws of the cost of production has hitherto proceeded on the assumption that production is non-capitalistic. *We should, therefore, be arguing in a circle*. *Ibidem*, 149, italics added.

Wicksell then constructed a model with 'dated' quantities of *non*-produced inputs as 'representatives' of capital goods.

Suffices it to take a simple stationary economy with only one single final product and dated quantities of labour and land over n periods, and composed of $2n + 3$ independent equations: 1 production function (whose arguments are the dated quantities of labour and land over the n periods), $2n$ 'marginal productivity' conditions, and 2 demand and supply equality conditions for labour and land respectively.

The system of equations formulated in that way does have $2n + 4$ unknowns: the quantity of the final product, the $2n$ dated quantities of labour and land, the wage rate, the rent rate and the rate of interest (rate of profit). If the system is solvable, one of the unknowns can thus be fixed from *outside* the system of production, and – obviously enough – the most eligible unknown which might be fixed in this way is just the rate of interest. The latter possibility straightforwardly implies the unavoidable circumstance that distribution cannot find a consistent solution from within the model of production and that 'capital' – *however defined* – cannot be measured independently of distribution. It should also be added that the notion of 'marginal productivity' of *any* 'factor', although formally definable, turns out to be irrelevant in relation to the distribution of income.

[13] Cfr. Chiodi (2013). It is also worth reading Goodwin (1970) and Chiodi (2015).

A less known criticism – albeit far more profound than Joan Robinson's and with much Ricardian and Sraffian 'flavour' – was de Graaff's firm rebuttal of the conceptual separation between 'size' and 'distribution' of income.

> In a one commodity world – de Graaff writes – some definite meaning could be attached to a phrase like 'the size of the national income' […] But as soon as we leave a one commodity world this ceases to be true. There is no unambiguous meaning which we can attach to 'the size of the national income' when we have a heterogeneous collection of goods and services. […] [A Paretian welfare function] will only tell us what weights to use when the distribution of the goods among the members of the community is given. […] [T]he size-distribution dichotomy is inconsistent with the basic Paretian value judgments that individual preferences are to count and that a *cet. par.* increase in any one man's well-being increases social well-being. […] Moreover, 'size' in this sense will generally change whenever the distribution change, even if the collection of goods and services distributed remains the same. de Graaff (1957), pp. 91-92.

Lastly, it is worth briefly mentioning a paper by Nuti (1970), in which a 'putty-clay' model of production, widely used in the economic literature in the 1960s, is used to investigate some properties of the choice of production techniques.

Nuti eliminates in his 'putty-clay' model two of the customary assumptions *i.e*. (i) that the transformation of putty into clay is costless and (ii) that there are no gestation lags of investment. He is then able to show that the problem of 'reswitching' of techniques (the same technique might be eligible at more than one level or range of the rate of interest) arises straightforwardly. This implies that for specific critiques of economic theory it is utterly unnecessary to refer to the Sraffian framework.

10. Concluding remarks

The main thesis of the present paper can be summarized by saying that the most characterizing feature of *PCMC* lies in having brought about a *new way of thinking* in the economic discipline, by reshaping the classical economists' and Marxian standpoint in an analytically robust framework and by using a *lexicon* completely different from that introduced and used since the advent of neoclassical economics. *This* very feature of Sraffa's *PCMC* should then be considered the most important and *constructive* critique of the dominant economic theory.

Over the years, however, most Sraffians have pursued a different path in the critique of economic theory, essentially based on bringing about, here and there within the equilibrium-market-centred neoclassical standard model, mistakes and infelicities *on logical grounds*. This very approach – which nonetheless deserves appreciation and intellectual respect – has ultimately revealed itself too feeble to upset the consolidated and widespread 'vision' of the society conveyed by neoclassical economics. A litmus test of this can be seen by looking at the economic policies pursued around the world and at the consequences produced by them on the people.

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