

## An Essay on Theories of Value from Adam Smith to Piero Sraffa

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What is *value*? What makes a thing valuable? An old family picture or a gift from a loved one could have a great value for an individual, but no one else may be willing to give anything in exchange for these items. Such items, as we all know, have 'sentimental value' but no 'economic value'. Value in economic sense is a *social measure* of the 'worth' of a thing. It is an *objective measure* in the sense that a thing's worth is not measured by individual subjectivity but by the objective measure of how much of something else that can be gotten for it in exchange. If exchange between two commodities is sporadic, then the measure of the worth of the two commodities may still reflect idiosyncratic subjectivity. When exchange becomes regular, however, then the relationship between the two commodities in exchange takes an objective form such as twenty-five goats for an ounce of silver. The problem of value is to answer this question: *what determines such objective measures like twenty-five goats for one ounce of silver?* This is essentially a static problem in the sense that the question relates to a particular point in time. Sometimes the problem of value gets mixed up with an entirely different question that seeks to inquire the reasons for the changes in the exchange ratios of the commodities over a period of time. It should be quite clear that the correct answer to the first question is the prerequisite for a satisfactory answer to the second.

But before we could discuss the question of how the exchange ratios of commodities or the prices of commodities are determined, we need to ask a more fundamental question. It is obvious that if we were interested in understanding black holes or the beginning of the universe, etc. we would not need to be bothered by the question of why many things have 'value'? The question of value must arise within a theoretical problematic, and thus the mystery of 'value' can only be solved by investigating the theoretical problematic that give rise to the problem.

With the advent of capitalism as a historical mode of reproducing human material life, economics slowly separated itself from being a part of ethical philosophy (e.g., the problem of fair price) and developed its own independent personality. There are two or rather three fundamental aspects to capitalist organization of society. One is that there is extensive social division of labour, i.e., fulfillment of human needs require exchanges of the things produced. Second, the society is divided into two or three classes of capitalists, wage labourers, and land lords. And third, there is competition among the capitalists. The first two aspects give rise to two fundamental questions. (i) How is the exchange of commodities determined? And (ii) how is the income of the three classes determined, such that they are reproduced from one time period to another?

In this paper we would concentrate our analysis of the problematic of value, particularly with its relation to the problem of finding a *measure* of value,

in the writings of four significant economic thinkers of the past, namely: Adam Smith, David Ricardo, Karl Marx, and Piero Sraffa.

### **Adam Smith (-1790)**

Adam Smith's major economic magnum opus, *An Inquiry Into The Nature And Causes Of The Wealth Of Nations*, was published in 1776; and our discussion of his theory of value will concentrate on this book. Adam Smith arrives at the problem of value only after developing his theme on the 'division of labour', the development of which, according to him, was the major cause of opulence or wealth of a nation. Though Smith is concerned with the problem of growth, he poses the problematic of value in starkly static context: "What are the rules which men naturally observe in exchanging them either for money or for one another, I shall now proceed to examine. These rules determine what may be called the relative or exchangeable value of goods." (p. 44) He, further on, elaborates the basic problem of value as:

In order to investigate the principles which regulate the exchangeable value of commodities, I shall endeavour to shew,

First, what is the real measure of this exchangeable value; or, wherein consists the real price of all commodities,

Secondly, what are the different parts of which this real price is composed or made up.

And lastly, what are the different circumstances which sometimes raise some or all of these different parts of price above, and sometimes sink them below their natural or ordinary rate; what are the causes which sometimes hinder the market price, that is, the actual price of commodities, from coinciding exactly with what may be called their natural price. (p. 46)

Thus the first problem deals with the *measure* of value. Smith needs to solve this problem because after developing the notion of division of labour and exchange as the main cause of the opulence of a nation, he needs a *measure* that would measure the wealth and its rise or fall over time. We should though keep in mind that the problem of value was posed in a static context as determining the rules of exchange between commodities at any given time. Though the early discussion in chapter 5 appears to establish a pure labour theory of value as the rule for exchanging one commodity for another, it soon becomes clear that Adam Smith's solution to the problem is of a completely different nature. He needs a measure that is invariable over time. Though any commodity (preferably precious metals) could serve the purpose for any given time and place, none of them are a good candidate for an invariable measure over time. Thus Smith starts to look for something whose 'value' is given from outside of the exchange relations of all the commodities. He thinks that he has found it in his notion of 'labour commanded', i.e., the amount of labour time any

commodity commands or can buy is what measures its value. On the face of it, it is not a satisfactory solution, and Smith was aware of it, since it must be assumed that the real wages are constant over time for this measure to remain *invariable*. To get out of this problem, Adam Smith took refuge in a *subjective* notion of labour as *sacrifice*, i.e. equal amount of labour time amounts to the same amount of *sacrifice* to the labourer at all times:

... so a commodity which is itself continually varying in its own value, can never be an accurate measure of the value of other commodities. Equal quantity of labour, at all times and places, may be said to be of equal value to the labourer. In his ordinary state of health, strength and spirits; in the ordinary degree of his skill and dexterity, he must always lay down the same portion of his ease, his liberty, and his happiness. The price which he pays must always be the same, whatever may be the quantity of goods which he receives in return for it. (p. 50)

To understand the significance of Smith's labor commanded measure one only has to look at the title of his book. The very title of the *Wealth of Nations* makes an epistemological claim that the purpose of his inquiry is to discover the nature and causes of the wealth of a nation. Apparently for Smith the real cause or the ultimate *cause* of wealth lies in the *sacrifice* of the laborers, and therefore its real measure must be the amount of sacrifice it can command. Such a

measure of value, however, implies that a rise or fall in the wages of workers would be interpreted as fall or rise in the values of other commodities. Ricardo, whose concern with the theory of value was quite different, as we shall see, could never reconcile to such a measure or rather the interpretation of rise and fall of the values of commodities.

Though the labor commanded measure of value has significance for Smith's definition of wealth and its measure over time, it has no significance for a theory of value that aims at explaining the exchange ratios between commodities at any *given time and place*. As Smith pointed out:

At the same time and place the real and the nominal price of all commodities are exactly in proportion to one another. The more or less money you get for any commodity, in the London market, for example, the more or less labour it will at that time and place enable you to purchase or command. At the same time and place, therefore, money is the exact measure of the real exchangable value of all commodities. It is so, however, at the same time and place only. (p.55)

Thus the problem of measure of value does not arise in the case of the static theory of value. For such a theory, he first divided the total output into three major categories: wages, profits, and rents. Leaving out his confusion between gross and net outputs aside, his major contention was that the value of a commodity could be determined as an *objective measure* by its 'cost of

production', where cost included, along with the natural wages, natural profits and rents as well, that were necessary to bring forth the effectual supply of the commodity. Here again Ricardo was quick to point out the fundamental theoretical problem with this approach. If the total net output was divided into wages, profits, and rents and the price of a commodity represented the aliquot parts of the three income categories, then it could not be determined by adding up *independently* determined natural wages, profits and rents, since the net output imposes a constraint binding on the system. Thus prices could not be determined by adding up wages, profits, and rents as necessary cost components.

The third aspect of the theory of value in Smith deals with the competitive nature of capitalism. Here Smith argues that free mobility of capital and labour would ensure that all the prices and income categories *gravitate* to their 'natural' values that could be determined independently of the demand and supply conditions at any given time point. The current demand and supply forces only determine 'market prices', which are ephemeral, as opposed to 'natural prices' that serve as long-term gravitational points for the market prices. Both Ricardo and Marx accepted this proposition of Smith, and Sraffa passed it over in silence.

### **Ricardo**

As mentioned above, Ricardo rejected both the *subjective measure* of value proposed by Smith, as well as his *objective* adding up theory of value. In

the Preface of the *Principles of Political Economy and Taxation* (1817-21), the only book Ricardo produced in his lifetime, he set the problematic of political economy in these terms:

To determine the laws which regulate this distribution, is the principal problem in Political Economy: much as the science has been improved by the writings of Turgot, Stuart, Smith, Say, Sismondi, and others, they afford very little satisfactory information respecting the natural course of rent, profit, and wages.

(p. 5)

Here the problem of the distribution of income has been put at the centre of the problematic of political economy. One should also note that the question of the distribution of income is posed both in the static (i.e., "to determine the laws which regulate this distribution") as well as the dynamic (i.e., "[the] information respecting the natural course of rent, profit, and wages") contexts. The book, however, begins with a long chapter 'On Value', and only then moves to the analysis of the distributional categories. Sraffa (1951), in his famous general introduction to *The Works and Correspondence of David Ricardo*, gives a cogent and highly persuasive story behind Ricardo having to come to terms with a theory of value before he could discuss the laws regulating the distribution of income.

According to Sraffa, prior to the writing of the *Principles* Ricardo was working on an implicit 'corn-profit model'. According to this model, given the

theory of differential rents established by Malthus, the marginal land did not pay any rent and both the inputs and the output of the land consisted of the same commodity, corn, as seed and corn wages as well as corn output. In this case the rate of profits could be derived by physically dividing the net corn output by the seed plus the corn wage capital investment. This rate of profit, given the competitive nature of the capitalist economy, will have to prevail in all the sectors of the economy. Moreover, a fundamental law of distribution, suggesting that the real wages and the rate of profits are proportionately and inversely related to each other, is established by changing the corn wages and reading out its effect on the rate of profits.

This simple model had to be given up by Ricardo because of his friend Malthus's consistent protestation that real wages, apart from corn or agricultural goods in general, also contain manufacturing goods. Thus the rate of profits could not be determined in the agricultural sector alone. The one good 'corn-profit model' had to be given up and capital consisting of a bundle of heterogeneous goods had to be taken up. Now, one could no longer determine the rate of profits by simply dividing the physical net output by the physical capital investment since the ratio, in all probability, would be a ratio of heterogeneous goods. Ricardo needed to homogenize the ratio of heterogeneous goods in order to derive the rate of profits, and this could only be done with the aid of a *theory of value*. A theory of value would give a theoretical basis of

representing or measuring all commodities in terms of one chosen as the 'money commodity'.

The pure *labour theory of value* seem to foot the bill at the first blush, as long as it could be assumed that the ratio of direct to indirect labour content in all the sectors were the same. This also proved triumphant in demolishing Adam Smith's incorrect argument that the pure labour theory of value becomes invalid once the surplus income categories such as profits and rents emerge. It was not the emergence of profits and rents that invalidated the labour theory of value as a correct theory of value or prices in a capitalist system, argued Ricardo. The assumption of equal ratio of direct to indirect labour in all the sectors, however, was too restrictive. And once this restriction was revoked the pure labour theory of value had to be "modified" to ensure an equal rate of profits across the sectors.

This "modification" of the labour theory of value as such did not bother Ricardo. What bothered him though was that once such a modification is accepted, a rise or fall in real wages would affect the value of all the commodities, including the chosen money commodity, in all sorts of ways. Thus even if the net output has been kept constant in physical terms a change in its distribution between wages and profits could very well change the size of the pie when measured in value or money terms. The *measuring rod* does not remain *invariant* to the distribution of income, and thus no precise laws about the distribution of income could be established. Ricardo remained worried and

busy trying to solve this theoretical problem till his end, but did not succeed.

Sraffa (1960) solves this particular problem with his ingenious devise of the 'Standard commodity'.

The point that we need to note here is that though Adam Smith's problem of the *invariable measure of value* was a problem of invariability over a period of time; Ricardo's problem of the *invariable measure of value* was a static problem needing a solution for a given point in time and place.

In opposition to Sraffa's reading of Ricardo's problem of the invariable measure of value, some noted Ricardo scholar such as Caravale and Tosato (1980), Nai-Pew Ong (1983), and recently Mark Blaug (1999) have highlighted the dynamic aspect of Ricardian problematic; and have gone on to interpret Ricardo's search for an invariable measure of value in the dynamic context as well. Below I shall argue that such a reading is a misinterpretation of Ricardo.

Though Blaug in his most recent paper (1999) has argued for putting the *dynamic* aspect of Ricardo's problematic at the centre, his position on this crucial issue of the invariable measure of value remains unclear. In the most recent paper he does not broach this issue; however, in his earlier piece (Blaug 1987) he sent confusing signals. First, he suggested that “what Ricardo later put in place of the missing corn model was the ‘invariable measure of value’”, which confirms Sraffa’s position. But later in the same paragraph he goes on to add, “In Ricardo, the divining rod of the invariable measure is supposed to be invariant (as Ricardo kept saying) not just to changes in wages and profits but also to changes in its own methods of production.” (p. 439). It is not clear whether he thinks the two problems are theoretically separate or not.

Caravale and Tosato (1980) and Nai-Pew Ong (1983) have also challenged Sraffa's reading of Ricardo from a *dynamic* perspective, similar to Blaug's (and both of whom Blaug approvingly cites). But unlike Blaug, both of them have taken the challenge to Sraffa on this most crucial issue of the invariable measure of value itself.

Caravale and Tosato (1980) claim that real wages in Ricardo's theoretical framework remains fixed both for short and long periods. Thus by changes in wages Ricardo means changes in money wages due to changes in the technology of production of the wage goods. The Sraffian problem that analyzes the effects on prices of changes in real wages, given the technology of production and total output, therefore, has no playing room in Ricardo's framework: "The former type of analysis [i.e. Sraffa-type], however, is precisely what the assumption of fixed real wages exclude." (p. 16). Caravale and Tosato go on to claim that Ricardo's 'invariable measure of value' was about finding a measuring rod that would remain invariable in the face of changes in technology in wage goods production, i.e. diminishing returns in agriculture.

Both these claims, however, are false. In Ricardo's framework real wages are not fixed in the long-period context. His fixed subsistence wage is defined for the stationary state, where the rate of growth of population is equal to zero. Since Ricardo believed that the contemporary economy was far from the stationary state, he envisaged a falling real wage over a long period of time—Hicks and Hollander (1977) have provided ample evidence in Ricardo's writings to refute a fixed-wage hypothesis in Ricardo's long-period framework. Furthermore, there is ample evidence in Ricardo that he contemplates changes in real wages completely independently of any changes in

technology. To give just one example, in the rough draft of ‘Absolute Value and Exchangeable Value’ Ricardo writes:

It [the rate of profits] not only depends on the relative value of the finished commodity to the necessaries of the labourer, which must always be replaced, to put the master in the same condition as when he commenced his yearly business but it depends also on the state of the market for labour (or on the quantity of the necessaries which competition obliges the master to give for these necessaries), for if labour be scarce the workman will be able to demand and obtain a great quantity of necessaries (or which is the same thing to the master luxuries) and consequently a greater quantity of the finished commodity must be devoted to the payment of wages and of course a less quantity remains as profit for the master. The profits of the master depend then on two circumstances first on the comparative value which necessaries bear to the finished commodity, secondly on the quantity of necessaries and enjoyments which the labourer by his position can command. (*Works* vol. IV, p. 366).

It is equally false to suggest that Ricardo’s ‘invariable measure of value’ was supposed to remain invariable in the context of changing technology and not in the context of given technology. If this was the case, then Ricardo’s life-long quest to define an ‘average commodity’ loses all its meaning. The very idea of an ‘average commodity’ is simply meaningless when one is looking at two sets of technological configurations. Thus, when Ricardo argues, “May not gold be considered as commodity produced with such proportions as of the two kinds of capital as approach nearest to the average quantity employed in the production of most commodities?” (*Works* vol.I, p. 45), he clearly is

talking about the gold sector having the *average* composition of capital *given* the technologies of all the commodities. The question of changes in technologies does not even arise here.<sup>1</sup> Thus Ricardo's identification of 'invariable measure of value' with the commodity produced with *average* composition of capital leaves us with no other choice than to conclude, with Sraffa, that:

This preoccupation with the effect of a change in wages arose from his [Ricardo's] approach to the problem of value which, as we have seen, was dominated by his theory of profits. The 'principal problem in Political economy' was in his view the division of the national product between classes and in the course of that investigation he was troubled by the fact that the size of this product appears to change when the division changes. Even though nothing has occurred to change the magnitude of the aggregate, there may be *apparent* changes due solely to changes in measurement, owing to the fact that measurement is in terms of value and relative values have been altered as a result of a change in the division between wages and profits. ... Thus the problem of value which interested Ricardo was how to find a measure of value which would be invariant to changes in the division of the product; for, if a rise or fall of wages by itself brought about a change in the magnitude of the social product, it would be hard to determine accurately the effect on profits. (This was, of course, the same problem as has been mentioned earlier in connection with Ricardo's corn-ratio theory of profits.) (Sraffa 1951, p. xlviiii-xlix).

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<sup>1</sup> The 'average' could still be meaningful in the context of technical change in the agricultural sector only if it is assumed that the average is meant only for the manufacturing sector, which does not experience any technical change. There is no evidence in Ricardo's writings, however, that suggests that he excludes the agricultural sector from his calculation of the 'average' industry.

Nai-Pew Ong (1983) argues that Ricardo was interested in establishing the labor theory of value in a dynamic context. That is, he wanted to establish a one-to-one relationship between a change in the ‘difficulty of production’ of a commodity and its prices of production. Since an increase in the difficulty of production in the agricultural sector leads to changes in the distribution of income, which has an independent impact on the prices of production, Ricardo’s intended ‘invariable measure of value’, or what Ong calls the divining rod, was somehow supposed to separate out all the complications caused by the latter factor.<sup>2</sup> Ong’s conclusion is that a solution to Ricardo’s problem is a theoretical impossibility. This is because in an interlocking input-output system an increase in the direct labor-time element in the production of a commodity may lead to either a rise or a fall in its price of production, depending on how the consequent fall in the rate of profits affects the cost of indirect, or dated, labor elements—the argument is similar to Sraffa’s reswitching argument.

Though Ong’s argument is correct for Sraffa’s analysis in the *PCMC*, he is simply wrong in the case of Ricardo. Ricardo never assumed that ‘corn’ or agricultural goods in general entered the manufacturing sector as raw materials or inputs, nor did he assume that the manufacturing sector provided inputs to the agricultural sector. In other words, he did not have a Sraffa-type interlocking input-output system.<sup>3</sup> The two sectors were interconnected only because the wage basket contained both agricultural and manufacturing goods. In this case a rise in the difficulty of production in the agricultural sector would not

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<sup>2</sup> “Clearly, Ricardo’s search for the invariable measure is his peculiar way of reconciling his one-dimension notion of an absolute ‘difficulty of production’ of commodities in general, which underlies his theories of income distribution and ‘natural value’, with his discovery that the relative prices of production of commodities change with both the labor expended in their production and the time distribution of these expenditures, that is, according to *two dimensions* of changes in their conditions of production.” (Ong 1983, p. 210).

<sup>3</sup> “It was a fair simplification, in Ricardo’s time, to think of all industries as vertically integrated. It was so natural a simplification that he could make it without emphasizing it.” (Hicks 1985, p. 309).

affect the dated labor content of the manufacturing sector. Had Ricardo been working with an interlocking input-output system, then his assumption “that in production of our money ...the same quantity of labour should at all times be required”<sup>4</sup> would become meaningless. This is because a rise in the difficulty of production in the agricultural sector would affect the indirect labor content of the measuring rod as well. Thus maintaining the “same quantity of labour at all times” would amount to constant and artificial adjustments in the production technology of the money commodity to keep its total labor content constant. Clearly Ricardo was bright enough to see this much, and there is no evidence in his writings to show that he meant anything other than constant technology by the condition of “same quantity of labour at all times”. Thus again we have no other option than to conclude with Sraffa that:

Ricardo starts (in ed. I of the *Principles*) by applying the concept to the problem of two commodities which have changed in relative value as a result of a change in the difficulty of production: absolute value is then the criterion for deciding in which of the two the real changes has occurred. He ends (in his last paper on value) by bringing this criterion to bear upon another problem, namely the distinction between two causes of changes in exchangeable value: for, ‘difficulty or facility of production is not absolutely the only cause of variation in value[,] there is one other, the rise or fall of wages’, since commodities cannot ‘be produced and brought to market in precisely the same time’. Absolute value, however, reflects only the first type of change and is not affected by the latter. (Sraffa 1951, p. xlvi).

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<sup>4</sup> *Works* vol. I, p. 44.

## Marx

Marx considered Ricardo's problem of the invariable measure of value as a "secondary problem". According to him, the very deviation of the natural prices or values from the pure labour theory of value was the problem that needed addressing by Ricardo. He thought that he had solved this problem to a large degree--a solution that has come to be known as the *transformation problem* in Marxian economics. But before discussing this vexed problem, let us see how Marx presented the problematic of value.

Marx begins his magnum opus, *Capital vol. I*, with a chapter on commodities. He argues that in a commodity producing economy, the value relations between commodities regulate the social division of labour. In a simple commodity producing economy, where labour is still not separated from the means of production, a pure labour theory of value can be taken as the solution to the problem of the value relations between commodities that regulate the social division of labour. Up till this point, neither Adam Smith nor David Ricardo would have had any problem with Marx. Marx, however, gives a new twist to the whole thing. He argues that labour, and here labour is seen as *objective* measure in the sense of labour time spent and not in the Smithean *subjective* measure as sacrifice, is the measure of value because value relations between commodities are nothing but a representation or a *form* taken by the relations between different kinds of concrete labour within a given social division of labour. Thus the problematic of the measure of value has been shifted from Ricardo's problem of the distribution of income to the problem of the allocation of social labour. This Marx, I would suspect, would be much dear to a Paul Samuelson or a Samuel Hollander than a Sraffa.

Elsewhere (Sinha 1996) I have argued that There are two separate problematics of value that run through *Capital*. Apparently, Marx's strategy was to establish a rule of exchange on the basis of labour time to establish the fact of exploitation of labour in capitalism that is hidden under the cloak of exchange

of equals. A deeper analysis, however, reveals that the capital-labour relation is a commodity relation only in appearance. Its scientific understanding cannot be formed on the basis of an analysis of commodity relation in general. Thus the theoretical relevance of the analysis of commodity relation in general collapses for the project of an analysis of exploitation and its reproduction in a capitalist system. Thus the relevance of labour time as a unit of *measure* in Marx's broader problematic of exploitation of labour and its reproduction must be searched in the formulation of the concept of exploitation itself. More detailed ideas of mine can be found in Sinha 1997, and Sinha 2000.

### **Piero Sraffa**

Sraffa's *Production of Commodities by Means of Commodities* begins with a subsistence economy such as:

280qr. wheat + 12t. iron  $\rightarrow$  400qr. Wheat

120qr. wheat + 8t. iron  $\rightarrow$  20t. iron.

It is obvious that for this economy to continue from one period to another, 10qr. wheat must exchange against 1t. iron. This simple example is designed to show that values in this economy form an internal logical relation with the method of production. Sraffa then goes on to develop examples of surplus producing economies with positive rate of profits and wages. He finds that in such an economy values cannot be determined unless wages or profits are given from 'outside' of the system. Let us suppose that wages are given from outside, then all the prices in terms of any arbitrarily chosen commodity and the rate of profits will be determined *simultaneously*. This simultaneous determination of

prices and rate of profits brings an interesting aspect of Sraffa's argument to relief. By this proposition, Sraffa is able to show that concepts such as 'quantity of capital' or 'cost of production' have no meaning independent of the concept of value. In other words, these concepts form an internal logical relation with each other and have no independent identity of their own. In a generalized joint production case, he goes on to show that even statements such as "rise" or "fall" in wages have no meaning unless it is specified in what standard the wages are measured—what is a rise in one standard could very well turn out to be a fall in another standard.

Before I further develop this theme of internal relations and analyze the role of the standard of measure in Sraffa's work, let me say a few words about the general frame in which his arguments are made. Sraffa takes what could be called a 'snap shot' of any given economy. His concern is to analyze the relationships that must pertain between economic variables and concepts if an equilibrium condition is imposed on the system. The metaphor of a snap shot points to the fact that his propositions are built on only observable in the economy, as well as an absence of time as a variable in the system. In other words, Sraffa's propositions are akin to the propositions in geometry rather than mechanical sciences where the system works on the relationship of cause and effect, and time is implicitly or explicitly a part of the argument. It should also be noted that Sraffa's equations are not necessarily in "equilibrium". He is not concerned with the *forces* that would bring a system to equilibrium (which

implicitly must bring time into the argument). He is only concerned with the necessary relationships that must pertain between certain economic concepts and variables if the equilibrium condition is imposed on any given economic system.

Now let us look into the problem of standard of measure in Sraffa's system. As we have seen, Sraffa's general system can determine all the prices in terms of any arbitrarily chosen commodity and the rate of profits, once the wages are given from outside. However, when one changes the wages, in general, all the prices change in a very complicated way. This is how Sraffa introduces the famous chapter on the 'Standard Commodity', "The necessity of having to express the price of one commodity in terms of another which is arbitrarily chosen as standard, complicates the study of the price-movements which accompany a change in distribution. It is impossible to tell of any particular price fluctuation whether it arises from the peculiarities of the commodity which is being measured or from those of the measuring standard." (p. 18). This does not seem to be a very strong motivation, as we are not told why the study of the "price-movements" is important. As we go deeper in the book, we find that the construction of the Standard commodity was just a device to show that there exists a structural relationship between the three variables, which is given by,  $r = R(1-w)$  (i), where  $r$  and  $w$  represent the rate of profits and wages expressed in the Standard net product respectively and  $R$  represents the Maximum rate of profit that the system can generate given the technological

configuration. Thus, if the relationship given by the equation (i) is introduced as an additional equation on the system, then it implies that one is implicitly using a Standard commodity for measuring all the variables without explicitly using it, though  $w$  still needs to be expressed in terms of the Standard commodity. The above relationship could also, however, be expressed as  $1/w = R/(R-r)$  (ii), and if one takes the rate of profits as given from outside (which is a pure number) then  $w$  could be determined as a fraction of the total labor spent as a pure number as well. By solving for the prices one can then easily express  $w$  in money wages by choosing any commodity as money-commodity. Thus, Sraffa uses the Standard commodity as a ladder. He uses it to show that a fundamental structural relationship holds between the given production technology (represented by  $R$ ) and the rate of profits and wages. Once this is achieved, the ladder could be kicked off.

The above relationship shows that there exists a structural relationship between the given technological configuration of an economic system and the wages and the rate of profits that are independent of value or prices. One important theoretical implication of the above proposition is that all the attempts to arrive at prices by adding up a rate of profit to given 'cost' is logically flawed. But more importantly, I would venture to suggest that Sraffa's arguments are akin to Wittgenstein's later philosophy, where he argued that the meaning of a word could only be determined in the context of its *use*. If we use the language metaphor to understand Sraffa, then we could say that his  $R$

represents a language such as English, and  $w$  and  $r$  represent the cultural context in which value of a commodity can be determined or has any meaning. The interesting thing is that in Sraffa's world there is not much of a possibility of translation from one language to another. One given technological configuration defines a world and it cannot be compared in any meaningful way with another technological configuration. This may be a reason why Sraffa remained so silent about dynamic theories. Not only that dynamic theories are based on mechanical causality as an epistemology, which he was trying to replace with an epistemology of internal and simultaneous relations, but also that when time becomes an argument then infinite number of variables could change including technology and there is no way of meaningfully comparing one system with another. This appears to be the theoretical import of Sraffa's concern for the invariable measure of value and his Standard commodity.

It seems to me that Sraffa is working on the limits of economic knowledge, and holds the opinion that future cannot be predicted.

## References

- Blaug, Mark. (1987), "Classical Economics", *The New Palgrave: A Dictionary of Economics*, eds. J. Eatwell, M. Milgate and P. Newman. London: Macmillan.
- . 2000, "Misunderstanding Classical Economics—The Sraffian Interpretation of the Surplus Approach", *History of Political Economy*.
- Caravale, G. A. & D. Tosato. 1980. *Ricardo and the Theory of Value, Distribution and Growth*. London: Routledge & Keegan Paul.
- Marx, K. (1867) 1977. *Capital, vol. I*. New York: Vintage.
- . (1894) 1981b. *Capital, vol. III*. New York: Vintage.
- Ong, Nai-Pew. 1983. 'Ricardo's Invariable Measure of Value and Sraffa's "Standard Commodity"', *History of Political Economy* 15: 207-27.
- Ricardo, D. (1821) 1951. *On the Principles of Political Economy, and Taxation*. Cambridge: Cambridge University Press.
- . 1952. *The Works and Correspondence of David Ricardo, vol.IV*, Cambridge: Cambridge University Press.
- Sinha, A. 1996. 'A Critique of Part One of Capital volume one: The Value Controversy Revisited', *Research in Political Economy vol. 15*, (eds.) Paul Zarembka & Ajit Sinha. Greenwich: JAI Press Inc: 191-218.
- . 1997. 'The Transformation Problem: A Critique of the "New Solution"', *Review of Radical Political Economics* 29(3): 51-58.
- . 2000. 'The Transformation Problem: Is the Standard Commodity a Solution?', *Review of Radical Political Economics* 32(2)
- Smith, A. (1776) 1981. *An Inquiry into the Nature and Causes of the Wealth of Nations*. Indianapolis: Liberty Fund
- Sraffa, P. 1951. 'Introduction' to *The Works and Correspondence of David Ricardo, vol.I*, Cambridge: Cambridge University Press.
- . 1960. *Production of Commodities by Means of Commodities*. Cambridge: Cambridge University Press.