The inconvenient problem of exchange consistency: Why Moseley's price interpretation of Marx is not a monetary Interpretation

Alan Freeman, Winnipeg 8 May 2019

"And make money disappear
just by talking sweet and low"
- Linda Ronstadt, *Simple Man, Simple Mind*

Abstract

These comments on Fred Moseley's book *Money and Totality: A Macro-Monetary Interpretation of Marx's Logic in Capital and the End of the 'Transformation Problem* address the fundamental issue of *exchange consistency*: when are things bought, when are they sold, and when are their prices established? This simple question defines the difference between two paradigms that divide the whole of economics including Marx studies: temporalism and simultaneism.

I will show – in the probably vain hope of convincing him – that Fred's theory is incompatible with Marx's concept of money. It is likewise incompatible with any concept of money that recognizes its most fundamental property, as a means of purchase.

This is because, in Fred's simultaneist (that is to say, general equilibrium) interpretation of Marx, the money paid by sellers is different from the money received by purchasers.

Actually, therefore, Fred's is a *price*, not a *monetary*, interpretation of Marx. It therefore has more in common with the value theories of Ricardo, Walras, von Bortkiewicz, and Sraffa, than with Marx's theory.

All these theories manifest the same contradiction, which arises from the identification of money with price, that is to say, a denial of the independent and real function of money, reducing it to a measure and a standard. But the primary function of money is to buy things, as Marx understood, and Fred does not.

Short introduction

This paper reports on a fundamental problem in Fred Moseley's *Money and Totality: A Macro-Monetary Interpretation of Marx's Logic in Capital and the End of the 'Transformation Problem,* which arises from his equilibrium methodology.

Fred has done a service to value theory, and has also engaged critically and pluralistically with other scholars including my own generic school, the 'Temporal Single System Interpretation' (TSSI) of Marx. However, he has stubbornly, resolutely, insistently and systematically rejected temporal analysis.

Unlike Marx, Fred defends, and adheres to, the convention introduced into value theory from without by the Austrian Walrasian Ladislaw von Bortkiewicz, that Marx's analysis needs to be corrected by insisting that the prices and values of commodities produced as the outputs of a given period must equal the prices and values of the same commodities consumed, in the same period, as inputs.

This convention, perpetuated by Sweezy, converts Marx's analysis into a variant of neoclassical general equilibrium. Moseley has persistently and valiantly defended it despite many contradictions that arise – not least that Marx's theory of value, so interpreted, contradicts Marx's theory of the Law of the Tendency of the Rate of Profit to Fall and cannot account for the observed fact that, for long periods and in most countries, it does.

This paper however deals with one specific issue that has so far gone unmentioned; that of 'exchange consistency', the simple requirement that the money received by sellers should be equal to the money paid by buyers. This is, has to be said, pretty damn obvious.

However, if it is violated, as is the case with Moseley's interpretation of Marx, the results are not *monetarily* sustainable: they cannot be squared with any reasonable concept of what money is and how it is used. The term 'monetary interpretation' is therefore a misnomer: it deals only with the most elementary functions of money that Marx identified, namely as a measure of value and a standard of price. But it directly contradicts the most fundamental function of money in Marx's theory, that is, as a means of purchase.

In short, in Fred's interpretation, money cannot buy things.

Therefore, the first part of the title of Fred's book must be questioned: since his interpretation of Marx is not, in fact, a monetary theory, it cannot constitute a monetary interpretation of Marx. It is better described as a *price* interpretation of Marx. In this respect, sadly, it has more in common with the tradition of Ricardo, von Bortkiewicz, and Sraffa, than with Marx.

This could easily be corrected, were Fred to make the one concession on which he has refused to budge in twenty-five well-documented years of discussion with TSSI scholars – that the prices and values of commodities produced as outputs are not equal to the prices and values of these same commodities consumed as inputs at the start of the *same* period, but instead are equal to the prices and values of these same commodities when purchased at the start of the *next* period, prior to being consumed in that period, as the simple logic of time (you cannot consume something until you have produced it) dictates.

The issue of exchange consistency has wider implications. This simple question 'when are things purchased?' defines the difference between two paradigms that divide the whole of economics including Marx studies: temporalism and simultaneism. Temporalism is little more than the obvious assertion that things are purchased after they have been produced.

More broadly, the time has therefore come for economists in general to take stock of a subject now virtually defined by Arrow, Debreu and Hahn's definitive axiomatization of Neoclassical General Equilibrium (NGE, see Arrow and Hahn 1971): is the entire approach of general equilibrium capable of yielding any useful understanding of reality?

So far, it has to be said that it has not done well. It has failed to predict the long-run decline of the North (Freeman 2018a). It has failed to predict the divergence of the South from the North (Freeman 2019). It has failed to predict or explain financial crashes (Freeman 2018b. It is therefore in a sorry state.

But for this very reason, it is long past time for Marxists, who since von Bortkiewicz (1952, see also Sweezy 1942), and above all Sweezy, have regarded Marx's theory as little more than a variant of NGE, also to take stock, nearly sixty years after the publication of Sraffa's (1962) *Production of Commodities by Means of Commodities,* and Okishio's (1961) famous theorem on the rate of profit, mathematically generalizing and defining the Bortkiewicz-Sweezy-NGE interpretation of Marx.

MONEY AND VALUE

Fred Moseley has done a service to scholarship in his insistence on the centrality of money in Marx's value theory. He is not alone: the Uno school has long insisted on it, and a swathe of 'new interpretations' beginning with Aglietta's (1979) term 'Monetary Equivalent of Value' passed through the contemporaneous publication of Foley's and Dumenil-Levy's work. This then evolved through SSS solutions such as Wolff-Callari-Roberts (1982) —an important precursor of Fred's work. Suzanne de Brunhoff's (1976) pioneering work should also not be forgotten if we are to rest on the foundation of a truly general understanding of Marx's theory of money.

In my view, the high point of this progress was the concept, developed by two Costa Rican economists Adolfo Rodriguez Herrera and Alejandro Ramos Martinez (Ramos 1995, Ramos and Rodriguez 1993, 1996), of the *Monetary Expression of Labour Time* or MELT. The MELT, at any point in time, tells us the quantity of money in which a given number of socially-necessary labour time is expressed. Conversely, it tells us how many historically-accumulated hours a given sum of money represents, that is to say, how much socially necessary labour time was expended in order to produce any aggregate of goods whose price is expressed in a given sum of money.

In most contemporary appropriations of the concept of the MELT, the contribution of Ramos and Rodriguez is absent.[1] It is difficult to describe such lapses with any other term than racist. The very idea that two impudent third world writers could have contributed an idea that a hundred or more years of civilized Western scholarship have failed to notice is, it would appear, either beyond the comprehension or beneath the dignity of any Western scholar to merit attention.

The general formulation which Ramos and Rodriguez elaborated definitively solves the so-called 'transformation problem': the value transmitted to the product, expressed in hours, is exactly equal to its money price, divided by the MELT. At that, the problem vanishes —and not just, we should note, when inputs are purchased at prices of production but when they are purchased at any arbitrary money price.

The recognition of money as a central category of Marx's value analysis, after nearly a hundred years in which it progressively disappeared, is hugely welcome. However, we are now in the position of a theatre spectator waiting for the curtains to part and clear the stage, who finds that, due to a strange fault, only one curtain has risen.

We know that money, for Marx, simply expresses value. What we don't know is how and when money changes hands. For that same reason, since money represents value, Marx scholarship has yet to address *when value itself changes hands.*[2] The purpose of this comment is to peek under that other curtain.

[1] See for example Moseley (2010) which is merely one example, by no means the most heinous, of a tradition in which a concept is employed without the most cursory reference to its original source. This method of 'citation' is, needless to say, the diametric opposite of Marx who was even chastised by Engels for his punctilious habit of footnoting the original source of every idea he referred to.

[2] This is a more general question than the first, since value changes hands whenever price levels change, regardless of whether any actual transactions take place.

AN ILLUSTRATION[3]

Fred assesses with great diligence, the process of *production* in monetary terms. However, the purpose of money is to buy things and sell things. Let us now consider, therefore, the process of *exchange* in monetary terms. So that matters do not run off into side tracks, I will therefore (following Fred) present the matter, first of all, in monetary terms abstracted from all other considerations, including the physical quantities of commodities concerned and the labour values of those commodities.

We can illustrate the issue with a simple one-commodity example.[4] Suppose in a given period, let us say 12:00:01am on January 1st 2020 to 11:59:59 on December 2020, £170 worth of corn is consumed to produce £510 worth of corn. Suppose also that the workers and the capitalists both receive £170 worth of corn. We can illustrate this with a table:

Seed corn (C)	£170
Wages (V)	£170
Profits (S)	£170
Total (C+V+S, or C')	£510

Now suppose that production recommences at 12:00:01am on January 1st 2021 —the next period.

To study this question, all economics, from Sismondi onwards, adopts the fiction that exchange takes place at a definite point of time. The validity of such a restricted supposition is not the topic of this comment, except to note that the divide, between the two principal paradigms of economics, consists no more nor less in *when we suppose this exchange to take place*.[5]

Whether we adopt the temporalist view that prices at the end of a period are equal to prices at the start of the next, or the simultaneist view that prices at the end of a period are equal to prices at the start of the same period, exchange is supposed to 'take place' in our example, at the end of the first period, which is also the start of the next period —in the two seconds overlapping midnight at New Year 2020-2021.

At this time, the farmers pay £170 in wages to their workers, and take £170 in profits. The two classes then purchase the output of their farms, which we suppose, in order to illustrate the issue, are legally distinct corporate bodies. So they pay £340 to the farms and receive £340 worth of corn to eat over the next year. The farms retain £170 worth of corn, which they put in the ground to resume production during the year 2020.

All well and good. The sellers received £340 (£510 if we count the money that the farmers pay themselves in return for the seed corn) and the buyers parted with £340 (£510 including

[3] The numbers in this comment are taken from Moszkowska's early statement of what was to become Okishio's theorem, which I analyse in greater depth in https://ideas.repec.org/p/pra/mprapa/5590.html

[4] The term though often used is a misnomer, because so-called one-commodity economies actually contain two commodities (three if money is included): the product and labour. Using the term loosely, I mean an economy in which only one commodity is capitalistically produced.

[5] I have forwarded, to participants in the conference, a separate text dealing with the more general problem of abolishing this fiction altogether. In these comments, I confine myself to the normal and opposed suppositions of the temporal and simultaneist paradigms, as so far and generally expressed.

sales of seed corn). The money paid by the buyers equals the money received by the sellers. This, I term *exchange consistency.*

Exchange consistency is possible because the economy is in a hypothetical steady state. Each year the same inputs are consumed, the same workers work for the same time and produce the same outputs. That is to say we have general equilibrium —whether Sraffian, Okishio or Arrow-Debreuian makes no difference. Change is not taking place, and that's why the monetary transactions can be conducted in a tranquil manner.

All well and good. But now suppose the technology changes in 2020 in the following way: the input of constant capital doubles and the output increases by 50%, with no increase in labour. That is to say, there is a rise in the productivity of labour, a technological improvement —in Okishio's terms, it is a cost-saving innovation.

If we pay no attention to what happened in 2020, and suppose a new steady state, production in 2021 can now proceed as follows: £340 worth of corn is consumed to produce £765 worth of corn. The workers receive £170 worth of corn. £340 worth of corn is set aside to continue production in 2022, and profit is £255. The rate of exploitation has risen from 1 to 1.5 and the rate of profit from 0.5 to 0.75.

This is simply an illustration of Okishio's result: *if* society could simply transition from its 2020 technology to its 2021 technology without worrying about how to get from one to the other, the profit rate would rise.

Now we ask our awkward question. How does society get from 2020 to 2021? How does *exchange* take place? How do the purchasers of 2021 acquire the goods they need from the sellers of 2020? How do the sellers of 2020 get the money they need from the purchasers of 2021?

The answer is: they don't. In 2021, the society is in a steady state. Prices at the start of 2021 are equal to those at the start of 2021. Therefore, at the start of 2021, the farmers spent as follows:

Seed corn	£340
Wages	£170
Profits	£255
Total	£765

They spend £765. But the capitalists of 2020 received £510. The two sums of money are not equal. Yet, we have assumed and there is no reason to deny, the farmers of 2021 simply took what was produced in 2020 and employed it in a different (and more productive) manner.

No monetary economy can function in this manner. A society in which the amount of money received differs from that paid is not a capitalist society, but a Harry Potter society, in which money magically appears from nowhere. This is the problem of exchange consistency.

MONEY AND PRICE

I do not doubt that by this point, readers unfamiliar (or hostile to) temporal analysis will be in a state intermediate between annoyance and anxiety. Surely Freeman has overlooked some elementary point. Why, for example, all we must do is recognise that unit prices have changed between 2020 and 2021, and the discrepancy will vanish.

Well, I invite you to do that. But first of all, a minor point of narrative, which may be discounted as a point of rhetoric, but is actually a point of logic. Until now, following the notion of a monetary theory, I have not introduced a single physical quantity. I have *only* spoken of prices. I have made one single 'physical' assumption which is that the product of 2020 is entirely used up in 2021, and only one monetary assumption which is that the sellers of the corn receive the same amount of money that the purchasers part with.

There is no 'price of corn' in these comments, until now. For example, the same 'physical' arrangement could be achieved if the farmers deposited all their produce with a wheat board, in return for a monetary sum which the wheat board extracted from them next year as a tax. We have introduced only two requirements. The physical wheat produced should be accounted for, which is to say it is either consumed or reintroduced into production as seed corn; and the total money received by sellers should be equal to the total money paid by buyers.[6]

If you feel it necessary to introduce some hitherto unspecified relation between money and physical quantities, dear reader, by all means feel free to do so: do not however lay responsibility for this change at my door.

If you introduce prices, in the normal sense of a ratio between what is purchased and the money paid for it, I claim you will find two things.

Firstly, unless unit prices are constant then at the end of 2021 they *cannot* be equal to those at the start of 2021 —that is to say, the end of 2020. In short unit prices *must* be different, at the end of a period, from unit prices at the start of the same period, in order for exchange consistency to hold, except and unless unit prices are constant.

That is to say, simultaneism is exchange consistent if and only if prices are constant.

Second, and as a consequence, in order to introduce the one modification that provides for exchange consistency, you will have to introduce what I would term corn money. The only price system that makes exchange consistency possible is if the price of corn never changes. 1 ton of corn always costs £1. But in that case, it's hardly surprising that —for example —the rate of profit rises. It rises because we have mistaken corn for money. Every time productivity increases, prices will rise. More and more 'things', more and more profit. In effect you get exchange consistency iff the product is itself money.

Only one problem: this isn't what happens. Actually, prices fall as productivity increases, a fact even Marx's critics grudgingly admit. But once we allow prices to fall, the ugly difficulty of exchange consistency raises its head.

We thus face three fundamental and antagonistic options.

- *Either* we accept that prices at the end of a period differ from prices at the end,
- *or* we demand that prices never change,
- *or* we acknowledge that our system is incompatible with exchange consistency,

That, in essence, is the difference between the temporalist and the simultaneist approach, seen from a monetary perspective. TSSI simply supposes the first, and only reasonable option. It also argues that since Marx was a reasonable person, with a reasonable theoretical system

[6] We have not introduced hoarding, which is needed in a general treatment, but in no way affects the argument.

that combined with a reasonable and realistic understanding of society, he cannot possibly have supposed that prices at the end of a period are equal to prices at the start.

That is to say, Marx was a temporalist and not, as Fred has consistently argued, a simultaneist. Sweezy, von Bortkiewicz, Okishio and probably Morishima have, therefore, simply interpreted Marx wrongly, because they attribute to Marx a view that requires him to suppose money is created in exchange.

Postscript: money and value

The attentive reader will have noticed that not only did I say nothing of 'physical prices' in the above analysis, but I also said nothing of values. This was not an oversight. For, reader, you may additionally make any supposition you like about the relation between value and money. I deliberately did not insist on any connection, not because I do not believe there is a connection —to the contrary, I believe the connection is that of Rodriguez and Ramos —but because since I have made the analysis in monetary terms, *no matter what your theory of value, it must result in exchange consistency, or it cannot possibly represent a valid interpretation of Marx.*

I pose the question in this way with deliberate intent. Now that the issue of money has returned to the front stage of Marx value theory scholarship, the issue of exchange can be addressed. In the normal presentation of the transformation so-called problem, despite the attention that von Bortkiewicz himself devoted to the 'money commodity', only labour time is spoken of. But if we speak only of labour time, the requirement that goods should actually exchange for money is shunted offstage. Labour itself never exchanges against labour; it is the products of labour that exchange against the products of labour.

The issue of exchange consistency comes to the front of the stage only when we recognize that money, and labour, are two expressions of the same thing, namely value.

That is why, if we wish to understand value properly, and see what is sitting on the stage in front of us, we have to lift the second curtain – and ask how, and *when,* the mysterious act of exchange, and the equally mysterious act of price formation, in fact take place.

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