

The ‘Transformation Problem’ – Take 41st

The solution for getting rid of a problem that does not exist

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0 Introduction

The following is an input paper for discussing the so called ‘Transformation Problem’ in our *Capital-Reading-Circles*.

In the debates about Marx’s value theory this ‘Transformation Problem’ played a major role. Meanwhile it’s only a topic among lefties that have some interest in Marxist theory. Going into ‘Transformation Problem’ beyond the pure reading of *Capital* is extraordinarily important, as nearly all contributions relating to this topic during the past century created huge hurdles for the understanding of the coherence and consistency of the ‘capitalist way of production’ and, overall, contributed to kill *Capital* as an *economic* theory.

In order to get an overview, we use [Heinrich 1988]¹ as it is quite concise and does not require us to dig into an endless amount of articles related this topic. The most important thoughts are also contained in Chapter 7.2 of [Heinrich 201x]. As Michael Heinrich (MH) seems not to have much added since his initial paper, drawback and risk is that we miss a major discussion that could have taken place later².

Me, however, with this document, am pretty sure to have an explanation not only for the so called ‘Transformation Problem’ being a pseudo-problem, but also, why it appeared and what the major faults of those are that follow this wrong problem-interpretation. I believe that I’m pretty close to the solution not of the so called problem, of course, but on how to get rid of it. We know from ‘Hitchhiker’s Guide’, the solution is 42. So, as I’m not perfect, my claim is having reached 41. The next ‘take’ then should close the issue for ever.

In short, the paper follows exactly the titles of [Heinrich 1988] and is structured as follows:
a) in 1 “Marx’s transformation of values into production prices“, in order to overcome a presentation weakness of Marx, I show that his three equalities also hold in the more general case of production price inputs being diverging from value sizes.

b) related 2 “The ,correction’ by v.Bortkiewicz“:

In 2.1 I show, how Bortkiewicz creates the ‘Transformation Problem’ that does not exist in Marx’s theory;

In 2.2 I show what hooks are in Marx’s theory that by misunderstanding him may lead to a faulty reception;

¹ Initially only a paper for internal use, it appeared useful for discussion with non-German-language Marxists. Therefore, I have translated it. The problem was that the most relevant reference was Michael Heinrich’s paper [Heinrich 1988] that is only available in German. As [Heinrich 201x] is still not available in English, in this 2017 update of the paper I have written it such that Chapters 1-3 are now Heinrich-reference free. For the rest, I’ve made an own English translation of Heinrich-references.

² For that reason I have overlooked that meanwhile there was quite some progress. In order to avoid a complete rearrangement of this paper, I will discuss what is beyond the scope of MH’s consideration in an Addendum of this paper. Currently, this refers only to the TSSI interpretation.

c) in 3 **“Sraffa and the consequences“** I criticize Sraffa et al. by showing how they – by inverting causality direction - create ‘redundancy ideology’;

d) 4 **“Alternative Interpretations of Value-Price Transformation“**.

Here MH treats theorists that do not belong to the neoricardian universe. This part in my text is likely not well understandable without having MH’s paper, but it is also less relevant.

e) 5 **“The monetary value theory of Marx“**.

This refers to the group of people that have revitalized value form and thus the monetary aspects as essential parts of Marx’s value theory. Owing to their importance, I have extracted quite some references from [Heinrich 1988] here in order to allow (hopefully) that this part becomes understandable even without having his reference publication in English at hand. I show - in spite of their significant merits - that this group destroys quantitative aspect of value theory and thus Marx’s ‘Critique of Political Economy’ as an economic theory.

f) Not believing of being only one for identifying ‘Transformation Problem’ as a pseudo problem, on finalisation of 1st version of this paper in 2013, I made a small inquiry and found [Kliman 2007]. There is so much in this book that this paper cannot compare with it. However, it does not make it superfluous. This I will discuss this in Addendum A).

1 **“Marx’s transformation of values into production prices“**

Marx undertakes to explain why for groups/spheres of capital of diverging organic composition the resulting masses of profit empirically are not proportional to the amount of variable capital, but the profit rates have tendency to balance out. The explanation is that commodities are sold not according their values but according their *production prices* which result from putting an *average profit* onto the *cost price*. Related to the total amount of capital of an economy Marx then proves the three equalities:

1. Price profit rate (\sum prod.prices / total capital) = value profit rate
2. \sum surplus values = \sum profits
3. \sum values = \sum prices

I.e., the balancing out of profit rates does not change the production of value as such, but only the *distribution* of the surplus value among the capitalists.

In the example, where he shows this, Marx, however, sets the cost prices implicitly equal to the value sizes of the means of production purchased. I.e. he consciously abstracts from the fact that they are bought for diverging production prices and therefore „it is always possible to go wrong“ [Marx 1991, p.265]. In his view this is a minor issue by stating “Our present investigation does not require us to go into further detail on this point.“ [p.265]

Related to this MH states that this error by Marx “was tremendously under estimated in its consequences”³ [Heinrich 1988, ch. 1].

What Marx, however, has made here is not a logical but a *tactical beginner’s* fault. Instead of explicitly tackling the general case ‘input prices are production prices already’, he explicitly considered a special example case only, i.e. ‘value/input price deviation = 0’, and considered generalisation of being understandable in a straight forward way for his readers. This ‘prove by example’-technique is common in mathematics, where then the remarks ‘with no loss of

³ „in seiner Auswirkung allerdings gewaltig unterschätzt (wurde)“

generality' (WLOG) is added. However, it is risky once the readers cannot easily follow this WLOG.

But Marx's risk taking tactical fault can easily be overcome by simply redoing what he did, but this time under the assumption that input prices are production prices diverging from a commodity's value size. I.e. by explicitly considering the general case: commodity value \neq value of commodity purchasing capital.

The following reasoning is done "on the assumption of one turnover in the year" [Marx 1991, p. 264] through beat synchronized periods (say, one year production, followed then by doing all selling/purchasing of all commodities at one day).

This is shown in the following figure, where commodities are shown that represent the commodities bought and produced by one group/sphere G of capital. Also procedure of *Capital* Vol. 1 Chapter 7.2 is applied, where value elements of capital are presented in proportional parts of a product. The commodities shown are one for means of subsistence (MS), one for means of production (MP) and two resulting commodities. *PoP* denotes the price of production of every such commodity (the *PoP* is in the fact the aggregation of all *PoPs* of commodities that go from one sphere G1 to a sphere G2).

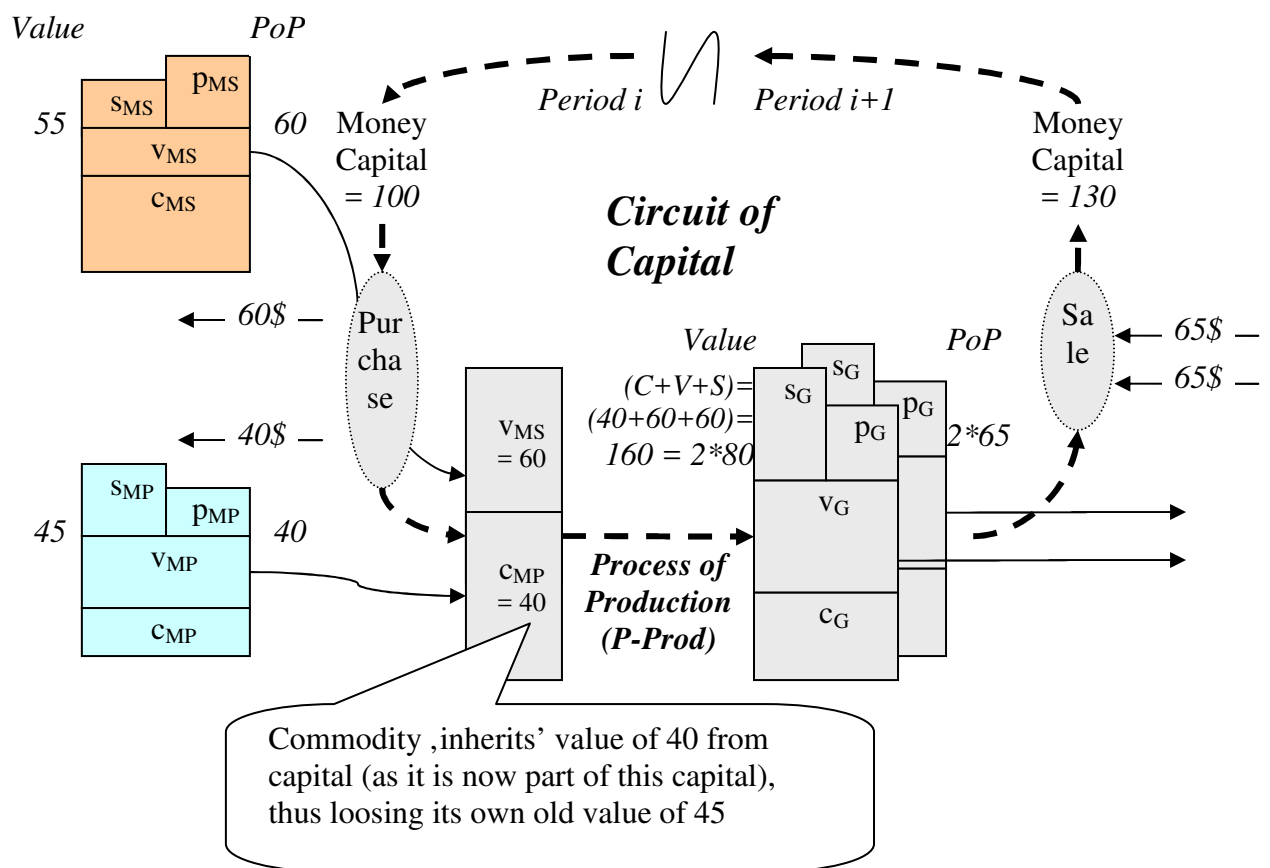


Fig. 1

In the figure, if we look at commodity MS, there is a certain difficulty. MS is shown such as if it would directly being purchased by capital. However, in reality, this is not the case, as for *v* not MS but labour power is purchased. So this requires closer consideration, covered in 1.2.

In Fig. 1, only one period and one sphere of capital is shown. Overall the economy looks like this (assuming two spheres only) (MC^{MS}_i denotes Money Capital in sphere ‘means of subsistence’ in period i):

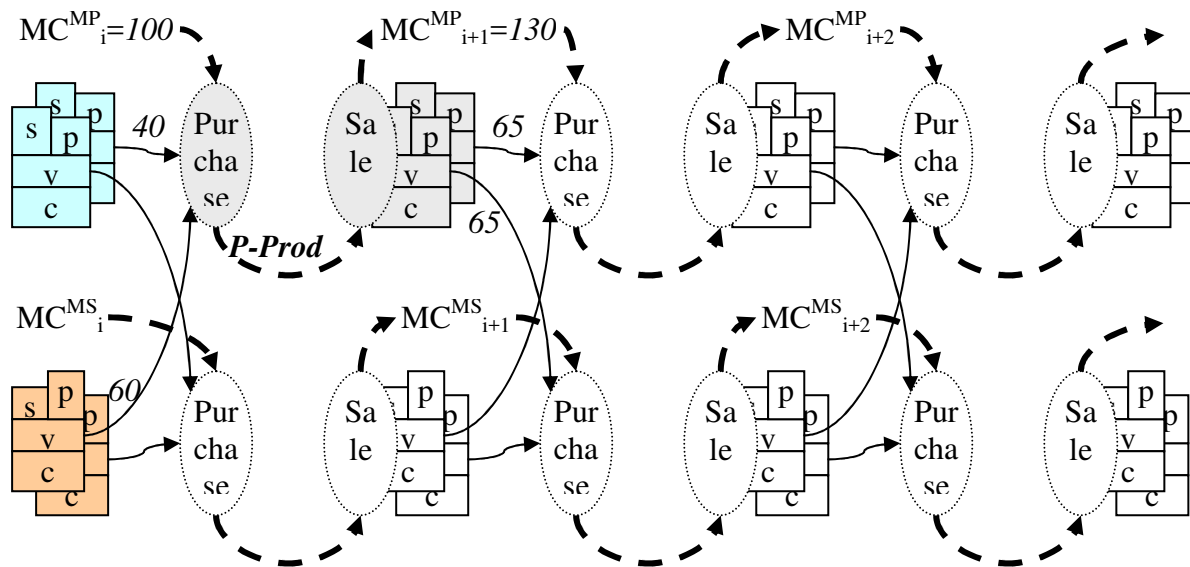


Fig. 2

Note: for every period $j+1$ amount of Money Capital as well as monetary figures (prices, price aggregations) may be different related to period j .

The figure expresses that economy takes place as a *sequence* of periods, three of them are shown. Every period requires some time (one year, in our case), so the system is *sequential and temporal*.

1.1 Impact from production price determined means of production (MP)

Let's consider the purchase of a MP in detail. On one side we have constant capital in money form (its size being 40\$ in the example). There is no cause to see in it something else than expression of value. On the other side we have the MP with a price that diverges from the MP's value size. Is anything of this, as far as it diverges from the price, passed on to the capital? No. Is therefore, after the purchase, anything changed in the size of the capital? No. The only difference lies in the fact that for the capital expended a different amount of MP is obtained as if the value size of the MP would have been paid. But this situation would belong to a different economy.

With the purchase of the commodity it 'inherits' the value size of capital that was spent for it (as it is now by itself capital, only capital that has changed its form, from money form to commodity form, without changing value size), its own former value size as a special component of its price is erased.

But – as a consequence – this former value size, is it superfluous? No, as after subtraction of c and v it has made its contribution for the aggregation of the value mass of the whole economy that is available for distribution among capitals and explains the total profit sum. And with this it determines and explains also the overall production price level.

Now, as a crucial point, here is where the link between value abstraction stage and production price abstraction stage is. It's here and only here. It would be completely wrong to look for it

at the moment for purchase. With commodity having production price its own value does no longer appear in purchase.

This is the point, where Marx's beginners fault has created a mantrap. By - without any good cause - just choosing $s_{MP} == p_{MP}$ as a starting point, quite a few followers were lead astray.

But essentially it's their fault. If they would have read further in this part of Vol. 3, they could have found:

“the price of production of a commodity that diverges ... from its value enters as an element into the cost price of other commodities, which means that a divergence from the value of the means of production consumed may already be contained in the cost price

It is quite possible, accordingly, for the cost price to diverge from the value sum of the elements of which this component of the price of production is composed” [Marx 1991, p. 309]

But how shall then Vol. 1 of *Capital* be understood?

A world, where commodities were sold at their value size never existed. Looking at value price in Vol. 1 is only a lower abstraction, i.e. consideration stage. What instead it is about, is the value-determined (and in parts also value-determining) character of the purchase. And this remains fully preserved. The only difference related Vol. 1 being that the formula being a bit more complex as it comprises now no longer only the value of the individual commodity but to certain parts also the value of the commodities of the other spheres- or differently spoken, the contribution from these other commodities existed already in Vol. 1, but was silently set equal to 0.

(By the way, such a relationship to *other* commodities is nothing fundamentally new, as the production effort for the other commodities and the situation of its sale where anyway part of the determination of the value size of the given individual commodity – see Vol. 1.)

Summary related constant capital c . What is the sum of the cost prices of commodities purchased from the constant parts of all capitals? It's the sum of the constant capitals – just the same as if we would have started from cost prices that equal value size. This means, related c the consideration of production prices does not change anything.

1.2 Impact from production price determined means of subsistence (MS)

Let's consider now variable capital v (60\$ in the example). Also v exists in money, i.e. as a monetary value expression. It's now further assumed that for this value an equivalent of labour power (LP) is purchased. But, what determines value of commodity LP? It's the amount of *money* that is just sufficient to acquire the necessary means of subsistence. And this amount is determined by its *production price*. In case e.g. the value size of the MSs would be lower and still this size would determine the value of LP then not all MSs necessary for subsistence could be purchased. I.e. the determination of the value of LP has to be modified in so far as it is determined not by the value sum of necessary MSs, but *its production price* sum. I.e. the determination of value of LP by MS-values in Vol. 1 is *preliminary* – not possible differently at the stage of presentation of categories reached in Vol. 1 when it was developed. Related to the level of development of categories reached at beginning of Vol. 3 – a logically further developed stage – it is wrong.

This may a bit sound like dialectic hanky-panky, but it is in natural science and system analysis so common that meanwhile formal method exists to model such cases (created during last about four decades). In leading Object Oriented Analysis (OOA) it's a principle - from only about a handful of fundamental other ones - called 'inheritance'. This allows modelling a system on different abstraction stages by starting with a simple one and then, for a given category, 'inheritance' principle allows to switch off and add new features for every category as the model gets more refined. The idea goes back to evolution, where we have genes in common with our early predecessors, some of them being switched off, many new being added. The difference is that this evolutionary inheritance is one happening in time, while in OOA it's a *logical* inheritance.

So, in our case, related category 'price' one would start with value determination as described in Vol. 1, inherit all this into Vol. 3 and add production price 'deviator' then. One could go on to the next abstraction stage by adding 'market price' attribute and in *Capital* Vol. 5 (not yet written) one may add 'fiat money' attribute to explain inflation and what the impact of today's existing money like \$ on price is about.

Marx has not clearly expressed this modified LP-determination but instead only written that "As for the variable capital, the average daily wage is certainly always equal to the value product of the number of hours that the worker must work in order to produce his necessary means of subsistence; but this number of hours is itself distorted by the fact that the production prices of the necessary means of subsistence diverge from their values. However, this is always reducible to the situation that whenever too much surplus-value goes into one commodity, too little goes into another, and that the divergences from value that obtain in the production prices of commodities therefore cancel each other out." [p.261]

This is the only argumentative weakening of Marx in Vol. 3 Chapter 9 (the tactical error from above he cannot be accused for, it's more a problem of his followers/readers).

With value of LP being determined by production price of MS the cost price of LP is just its value, i.e. nothing changes related Marx's assumption.

Related the sum of the surplus values one gets:

Σ (surplus values) =

Σ (new-values) – Σ (prod.prices necess. LMs) = Σ (new-values) – v = Σ (profits).

As regards contents, – if I understood it right – this is also the argumentation of Stefan Krüger, however without illuminating the monetary aspects and without saying anything about the explicit modification related determination of LP-value. [Krüger 2010, p. 289ff].

1.3 Conclusion related the 3 equalities

Related sum of cost prices purchased by all capitals, be it related to MP or MS commodities, this sum equals the value sum of the respective commodities. So, equalities 2 and 3 hold, and with this also equality 1.

1.4 Summary

With the presentation so far all confusion related relationship of values, cost price and production prices should be clarified and Marx's *3 equalities be confirmed*.

And - what is equally important - it is also shown, how value and production price are linked together, i.e. *determination and explanation of production price is inextricably linked with value theory as its basis*.

Another point should be noted: all this is proven for the *general case where situation for period i and for period $i+1$ is typically different*.

Considering degree of difficulty, the solution is not looking so extremely complex. Therefore, please, where is the problem?

2 Ad „The ‚correction‘ by v.Bortkiewicz“

2.1 Bortkiewicz creates the ‘Transformation Problem’

In Vol. 3 Chapter 9 Marx considers one period of capitalist economy. However, the economy is a sequence of such periods. Marx has considered them in Vol. 2 under the name ‘reproduction schemes’. He starts his analysis there with the ‘simple reproduction scheme’, i.e. system parameters (like amount of capitals and its parts) stay the same and the outputs of one period (primarily values sizes but also sets of physical entities) of the economic system have same amount as the inputs of this period. This way all periods look the same, though they still are sequential and temporal. I.e. it is not about a different type of economic system but only about a special state of the same economy. In system theory such a system is called of being in stationary state⁴. ‘Input’ and ‘output’ here is meant likewise in the general sense of system theory: everything that is going into / coming out of a system and what is characterizing it.

This is not to be confused with meaning in bourgeois economy where output refers to goods, i.e. physical units. For Marx, in reproduction schemes, inputs/outputs in contrast refer *primarily to monetary expressions*, as well as all numerical figures there are *monetary figures*. The monetary figures as such do not refer to physical *units* but instead to sets of commodities that have related to their physical use value aspects *different quality*. The only thing that is assumed in simple reproduction is that these sets remain same across periods.

For real a economy, this stationary state is very special situation. However, as Marx's claim related to value / production price transformation and three equalities is a universal one, it must also be true in this special situation.

If we map this ‘simple reproduction’ situation to Fig. 2 above, we could take it as it is and would simply have to put same amounts (Money Capital, prices) to every arrow. This is not very convenient. A more compact presentation is as follows:

⁴ one could also say that it is in ‘equilibrium state’ but in bourgeois economy this has a special ideological meaning – see below -, therefore I do not prefer it. By the way, also Marx uses wording ‘stationary’ for system parameters that stay the same.

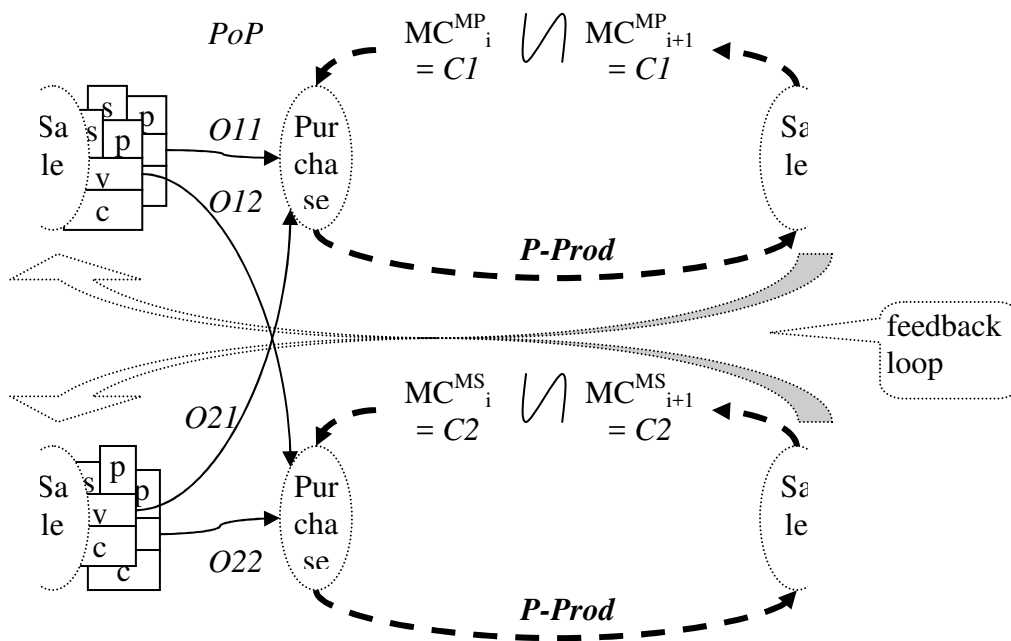


Fig. 3

The advantage of Fig. 3 is, that the same situation needs not to be presented n times. Instead it is presented only once and repetition is indicated through feedback loop arrows. In the figure C_i denotes Money Capital of sphere G_i and O_{ij} denotes output figures from sphere G_i to sphere G_j . The output figures shown are prices of production (as explained for Fig. 1, in fact the aggregation of the production prices of the set of commodities that goes from G_i to G_j ; this as such is also an output).

As Fig. 2 does, also Fig. 3 represents a sequential and temporal system in stationary state. This means, output of period i and the related output of period $i+1$ are not identical. Output of period $i+1$ cannot not cause period i parameters to change (temporal system consequence). However, period- i -output and related period- $i+1$ -output have same numerical value (stationary state consequence). As period- i -output equals period- $i+1$ input, numerical input and figures need to be the same.

This way, considering a system when being in stationary state creates additional *constraints* related the system parameters like C_i , O_{ij} . These constraints make up a stationary state relation $SSR(C_1, C_2, O_{11}, O_{12}, O_{21}, O_{22})$. An $SSR(\text{element1}, \text{element2}, \dots)$ has some peculiarities:

a) There is no notion of time. It is not visible that we talk about a dynamic system at all. From perspective of this system, SSR can be viewed as of having made a *snapshot* of it, e.g. at the instant of period $i / i+1$ transition. The snapshot itself is timeless, i.e. *simultaneous*.

b) Pure mathematical and causal determination. Typically, when one SSR element changes all the others have to change, too. Let's consider an (approximately stationary) planet's orbit around the sun. The SSR related its position is an ellipse, i.e. $SSR(x, y): 1 = ax^2 + by^2$. When x is changed, y has to change too, as $y = f(x) = \pm \sqrt{(1 - ax^2)/b}$. So, pure mathematically speaking, x determines y . But this is not a *causal* determination. Causally it's the masses of

sun and planet, together with law of gravitation etc. that determine positions x,y and $SSR(x,y)$.

In case of simple reproduction, SSR takes the form of an algebraic equation system. And not only this, but the form of an equation system where time or at least any notion of succession *do not appear*. Succession like: 1st c and v take the form of MP and living labour, then there is production process exploiting labour power and creating surplus value, Beyond that, in the SSR there is also no notion of a *causal* relation like: it's the exploitation of labour power that causes the creation of (surplus) value.

Also the latter can be expressed as a function: $s = f(\text{exploitation})$. So, including planet-example from above, in both cases we have primarily pure mathematical determination. But only in the latter case the $f(\dots)$ expresses *in addition* a causal determination. I.e., there are obviously two types of functions.

Stationary state and SSR are linked. But they are not the same. SSR is simultaneous, Stationary state is not. SSR comprises mathematical determination and *excludes* causal one. Stationary state does not exclude causality. But, in mathematical terms, it may formally much look like its SSR. What makes the difference, however, is the *meaning* or the *semantics* that comes along with it. Consider Marx's reproduction scheme. If you look at its formal pattern only, there is also no information about time and exploitation. It's coming through the textual reference Marx is making when discussing it.

The SSRs are a means to answer questions like: what conditions are or need to be fulfilled for the system to be stationary?
But it is in no way a means to answer questions about causal or temporal/successive origin of any of the elements of an SSR.

Consideration of SSR is not a bad thing as such. However, it's crucial to understand its differences and limits related full stationary state analysis. Then it can be a starting point for further investigation.

Bortkiewicz was interested in investigating equilibrium state, but he had a special understanding about what is good in 'modern economics':

“Modern economics is beginning to free itself gradually from the successivist prejudice, the chief merit being due to the mathematical school led by Léon Walras. The mathematical, in particular the algebraic method of exposition clearly appears to be the satisfactory expression for this superior standpoint, which does justice to the special character of economic relations.” (Bortkiewicz, 1952, p. 35)

So, he is putting stationary state consideration into *opposition* to a consideration of succession. This way, he eliminates also stationary state analysis that comprises succession. The simultaneous algebraic method that is good for a very restricted aspect of a special case of capitalist economy (the equilibrium state relation) he sees as 'satisfactory expression' for Walras' 'superior standpoint', meaning the classical/neoclassical ideology of an economy that per default is in an equilibrium condition. In the light of this, all consideration of succession for him is only a 'prejudice'.

From this methodological background Bortkiewicz now started to create stationary state 'reproduction schemes'. He took Marx's tables from Vol. 3. Chapter 9 (p. 256) and created

‘reproduction schemes’. This he did by slightly modifying Marx’s tables in the following way (see Bortkiewicz, 1952, p. 10):

“<citation start>

Table 1: Value-calculation

Sphere of Production	Constant Capital (c)	Variable Capital (v)	Constant Capital used up (ac)	Surplus Value (m)	Value (W)	Rate of Profit (m/(c+v))	Cost Price
I (MS)	80	20	50	20	90	20%	70
II	70	30	50 51	30	110 111	30%	81
III (MP)	60	40	52 51	40	132 131	40%	91
IV (MP)	85	15	40	15	70	15%	55
V (MS)	95	5	10	5	20	5%	15
I-V	390	110	202	110	422		

Table 11: Price-calculation

Sphere of Production	Const. Capital (c)	Variabl. Capital (v)	Constant Capital used up (ac)	Surplus Value (m)	Value (W)	Cost Price (ac+v)	Profit (m')	Price (P)	Diverge. of Price from Value	Rate of Profit (m/(c+v))
I (MS)	80	20	50	20	90	70	22	92	+2	22%
II	70	30	50	30	111	80	22	102	-8	22%
III (MP)	60	40	52	40	131	92	22	114	-18	22%
IV (MP)	85	15	40	15	70	55	22	77	+7	22%
V (MS)	95	5	10	5	20	15	22	37	+17	22%
I-V	390	110	202	110	422	302	110	422	0	22%

<citation end>”

Marx’s two tables serve as an example, how, for a given period, average rate of profit and production price determination occur. As all required columns would not have fitted in one table, Marx made a split into two, with repeating some columns in the resulting ones. Bortkiewicz created two semantically different tables by giving them names and deleting unwanted columns. First table should refer to values. So he called it ‘Value-calculation’. Cost price column, as dealing with ‘price’ did not fit. So he deleted it. Second table should be about prices. He called it ‘Price-calculation’ and deleted non fitting ‘Surplus Value’ and ‘Value’ columns. Next step was to create from consideration of one single period only a closed self-reproducing system. Marx’s figures, not meant for this, did not fit. Bortkiewicz however realized that by a very small change only, he could create a simple reproduction scheme. He changed original 111 (shown crossed) into 110 and 131 into 132. And then, by interpreting spheres I+V as MS producing spheres (red), spheres III+IV as MP producing spheres (blue), and remaining sphere II as capitalist’s consumption goods producing sphere he could create a value system that followed the conditions of simple reproduction $(90+20)=110$, $(132+70)=202$, $110=110$.

Then he made the same with the price system. And found out: the system was not able to reproduce! As the three figures $92+37=129$, $114+77=191$, and 102 do not equal 110, 202 and

110, respectively. So conclusion: capitalist cannot reproduce related values and prices at once!

Mathematically considered this is no surprise at all, as e.g. the formula to calculate the $90+20$ and $92+37$ outputs are very different. And as the inputs remain same (c and v columns) there must be a contradiction.

It is solely Bortkiewicz who has created this ‘problem’: by inventing two systems for simple reproduction and let them function with same input figures. From perspective of system modelling it is: generating a stationary (input==output) system model on lower abstraction stage (with simplified functional content) and one on higher abstraction stage (with refined functional content) and then believing one could feed both systems with same input figures and they would both work: crazy concept.

It is not so that Bortkiewicz was not aware of it. He by himself would not have done so. His purpose was to put Marx in charge of an error:

“It is easy to show that the procedure employed by Marx for the transformation of values into prices is erroneous, since it fails to keep separate rigorously enough the two principles of value- and price-calculation. ., (p. 11).

Now Bortkiewicz comes up as the big helper by correcting Marx: if two systems cannot exist at once, with same input figures, couldn’t we set up an equation system that transforms both systems from one into the other, so that problem with same input figures does no longer occur.

And this is his ‘solution’ then, a three spheres economy (with x,y,z being value-price transformation factors and r being rate of profit):

$$\begin{aligned}(c_1x + v_1y) (1 + r) &= (c_1 + c_2 + c_3) x \\(c_2x + v_2y) (1 + r) &= (v_1 + v_2 + v_3) y \\(c_3x + v_3y) (1 + r) &= (m_1 + m_2 + m_3) z\end{aligned}$$

Problem with this: Marx’s three equalities do not hold.

Bortkiewicz concept is to put Marx in charge of something that is completely silly and then ‘help’ with something that is not obviously silly because it’s made very complex to be easily seen through, but is still unsatisfactory. And because of the latter there are numerous proposals for improved solutions.

However, as we know from above (cf. 1) that there is no problem, rather than looking for improvements, we have to see where the error in Bortkiewicz approach is. Let’s collect:

a) Bortkiewicz wipes out the possibility to consider succession, i.e. the consideration of processes, namely the production process, where the cause of surplus and profit generation lies.

b) Bortkiewicz considers the economy as a dual system, consisting of a value and price system

As any system, one can model the capitalist economic system under different abstraction stages, e.g. one model assuming purchase at values, another at production prices.

Abstraction is typically made by leaving something away, e.g. deviations. This can make analysis simpler at the price of considering a more special case of to real system. This way, a system model exchanging at values is a special case from the more general case of a system model exchanging at production prices. Rather than keeping these models apart, Bortkiewicz - by his transformation functions – had the idea of linking the general and the

specialisation of it together. Mere logic should have told him that this cannot work *in general*.

Thinking into this, we get the situation while a purchase for a certain price happens, there is a simultaneous exchange related a different amount of value happening. This is really difficult to image, all the more if we go down to the level of particular commodities.

- c) Bortkiewicz considers the linkage between value and price of production happening through a transformation at the transition from one period into the other (i.e. at the instant of purchase), i.e. he does not recognize Marx's tactical error.
Note the difference related 1. There the link between value and production price goes through re-distribution of surplus into profit masses within one system and not through the transformation of two system models existing jointly together.
- d) In Bortkiewicz approach (monetary) input figures equal (monetary) output figures, as this is the consequence from stationary state consideration.
Only by making the stationary state consideration, Bortkiewicz gets the mathematical constraints to detect that Marx's three equalities do not hold. However, though this is a *necessary* condition, it is not a *illegal* condition. The opposite is true. As Marx's *general* assertion needs *also* be true in *special* simple reproduction case (may its empirical probability be close to 0), it is just this condition where it has to be proven that there is no 'Transformation Problem' (Above it is already proven in the general case, i.e. there is no need for a further proof here).

So, d) is not an error. That means, if someone is trying to refute Bortkiewicz then not by attacking d).

Now, looking beyond Bortkiewicz, the surprising thing is the following. Instead of being able to criticize Bortkiewicz as done above, since appearance of his book in 1906 [Bortkiewicz 1952], it was the general opinion of the believed Marx-knowledgeable community that *his idea* of the simultaneous existence of a price and value system, i.e. two systems, be also the *view of Marx*. And only this way the 'problem' became a problem of Marx's Critique of Political Economy (CPE).

From the bourgeois side a point of attack against the value theory was available. But also from Marxist side the 'Transformation Problem' was accepted, as thanks to Bortkiewicz there was a procedure on how to derive prices from values, i.e. to a certain extent a solution of the problem - in fact a partial solution of a non existing pseudo problem.

In contrast to Michael Heinrich (who has made a complete literature research for his [www-article 1988](#) – no surprise, as it's an extract from his dissertation) I have not done this for the time passed by since then (as it is only the preparation for the next *Capital* reading circle meetings to come). But one thing nevertheless was interesting me: isn't there anybody around who realized that something is wrong with these two simultaneous system stages? And indeed, I discovered something: *Andrew Kliman „Reclaiming Marx's Capital: ...“ 2007 at Lexington Books*, where Kliman insists on the validity of a 'single-system-theory' in contrast to the widespread 'dual-system-theory' [Kliman 2007].

2.2 Hooks in *Capital* allowing to Pin the 'Transformation Problem' on Marx

The procedure of deriving production prices from value, as Marx describes it in *Capital* Vol. 3 Chapter 9 fits to what I have said above (see 1), but it fits in no way to the imagination of two system stages existing in parallel. Wherefrom comes then this acceptance of

Bortkiewicz's view being the one of Marx (besides the widespread unwillingness of lefties and Marxists to dwell on mathematically formulated, or at all, *formalized* relationships)? It is his direct linkage to the scheme of simple reproduction that not many ever understood (and today, where Vol. 2 is even less read than in former decades, this is even more true). Isn't this scheme not one of an economy in equilibrium? And isn't it a scheme that is based on exchange according values, i.e. a *value system*?

Economy in equilibrium: One of Marx's major objectives with respect to his reproduction schemes is to prove that capitalism is not just a flash in the pan, but in contrary, basically *capable of reproduction*, i.e. not having a major 'open end'. The latter was up to then a significant problem of economic theory – owing to the not seen through and therefore not criticized 'Smith's dogma'. E.g., as a quote from Sismondi (I use German wording of Rosdolsky and translate it into English):

“How can the surplus product be sold, when the workers that have created it can only buy the non surplus part of the product and the capitalists can also not consume it as a part of it has to be capitalized?” (Nouveaux Principes ..., ba1,li2,c4,p92)

Marx sees through the fault in Smith's Dogma and recognizes that for the modelling of the capitalist reproduction in the minimum two spheres/departments are required. One part of the reproduction can then take place within MP-department, without requiring that the repeatedly circulating value in this department (and in the extended reproduction scheme in front of all the value accumulation) has to take on MS-form.

The simplest way, to formulate the related reproduction, is the scheme of simple reproduction. As within this scheme all inputs and outputs, i.e. all 'circulation-ends' are closed, it clarifies Sismondi's wrongly believed 'open end' problem. By this closing it *formally looks like* a equilibrium scheme. At a closer study, however, it comes up that this scheme represents a *requirement* for the capitalist system interconnection. Marx, based on the reproduction scheme, identifies the *conditions* that have to be met for allowing the basically possible reproduction to really take place. And these conditions are so restrictive that meeting them can only happen as a lucky accident – considering that the value-inter-relationships be 'naturally growing' results behind the 'backs of the producers'. What means that the basically possible reproduction is in the consequence a very bumpy and crisis ridden one. This is *anything else* than an equilibrium system.

Value System: System analysts of today (a designation having roots towards IBM or Ericsson), when analysing or designing a system, are familiar with the paradigm that it makes a lot of sense to separate clearly between *structural* and *functional system elements*. Marx has anticipated much of this thinking (besides his thinking in categories, instances, aggregations, abstraction stages with related modifications etc., system analysts are also familiar with).

Structural elements within the reproduction schemes are the modelling of two (later refined three) departments, i.e. not only of one or seventeen, as well as the resulting streams of commodities and money of different kinds (MP, MS, MLuxury, Wages...). Mathematically this structure can be viewed as a directed graph (consisting of stream-arrows from and towards the department-nodes), e.g. see Fig. 2. The nodes being aggregations (e.g. commodities piled up with their related price sum) of instances (particular commodities with their unit price) of categories, by the way.

Functional elements are the *quantitative* relationships within and at the borders of a respective department. E.g. whether incoming and outgoing value sizes are in balance or what happens if

they are not in balance, as probably an increase of prices in such a situation. The advantage of such a clear separation is that the functional part can easily be changed without impacting the structural one.

The structural modelling of two spheres together with its 'circulation arrows' (see Fig. 3) is the fundamental element to show the reproduction capability of capitalism. Related to the functional side Marx chooses the *assumption* of exchange by value equivalents – anything else would not have been in consistence with the presentation up to this point. But was it important for him beyond that, should it have even been a postulate towards the real existing economy?

At 2nd page of simple reproduction Chapter 20 in Vol. 2 Marx writes:
“In as much as prices diverge from values, this circumstance cannot exert any influence on the movement of the social capital. The same mass of products is exchanged afterwards as before, even though the value relationships in which the individual capitalists are involved are no longer proportionate to their respective advances and to the quantities of surplus-value produced by each of them.” [Marx, 1992. p.469].

Obviously here it is not about arbitrary oscillations of prices around values, but it is about a *systematic deferment* of value between the individual capitalists. Also this case – what means also the case of an exchange alongside *production prices* - he sees covered by his schemes. The assumption of exchange according equivalents for Marx is a pure model assumption. It would therefore be a mistake to conclude that, when Marx assumes equivalent exchange in the reproduction schemes, he would postulate that something like that would occur in real capitalism.

Resultat: the view, Marx would assume an in reality existing – above all balanced – value system is the consequence of superficial and wrong reception of Vol. 2.

3 Ad „Sraffa and the consequences“

In an effort for providing a theoretical foundation for the critics of marginal theory (subjective value theory) Sraffa has created a linear equation system. It comprises n products. Variables are the n prices of these n products, as well as the uniform profit rate r . To achieve an unambiguous solution, there are $n+1$ equations. One per product, whose coefficients are the required quantities of input-products as well as the working time per unit output product and finally one equation for the wage rate, the coefficients of which are the required MSs. By this equation system Sraffa creates a system of relationships that postulates for *every single* (preliminary) product of the economy a balanced relationship. I.e. he drives the equilibrium dream of bourgeois economic theory to its culmination point.

His approach is a refinement of Bortkiewicz's three-spheres SSR. A simultaneous snapshot model that eliminates any consideration of the origin of its elements like prices or profit rate. This way Marx's (surplus) value theory, i.e. the explanation for the elements, is rubbed out. To fill the gap, it has to be overwritten by an alternative 'explanation'.

And here the nice peculiarity of SSR gets into application that one can freely chose one element and this then determines the other – in the sense of pure mathematical determination.

Then, by being not so strict in making a difference between pure mathematical and semantic/causal determination one can *declare* mathematical determination as a causal one and thus artificially create an explanation.

Major part of his equation system is of type $a_{ij} * p_j$, i.e. one element in his SSR is a matrix that describes a layout of products and amount coefficients and the other element is a vector of prices. So we have physical quantities on one side and monetary figures on the other. Now, formally, for creating a (anyway wrong) artificial causal relationship or ‘explanation’, what shall Sraffa chose? Shall monetary figures like prices and profit rate (categories quite close to value) explain physical quantities or the other way round? He chooses 2nd option, thus being able to ‘explain’ monetary figures, prices and especially profit rate by physical quantities.

Chosing 2nd option means setting layout of products and amount coefficients *as givens*, *constant*. What is wrong with that?

In the real economy it is not so that upfront this layout is fixed and then economic activity is started. In contrary. Economic activity takes places, namely driven by the *purpose of profit maximization*. The consequence is that certain products (those with solvent demand) are produced, others – may be socially and ecologically much more important ones – not. Also the preliminary products are not simply pre-determined, but among the many alternatives those with highest profit promise are selected. The whole layout/tableau of products and coefficients is in reality only a snapshot, i.e. *the result of a logically preceded value and especially surplus value production process*. The information of workers’ exploitation (including its quantitative side) is codified, i.e. encrypted into the tableau. What then – after the constant setting – is permitted as set of variables is just selected in a way that only one solution remains.

In the same way, however much simpler, one could pick out any set of parameters from existing economy as God-given, create for simplification only one equation with one variable, e.g. a much to low minimal wage rate and then prove by solving this equation that the confirmed existing minimal wage is just the one it should be.

What Sraffa does is nothing but the superficial affirmation/apology of existing economic and social conditions.

The semantic content of mathematical relations in general is difficult to understand. The creation of such a neoricardian equation system, especially such a – at first glance – plausibly looking one, is an intellectual performance. I.e. what Sraffa does is an *active enigmatisation*. Or, more precise, not only enigmatisation but the invisible making that something was enigmated.

Summary:

Sraffas approach comprises two steps:

- a) He reduces the economical process to a snapshot consideration. This way he can be called simultanist.
- b) He arbitrarily selects physical amount figures to explain monetary ones, especially profit rate. This way he can be called physicalist.

In doing so, the neoricardian equation system combines in a formally elegant way the *ideology of a harmonic economy* with the *active concealment* of the concrete/quantitative *capitalist exploitation*.

And now the ,*Superhammer*' comes: the neo-ricardian equation system appears in formal mathematics – via Bortkiewicz's equation system – as a mere refinement of Marx's reproduction scheme. *From its contents, however, it's just the opposite of what Marx has uncovered.*

Reformulations of Marx's value and price theory based on this neo-ricardian approach did not stay absent (Okishio, Marishima). They and in the consequence also achieved 'proofs' in favour of Marx ('Fundamental Theorem') are – as follows from what I've said above – in blanket terms only good for the garbage dump.

Even worse. Persons that in the name of Marx involve themselves into such a waste, make Marx's Critique of Political Economy vulnerable at places where it is simply correct. So no surprise that owing to this, century-famous economist Samuelson – figurehead of post-world-war-II-Keynes reading – states that rate of surplus value is *superfluous* for determination of production prices and average profit rate. In a way this is logical, as surplus value rate is upfront burned into the code of amount-coefficients.

Steedman then states the 'redundancy' of value theory. Clear, after gravitation has done its effect and as a consequence planets are moving according Kepler's laws in elliptical orbits around the sun, one can say, these laws determine the trajectories and Newton's gravitation law is superfluous as a consequence. A difference is that Kepler lived before Newton. He would have welcomed Newton's explanation of his own laws. In relationship to this Steedman and other left theorists are backward, science-undoing oriented.

And then, on this basis, quite a number of other 'Marxists' scramble around in this context to attach alleged improvement to the labour theory of value (probably one should personally better avoid to the get term 'Marxist' attributed to oneself).

4 „Alternative Interpretations of Value-Price Transformation“

These interpretations are all based on the idea of one price system and a 2nd separate value system in Marx's CPE. In blanket terms, they are all wrong, as according the above, such two systems (and therefore a problem of one system to be transformed into another) do not exist - neither in real economy nor in Marx's thinking.

How well-meaning these interpretations may all be, in the consequence they are all harmful, as they strengthen the wrong believe that in Marx's theory there would be such a 'Transformation Problem'.

Adding up to this is that the neo-ricardian pitfalls including the '*Superhammer*' are not seen through (or in best case partially only).

As a consequence it is tried to save parts of Marx's theory by ,reducing' it. This happens especially by saying that *quantitative* models are inadequate reconstructions of Marx's problem issues.

However, one does not help Marx with this, as he is exactly doing so by determining relationships between *quantitative* aspects. But these relationships do not consist in an pure mathematic meaningless equation system.

Ad 4.‘a)‘: In some contributions, however, there is an approximation towards what I have said above (see 1). Dumenil, Foley and Lipiets start from money wages and a 'newly determined value of labour power' but then loose their way among different bundles of consumption commodities.

Dumenil sees the superficial character of the (neoricardian) production prices system (although not it's apologetic side). He also brings a similar gravitation law example as I have done above.

Ad 4.“b)“ und 4.“c)“: these are trials to help with the ‘Transformation Problem’ by refining simplifying assumptions of Marx (that to him were quite clear btw.). Be it related to heterogeneous labour in contrast to simple labour or be it the usage of stochastic rather than deterministic modelling.

5 „The monetary value theory of Marx“

Representatives from the group of ‘monetary value theorists’ criticise that the neoricardians do not consider the “central importance of money”⁵. They recognize that this has something to do with the presupposition of a “system in state of balance” (Ganßmann).

But also the ,monetary value theorists’ do not see through the Superhammer. Also they believe that Marx’s theory comprises an independent value system besides a price system: “His [Marx] quantitative transformation approach/trial of values into prices presupposes an existing system of value sizes.”⁶ [Heinrich 1988, ch. 5]

Ad 5.“a) Marx’s new paradigm“:

„The analysis of this ,specific social character [of abstract labour] *and not* [my emphasis] the proof of the sentence that the exchange relation is proportional to the commodity’s incorporated labour quantities is the actual subject of Marx’s value theory”⁷. [ch. 5 a)]

Ok, let’s put the focus on this special social character including money, but why saying ‘and not’? Are labour quantities not an ‘actual’ subject of Marx’s value theory?

“As commodities are not exchanged according their values, but according their production prices, value sizes have to be value sizes that get attached to the commodities already before exchange, ...”⁸ [ch. 5].

“The value of a commodity cannot be determined alongside itself, but only in relationship to the other commodities and this is only possible through money”⁹. [ch. 5 a)]

So, the conclusion is, value size cannot have anything to do with money.

This conclusion is wrong. These ,monetary value theorists’ confuse ‘individual exchange’ and ‘general concept of exchange’. The latter, as being part of the *production-exchange-context* during production of an individual commodity, determines the value size of this commodity; it’s not (or to a minor part only) the exchange of this individual commodity itself.

And the exchange in the production-exchange-context is money based, i.e. it’s a production-*purchase*-context. I.e. the linkage with money takes already place during production of an individual commodity through other similar individual commodities being purchased in a time range around it. What from perspective of an individual commodity is a before/after is from

⁵ This is of course a good point. One need not read all three Volumes of *Capital* to see that value theory is a monetary theory. However this is not all what the ‘monetary value theorists’ have in mind.

⁶ „Sein quantitativer Transformationsversuch von Werten in Preise setzte ein bestehendes System von Wertgrößen voraus.“

⁷ „Die Untersuchung dieses ,spezifisch gesellschaftlichen Charakters’ und nicht die Begründung des Satzes, daß das Austauschverhältnis zweier Waren den inkorporierten Arbeitsmengen proportional ist, ist der eigentliche Gegenstand der Marxschen Werttheorie.“

⁸ „Da die Waren aber nicht zu diesen Werten ausgetauscht werden sondern zu Produktionspreisen, muß es sich bei diesen Wertgrößen um Wertgrößen handeln, die den Waren bereits vor dem Austausch zukommen, ...“

⁹ „Der Wert einer Ware kann nun nicht an ihr selbst bestimmt werden, sondern nur in der Beziehung auf die übrigen Waren und dies ist nur vermittels des Geldes möglich.“

perspective of the value determination of this individual commodity the *concurrency* (running in parallel) of the system context.

Next, these theorists confuse temporal relationships existing in individual entities with abstraction level. Depending on the abstraction stage one just passes through, attributes of entities are still hidden or are already disclosed. So it's a relationship of hiding/disclosure rather than before/after. In Vol. 1, if we look at a given commodity, we see only value price; production price is still hidden. In Vol. 3, we see both, value price and production price and we see the mathematical relationship between the two.

So, if indeed it might be difficult for these devotees of monetary value theory (and others of course) to imagine this: there is no reason why not value size and production price should come into existence in parallel, in *concurrency*. Concurrency is not to be confused with Simultaneity. Concurrency comprises interlinked processes running in parallel in time. Simultaneity has no time, is a snapshot.

The fact that for value determination the concurrency of production and purchase is required does not mean that they play the same role. It's labour that creates value, not purchase. Purchase only sets conditions what from individual labour quantities go into the averaging that determine value size. So, concurrency does in no way change the causality of (surplus) value size that semantically determines production price.

“But this does also mean that it is forbidden to start from a quantitatively determined value structure before actual exchange. As a consequence the problem of value/price transformation is not asked in the way of finding a numerical conversion from given value sizes into prices, as Marx understands it in Chapter 9 of Volume 3”¹⁰. [ch. 5 a]

For explaining production price determination, Marx himself makes abstractions. There is an abstraction from short-term price oscillations. But there is also an abstraction from many individual processes with different individual turnover periods, typically more than one of them being required to constitute production price. This is all abstracted into one clocked fixed period system consisting of a repeated sequence of production and purchase. Production followed by purchase and production of value sequentially before purchase, as all the peculiarities of concurrency of value determination considered as being condensed and covered when saying ‘production of value’.

The ‘monetary value theorists’ cannot image such abstractions and therefore forbid Marx to do so. In natural science there is a saying ‘the error cause is always in front of the keyboard’. Probably in this discipline reality teaches some humbleness that avoids crossing border of prohibition on thinking.

The inability of thinking in such abstraction stages and modes is wide spread. Without this lack of ‘one system’ – ‘several abstraction stages’ thinking one would not be able to explain why across one century a theory of a separated ‘value system’ and ‘price system’ could be sustained.

¹⁰ „Das bedeutet aber auch, daß es sich verbietet von einer vor dem tatsächlichen Tausch vorhandenen quantitativ bestimmten Wertstruktur auszugehen. Dann stellt sich das Problem der Wert-Preis Transformation aber auch nicht in der Art wie es von Marx im 9.Kapitel des dritten Bandes aufgefaßt wird, als Umrechnung von gegebenen Wert- in aufzufindende Preisgrößen.“

Ad 5.“b) The transformation problem as ricardian rest in Marx’s theory“:

„And in fact does Marx not only apply a wrong transformation algorithm, he is also doing a complete abstraction from money. He does not only show a problem of Ricardo, he tries also to solve it on Ricardo’s terrain of a non-monetary theory of labour value.”¹¹ [ch. 5 b)]

It can really not be seen, where Marx abstracts in Chapter 9 from money. However in contrary to ‘monetary value theorists’ Marx does not have any reservation to say ‘money’ and ‘quantity of labour’ in one breath, e.g. “in point of fact, therefore, the monetary expression for the total quantity of labour, ...” [Marx 1991, p.259].

Before detecting a ricardian rest in Marx’s thinking it might be good to consider whether there is still a rest of misunderstanding of Marx in the own thinking.

“The real merits of the neoricardians are due to the fact that they have shown that such a non monetary value theory of determination of production prices is indeed superfluous.”¹² [Heinrich 1988, ch. 5 b)]

Here the neoricardian garbage – instead of criticising it – is taken positively, as ‘real merits’ to declare Marx’s approach in Chapter 9 as superfluous.

Ad 5.“c) The value-price transformation as conceptual transition between different levels of presentation“:

As ‘monetary value theory’ (MVT) is not a term Marx is using, I try now to come to more specific determination. Theorists using this term, I believe, do not significate a partial area of Marx’s value theory, but this value theory in its entirety, with special focus on the money character of value. The justification for this results from the fact that this aspect was largely ignored in former ‘traditional’ Marx-reception.

So, it’s not about non-monetary quantitative relationships, but a “conceptual-logical transition between different levels of presentation, as it was already emphasized by some authors ... (Gerstein 1976, Himmerweit/Mohung 1981)”¹³ [ch. 5 c)]. In this context ‘new Marx reading’ theorists recovered and elaborated understanding of value form development. So far, so good. What, however, is striking that this happens in *opposition* to the quantitative side of value: “Marx’s MVT ... in first line it is not about to determine the value size of a commodity by a determined quantity of SNLT, but ...”¹⁴ [ch. 5 c)] “the real subject of the MVT is ... not the value size, but the value form ...”¹⁵ [ch. 5 c)].

It’s difficult, to follow this reasoning. We have an economy that in its core is maximization of a *quantitative* relation (unlike its predecessors), namely $M'/M \rightarrow \max$. And in this economy the quantitative side shall play no ‘real’ role – or only a 2nd priority one? Come on.

¹¹ Und in der Tat wendet Marx nicht einfach einen falschen Transformationsalgorithmus an, er abstrahiert vor allem völlig vom Geld. Er zeigte also nicht nur ein Problem Ricardos auf, er versuchte es auch auf dem von Ricardo vorgegebenen Terrain einer nicht-monetären Arbeitswerttheorie zu lösen.

¹² „Das eigentliche Verdienst der Neoricardianer ist nun darin zu sehen, daß sie gezeigt haben, daß eine solche nicht-monetäre Werttheorie zur Bestimmung (der ebenfalls nicht-monetären) Produktionspreise überflüssig ist.“

¹³ „begrifflich-logischer Übergang zwischen verschiedenen Ebenen der Darstellung wie bereits von einigen Autoren mit unterschiedlicher Akzentuierung hervorgehoben wurde“

¹⁴ „Die Marxsche monetäre Werttheorie ... hat es nicht in erster Linie damit zu tun, daß die Wertgröße einer Ware durch ein bestimmtes Quantum gesellschaftlich notwendiger Arbeit bestimmt ist, sondern ...“

¹⁵ „Der eigentliche Gegenstand der monetären Werttheorie ist daher nicht die Wertgröße sondern die Wertform ...“

But it gets even worse:

“In the context of such an interpretation [i.e. the MVT – my adding], it is extremely problematical to speak about any kind of regulation of the price system through value sizes,”¹⁶ [ch. 5 c)]. “Speaking about regulation is possible only in so far, as the concept of value is subordinated to the concept of price, profit etc.,”¹⁷ [ch. 5 c)].

One does not get rid of the quantitative regulation by fleeing into a conceptual subordination.

There is a category (general concept of) value consisting of three determines, one of them being *form* the other *size*. This trinity category is now ‘conceptual-logically’ moved to the next higher presentation level.

I think, here it would be indeed of interest, not only what happens to the form-determination, but also, what happens to the *size*-determination.

“Structural causality” is Althusser’s answer. This is great, when through it a structural understanding of the dynamic movement-relationship of capitalism is promoted. But as explained: structure alone is not enough. The quantitative-functional side is missing. But here, all hope is in vain. The MVT-guys not only do not want to *treat* the quantitative side, beyond that they want to have it *eliminated* from CPE. Where Marx argues quantitatively, for them it’s a ‘ricardian rest’ and otherwise they want make us believe that in ‘first line’ and ‘in reality’ Marx’s intention is only to talk about non-quantitative themes.

Here one has to conduct the following to mind. There is a traditional *Capital*-reception, on Say’s level of understanding, incapable of differentiating between concrete and abstract labour, the determination of value form being completely hidden. Then Althusser and friends are coming and are reconstructing this determination. Super. But as a compensation they throw away another of the three value determinations. One third against another third. Isn’t this a perfect exchange of equivalents, isn’t it?

This quantity-less „qualitatively interpreted MVT ... has no difficulties with the classical transformation problem,“¹⁸ [ch. 5 c)]. Clear, if – unable or unwilling to criticism – it lets the undeserved ‘Black Peter’ stick on Marx and otherwise prefers to eliminate a major part of his theory – namely the one that allows it being an *economic* theory.

In order to finally blame Marx: if one does a lot of thinking blunder when doing Marx reception one naturally comes to the conclusion that “Marx’s value theory [is – my adding] a much less consistent building than most of the interpreters assume.”¹⁹ [ch. 5]

6 Conclusion

A small failure of Marx of not being completely explicit at a specific point, but demanding instead some intellectual transfer effort from understanding recipients, has a fatal consequence. The recipients fall into an initial aberration (Bortkiewicz) and follow in a (relatively) great number this path by creatively inventing one artificial problem variant after

¹⁶ „Im Rahmen einer solchen Auffassung der Werttheorie ist es aber dann äußerst problematisch, von einer irgendwie gearteten quantitativen Regulation des Preissystems durch die Werte zu sprechen,“

¹⁷ „Von Regulation kann nur insofern gesprochen werden als die Kategorie Wert dem Verständnis der Kategorien Preis, Profit etc. vorgeordnet ist,“

¹⁸ „Die qualitativ aufgefaßte monetäre Werttheorie hat ... keine Schwierigkeiten mit dem klassischen Transformationsproblem,“

¹⁹ „die Marxsche Werttheorie [ist] ein viel weniger einheitliches Gebäude ~~ist~~, als die meisten Interpreten annehmen.“

the other. In fact an effect “tremendously under estimated in its consequences”, but nothing Marx can be blamed for.

Result is in any case the far-reaching destruction of the imagination of the applicability and possible further development of the *Capital* and the CPE with respect to its real subject: the economy in its concrete appearance of today.

Addendum

Meanwhile I know that there is a bunch of theorists outside German-language Marxist discussion being on the level of refuting ‘Transformation Problem’ as being a non-problem.

A) Kliman & McGlone: identifying ‘Transformation Problem’ as a non-problem

Kliman’s book [Kliman 2007] is a successor of a seminal article already from 1988 that enabled pushing back the universal acceptance of Sraffian interpretation [Kliman/McGlone 1988]. Universal except German-language Marxist discussion one has to add.

Key points in the article are:

- a) Bortkiewicz’s and Sraffian’s equations are lacking any concept of time and succession thus following (neo)classical equilibrium ideology.
- b) As a consequence the article emphasizes economy being a sequence of periods happening in time, *temporal*, where sources for value creation as well as exploitation are clearly visible.
- c) Commodities are typically not traded at their values but for a diverging price, from perspective of preceding period this is the production price and, alternately, from following period, it’s the cost price.
- d) Instead of a dual it’s about a *single system - Temporal Single System Interpretation (TSSI)* rather than Bortkiewicz and Sraffian *Simultaneism*
- e) The three equalities hold. This is proven in general (as also in this document, but differently), in the absence of general equilibrium. ‘Transformation Problem’ is a non-problem.

When so much is comprised, what can be wrong?

- f) [Kliman/McGlone 1988] consider a reproduction process very similar to the one of Fig. 1 in this document. However, in contrast to Fig. 1, where the process starts with diverging value and production prices their process in period 1 starts with both being the same. So first impression is that they have not detected Marx’s tactical beginner’s fault and still try by means of an iterative approach to link exchange of value and production prices together. However, this is not true, as it is stated:

“(Solely in order to facilitate comparison with ‘transformation problem’ ‘solutions’, we begin without any error(s) in the past; i.e. initial values are equal to the values of means of production and labour-power.)” [p.72]

This means, again, nothing wrong. But let's continue:

- g) Bortkiewicz's approach is based on simple reproduction condition. Kliman recognizes that a refutation of Bortkiewicz must be based on this:

“but Bortkiewicz's modification is unexceptionable, since Marx's solution was meant to hold true universally. It must therefore be viable in the special case of simple reproduction.” [Kliman 2007, p.149]

But he has a poor understanding about what simple reproduction means. For him it's equality of supply and demand, and with this he means the *physical quantities only*. He misses the point that primarily the *monetary* figures need to be the same:

“Simple reproduction and uniform profitability do require that supplies equal demands, but they can be equal even if the input and output prices of Period 1 are unequal”

and

“Recall that the physical quantities of Table 8.2 are the same in both periods. This means that simple reproduction *does* occur” [both Kliman 2007, p.151].

Consequently, in his Table 8.2 the monetary figures grow from period to period and this way he believes he can defend Marx! In Marx simple reproduction scheme it is primarily just the monetary figures that stay the same from period to period. It is surprising that a person so knowledgeable in *Capital* can have such a misunderstanding.

- h) Bortkiewicz makes the error of setting stationary state consideration and consideration of succession into *opposition*. Kliman does not recognize that this is a false opposition. He does not correctly understand the difference between stationary state and stationary state relation (SSR) – see 2.1 b) above. As he is (rightly) promoting succession he is fighting Bortkiewicz's simultaneist SSR scheme. And as he (wrongly) confuses this with a stationary state consideration of the system, he also fights this. And as stationary state consideration is linked with fact that monetary figures, i.e. prices have *same* amount at begin and end of a period, i.e. input prices = output prices, making an analysis by starting from price equality is a no-go for Kliman.

However, in order to criticize Bortkiewicz, it is favourable to just setup a stationary state system that comprises production price purchase and that maintains 3 equalities. Of course, in such a system prices have same amount at begin and end of a period. In Kliman and McGlone seminal TSSI article such a system is created: in the example starting from period 14 this one and all successive periods have input prices = output prices [Kliman/McGlone 1988, p.73]. So, Kliman/McGlone have stationary state refutation of Bortkiewicz in hands.

However, as ‘what is not allowed cannot happen’, Kliman does not accept this as the desired refutation, for him the convergence towards period 14 is an accidental one²⁰. He

²⁰ In the blog <https://www.marxisthumanistinitiative.org/tag/fred-moseley>, part ‘All Value-Form, No Value-Substance: Comments on Moseley's New Book, Part 13’ I have confronted with Kliman with the discrepancy that while on side he is fighting input prices = output prices for a given period, in [Kliman/McGlone 1988, p.73] the same equality appears. The answer is: It's allowed when data are so but the probability for this is 0%. So, as in the refutation it's about logic and not empirical data, he dismisses his own solution by making it irrelevant via 0% probability. The original communication was:

□ **Herbert Panzer on Sat, 11th Mar 2017 12:10 pm**

does not get into a problem with this, as for him he has a solution for the required simple reproduction situation: the erroneous from g) above.

So, the funny thing is that Kliman makes two errors. These two errors compensate each other in a way that for Kliman the TSSI approach appears as being consistent. Therefore he believes of having refuted 'Transformation Problem' issue, but in reality he has not. It's a pity, as most ingredients for refutation are on the table already through Kliman/McGlone's article from 1988. Only a wrong usage of the ingredients is made.

- i) Kliman has not recognized Sraffian trick (see 3 above) to use SSR's pure mathematical determination feature to make profit a determinant of physical quantities and then deliberately convert it into a causal explanation. Instead for him a SSR equation system as such is already devil's work, despite how much meaning and semantics one adds around it.
- j) The last two points together lead to unfavourable consequences. Consider, for simpler analysis, one assumes economy being in stationary state, comprising temporal, process-oriented, successive dynamics. Naturally, equations will have SSR style. Automatically, whatever other meanings, argumentation etc. one adds otherwise, one will be a simultaneist. And as through SSR (inevitably as Kliman believes, not realizing that it was Sraffa's free choice) physical quantities determine profit rate, one will automatically be a bourgeois physicalist. In the consequence this erroneous positioning of Kliman is a hindering of Marxist scientific progress.

Summary: Kliman/McGlone's contribution to overcome 'Transformation Problem' is seminal. They are able to demonstrate that 'Transformation Problem' is a non-problem and can show this for all cases except one: the stationary case. Unfortunately, this is the most relevant case, as it is the only one that enabled Bortkiewicz to construct the 'Transformation Problem'.

Andrew, I'm trying to understand "Centers-of-Nothing-enhanced-3.9.17.xlsx". In the sheet you put temporalist calculation and $p_{in=out}$ calculation into opposition. In Kliman/McGlone article period 14 (and also 15, 16 etc., I presume) $p_{in=out}$ seems to be compatible with TSSI. So, why is that or what are the conditions for $p_{in=out}$ being allowed and when not?

□ **Andrew Kliman on Sat, 11th Mar 2017 3:38 pm** A reply to Herbert Panzer's comment of Sat, 11th Mar 2017 12:10 pm: "So ... what are the conditions for $p_{in=out}$ being allowed and when not?" It's allowed when the actual data and temporal value relations generate that result (a zero-probability event). Otherwise, it's not. In other words, input and output prices may happen to be equal, but we don't force them to be equal contrary to the facts—or force them to be unequal contrary to the facts. We like facts. Facts are our friends.

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