THE DETERMINATION OF CONSTANT CAPITAL

IN THE CASE OF A CHANGE IN THE VALUE OF THE MEANS OF PRODUCTION

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A fundamental issue in the current debates over Marx's value theory (in the IWGVT, on OPEL, in journal articles, etc.) is precisely what was Marx's assumption regarding the determination of constant capital, *in the case when the labor-time required to produce the means of production changes.* The most-commonly held interpretation of this issue, and my own interpretation, has been that Marx assumed that constant capital is determined by the "*current reproduction costs*" of the means of production, in the sense that if the labor-time required to produce the means of production changes anytime between the initial investment of capital and the eventual recovery of this capital through the sale of commodities, then the value of the existing constant capital would also change in order to reflect the current reproduction costs of the means of production.

In recent years, the TSS interpretation has presented a different view of the determination of constant capital - or rather at least two different views. John Ernst (1982) and Alan Freeman (1995) have argued that the value of constant capital is determined by the actual *historical costs* of the means of production, so that the value of constant capital in existence is not affected by a change in the value of the means of production. Andrew Kliman has presented a more complicated interpretation - that the *stock* of constant capital is determined by the historical costs of the means of production, but the *flow* of constant capital is determined by the value of the means of production *at the time these means of production enter the production process*, i.e. are determined by what Andrew calls the "pre-production current costs". If the value of the means of production changes after a given set of means of production enters the production process and before the output produced from these means of production are sold, this will not affect the value of the means of production already in production.

This paper will review all the passages in Marx's various manuscripts - from *The Poverty of Philosophy* in 1847 to the final published versions of Volume 1 of *Capital* - in which Marx specifically discussed the question of the determination of constant capital in the case of a change in the value of the means of production. This review should enable us to determine which of these interpretations of the determination of constant capital is best supported by the textual evidence and the extent to which Marx was consistent throughout his writings on this subject.

Andrew has recently posted on OPEL his latest defense of his "temporalist" interpretation of the determination of constant capital. The last half of this paper will respond in detail to Andrew's recent post. It should make for a good debate at next year's IWGVT conference.

In this recent post (and elsewhere) Andrew suggests that the main criterion for choosing between different interpretations of Marx's concept of constant capital is which interpretation can better derive more of Marx's main conclusions (most importantly, the falling rate of profit). I disagree. I argue that the main criterion for choosing between different interpretations of the determination of constant capital in the case of a change of in the value of the means of production is *what Marx himself actually wrote* about this subject. One should read everything Marx wrote on this subject, in systematic and chronological fashion, in order to get a better understanding of the meaning of specific passages and how Marx's thinking developed over the years on this subject. This paper will show below every time Marx wrote specifically about this subject, he assumed that constant capital is valued in current replacement costs, in the sense indicated above. In this situation, it does not make sense to accept Andrew's interpretation of the valuation of constant capital simply because this interpretation makes it easier to derive a falling rate of profit. It may be easier to derive the falling rate of profit, but this interpretation contradicts everything Mar x ever wrote specifically on this subject. Maybe if the texts were more ambiguous, Andrew's criterion might be more appropriate. But in this case, the texts are unusually clear and consistent throughout Marx's manuscripts.

Andrew has acknowledged in his recent post that there is much textual evidence against the historical interpretation of constant capital. How then can Andrew reconcile this negative textual evidence with his interpretation that the *stock* of constant capital is valued in historical costs? I don't know. Perhaps Andrew would clarify this point for us.

I presume that Andrew's reconciliation with all this negative textual evidence might be that all these passages refer only to the *flow* of constant capital, and do not refer to the *stock* of constant capital. But why this complete separation between the determination of the stock of constant capital and the flow of constant capital? What could be the theoretical justification for different methods of determination? In any case, there is *no* textual evidence in all of Marx's manuscript s (that I know of) that states that the stock of constant capital and the flow of constant capital are determined in fundamentally different ways (the former in historical costs and the latter in current costs). Nor is there *any* textual evidence that states that the stock of constant capital is determined by historical costs. Indeed we will see many passages below in which Marx clearly stated that, if there is a change in the value of the means of production, this would revalue not only the flow, but also explicitly the *stock*, of constant capital. I ask Andrew to present at least *one* passage (the more the better obviously) in which Marx explicitly said that, if the case of a change in the value of the means of production, the stock of constant capital will not be revalued, but will instead continue to be valued at the original historical cost. We will see many passages below in which Marx said the opposite.

So we turn now to a comprehensive review of everything Marx wrote on this subject of the determination of constant capital in the case of a change in the value of the means of production.

1. Review of Marx's texts

1.1 *Poverty of Philosophy*

The first time in Marx's writings that he touched upon the subject of the determination of the value of commodities by current reproduction costs was in the *Poverty of Philosophy* (1847). In the following passage Marx stated that (1) a change of productivity in the production of a certain product will affect the value of all similar products that have been *previously produced but not yet sold* and (2) this devaluation is also true when the change of productivity is in the production of the instruments and buildings used to produce this product. In other words, what Marx would later call "the existing constant capital" would be devalued and hence also the value of the product.

Every new invention that enables the production in one hour of that which has hitherto been produced in two hours *depreciates all similar products on the market*. Competition forces the producer to sell the product of two hours as cheaply as the product of one hour. Competition carries into effect the law according to which the relative value of a product is determined by the labor time needed to produce it. Labor time serving as the measure of marketable value becomes in this way the law of continual depreciation of labor. We will say more. There will be *depreciation not only of the commodities brought into the market, but also of the instruments of production and of whole plants.* (PP, p. 65; emphasis added)

Marx went on to say that Ricardo had already pointed out "this fact" in his *Principles*. Marx quoted the following passage from Ricardo's Chapter 20 (Value and Riches: Their Distinctive Properties"):

This fact was already pointed out by Ricardo when he said: "By constantly increasing the facility of production, we constantly diminish the value of some of the commodities *before produced*, though by the same means we not only add to the national riches, but also to the power of future production." (PP, p. 65)

It will be seen below that Marx held fast to this basic assumption - the determination of the value of commodities, including commodities already produced but not yet sold, by current production conditions - throughout his economic manuscripts.

1.2 *The Grundrisse*

The next time Marx wrote about this subject was two brief passages in *The Grundrisse* (1857-58). The first passage refers to the earlier passage in *Poverty of Philosophy* just examined and restates the same assumption in pretty much the same words.

In my pamphlet against Proudhon, I showed that real value itself - independently of its rule over the oscillations of the market price (seen apart from its role as the *law* of these oscillations) - in turn negates itself and constantly posits the real value of commodities in contradiction with its character, that it constantly depreciates or appreciates the real value of *already produced commodities* (...) .

(G, p.137; emphasis added)

Later in *The Grundrisse,* in a draft of a section on the transition from the process of production (what later became Volume 1 of *Capital*) to the process of circulation (what later became Volume 2), Marx commented again that the *existing* capital is continually depreciated by an increase of productivity in the production of the means of production:

> one part of the capital on hand is *constantly devalued* owing to a decrease in the costs of production at which it can be *reproduced*; not because of a decrease in the amount of labor objectified in it, but because of a decrease in the amount of living labor which *it is henceforth necessary to objectify* in this specific product. This *constant depreciation of the existing capital* does not belong here, since it already presupposes capital as completed. (G, p. 402; emphasis added)

1.3 *Manuscript of 1861-63*

In the *Manuscript of 1861-63,* Marx developed further his basic assumption of the determination of constant capital by current reproduction costs in the case of a change of productivity in the production of means of production. This manuscript begins with a second draft of Volume 1 of *Capital* (after the first draft in *The Grundrisse*). This draft of Volume 1 was unknown until the recent publication of this manuscript in its entirely, first in German in the early 1980s and then in English in the late 1980s. (The English translation is part of the projected 50-volume *Marx-Engels Collected Works*, which is a partial translation of the authoritative 100-volume Marx-Engels Gesamtausgabe in German.

The first passage from this manuscript comes from a draft of the all-important Chapter 7 of Volume 1, in which Marx presented his theory of surplus-value. Toward the end of a long discussion of the value transferred from the means of production to the price of the product (pp. 70-80), Marx further clarified that the value transferred from the means of production *already in operation will change*, if there is a change of productivity in the production of these means of production. Marx wrote that, even though these means of production enter the production process of other goods with a certain value, *they may leave this production process with a different value*, if there is a change of productivity in their own production. This very interesting and important passage is as follows:

But the values of the material and means of labor only reappear in the product of the labor process to the extent that they were pre-posited to the latter as values, i.e. were values before they entered into the process. Their value is equal to the social labor time materialized in them; it is equal to the labor time necessary to produce them under given general social conditions of production. *If later on more or less labor time were to be required to manufacture these particular use values, owing to some alteration in the productivity of the labor of which they are the products, their value would have risen in the first case* *and fallen in the second*; for the labor time contained in their value only determines it to the extent that it is genera l, social, and necessary labor time. *Hence although they entered the labor process with a definite value, they may come out of it with a different value that is larger or smaller, because the labor time society needs for their production has undergone a general change*... But this change in the value of the material and means of labor involves absolutely no alteration in the circumstance that in the labor process into which they enter as material and means they are always *preposited as given values, values of a given magnitude*. For in this process itself they only emerge as values in so far as they entered as values. A change in their value never results from this labor process itself but rather from the conditions of the labor process of which they are or were the products and to which they therefore are not preposited as products. *If their general conditions of production have changed, this reacts back upon them. They are an objectification of more or less labor time, of more or less value than they were originally; but only because a greater or smaller amount of labor time is now required than originally for their production.* This reaction is due to the fact that as values they are a materialization of social labor time but the labor time contained in them only counts to the extent that it is reduced to general social labor time ... These changes in their value, however, always arise from changes in the productivity of the labor of which they are products, and have nothing to do wit h the labor processes into which they enter as finished products with a given value. Their change of value stems from alterations in their own conditions of production, which occur outside and independently of the labor process into which they enter as material and means; not as a result of an operation occurring within the labor process. *For they are always values of a given, preposited magnitude, even though owing to external agencies, acting outside the labor process, they are now preposited as a greater or smaller magnitude than was originally the case*. (MECW.30, pp. 79-80; emphasis added)

Note also that Marx stated here that, even though the value transferred from the means of production already in operation may change as a result of a change of productivity, the value of the means of production is still taken as *"given"* or "*p reposited"* in the determination of the price of the product. They are "preposited as a greater or smaller magnitude than was originally the case," but they are still preposited. In other words, they are preposited as the value at which they come out of production, not the value at which they enter production. We will return to this important point below.

Marx repeated these same two points in a brief passage about 300 pages later in this *Manuscript of 1861-63*. By this time, Marx had broken off from his draft of Volume 1 to work on the well-known *Theories of Surplus-value* part of the manuscript, beginning with Steuart, the Physiocrats, and Smith. In the long Chapter 3 on Smith, Marx discussed for the first time what later became his analysis of the "schemes of reproduction." The main point of these "reproduction schemes", it becomes clear on rereading this chapter, is to critique "Smith's dogma", according to which the entire price of the annual can be resolved into wages, profit, and rent; hence no part of the total price is resolved into constant capital. But Marx asked: how then is the constant capital recovered and with what money are the consumed means of production repurchased? The reproduction schemes were devised by Marx primarily in order to analyze these questions. (see Moseley 1997 for a further discussion of Marx's reproduction schemes)

In the first few pages of this section, Marx specified once again that the precise amount of constant capital that is transferred to the price of the output (and hence recovered from the price of the output) *may change*, if productivity in the production of the means of production changes. But since the precise amount of constant capital taken as given transferred to the price of the output does not matter in the explanation of how the given constant capital is recovered and reproduced (i.e. in his analysis of the reproduction schemes), these changes in the value of constant capital can be ignored in the analysis of the reproduction of constant capital.

> If we take society at any one moment, there exists simultaneously in all spheres of production, even though in very different proportions, a definite constant capital - presupposed as a condition to production - that once and for all belongs to product ion and must be given back to it, as seed must be given back to the land.
>
> *It is true that the value of this constant part can fall or rise, depending on whether the commodities of which it is composed have to be reproduced at less or greater cost.* This *change of value*, however, never alters the fact that in the process of production, into which it enters as a condition of production, it is a *postulated value* which must reappear in the value of the product. Therefore, this change of value of the constant capital can here be ignored. In all circumstances it is a definite quantity of past, objectified labor, which passes into the value of the product as a determining factor. (MECW.30, p. 413; emphasis added)

We can also see that Marx repeats here the point made above that, even though the value of the existing constant capital may change, this constant capital is still *taken as given* in the determination of the price of the product. It is taken as given as the new current cost of the means of production, not the old costs before the change of value of the means of production .

After writing most of what we know as *Theories of Surplus-value,* Marx broke off and began to write a first draft of what later became Parts 1 through 4 of Volume 3 of *Capital*.

In a draft of what later became Chapter 6 of Volume 3 of *Capital* (to be examined below) on the effect of a change of constant capital on the rate of profit, Marx mentioned again briefly the devaluation of the *existing* constant capital by an increase of productivity in the production of the means of production.

> In reality the part of capital which *exists as fixed capital* - or also all the commodity capital which was produced under the old conditions of production -

is *relatively devalued* by this increase in the productive power or the relative *devaluation of this capital;* (...) . (MECW.33, p. 88)

Marx returned to this point a few pages later:

Fluctuations in the rate of profit, independent of organic changes in the components of capital, or of the absolute magnitude of capital, are possible if the *value of the capital advanced, whether it is engaged in the form of fixed capital, or exist s as raw material, finished commodities, etc. rises or falls in consequence of an increase or reduction, independent of the already existing capital, in the labor time needed for its reproduction, since the value of every commodity, hence also of t he commodities of which the capital consists - is conditioned not only by the necessary labor time contained in it itself, but by the necessary - socially necessary - labor time which is required for its reproduction, and this reproduction may occur under circumstances which hinder or facilitate it, and are different from the conditions of the original production.* If under the changed circumstances twice as much labor time, or, inversely, half as much, is generally required to produce the same capital , as was needed to produce it, *that capital ... would now be worth 200 thalers, if it was previously worth 100, or ... it might be worth 50.* (MECW.33, p. 105; emphasis added)

Notice here that *the value of the original advanced capital changes* as a result of a change of productivity in the production of the means of production. The value of the original capital does not stay the same in this case. Capital that was originally worth 100 is now worth 200, or 50, as a result of the change of productivity.

In a later section of the first draft of Part 4 of Volume 3 on commercial capital (what Marx called here "mercantile capital"), there is another very interesting discussion of this issue. This discussion begins as follows (which "temporalists" should love):

An important circumstance in the *circulation* and *production* of capital is this: *Time* passes between the outlay and the return of this capital, even if it returns. This interval, in proportion to its size, has a dual impact. *Firstly on the use value*... (MECW.33, p. 244)

Then Marx continued on the next page:

The second effect of time ... within the circulation process affects not the *value in use* ...but the *value* of *exchange* directly ...

But <u>the real value of commodities changes during a certain interval of time,</u> and the greater the time, the larger the field, the opportunity for such changes of value...

The process of circulation of the capital dissolves into two parts, epochs or phases - first, the conversion of the commodity into money, and, secondly, the reconversion of money into commodities ... Now we shall inquire how far any *variation or change in value* may affect price and profit; any variation taking place in one or the other of these two phases. We shall commence with the latter, the reconversion of money into the productive ingredients. (MECW.33, pp. 245-46;

underlined emphasis added)

Marx went on to say that if the value of cotton increases (or decreases) during this second phase of the reconversion of the money-capital into cotton then it will take more (or less) money-capital to purchase the same quantity of cotton, a point which is not in dispute between Andrew and myself.

But the main issue between Andrew and myself has to do with Marx's first phase, the *interval of time between the production and the sale of the commodities*. Marx went on to discuss this key phase in following pages:

We come now to C - M, the *phase during which the product circulates*, waiting to be changed into money. (MECW. 33, pp. 247)

Marx then stated again clearly his assumption (repeated over and over again since the *Poverty of Philosophy*) that if the price of e.g. cotton falls, this would reduce the value transferred to the yarn *already produced and "floating on the market*":

If in the preceding example, the price of *x* lbs. of twist = $120 (including cost - $100, of which say $80 for raw material, i.e. cotton + $20 surplus value), and if the value of cotton fell suddenly, from an extraordinary harvest by 60 p.c., the n the *cotton worked up in the twist floating upon the market would sink as well as the cotton in its raw state...*

Such a change of value *directly depreciates the capital (productive)*, if the change happens during the first phase, C - M ... (MECW. 33, p. 248; emphasis added)

On the next page, Marx mentioned the risk that arises

... out of the *change of value* in the productive ingredients of commodities, and, therefore, affecting commodities in the *interval between production and sale* ... (MECW. 33, p. 249; emphasis added)

Thus we see that time is indeed important in Marx's value theory, but for the opposite reason that "temporalists" claim. The temporalists argue that time is important because the value of commodities does *not change* after they enter production, whereas for Marx time is important because the value of commodities *will change*, even after they have entered production, if the conditions of their own production changes.

1.4 Volume 3 of *CAPITAL*

1.4.1 Chapter 6

Soon after completing the *Manuscript of 1861-63*, Marx began work on a full draft of Volume 3 of *Capital* (not exactly the same as what we know today as Volume 3), which was written in 1864-65. In Chapter 6 of this Volume 3 manuscript, Marx again discussed at some length the determination of constant capital in the case of a change in the value of the means of production. The subject matter of Chapter 6 is the effect of a change in the constant capital on the rate of profit. The main example used throughout this chapter was again the raw material cotton in the cotton textile industry. The main theoretical point of the chapter is that a change in the value of the constant capital affects the *rate* of profit, but it does not affect the *amount* of profit or surplus-value. This is an important point, because if a change in the value of constant capital affected the amount of surplus-value, then it would appear that surplus-value arises in part from constant capital and not solely from living labor.

In this analysis, Marx made it clear once again that a change in the price of e.g. cotton will change the value transferred from the cotton to the yarn, not only of the yarn yet to be produced, but also of yarn *that is in the process of production o r that has already been produced, but not yet sold*. In other words, a change in the price of cotton changes the value transferred to the yarn "at whatever stage of completion of the yarn: "semi-finished","finished", "still in the warehouse", "in the course of manufacture", "commodities on the market". Here is what Marx wrote:

> If the price of a raw material changes - cotton for example - the price of cotton goods rises as well: both semi-finished goods such as yarn, and finished products such as cloth, etc. which are produced with this more expensive cotton. And cotton that has not yet been worked up, but is still in the warehouse, rises
>
> just as much in value as cotton that is in the course of manufacture. *As the retrospective expression of more labor-time, this cotton adds a higher value to the product which it goes into as a component than it possessed originally and the capitalist paid for it.*
>
> *Thus if an increase in the price of raw material takes place with a*
>
> *significant amount of finished goods already present on the market, at*
>
> *whatever stage of completion, then the value of these commodities*
>
> *rises and there is a corresponding increase in the value of the capital involved. The same applies to stocks of raw material, etc. in the hands of the producers... .*
>
> The reverse is true with a fall in the price of raw materials which would otherwise increase the rate of profit, if all other circumstances were the same. *The same commodities on the market, articles still in preparation and stocks of raw materials are all devalued*, and this counteracts the simultaneous rise in the rate of profit. (C.III. 207-08; emphases added)

A few paragraphs later, Marx briefly considered the reevaluation of the existing *stock* of fixed constant capital:

(1) The constant improvements which rob existing machinery, factories, etc., of a part of their use-value, and hence a part of their exchange-value. This process is especially significant at times when new machinery is first introduced, before it has reached a certain degree of maturity, and where it thus constantly becomes outmoded before it has a chance to reproduce its value...

Once machines, factory buildings or any other kind of fixed capital have reached a certain degree of maturity, so that they remain unchanged for a long while at least in their basis construction, a further development takes place as a result of improvements in the methods of reproduction of this fixed capital. The value of the machines, etc. now falls not because they are quickly supplanted or partially devalued by newer, more productive machines, etc., but because they can now be reproduced more cheaply. (C. III., pp. 208-09)

Here is very clear textual evidence that Andrew is wrong when he argues that the stock of constant capital is valued at historical cost and does not change if there is a change in the value of the means of production. Marx clearly stated here (and else where) that the stock of constant capital, like the flow of constant capital, changes as a result of a change in the value of the means of production.

1.4.2. Chapter 7

Chapter 7 of Volume 3 of *Capital* consists of three "supplementary remarks" on the effect of a change of constant capital on the rate of profit: the illusion that profit arises from constant capital and from the capitalists' own actions, the error of Rodbertus who thought that a change of constant capital did not affect the rate of profit, and a final remark that states again very clearly the basic assumption that the value of commodities, including the value transferred from the constant capital, is determined by the current reproduction cost:

Fluctuations in the rate of profit that are independent of changes in either the capital's organic composition or its absolute magnitude are possible only if the *value of the capital advanced, whatever might be the form - fixed or circulating - rise s or falls as a result of an increase or decrease in the labor-time*

necessary for its reproduction, an increase or decrease that is independent of the capital already in existence. The value of any commodity - and thus also of the

commodities which capital consists of - is determined by the socially necessary labor-time required for its reproduction. This reproduction may differ from the

conditions of its original production by taking place under easier or more difficult circumstances. If the changed circumstances means twice as much time, or alternatively only half as much, is required for the same physical capital to be reproduced, then given an unchanged value of money, this capital, if it was

previously worth $100, would now be worth $200, or alternatively $50.

(C.III, pp. 237-38; emphasis added)

This passage is similar to the passage examined above from the first draft of Volume 3 (MECW.33, p. 105). Again we can see that Marx clearly stated that the value of the *original* capital *changes*, if there is a change of productivity in the production of the means of production. The value of the original capital does not stay the same in this case. The original capital that was worth $100 is revalued to e.g. $200, or to $50.

1.4.3 Chapter 14

In the well-known Section 3 of Chapter 14 of Volume 3 of *Capital* on the "cheapening of the elements of constant capital", Marx argued that this cheapening of the means of production is one of the "counter-acting tendencies" to the tendency o f the rate of profit to decline. Marx first referred back to his earlier discussion in Chapters 6 and 7 of Volume 3, discussed above:

Everything is relevant here that has been said in Part One of this volume about the causes that raise the rate of profit while the rate of surplus-value remains constant, or at least raise it independently of the latter. (C.III, p. 343)

Marx then went on to say that the devaluation of constant capital due to the cheapening of the means of production affects not only the capital invested from now on, but also the *"existing capital":*

Also related to what has been said is the *devaluation of existing capital* (i.e. of its material elements) that goes hand in hand with the development of industry.

(C.III, p. 343; emphasis added)

1.5 *Capital*, Volume 1, Chapter 8

Finally, the last time Marx discussed this question of the valuation of constant capital in the case of a change of the value of the means of production was in Chapter 8 of the published versions of Volume 1 of *Capital*. In this chapter, Marx introduced and defined his key concepts of constant capital and variable capital. Toward the end of this chapter, Marx emphasized once again that the precise magnitude of constant capital that is transferred to the value of the product *may change is t here is a change in the value of the means of production*. He first used cotton again as an example of a change in the value of raw materials:

The definition of constant capital and variable capital given above by no means excludes the possibility of a change of value in its elements. Suppose that the price of cotton is one day sixpence a pound, and the next day, as a result of a failure of t he cotton crop, a shilling a pound. *Each pound of the cotton bought at sixpence, and worked up after the rise of value, transfers to the product a value of one shilling; and the cotton already spun before the rise, and perhaps circulating in the market as yarn, similarly transfers to the product twice its original value*... The value of a commodity is certainly determined by the quantity of labor contained in it, but this quantity is itself socially determined. If the amount of labor-time socially necessary for the production of any commodity alters - and a given weight of cotton represents more labor after a bad harvest than after a good one - *this reacts back on all the old commodities of the same type*, because they are only individuals of the same species, and their value at any given time is measured by the labor socially necessary to produce them, i.e. by the labor necessary under the social conditions *existing at the time*. (C.I, pp. 317-18; emphasis added)

We can see here that the value transferred from the cotton to the yarn changes at all stages of completion of the yarn: "worked up after", "already spun ... and circulating on the market", "all the old commodities of the same type".

In the next paragraph, Marx noted that this change in the value of constant capital also affects the stock of fixed constant capital invested in means of production which are already operating in the production process.

> *As the value of the raw materials may change, so too may that of the instruments of labor, the machinery, etc. employed in the process*; and consequently that portion of the value of the product transferred to it from them may also change. If, as a result of a new invention, machinery of a particular kind can be produced with a lessened expenditure of labor, *the old machinery undergoes a certain amount of depreciation, and therefore transfers proportionately less value to the product*. (C.I , p. 318; emphases added)

We can see again Andrew’s interpretation that the stock of constant capital is valued in historical costs is clearly mistaken. The stock of constant capital is revalued along with the flow of constant capital. Indeed the flow of constant capital is revalued *because* the stock of constant capital is revalued (note Marx’s "therefore" in the last line above).

Thus I conclude on the basis of this review of Marx’s texts that Marx was consistent throughout his writings on this topic of the valuation of constant capital. Marx assumed throughout that constant capital is valued at current reproduction costs, in t he sense that the value of existing constant capital may change, if there is a change in the value of the means of production anytime between the purchase of these means of production and the sale of the commodities produced. The value of constant capital is not determined at the point in time when the means of production enter the production process. The value of constant capital does not remain unchanged after the means of production enter production if there is a change in the value of the means of production before the output is sold. The stock of the constant capital, as well as the flow of constant capital, is revalued as a result of a change in the value of the means of production.

2. Response to Kliman's OPEL post

The remainder of this paper will respond to Andrew Kliman's latest post on OPEL on the valuation of constant capital. Because of time constraints, this section is not yet finished.

2.1 Sections 1 and 2: Simultaneous determination

Andrew attributes to my interpretation the method of the "simultaneous determination" of input prices and output prices. By this, Andrew means essentially the method of linear production theory (or Sraffian theory), according to which the prices of inputs and outputs are determined simultaneously by a system of equations, in which the physical quantities of inputs and outputs are the initial givens.

But I have argued in several papers (Moseley 1993, forthcoming a, and forthcoming b) and on numerous occasions on OPEL that my interpretation is *not* the same as the Sraffian method of simultaneous determination. According to my interpretation, constant capital is *taken as given* in the determination of the prices of outputs, as in Andrew's interpretation. This is one of the two main points of my interpretation (the other main point is the prior determination of the total amount of surplus- value, prior to its division into individual parts). As I have written before, according to my interpretation, prices of production are determined by the following equation:

$$P_i = (C_i + V_i) + r\,(M_i)$$

where P_i stands for the price of production of each commodity, C_i for the periodic flow of constant capital consumed in each industry, V_i for the periodic flow of variable capital expended in each industry, r for the general rate of profit, and M_i for the total stock of money-capital advanced in each industry. In this equation, *C_i, V_i, and M_i are taken as given sums of money*, and r is taken as given as determined in the Volume 1 analysis of capital in general.

If productivity in the production of means of production remains the same between the time the means of production are purchased and the output is sold, then the constant capital that is taken as given in the determination of the price of production will be equal to the actual amount of money-capital used to purchase the means of production.

However, if productivity in the production of the means of production changes anytime between the time the means of production are purchased and the output is sold, then the value of the *given* constant capital also changes. It is changed to the current cost of the means of production, i.e. what it would cost to purchase the means of production today, not their actual historical cost. In this case, constant capital *continues to be taken as given*, but the precise magnitude of constant capital that is taken as given changes as a result of the change in the value of the means of production. *The fact that the magnitude of constant capital may change does not imply that the constant capital cannot be taken as given in the determination of output prices.* We have seen above passages in which Marx explicitly stated that the value of the constant capital *may change*, but the value of constant capital is *still taken as given*, at its *new value* (MECW.30, p. 79-80; MECW.30, p . 413) Thus, the only difference between Andrew's interpretation and my interpretation is the precise magnitude of constant capital that is taken as given. In both interpretations, constant capital is *taken as given.*

Therefore, my interpretation of Marx's method of price determination is *not* the same as the Sraffian method of simultaneous determination from given physical quantities, and Andrew's arguments about simultaneous determination do *not* apply to my interpretation of Marx's theory.

2.2 Section 3: Passages which appear to support the "current reproduction cost" interpretation

In Andrew's third section, he discusses two passages which "have been read as offering direct support" for the post-production reproduction cost interpretation of constant capital. These two passages are excerpts from the passages that we have examined above from Chapter 8 of Volume 1 of *Capital* and from Chapter 6 of Volume 3 of *Capital*. Andrew then comments on these passages as follows:

> The passages are very similar. Both clearly repudiate a historical cost concept of value transfer, but this is not in dispute. *The first passage could perhaps seem to contradict the temporal interpretation more directly, because Marx writes that the value transferred to existing stocks of yarn rises, *after* the cotton contained in them entered production. This, however, is also not in dispute; it is clear that, because values are determined by current production conditions, when the value transferred to newly produced yarn rises, so must the value transferred to existing stocks of yarn*. The dispute instead concerns the precise meaning of the determination of values by current production conditions. It therefore pertains to the valuation, not of existing stocks, but only of yarn that is *currently* produced.
>
> (emphasis added)

In order to examine Andrew's argument here more closely, I will distinguish between three phases of production and circulation (using Marx's example of cotton and yarn):

(1) BEFORE production, in which the purchased cotton exits as a stock of raw material awaiting

production; (2) DURING production, in which the cotton is being transformed into yarn; and (3) AFTER production (and before sale), in which the cotton exists as yarn circulating on the market. The question at issue is: if the price of cotton changes in any one of these intervals of time, does this result in a change in the value transferred from the cotton to the price of the yarn?

We have seem above that there are many passages throughout Marx's manuscripts in which he clearly states that, if the price of cotton changes in each and every one of these three phases ("at whatever stage of completion"; C. III, p. 207), then the value transferred from the cotton to the yarn also changes. The value transferred by the cotton is determined by the current cost of cotton, and the current cost of cotton may change in all three of these phases.

Andrew's interpretation, as I have understood it up until now, assumes that the value transferred by the cotton is determined at the point in time at which the cotton enters into production (at the beginning of phase 2). Therefore, according to this interpretation, if there is a change in the price of cotton during phase 1 (i.e. before production), then the value transferred by the cotton will change. However, if there is a change in the price of cotton during phases 2 or 3 (i.e. after production has begun), then the value transferred by the cotton will *not* change.

Therefore, I was surprised to read in the italicized sentences of the above excerpt that, although Andrew continues to argue that if the price of cotton changes during stage 2 (i.e during the production process), then the value transferred from the cot ton to the yarn will *not* change, he seems to agree that, if the price of cotton changes during phase 3 (after production and before sale), then the value transferred from the cotton to the yarn *will change* accordingly. If I understand this correctly, there is an interval of time in the circulation of a given batch of cotton during which a change in the price of cotton *does not* affect the value transferred from the cotton to the yarn (phase 2), and then there is a later interval of time during which a change in the price of cotton *does* affect the value transferred from the cotton to the yarn (phase 3).

If I understand this correctly, then it seems to me that: if there is a change in the price of cotton while a given batch of cotton is in phase 2 (during production), then, according to Andrew's own assumptions, this should result in a change in the value transferred by this batch of cotton when it reaches phase 3 (i.e. after production and before sale), in order to catch up or adjust to the new current price of cotton which reflects the change that occurred while this batch of cotton was in phase 2. Therefore, in the final sale of the yarn at the end of phase 3, the value transferred by this batch of cotton does change as a result of the change in the price of cotton in phase 2, as in my interpretation. The only difference is that the adjustment of the value transferred to the change in the price of cotton is delayed slightly, from phase 2 to phase 3.

Therefore, it seems to me that Andrew's surprising interpretation of phase 3 seems to imply that his interpretation leads to the same value transferred and hence the same price of production at the end of phase 3 as my interpretation.

Andrew then goes on to make a curious argument:

> Specifically, if the cotton contained in the *most recently produced* yarn entered into production *before* the change in the price of cotton, is the value transferred to *this* yarn determined by the cotton's pre-production price or by its change d
>
> price?
>
> If anything, the passage seems to support the temporal interpretation, by implying that cotton "worked up *after* the rise in value [...] transfers [...] a value of one shilling" because that is its price when it enters production. (emphasis added)

Unfortunately, Andrew's second sentence does not answer the question that he poses in the first sentence. The first sentence asks about the value transferred from cotton that enters production *before* a change in the price of cotton (i.e. cotton that was in phase 2 or phase 3 when the change of the price of cotton occurs). Andrew's next sentence (and the last sentence in this post) is instead about the value transferred from cotton that enters production *after* the change in the price of cotton (i.e. cotton that is in phase 1 when the change in the price of cotton occurs). Andrew and I do not disagree about phase 1. We both agree that the value transferred from cotton that has still not entered production will change if there is a change in the price of cotton. So, contrary to Andrew's assertion in the second sentence above, Marx's statement about the value transferred from cotton that enters production *after* the change in the price of cotton does *not* support his temperalist interpretation. This statement does not discriminate between the temperalist interpretation and the "current reproduction costs" interpretation of the valuation of constant capital.

Marx's statements that do discriminate between these two different interpretations of constant capital are passages about the value transferred from cotton that enters production *before* the change in the price of cotton (i.e. cotton that is in phase 2 or 3 when the change of price occurs). And the textual evidence on this issue, as we have seen above and indeed can see in the passages that Andrew is discussing, is all in favor of the "current reproduction costs" interpretation of constant capita l. The value transferred from the cotton *will change* if the change in the price of the cotton occurs *anytime* before the sale of the yarn (i.e. in *all three* of these phases).

2.3 Section 4: Passages from *The Grundrisse* and the *Manuscript* of *1861-63*

Section 4 of Andrew's post presents his survey of the textual evidence on this issue from *The Grundrisse* and the *Manuscript* of *1861-63.* Marx's earlier passage in *The Poverty of Philosophy* that we reviewed above, which indicates Marx's early clarity on this issue (that the existing capital is revalued if there is a change in the value of the means of production and that this revaluation affects even goods already produced and circulating on the market) is not mentioned in Andrew's survey.

Andrew begins Section 4 as follows:

A good deal of textual evidence addresses this question in a more direct fashion. All of it seems to me to support the temporal interpretation. First, at least from the 1857-58 economic manuscripts (Grundrisse) onward, Marx argued that production

results in "the *preservation* of the amount of labor already objectified" in used means of production (Marx 1986:288), and "thus *preserves the previously existing value* of the capital" (Marx 1986:290). The *previously existing value "reappears"* in the product (Marx 1986:282).

His subsequent economic works, including the chapter on "Constant Capital and Variable Capital" in Capital I that develops this notion systematically, likewise often refer to the *preservation* and *reappearance* (and synonymously, the *transfer*) of the existing value. Such terminology is explicitly temporal. It suggests that a *sum of value, already in existence before production, emerges from production unchanged*. I do not see how this can be reconciled with the replacement cost concept, which denies that the value transferred depends on the value of inputs when they entered production.

Thus Andrew seems to argue that the terminology that Marx used throughout these manuscripts - that the value of the capital *existed prior to production*, and is *preserved* or *reappears* in the price of the product - *necessarily imp lies* that the value of the capital that existed prior to production *cannot change in magnitude* after it has entered production (i.e. that it "emerges from production unchanged").

But Andrew's inference simply does not follow. It is true that Marx assumed that the value of the constant capital existed prior to production and that the value of the capital is preserved or reappears in the price of the output. But this prior existence of the constant capital *does not imply* that the magnitude of this constant capital already in existence *cannot change*, if there is a change in the value of the means of production. Constant capital can indeed *exist prior* to production, but the precise magnitude of this constant capital *can change*, if there is a change in the value of the means of production. We have seen above that Marx said precisely this in many passages throughout his manuscripts.

I ask readers to please review especially the passage from early in the *Manuscript of 1861-63* (MECW.30, pp. 79-80). As already mentioned, this passage is toward the end of a long discussion of the *preservation* of the value of the constant capital (pp. 70-80). In this passage, Marx clarified just exactly what he meant by the *preservation* of value in the case of a change in the value of the means of production. And he clearly stated that, in this case, the precise magnitude of the value that is *preserved* is the *current reproduction costs* of the means of production up until the time of the sale of the output. To repeat a couple of sentences from this passage:

> Hence although they entered the labor process with a definite value, they may come out of it with a different value that is larger or smaller, because the labor time society needs for their production has undergone a general change...

> For they are always values of a given, preposited magnitude, even though owing to external agencies, acting outside the labor process, they are now preposited as a greater or smaller magnitude than was originally the case. (MECW.30, pp. 79-80)

Note that this passage also clearly states that the value of the means of production does *not* "emerges from production changed", contrary to Andrew.

Therefore the terminology of "preserved", etc. does not imply that the value of the constant capital cannot change. This terminology is not evidence in favor of the "temporalist" interpretation of constant capital, but is also consistent with the "current reproduction costs" interpretation.

Andrew continues:

Many passages in the economic manuscript of 1861-63, almost of them from the earlier notebooks (I through VII) state explicitly that inputs' pre-production value does determine the value they transfer. "The value of the material and means of labor only re-appears in the product because the material and means of labor possess this value *before* the labor process and independently of it" (Marx 1988:92). Raw materials and means of labor "add to the labor time contained in the product only as much labor time as they themselves contained *before* the production process" (Marx 1988:177). The consumption of means of production increases the product's value by "the amount of its own value"; Marx further specifies that this means, "to be precise, the value it has when it enters the process of production" (Marx 1988:322-23). A means of production "does not add more value to the product than it possessed before. As value, this part of capital therefore enters unchanged into the production process and emerges from it unchanged" (Marx 1989:362).

Andrew’s assertion in the first sentence of this passage is not true. None of Marx’s passages quoted by Andrew are in the context of a discussion of the determination of constant capital *in the case of a change in the value of the means of production*. Implicitly, all these passages are under the assumption that the value of the means of production does not change during a given circuit of the capital being analyzed. As we have just seen, under this assumption, the terminology of "reappears", "possessed before", "contained before", "the value it had when they entered production", "emerges unchanged from production", etc. is also consistent with my interpretation. These passages do not provide "explicit" evidence in favor of the temporal interpretation.

Indeed Andrew acknowledges this in the next sentence:

Although these statements are unambiguous in identifying the pre-production value of inputs as that which determines the magnitude of value transferred, *none of them treats the issue in the context of a possible change in the input's value during the course of production*. (emphasis added)

If these statements do not "treat the issue in the context of a possible change in the input's value", then how can they be "unambiguous"? The terminology of "exited before", "preserves", "reappears", etc. is also consistent with my interpretation of Marx's theory; this terminology does not provide unambiguous evidence in favor of the temperalist interpretation. Thus the assertion in the first sentence of Andrew's previous paragraph is unfounded.

Andrew then goes on to say that "at least two passages do address this issue" (of the determination of constant capital in the case of a change in the value of the inputs). The first passage quoted by Andrew is the key passage from early in the *Manuscript of 1861-63* that we examined above and just discussed again (MECW.30, pp. 79-80). Andrew's selective quotation of this passage is as follows:

> In one, Marx (1988:79-80) argues that "the values of material and means of labor only re-appear in the product of the labor process to the extent that they [...] were values before they entered into the process." Although their values can change during the course of the process, this "involves absolutely no alteration in the circumstance that in the labor process into which they enter as material and means they are always preposited as given values, values of a definite magnitude. For in this process itself they only emerge as values in so far as they entered as values". (Marx 1988:79-80).

Andrew's argument here seems to be that, although the value of the means of production can change while they are in the production process, the value of the constant capital is still preposited as the *original value* of the constant capital when these means of production entered production. But Marx's text does not say this. The sentences quoted by Andrew simply say that, although the values of the means of production may change, the value of the constant capital is still *preposited*. They do not say that they are preposited at the *original* value when the means of production entered the production process, if there is a change in the value of the means of production. Indeed, in the full passage, Marx stated exactly the opposite of Andrew's interpretation: that the value of the constant capital is *preposited as the new changed value* of the means of production. The constant capital *"comes out of it [production] with a different value"* and is *"now preposited as a greater or smaller magnitude than was originally the case*". Andrew's misinterpretation of this passage is clear if we reproduce the entire passage, with Andrew's excerpts capitalized.

> But THE VALUES OF THE MATERIAL AND MEANS OF LABOR ONLY REAPPEAR IN THE PRODUCT OF THE LABOR PROCESS TO THE EXTENT THAT THEY WERE PRE-POSITED TO THE LATTER AS VALUES, I.E. WERE VALUES BEFORE THEY ENTERED INTO THE PROCESS. Their value is equal to the social labor time materialized in them; it is equal to the labor time necessary to produce them under given general social conditions of production. If later on more or less labor time were to be required to manufacture these particular use values, owing to some alteration in the productivity of the labor of which they are the products, their value would have risen in the first case and fallen in the

> second; for the labor time contained in their value only determines it to the extent that it is general, social, and necessary labor time. *Hence although they entered the labor process with a definite value, they may come out of it with a different value that is larger or smaller, because the labor time society needs for their production has undergone a general change*... But this change in the value of the material and means of labor INVOLVES ABSOLUTELY NO ALTERATION IN THE CIRCUMSTANCE THAT IN THE LABOR PROCESS INTO WHICH THEY ENTER AS MATERIAL AND MEANS THEY ARE ALWAYS PREPOSITED AS GIVEN VALUES, VALUES OF A GIVEN MAGNITUDE. For in this process itself they only emerge as values in so far as they entered as values. A change in their value never results from this labor process itself but rather from the conditions of the labor process of which they are or were the products and to which they therefore are not preposited as products. If their general conditions of production have changed, this reacts back upon them. They are an objectification of more or less labor time, of more or less value than they were originally; but only because a greater or smaller amount of labor time is now required than originally for their production. This reaction is due to the fact that as values they are a materialization of social labor time but the labor time contained in t hem only counts to the extent that it is reduced to general social labor time ... These changes in their value, however, always arise from changes in the productivity of the labor of which they are products, and have nothing to do with the labor processes into which they enter as finished products with a given value. Their change of value stems from alterations in their own conditions of production, which occur outside and independently of the labor process into which they enter as material and means; not as a result of an operation occurring within the labor process. For they are always values of a given, preposited magnitude, even though owing to external agencies, acting outside the labor process, *they are now preposited as a greater or smaller magnitude than was originally the case*. (MECW.30, pp. 79-80; emphasis added)

Andrew's other passage is another one we discussed above: the one 300 pages after the one just discussed early in the *Manuscripts of 1861-63*. Andrew's discussion is as follows:

> In the other passage, Marx (1988:413) argues that a change in the value of constant capital "never alters the fact that in the process of production, into which it enters as a condition of production, it is a postulated value which must reappear in the value of the product. [...] it is a definite quantity of *past, objectified* labor, which passes into the value of the product as a determining factor." As was discussed earlier, were the value transferred from constant capital to depend on the

> replacement cost of its material elements, it would not be a determining factor of the product's value, but a magnitude determined simultaneously with it.

Andrew’s argument here seems to be that, even though the value of the constant capital may change, the constant capital transferred to the value of the product remains unchanged at the original value when this capital entered production. It is this original value of the constant capital that is a "determining factor" in the determination of the value of the product.

But what would the value of constant capital change, but the value transferred from the constant capital not change? What possible justification could there be for this assumption? In any case, this is not what Marx’s passage says. Indeed, Marx’s passage says the opposite: that even though the constant capital may change, constant capital is still preposited, and is preposited at the *new changed value* of the means of production. Because this new changed value of the means of production is preposited, it is a "determining factor of the product’s value". It is not determined simultaneously with the value of the product, as Andrew argues. The new value of constant capital still represents "a definite quantity of past, objectified labor," but the quantity of past, objectified labor that the constant capital represents has changed due to a change in the labor-time required to produce the means of production.

In concluding this subsection, we can also see that Andrew’s very brief survey of the textual evidence in *The Grundrisse* and the *Manuscripts of 1861-63* (five paragraphs) misses many of the passages that we have examined above, in which Ma rx explicitly discussed the determination of constant capital in the case of a change in the value of the means of production, and thus provides discriminating evidence between these two interpretations. And we have seen that all this discriminating textual evidence supports the "current reproduction costs" interpretation and contradicts the "temporal" interpretation.

THE FOLLOWING SECTIONS REMAIN TO BE COMPLETED

2.4 Section 5: Passages from *Capital*

2.5 Section 6: Passages on Ramsay and Torrens

3. Conclusion

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