

“*Eine große Schwierigkeit*”: Marx’s Representation of the Circulation of Fixed Capital in the Reproduction Schemes

SUMMARY: In one part of his discussion of simple reproduction in the reproduction schemes at the end of *Capital* II Marx discusses the replacement of fixed capital. Marx paints a numerical picture of some complexity, and Engels, his editor, at one point feels himself compelled to intervene in the text to point out an error in Marx’s numbers. Surprisingly, Marx’s discussion of this question in *Capital* II has received scant commentary in the literature. Here, basing myself on the final published version of *Capital* II as well as manuscripts that have more recently emerged in the second *Abteilung* of the *Marx-Engels-Gesamtausgabe*, I comment on Marx’s text, and make the argument that, given a few minor interpretative assumptions, his account, both conceptual and numerical, is both coherent and error free. Finally, I make note of some of the omissions in Marx’s description, so they may serve as a pointer for future work.

KEYWORDS: Marx, *Capital*, Vol. II, reproduction schemes, fixed capital, social reproduction, crisis theory

I Preamble

In the third and final part of *Capital* Vol. II, Marx sets out a two-sector model of social reproduction (the so-called “reproduction schemes”). First, he describes an imagined state of “simple reproduction”, in which production continues on the same scale year on year, and then one of “reproduction on an expanded scale”, where a part of the socially-produced surplus product is advanced as new capital for the next production period, such that the scale of production, period on period, progressively increases.¹

All translations into English here of cited works in German are mine. Where I quote directly from German (i.e., in German), I modernise archaic spellings. Given that Marx (1978) is probably the best-known version of Vol. II in English, I have chosen it over the other extant English translations as the reference English text in what follows here.

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¹ Marx’s account of social reproduction is to be found in chs. 20 and 21 of Marx (1978). As is well-known, Marx did not finish either *Capital* II or *Capital* III: both volumes were put together after his death by his lifelong friend and collaborator Friedrich Engels, using manuscript material discovered in Marx’s *Nachlass*. In the case of *Capital* II, Engels used excerpts from a large number of different manuscripts written over a period of 13 years from end

In the chapter dealing with simple reproduction, Marx discusses how *fixed* capital (which I shall define below) is reproduced, and the problems that this poses for an understanding of the overall reproduction process. (Marx, 1978, 524-45.)

As far as it goes, the conceptual development of Marx’s argument seems clear enough, but its numerical representation is far less so. As Marx advances in his presentation, he becomes increasingly difficult to follow, and at one point Engels—his posthumous editor—feels himself obliged to point to an error regarding a discrepancy between the numbers Marx uses in one part of his exposition and those used in the rest of it. (Marx, 1978, 535n11.)

It is remarkable, given the fascination that the reproduction schemes have provoked in the field of what we might call Marxist reproduction theory, how little commentary both Marx’s conceptual account of the reproduction of fixed capital and his allegedly flawed numerical description have attracted.² My intention here is to help make good that gap. The case I shall argue is that—despite appearances, and *pace* Engels—Marx, in his discussion, was not in fact numerically mistaken. Although his text is verbally ambiguous—the manuscript is sketchy, and is clearly an outline intended for further development rather than a near finished draft—its numerical development makes perfect sense if one makes a small number of plausible interpretive assumptions. What follows below here is an attempt to justify this claim.

The main part of this text consists of a detailed commentary on Marx’s description; I base this description on both the published version of Vol. II and also the unpublished manuscript of Marx’s on which Engels based himself when compiling the final edited version. Before that, however, I shall set out, in bare minimum terms, an outline of what the reproduction schemes themselves consist of, and also define Marx’s (critically important, yet theoretically distinctive) notion of fixed capital. Finally, I will make some summary conclusions, drawing attention to some of the most important omissions in Marx’s account, as a pointer to further work.

What I am unable to do here, for reasons of space and scope, is make a critical judgement of either Marx’s account of social reproduction or his description of the place of the circulation of fixed capital within it. My intention is to advocate for the coherence of Marx’s argument, not for its “correctness”. I do not think that this latter task is unimportant, however. Far from it: it is just that a discussion at that particular level is beyond what I am able to undertake here, and the latter is important because it appears to me a necessary preliminary step for this other, broader and more important, task.

of the 1860s (Engels, 1978a, 85-6 and 1978b, 103-4) to construct the volume. The section on simple reproduction was largely extracted from Marx’s “Manuskript II”, written over spring 1868 to the middle of 1870, except for the material concerning the reproduction of fixed capital, which was extracted from his “Manuskript VIII”, written from early 1877 to early 1881 (from which the numerical representation of the simple reproduction process is also taken). These two original manuscripts of Marx’s, unavailable in English, are published in the *Marx-Engels-Gesamtausgabe* as Marx (2008a) and Marx (2008b) respectively.

² In general, commentaries on Marx’s account dismiss his efforts as overblown and long-winded. According to Anthony Brewer (1984, 120), Marx “makes very heavy weather of the problem of incorporating fixed capital into his account of reproduction.” For David Harvey (2013, 352), Marx’s description merely descends into “tedious arithmetic calculations”. In 1985, A B Lyall argued that there was a (previously unnoticed) arithmetical error in one of the more tangential illustrations in Marx’s description (see note 14 below), although it subsequently turned out that Lyall was wrong, and had simply not understood what Marx was doing. His (Lyall’s) misreading was then in turn corrected by Carchedi and Hann (1995). Nevertheless, this last discussion is slight, and casts little light on the matter at hand here.

II Preliminaries

II.1 Marx’s account of simple reproduction

Given that the question of the reproduction of fixed capital only occurs in his discussion of simple reproduction, in which production continues on the same scale indefinitely, I shall confine my remarks here to this part of Marx’s presentation, and not discuss his model of expanded reproduction.

Marx’s description of social reproduction rests on the division he makes of aggregate production into two “departments” (“*Abteilungen*”). One (Department I, hereafter DI) is where the totality of society’s means of production (raw materials; instruments of production, including buildings and infrastructure; ancillaries, including power and fuel; etc.), consumed productively by both departments, are produced; the other (Department II, hereafter DII) produces the whole of society’s means of consumption (consumed unproductively by both workers and capitalists).

In order to produce, capitalists in both departments have to advance money to buy means of production and, as wages, to buy labour power. At the end of the year (Marx assumes an annual production period) the commodity product is sold, and money recouped by its sale is either spent by the capitalists of both departments on unproductive consumption or is again laid out (to buy means of production and to pay wages) to begin production anew.

In Marx’s conception of capitalist production, capital advanced as means of production Marx calls “constant capital”, since its value is preserved in the commodity product in whose production it is consumed; that advanced in the form of wages Marx calls “variable capital”, since it undergoes a change in its magnitude in the final product, both reproducing the value of the labour power it is spent on in addition to producing a value magnitude in excess of this, which Marx calls surplus value. In the case of simple reproduction, the whole surplus product (total social surplus value) is consumed unproductively (in the form of means of consumption) by the capitalist class.

In his discussion of reproduction, Marx investigates how the commodity product produced in each year is sold, and where the money to buy and sell this product comes from.

In the case of DI, its whole commodity product exists (by definition) entirely in the material form of means of production. In value terms, and in the aggregate, it can be decomposed into that part equal to the capital advanced as constant capital; another equal to that advanced as wages, as variable capital; and another equal to surplus value. We may depict these three magnitudes respectively as I_c , I_v and I_s . Each of these value quantities represents a given, and (since in Marx’s account in this part of *Capital* the productivity of labour is taken to be constant, and we are assuming simple reproduction) fixed, physical mass of commodity product. He assumes, in addition, at least initially, that all the constant capital advanced as means of production at the beginning of the year is productively consumed in that year’s production. (It is the lifting of this assumption that will generate the particular difficulty that this present text addresses.)

In the case of DII, we may similarly break down its commodity product, which consists—again, by definition—exclusively of means of consumption, into the three value components of II_c , II_v and II_s .

Given that the whole of the output of DI consists, in material form, of means of production, it must all be sold to other capitalists, both of DI, and of DII.

The particular component I_c , that part of the product of DI, i.e. means of production, equal in value to the constant capital advanced for the production of the whole department’s product, will be sold to other capitalists in DI so that they can replenish the means of production they have consumed producing it. Capitalists in DI therefore sell to each other that part of the department’s commodity

product equal in value to the money advanced—year on year, under conditions of simple reproduction—as constant capital. The money the sellers receive from these sales is then used to buy—within the department—the means of production they need for the next production period. The money spent in DI to this effect derives from the money received for the sale of this part of its commodity product, such that the entire commodity product I_c is disposed of *within* the department, through a process that Marx calls “mutual exchange”. (Marx, 1978, 474.) Insofar as money mediates these exchanges, it functions as money of account, as means of payment rather than means of circulation: “ideally”, as Marx later puts it. (Marx, 1978, 539.)

(We need to note here that it is cardinal for Marx’s depiction of the mechanisms of reproduction that all money *advanced* for the purposes of exchange, whether money as such ever circulates or not (i.e. whether money functions “ideally” or not), ultimately returns to the person who advanced it.³)

Just as the commodity product I_c is bought and sold through a process of “mutual exchange” among capitalists in DI, so too is II_s within DII, as the surplus product produced here—in the material form of means of consumption—is sold to capitalists and bought by capitalists, with money in the aggregate functioning again—“ideally”—as means of payment.

With regard to II_v , that part of the product of DII equal in value to the money advanced as variable capital (as the wages paid in the department), this is bought and sold through the mediation of the purchase of means of consumption on the part of the DII workers. Collectively, the capitalists of DII advance, as a sum of money, value II_v as wages. Workers then spend this money to buy means of consumption from the capitalists of DII, buying the product II_v and returning the money so that the wages fund is replenished and wages can be paid again for the next production period.

The components I_c , I_v and I_s are thus each bought and sold through exchanges *within* the departments in which they are produced; in contrast, the components I_v and I_s , and II_c must be bought and sold through exchanges *between* DI and DII.

On the one hand, the commodity product components I_v and I_s exist in the form of means of production produced by DI. But DI has already fulfilled its constant capital requirements through the mutual exchanges through which I_c is bought and sold, so that I_v and I_s need to be sold to and productively consumed by the capitalists of DII. On the other, the component II_c consists of means of consumption, to be consumed by workers and capitalists. But the workers and capitalists of DII have already respectively spent their wages on means of consumption and bought and sold their surplus product—this latter so that it may serve as unproductive capitalist consumption—through the mechanism of inter-departmental exchange described above, so the II_c component can only be disposed of through its sale to the capitalists and workers of DI.

The following are the mechanisms according to Marx through which all this happens.

First, the capitalists of DI pay wages to the value of I_v . The workers who receive these wages use them to buy the means of consumption consisting of one part of II_c (let us call this latter $II_{c_{qI}}$, which we may define as that part of DII’s commodity product equal in value to the wages paid out in DI) from the capitalists of DII. The capitalists of DII in turn use this money to buy means of production to the value of I_v from the capitalists of DI. The capitalists of DI can then use this money to pay the wages required for the next production period. This set of transactions is described in **figure 1** (the solid lines indicate

³ To the extent that Marx repeatedly (Marx, 1978, 488, 520, 529-30) refers to the “law” (*Gesetz*) according to which “in the normal course of reproduction [...] the money advanced to circulation by the capitalist producer must return to its starting-point (it being immaterial here whether the money belongs to him or is borrowed).” (Marx, 1978, 533.)

commodity flows; the dashed, money).

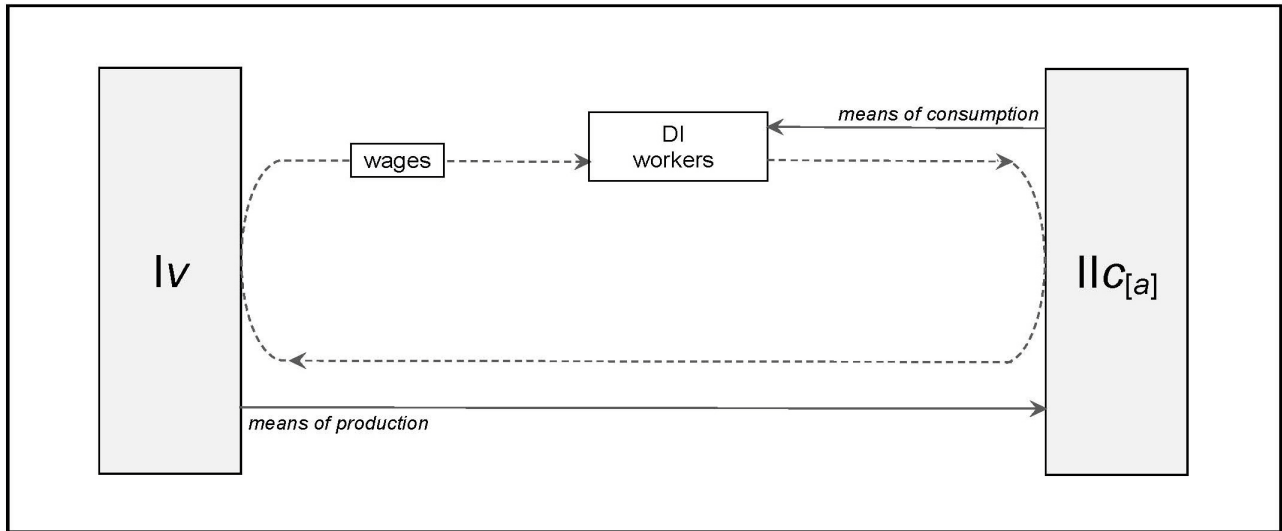


Figure 1: The exchanges $Iv \leftrightarrow IIc[a]$

Second, with regard to I_s and the remainder of IIc (and let us call the latter $IIc[b]$, defined as that part of the product of DII equal in value to the surplus value produced in DI), these may be bought and sold in one of three ways. The capitalists of DI might advance money to the value of I_s to buy means of consumption $IIc[b]$ from DII, with the capitalists of DII returning the money through the purchase of I_s means of production. Alternatively, the capitalists of DII advance money to buy means of production I_s from DI, with the latter's capitalists using this money to buy means of consumption $IIc[b]$ (which they then consume unproductively). Or it might be that both of these mechanisms occur simultaneously, with there occurring a series of parallel exchanges as capitalists of both departments advance money—DII capitalists buying means of production and DI capitalists buying means of capitalist consumption—money that will eventually return to the persons that advanced it. In this way, as Iv and I_s are bought and sold, so is $IIc[b]$.

This last possibility (the one, as we shall see below, that Marx actually assumes in his description) is set out in **figure 2**.

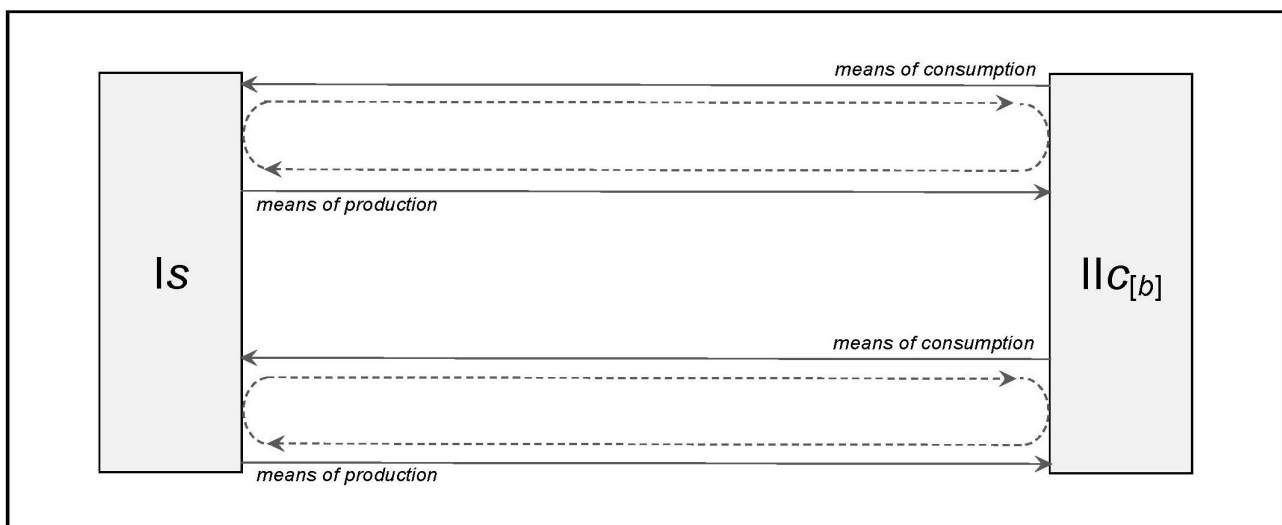


Figure 2: The exchanges $I_s \leftrightarrow IIc[b]$

Clearly, the fulcrum on which this whole mechanism rests is the set of exchanges between DI and DII. It is now clear that it is a *precondition* for the successful carrying out of simple reproduction as Marx envisages it that the sum of the value quantities I_s and I_v on the one hand and the value quantity II_c on the other be equal. If they are not, there will be overproduction in one of the departments: either in DI, of means of production; or in DII, of means of consumption.

Finally: at the beginning of his discussion of the reproduction schemes in *Capital* II, Marx introduces the numerical values shown in **table 1** for the various components of the annual commodity product. “The figures may be in millions of marks, francs or pounds sterling,” he tells us. (Marx, 1978, 473.)

	DI	DII
constant capital	4,000I _c	2,000II _c
variable capital	1,000I _v	500II _v
surplus value	1,000I _s	500II _s

Table 1: Marx's numerical scheme

II.2 Fixed capital and circulating capital

In the part of *Capital* II previous to his discussion of the reproduction schemes, Marx, adapting a vocabulary used before him by Adam Smith and David Ricardo, introduces a distinction between what he calls “circulating capital” and what he calls “fixed capital”.⁴

A raw material, which is materially transformed in production into something else (wood, for example, being transformed into furniture; oil being transformed into plastic) does not persist in its natural form as production advances, and as it is physically consumed its value—according to Marx—is preserved by the action of productive labour in the material form of the product into which it enters. As production continues, such inputs clearly need to be constantly replenished and replaced. Similarly consumed in production are those inputs Marx calls “ancillaries” (*Hilfsstoffe*): power for machines, energy for lighting and heating, etc. Such components of constant capital Marx calls “circulating” (sometimes “fluid”—*flüssiges*) capital.⁵

Not all the components of productive capital function in this way. Machinery, by contrast, like other factory infrastructure, may endure in its physical form for many years and over repeated production periods, only needing to be replaced after an extended period of time. Constant capital—means of production—that functions in this way, *persisting* in its material form as production progresses, Marx calls “fixed capital”.

Critical for our present purposes is the specific way that fixed capital *circulates*. By the “circulation” of capital Marx refers to the *metamorphoses* of its elements: the way in which the value (social labour) which functions as capital successively passes through the forms of money, element of production (means of

⁴ For Marx’s formal definitions, see Marx, 1978, 238.

⁵ Marx also includes capital advanced as labour power (i.e. *variable* capital) under the rubric of circulating capital.

production or labour power), production itself, commodity product and money again. (Marx, 1976, 709.)

Circulating capital, which needs constant replenishment, can at once be bought on the sale of the product in whose production it participates: if $\text{€}x$ of a given element of circulating capital is required for the production of a given mass of product, on the sale of this mass, a part of its sale price (equal to $\text{€}x$) is immediately available for the repurchase of circulating capital. Fixed capital does not circulate in this way. Fixed capital, precisely because it is fixed, does not need to be replaced immediately on the sale of the product. Rather, a portion of the sale price of each successive tranche of commodity product whose production it contributes to needs to be accumulated in money form in a constantly increasing money “hoard” (*Schatz*) over repeated production periods during the fixed capital’s lifetime, so that when it does need to be replaced the money required to be advanced to this end as constant capital is on hand.

Incorporating the manner of fixed capital’s circulation into the framework of the reproduction schemes evidently poses significant problems for how Marx conceives of social reproduction. We cannot now assume that the elements of constant capital advanced at the beginning of the year are consumed in their entirety in the production that takes place during it. A part of the money that the Ic and IIc components of the total social product are transformed into is now no longer available either to be laid out as new constant capital for the next year’s production nor serve in the transformation into money of other components of the social product: this money, rather than being available for commodity exchange, now needs to be accumulated as a progressively incrementing “hoard” for the duration of the lifetime of the components of the fixed capital whose depreciation it represents. This is the issue that Marx confronts in his discussion of the replacement of fixed capital in part 11 of ch. 20 of *Capital* II.

III Marx’s discussion of the reproduction of the fixed capital

Marx signals the beginning of his discussion by noting that there is a “major problem^[6] in depicting the conversions involved in [...] annual reproduction”, which needs to be dealt with. (Marx, 1978, 524.2.)

Of the total social commodity product, he tells us, one part is equal in value to the constant capital consumed—in both departments—in production. Of this part, another component in turn is equal in value to the annual depreciation of the fixed capital that is in use. The “difficulty” is that alluded to above, that the money into which this component part of the commodity product—the part equal in value to the depreciation of the fixed capital—is transformed is not immediately available for exchange, but is rather accumulated as a “hoard”—effectively a fixed capital depreciation fund (hereafter, FCDF)—where it persists in its money form until the fixed capital whose depreciation it represents comes to the end of its useful productive life and needs to be physically replaced. Money previously employed in the purchase and sale of commodities now instead has to be hoarded for perhaps extended periods.

To address this difficulty, Marx tells us, we need to focus on the “reconversion” of the constant capital components of each department’s product. With regard to DII, “[e]verything relevant” is “confined to the movement of $2,000IIc$,” he says, “and this reconversion can proceed only by exchange with $I(1,000v + 1,000s)$.” (Marx, 1978, 528.) Likewise, “everything relevant to the reconversion of the

⁶ The “*große Schwierigkeit*” (Marx, 2008b, 751) of the title of this essay, perhaps better translated as “great difficulty”.

constant value in department I can be restricted to consideration of the 4,000Ic.”⁷

(At this exact point in the text—between the third and fourth paragraph of Marx (1978, 528)—Engels inserts the subheading “(a) Replacement of the Depreciation Component in the Money Form”. There is no equivalent heading in Marx; Marx in fact is here still in mid argument, and, insofar as Engels’ interruption disturbs his flow, it is in my view unhelpful.)

Marx notes that the “difficulty” he refers to expresses itself in the fact that, on the one hand, the successful exchange between the departments presupposes that the *whole* of the 2,000IIc be transformed from the material form of means of consumption into that of means of production, while, on the other, the necessity of the depreciation component of 2,000IIc (let us call it, following the later notation on Marx, 1978, 530), $II_{c[d]}$, the *d* indicating “depreciation”) persisting in money form after the exchanges that mark the close of the production period under question seemingly rules this out.

At this stage of his discussion, Marx clearly makes the assumption—although it is unstated—that the value of the components of DII’s fixed capital that need to be replaced is equal to the value of the depreciation component of DII’s commodity product, i.e. to $II_{c[d]}$. (Later on,⁸ Marx will drop this assumption.)

If $II_{c[d]}$ is to be converted by sale into money, we need to ask where this money will come from. To be sold, someone has to buy it. But DII’s product exists in the form of means of consumption, and the requirements within DII for means of consumption—on the part of the workers as well as of the capitalists—have already been met through the sale and purchase of II_v and II_s . This means that buyers for II_c can only come from within DI. However, for the capitalists of DI to be able to transform their commodity product—means of production—into money, the capitalists of DII need to use the money received from DI to buy this means of production, thus fulfilling the “law” of social reproduction that money advanced for the buying and selling of commodity product must eventually return to the person who advanced it. The “difficulty” is that in the case of the depreciation component of II_c this will not be possible since the money into which it is converted must stay within DII in the form of a “hoard” (the FCDF).

(It is at this exact point in the text (Marx, 1978, 530) that Marx informs us—for the first time in the text—that $II_{c[d]}$ is, in his scheme, equal to 200.)

We seem to have arrived at an apparently insuperable obstacle—something of a “*hic Rhodus, hic salta*” moment. Marx notes that this “difficulty” is a matter “that has not been dealt with at all by the political economists up to now”, and that he intends to examine “in succession all possible (at least seemingly possible) solutions [*Lösungen*] of the problem, or rather formulations [*Stellungen*, perhaps better translated as “statements”] of it.” (Marx, 1978, 530.)

At this point in the original manuscript Marx now inserts a number “1”),⁹ indicating, it seems, a first attempt at a setting out (“*Stellung*”) of the problem. He immediately says: “First supposition [*Unterstellung*], already mentioned”. (Marx, 2008b, 758.) This supposition turns out to be that DI advances, through the various mechanisms identified earlier, a total of £2,000 in money to buy means of consumption from DII, but that DII in turn only buys £1,800 worth of commodities from DI. In

⁷ Nevertheless, Marx does not seem to have addressed this aspect—the renewal of DI’s fixed capital—anywhere in the manuscript.

⁸ Starting on Marx (1978, 540).

⁹ Omitted from the published volume: its position would be at the beginning of the paragraph that begins: “To start with, we just supposed [...]” (Marx (1978, 530.)

order to examine how this might unfold, Marx sets out, step by step, the following set of interdepartmental exchanges. Since I shall have cause to refer to these exchanges as the argument develops over the following pages, I shall label them here (although Marx does not) (a), (b) and (c):

- (a) 1,000I_v exchanges against 1,000II_c. (This is the exchange depicted in **figure 1** above.)
- (b) DII advances £400 to buy 400I_s means of production, and DI uses the same money to buy 400II_c means of consumption.
- (c) DI advances £400 to buy 400II_c means of consumption, and DII uses the same money to buy 400I_s means of production. (Exchanges (b) and (c) are together what is depicted in **figure 2** above.)

After these exchanges have taken place, there still remains in DI 200I_s (in the material form of means of production) and in DII 200II_{c_{fd}} (the depreciation element of DII’s fixed capital, in the form of means of consumption) to be exchanged. Were DI to advance the money to buy the 200II_{c_{fd}} (i.e. advance £200 to buy means of consumption), this money would not return (and would therefore not be, in the strict sense, an “advance”) for it would pass into DII’s FCDF; this is the ultimate reason why this last step, the advance of £200 for the 200II_{c_{fd}}, cannot, under these assumptions, take place.

(As Marx’s argument develops, it becomes clear that the product of DI as it appears in exchanges (a), (b) and (c)—1,000I_v and 800I_s—consists in material form of elements of circulating constant capital, while the 200I_s that remains unsold consists in the elements of fixed capital—of a value equal to II_{c_{fd}}—that need to be replaced.)

In the original manuscript Marx now (Marx, 2008b, 760) inserts a “2)” in the text,¹⁰ indicating another possible “solution” to (or “statement” of), the problem. Marx will now argue that DII *can* in fact spend the monetary equivalent of 2,000II_c on means of production, allowing DI to buy the whole the 2,000II_c, *without* this resulting in failure to reimburse the fixed capital depreciation account in DII.

First, however, Marx presents us with a paradox. We previously established that the money to buy the 200I_s had to come from DI, and then we found ourselves having to reject this presumption as “absurd” (*Abgeschmack*). This means—says Marx—that now we are forced to confront the “apparently still more absurd hypothesis” that the 200I_s is bought with money that originates from DII.

However, Marx objects, this “absurdity” “is only apparent”.

Department II consists of capitalists whose fixed capital is at different points in its reproduction. For some, it has reached the point at which it has to be completely replaced in kind. For others, it is still more or less distant from this stage; what is common to all members of the latter division is that their fixed capital is not really reproduced, i.e. not renewed in kind or replaced by a new item of the same variety, but that its value is successively collected up in money. The first group of capitalists is in exactly the same situation as when they began their business [...]. Just as at that time, they now have to advance [...] money capital once more to the circulation sphere, i.e. the value of the constant fixed capital as well as that of the circulating and that of the variable capital. (Marx, 1978, 534.)

Given that, on the one hand, across the department the fixed capital elements belonging to the different capitalists are at different stages in their lives, and, on the other, the different FCDFs are at

¹⁰ The number appears at the paragraph in Marx (1978, 533), that begins: “We assumed in the previous case: [...]”

different stages of accumulation, at the end of any production period some DII capitalists will be in a position to renew their fixed capital, while some will not. The former will already have accumulated the money necessary for this renewal; the latter will still be accumulating.

Marx returns now to examine the exchange we labelled **(b)** above, that in which DII advances £400 to buy means of production, with the money they advance returning as capitalists in DI buy means of consumption.

Let us assume, says Marx, that, of this £400, half (i.e. £200) originates from those capitalists in DII who, in addition to renewing their circulating constant capital, also need to renew their fixed capital, while half (the other £200) comes from those capitalists in DII who only need to renew their circulating constant capital.

It is important to keep in mind here that we have identified that exchange **(b)** as Marx describes it does not itself consist of any renewal of *fixed* capital: all of the £400 advanced to this end is spent on circulating constant capital. Marx’s assumption is just that half of this £400 comes from those DII capitalists who *also* need to replace their fixed capital, and half comes from those who do not.¹¹

If both groups of DII capitalists (let us call them for convenience $DII_{[1]}$ and $DII_{[2]}$, respectively those that need to renew their fixed capital, and those that do not) advance £400 (£200 each) to buy circulating constant capital, $DII_{[1]}$ will also spend another £200 to buy fixed capital. This £200—the £200 to buy fixed capital—will derive from its FCDF. A total of £600 is therefore advanced: £200 from $DII_{[1]}$ for circulating constant capital, another £200 from $DII_{[2]}$, also for circulating constant capital (together the £400 depicted in **(b)**), and a further £200 from $DII_{[1]}$, this last for fixed capital, originating from $DII_{[1]}$ ’s FCDF.

Marx now makes a reference in the paragraph to a quantity of £400 which “flows back” to DII (“and it flows back as soon as department I buys means of consumption with it”), and says that “there is nothing contradictory in the fact that [...] [when it] flows back [...] [it] is now divided differently between these two sections [i.e. between $DII_{[1]}$ and $DII_{[2]}$] of department 2.” (Marx, 1978, 535.)

In order to understand this statement of Marx’s it is necessary to grasp that the £400 that here “flows back” (and is then “divided differently”) is the £400 advanced by $DII_{[1]}$: £200 for circulating constant capital and £200 for fixed, and *not* the £400 advanced by both $DII_{[1]}$ and $DII_{[2]}$ for circulating constant capital.

Let us for convenience distinguish these two references to “£400” by calling them respectively £400_[1] and £400_[2]. £400_[1] is the money that DII advances in exchange **(b)**, money intended to buy circulating constant capital, half originating from the group who also need to renew their fixed capital ($DII_{[1]}$), and half from that group that does not ($DII_{[2]}$). £400_[2], on the other hand—that to which “flows back” refers—is the total amount of money cast into circulation by $DII_{[1]}$: £200 (half of the £400_[1] advanced for circulating constant in exchange **(b)**), and £200 originating from $DII_{[1]}$ ’s FCDF, used to buy fixed capital.

Marx’s point in this paragraph, which is why distinguishing between these two quantities of £400 is so important, is that, unlike £400_[1], not all of £400_[2] *does* flow back to the capitalists who advanced it: while that part that originated as part £400_[1] does flow back to $DII_{[1]}$ as DI capitalists buy means of

¹¹ There is an serious mistake in Marx (1978, 535) (which appears to originate in Engels: compare with Marx (1963, 456), for the text refers to one “half” of the capitalists in DII not renewing their fixed capital. Marx does not say “half” here, but “part” (“*Teil*”): Marx (2008b, 762). It is inconceivable that Marx would think that both groups of DII capitalists here were equal in size.

consumption from $DII_{[1]}$, that part which originated from $DII_{[1]}$'s FCDF flows back, in a movement mediated by the purchase of means of consumption on the part of DI from $DII_{[2]}$, to the collective FCDF of these $DII_{[2]}$ capitalists. It is to this total movement of £400_[2] that “divided differently” refers.

We can represent the exchanges we have just been considering graphically as in **figure 3**.

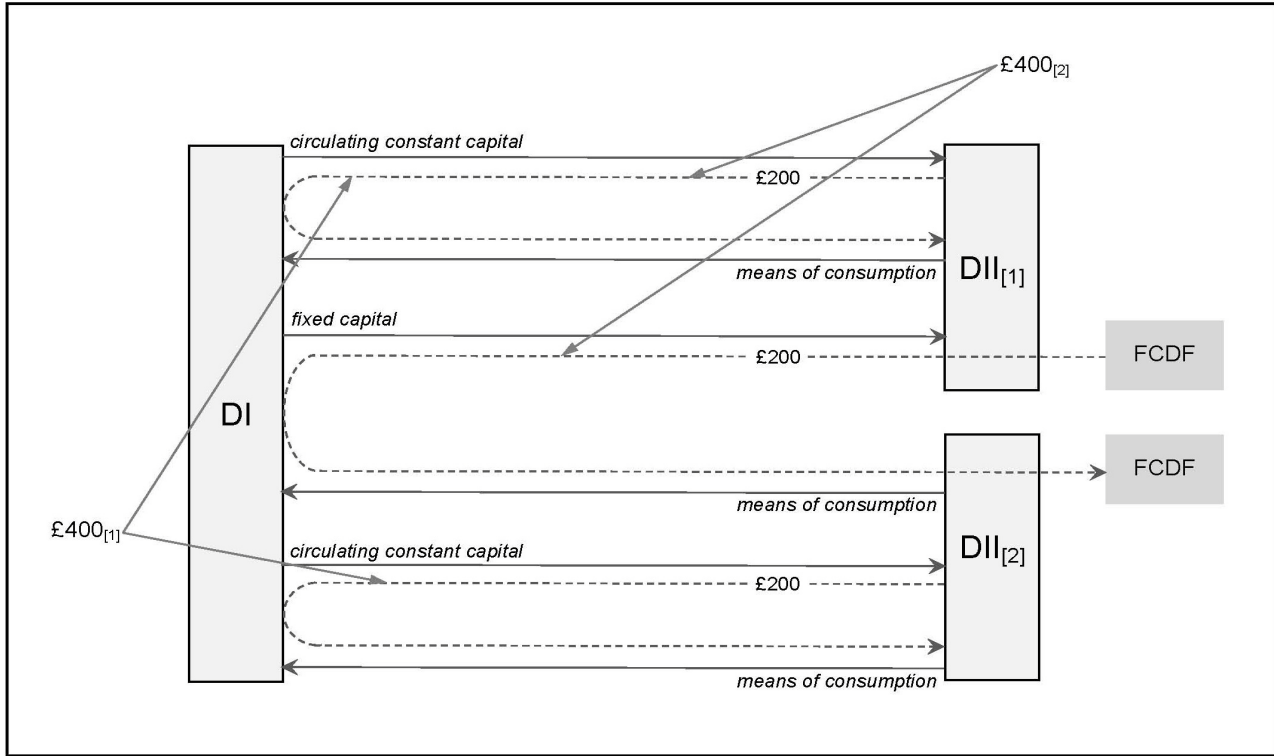


Figure 3: The exchanges of £400_[1] and £400_[2] between $DII_{[1]}$ and $DII_{[2]}$, and DI

We can now see why the “absurdity” of DII advancing the money to buy its own fixed capital depreciation component commodity product was a supposition whose absurdity was only “apparent”, for this is precisely what has just happened: through the mediation of the purchase of fixed capital from DI, $DII_{[1]}$ has effectively advanced the money which DI uses to buy $II_{[2]}$. This money, originating from $DII_{[1]}$'s own FCDF, passes—indirectly, i.e. mediated by the purchases of fixed capital and means of consumption—from $DII_{[1]}$'s FCDF to $DII_{[2]}$'s.

Marx now summarises:¹²

One part of [department] II has, in addition to the part of means of production ultimately covered by its commodities, converted £200 in money into *new elements of fixed capital in kind*. The money spent in this way—just as at the start of a business—only flows back out of circulation successively over a series of years as a *déchet* [depreciation] *value component* of the commodities that will be produced with this fixed capital.

The other part of [department] II did not purchase commodities from I with £200, but is paid this money, which the first part of [department] II advanced to purchase elements of fixed capital.¹³

¹² The description is set out in the first two paragraphs in Marx(1978, 535), although I cite the original manuscript, since it is clearer in meaning.

¹³ Marx (1978, 535, italicisation added) says here: “The other section of department II, on the other hand, did not obtain any commodities from department I with *its* £200.” This rendering is problematic (because of the “its”),

One part of [department] II thus has its fixed capital value again in a *renewed natural form*, while the other is still busy storing it up [in English in the original] *in money form* so as to replace its fixed capital in kind later on. (Marx, 2008b, 762.)

Marx now announces: “The position [*status*] from which we have to proceed [*auszugehen*], after the earlier exchanges is the remnant of commodities to be exchanged on both sides: department I’s 400*s*, and department II’s 400*c*,” and it is at this exact point (Marx 1978, 535n11) that Engels comments that “the figures here do not agree with earlier assumptions.”

Engels appears to think that what Marx here calls a “remnant” is a reference to the 200 of commodity product in each of DI and DII (i.e. 200I*s* and 200II*c*_[a]) not accounted for in exchanges (a), (b) and (c), and he consequently balks at Marx identifying the value of this “remnant” as 400 in each department. I think Engels is mistaken.

To my mind, what Marx is saying is that what we have to “proceed” from (meaning: what we now have to examine in more detail) is *exactly* the exchange he just described: the £200 advanced by DII for circulating constant capital (“covered by its commodities”) together with the £200 also advanced by DII for the fixed capital (both sums in the circumstances he has just described being advanced by DII_[1]), a total of £400, which will in its total movement result in the sale and purchase of 800 commodities (“department I’s 400*s*, and department II’s 400*c*”). (In fact, examining *this* total exchange is exactly what Marx spends the rest of this part of the text doing.) This commodity value of £800, the “remnant” that Marx refers to, is precisely the commodity value that remains after eliminating from consideration the following “earlier exchanges”: the exchange of 1,000I*v* against 1,000II*c* (exchange (a); the exchange of 400I*s* for 400II*c*, initiated by DI (exchange (c); and the exchange of 200II*c* means of consumption for 200I*s* circulating constant capital initiated here by DII_[2] in exchange (b). If this interpretation of mine is correct then Marx’s figures are entirely consistent and correct, and consonant with his verbal description.

The “remnant” Marx refers to therefore consists of the following. In DI there is the remainder 400I*s*, all of it bought by DII_[1]: 200I*s* in the form of circulating constant capital, and another 200I*s* in the form of fixed capital, this latter paid for with DII_[1]’s FCDF. (Let us, for future reference, label these two tranches of I*s* respectively 200I*s*_[a]—the “*a*” indicating circulating capital—and 200I*s*_[f]: fixed capital.) In DII there remains the 200II*c*, means of consumption in the hands of DII_[1], bought by the money advanced by DII_[1] for its purchase of the circulating constant capital, and 200II*c*_[a], means of consumption in the hands of DII_[2], bought by the money DI_[1] spends on fixed capital returning to DII_[2] for purchase of means of consumption before it passes into DII_[2]’s FCDF.

Marx now wants to re-examine the realisation of this “remnant” under circumstances in which the 200II*c* which covers the advance of £200 for circulating constant capital is distributed differently between DII_[1] and DII_[2]. He will examine three cases. In the first case, the 200II*c* will be divided equally between DII_[1] and DII_[2]. In the second, it will all be in the hands of DII_[2]. In the third, it will all be in the hands of DII_[2] (this last case being effectively identical to the one we have just been examining). In all three cases, the movement of money from DII_[1]’s FCDF to DII_[2]’s, a movement mediated by the purchase, first, of 200I*s*_[f] and then of the 200II*c*_[a], will remain the same.

It is not entirely clear (at least to me) why Marx wishes to do this. I surmise that he wants to emphasise that the movement of the £200 from DII_[1]’s FCDF to DII_[2]’s as fixed capital is bought and the depreciation component of DII’s product is sold takes place is independent of the distribution of the

and is not in accordance with what Marx says in Marx (2008b, 762). The problem seems to be with the English translation, not with Engels: cf. Marx (1963, 456).

rest of the department’s commodity product *vis-à-vis* $DII_{[1]}$ and $DII_{[2]}$. (His comment a little later on (Marx, 1978, 538) to the effect that it would make no real difference to the realisation of the fixed capital depreciation component whether the £200 that bought circulating constant capital in this operation originated in DI or DII would support this inference.)

The results of Marx’s discussion are as follows.

First case (labelled “(a)” in Marx (1978, 536):

$DII_{[1]}$ has in its possession $100II_c$ and $DII_{[2]}$ has in its possession $100II_c$ (the latter also has in its possession the $200II_{c[d]}$). Each group therefore advances £100 for purchase of circulating constant capital, and $DII_{[1]}$ also pays out £200 from its FCDF to buy fixed capital. Each £100 advanced for circulating constant capital returns to the group that advanced it to realise its remaining commodity product, while the £200 advanced by $DII_{[1]}$ for fixed capital returns to buy the realises the $200II_{c[d]}$ before passing into $DII_{[2]}$ ’s FCDF.

Second case (labelled “(b)” in Marx (1978, 537):

All of the money to replace the circulating constant capital is advanced by $DII_{[2]}$. $DII_{[2]}$ thus holds $400II_c$, including the $200II_{c[d]}$. $DII_{[1]}$ holds no outstanding commodity product, but advances £200 to buy fixed capital. This £200 returns to buy the $200II_{c[d]}$, while the £200 advanced by $DII_{[2]}$ for purchase of circulating constant capital flows back from DI to realise the remaining $200II_c$.

Third case (“(c)” in Marx (1978, 538):¹⁴

All money is advanced by $DII_{[1]}$, which holds $200II_c$ in commodities. $DII_{[1]}$ advances £400: £200 to replace circulating constant capital (this money flows back to purchase the $200II_c$), and £200 (from the FCDF) to buy fixed capital (which flows back to purchase the $200II_{c[d]}$). (This is where Marx notes that in none of these cases is it necessary that the £200 that buys the circulating constant capital originate with an advance made by DII, for “[t]he situation would in no way be changed” (Marx, 1978, 538) if the advance originated with DI.)

In all of these three cases, the key exchange—that which resolves the “difficulty” that Marx identified at the outset of this discussion—is the movement of the money from $DII_{[1]}$ ’s FCDF, via the purchase of fixed capital and then that of the $200II_{c[d]}$, to $DII_{[2]}$ ’s. This movement is set out in **figure 4**.

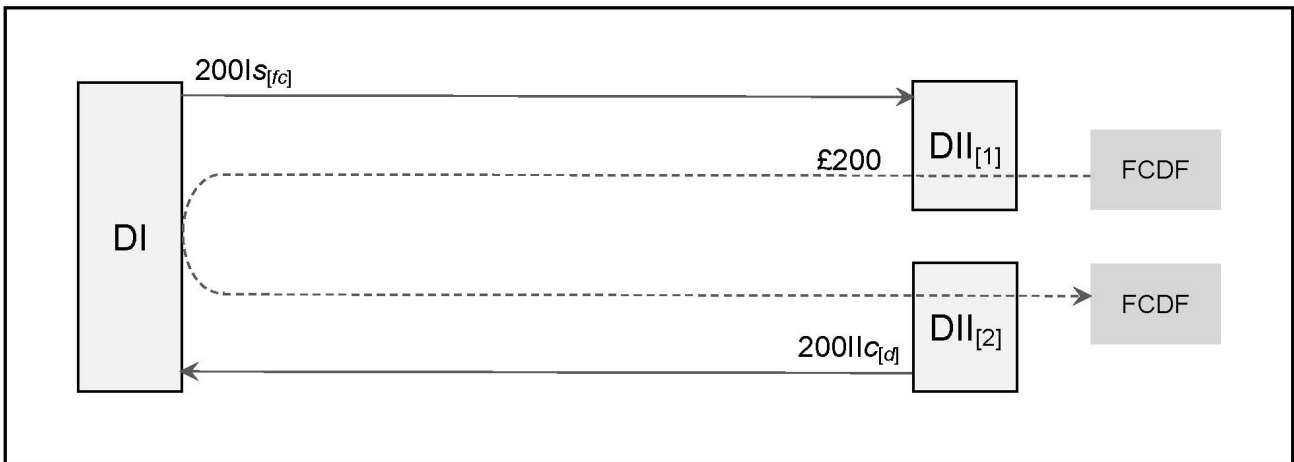


Figure 4: The exchange of $200II_{sc}$ for $200II_{c[d]}$

¹⁴ This case, case (c), is the focus of the exchange between Lyall, and Carchedi and Hann referred to in note 2 above.

As a result of all this, there now emerges the following interesting conclusion. I noted earlier an unstated assumption in Marx’s account that, in any given year, the value of the fixed capital to be replaced (through the spending of money accumulated in the FCDF of whichever group of capitalists compose that year’s $DII_{[1]}$) is equal to the depreciation component of DII’s commodity product. Marx comments:

The precondition [*Voraussetzung*] here is evidently that the fixed component of department II’s constant capital which in any given year has been transformed back into money to its full value and thus has to be renewed in kind (section 1 [i.e., my $DII_{[1]}$]) has to be equal to the annual wear and tear of the other fixed component of the constant capital in department II which still goes on functioning in its old natural form, and whose wear and tear, the loss of value that it transfers to the commodities in whose production it is involved, has first to be replaced in money [my $II_{c[d]}$]. Such a balance accordingly appears as *a law of reproduction on the same scale* [...]. (Marx, 1978, 540, italicisation added.)

In addition to this, there is another equality that has to hold here as well. If DII is to spend a certain amount of money on the replacement of fixed capital, this latter has to be present, already produced and available to be bought, in DI; in other words, there needs to be, within DI, a concomitant “proportionate division of labour [...] [between] on the one hand [the] circulating, and on the other hand [the] fixed components of the constant capital [requirements] of department II.” (Marx, 1978, 540.) (This means, in my notation, that $Is_{[d]}$ also has to be equal in value to $DII_{[1]}$ ’s FCDF).

Marx is now going to examine what would happen if these equalities do not hold. To do this he will look at two basic cases: first, one in which the money accumulated for the renewal of DII’s fixed capital ($DII_{[1]}$ ’s FCDF) is greater than the depreciation component of DII’s commodity product ($II_{c[d]}$); and, second, one where it is smaller. Within these two basic frameworks, he will also make some adjustments to the size of $Is_{[d]}$.

First case: $DII_{[1]}$ ’s FCDF greater than $II_{c[d]}$:

Let the money accumulated for the renewal of DII’s fixed capital ($DII_{[1]}$ ’s FCDF) stand at £220, and the fixed capital depreciation component of DII’s commodity product ($II_{c[d]}$) be equal to 200. Meanwhile, in DI, let $Is_{[d]}$ stand at 200.

£200 will pass from $DII_{[1]}$ to buy fixed capital, and then from DI to DII to buy the $II_{c[d]}$. There will thus remain £20 unspent in DII.

If we now set $Is_{[d]}$ equal to 220 (although this will mean that Is will now consist of 780 means of production to be used by DII as circulating constant capital, rather than 800, and how this will happen Marx leaves unexplained¹⁵), even though now DII is able to buy fixed capital to the value of the total FCDF, only £200 of this money can return to DII to buy the $II_{c[d]}$; there is now, as a consequence, a monetary surplus (of £20) in DI.

Second case: $DII_{[1]}$ ’s FCDF smaller than $II_{c[d]}$:

Let us now set $DII_{[1]}$ ’s FCDF to £180, $II_{c[d]}$ to 200, and $Is_{[d]}$ again (initially) to 200.

Now, $180Is_{[d]}$ is sold to DII, and £180 flows back to buy $180II_{c[d]}$. $20Is_{[d]}$ is unsold, as is $20II_{c[d]}$. However, these two remnants are not just unsold, but under the assumptions operating here *unsellable*, and this for the same reason that we identified at the outset of the overall discussion: if DI advances the £20 necessary to realise the outstanding $II_{c[d]}$, the money will just disappear into $DII_{[2]}$ ’s FCDF. The

¹⁵ However, Marx will note shortly that it will overall be more reasonable to assume that $Is_{[d]}$ always be equal to $DII_{[1]}$ ’s FCDF, “since production is determined by orders”. (Marx, 1978, 541.)

“law” that advanced money must return to whoever advanced it rules this operation out: the problem is the same as the one we started out with above, except that now the solution we found earlier—that the $\Pi_{c[d]}$ in the hands of $DII_{[2]}$ be realised by $DII_{[1]}$ ’s FCDF—cannot apply here since this latter is now empty.

Neither can we solve the problem by setting the outstanding $I_{s[v]}$ to 180, i.e. equal to $DII_{[1]}$ ’s FCDF, for while there would now not be an unsellable surplus in DI, there would still be an unsellable $20\Pi_{c[d]}$ of means of consumption in DII.

In the first case, Marx notes, where $DII_{[1]}$ ’s FCDF is larger than the $\Pi_{c[d]}$ component of $DII_{[2]}$ ’s commodity product, there is an *overaccumulation*—a surplus—of money, money that is not convertible into commodities. This monetary surplus appears in DII if $I_{s[v]}$ is smaller than $DII_{[1]}$ ’s FCDF, and in DI if it is equal to it. In the second case, where $DII_{[1]}$ ’s FCDF is smaller than $\Pi_{c[d]}$, there is overproduction¹⁶—commodity product that cannot be sold—either on both sides (if $I_{s[v]}$ is larger than $DII_{[1]}$ ’s FCDF), or only on the side of DII—in the form of a part of the $\Pi_{c[d]}$ —if $I_{s[v]}$ is equal to $DII_{[1]}$ ’s FCDF.

Interestingly (but frustratingly briefly), Marx now (Marx, 1978, 542) comments on the possible effect of foreign trade on the consequences of the kinds of imbalances we have just identified. In the case of an overaccumulation of money (i.e. in the first case), the monetary surplus might be realised by “an import of foreign commodities”; in the case of an overproduction of commodities (the second case), the export market could provide a source of extra monetary demand.¹⁷

At this point in the text (Marx, 1978, 542), Engels inserts the subheading “(c) Results”; it is not clear, however, if what Marx does from here on in the original manuscript (where there is no equivalent heading) is summarise his deliberations in anything approaching a comprehensive manner, or whether he is simply adding further thoughts, thoughts that he would have expanded on at a future point in a more developed and worked out form. The impression one has is the latter.

Nevertheless, to my mind he does make two points in this part of the text that deserve emphasis.

First, he seems to suggest that the social fixed capital renewal requirement—the total value of the new fixed capital that needs to be bought each year—will vary naturally, even under assumed conditions of simple reproduction and constant productivity of labour. (He gives no indication as to why this might be the case, although he seems to imply¹⁸ that the requirement might be larger one year and smaller the next—in other words, that it may be subject to short term variations, which one might imagine as a normal consequence of a given, albeit not uniform, distribution of a variety of elements of fixed capital with different lifetimes across social production. In such circumstances, the year-on-year fixed capital requirement might vary while its long-run average stayed fixed.) This would bring about the kinds of disproportions and their consequences—periodic overproduction of commodities, periodic overaccumulation of money—that Marx has just discussed, disproportions that would, in the long run, cancel each other out. If this is the case, then, even under conditions of simple reproduction and constant labour productivity, “[t]here would be a crisis, a crisis of production [or perhaps repeated crises]—despite reproduction on a constant scale.” (Marx, 1978, 543.)

¹⁶ Or underconsumption, according to taste.

¹⁷ However, he will also shortly point out that “foreign trade, insofar as it does not just replace elements (and their value), only shifts the contradictions to a broader sphere, and gives them a wider orbit.” (Marx, 1978, 544.)

¹⁸ Abstracting from its capitalist social form, “the whole problem boils down to the fact that the magnitude of the part of fixed capital that becomes defunct and has therefore to be replaced in kind varies in successive years [...]” (Marx, 1978, 544.)

Second, he observes that, under non-capitalist social conditions, the insurance against the deleterious effects of the naturally occurring periodic disproportions in the replacement of means of production just noted would need to take the form of a “perpetual relative over-production”. This would mean that,

on the one hand a greater quantity of fixed capital¹⁹ [would be] [...] produced than is directly needed; on the other hand, and this is particularly important, a stock of raw materials etc. [would be] [...] produced that surpasses the immediate annual need (this is particularly true of means of consumption). Over-production of this kind is equivalent to control by the society over the objective means of its own reproduction. (Marx, 1978, 543.)

His point is that this—perpetual overproduction, as a necessary social insurance—is not of course possible under conditions of capitalist production, and this fact stands as a further indictment of the “anarchic” (Marx, 1978, 545) nature of the latter.

IV By way of a conclusion

The commentary made by editors of the volume of the *Marx-Engels-Gesamtausgabe* in which Marx’s original Manuskript VIII appears can serve as an effective summary of his overall argument.

In Manuskript VIII, Marx analysed in detail for the first time the replacement of fixed capital in the overall social reproduction process. This was also a matter of resolving the “difficulty” [*Schwierigkeit*] [...] that if all capitalists limited themselves to the amortisation of fixed capital, on the one hand a mass of circulating money or reserve money capital would be transformed into a hoard or idle money, while on the other a mass of the commodity product could not be converted into money; “thus there would be a collapse of the entire basis of the scheme, namely reproduction on a constant scale, where complete proportionality between the different spheres of production is assumed.” [Marx, 2008b, 757-8.] [...] The starting point for solving this problem is that there is in fact one group of capitalists who do not yet have to replace their fixed capital in kind completely, and who therefore gradually accumulate the depreciated value in money, while there is another group with money capital who appear on the market in order to replace their fixed capital partially or completely [...]. Once the sum of one-sided sales leading to the accumulation of the amortisation fund (the quantity of circulation funds converted into a hoard) tallies with the sum of unilateral purchases through the reinvestment of the amortisation fund (the quantity of the hoard that is converted into means of circulation), the reproductive process can proceed normally. Assuming this, all circumstances that disrupt the normal course of the reproductive process can be identified. (MEGA, 2008a, 870.)

In addition, Marx’s numerical presentation, as I have tried to argue, is, if one makes a small number of plausible textual interpretations, both consonant with his conceptual presentation and numerically internally consistent throughout. I will not repeat anything else I have said about this.

What I want to do here is draw attention to what appear to me to be the most important omissions in Marx’s account: omissions that are perhaps inevitable given the nature of the unfinished and partial draft, itself, it appears, written in stop-start fashion over a period of some four years, from which his account was extracted, but omissions nonetheless which need to be addressed.

First, and most obviously. The account Marx gives us of the circulation of fixed capital within the framework of the reproduction schemes is carried out entirely on the terrain of the reproduction of the

¹⁹ Marx is surely being sloppy here: means of production used under non-capitalist conditions might be “fixed”, but they would not be “capital”.

fixed capital in operation in DII, the department where means of consumption are produced. There is barely a mention of the renewal of the fixed capital in operation in DI in the whole of Marx’s account. As the editors of the volume of the *Marx-Engels-Gesamtausgabe* which contains the final finished volume have put it, both Marx’s manuscript and the text of the final edited volume exhibit a “logical breach” in their failure to deal with the renewal of the fixed capital in DI. (MEGA, 2008b, 534-4 and 535n161.)

Second. The *dénouement* of *Capital* II is Marx’s discussion of expanded reproduction, in which previously produced surplus product is accumulated as new capital. It is clearly the case that the question of the circulation of fixed capital will become even more acute in its repercussions and social reproduction taken as a whole considerably more complex in its internal entanglements under these conditions. But Marx does apply his analysis developed under conditions of simple reproduction to those of expanded reproduction; his remarks on fixed capital in the volume’s final chapter are cursory and scant.

Finally. Marx closes his discussion of fixed capital in the manuscript by noting the effects supposed by disproportions between the value of DII’s annual fixed capital renewal requirement and the depreciation component of its commodity product—disturbances of the “law of reproduction on the same scale”. Further, prior to his discussion of the circulation of fixed capital he identifies that a necessary condition for the progress of simple reproduction itself is that the value of the product $I(v + s)$ be equal to IIc (a condition that, suitably modified, also applies in the case of expanded reproduction). If Marx believes that capitalist societies do reproduce themselves in the way he describes, which he evidently does, then there must be something endogenous to social reproduction that ensures that such necessary proportions are achieved, or that deviations from them are maintained within determinate bounds. I suspect that Marx would have had in mind the kinds of dynamic interactions between demand and supply that he describes in ch. 10 of *Capital* III, but there is no hint in Vol. II as to how social reproduction in fact does actually proceed in the sense of maintaining the conditions that its procession evidently requires. This is a large gap in the analysis.

One final point. I have at times in the foregoing been critical of both the editorial decisions of Engels and certain translation strategies, especially with regard to Marx (1978). It is of course easy to criticise the work of others. I should say, therefore, that I say these things from the standpoint of an utmost respect for the work, both of Engels, without whose genuinely heroic efforts after the death of his lifelong friend and collaborator we would not have either *Capital* II nor *Capital* III in the forms that we do, and that of successive translators, whose herculean efforts have made Marx’s work available to generations on non-German speakers. Nevertheless, given the recent completion of the *Abteilung* of the *Marx-Engels-Gesamtausgabe* which compiles all of the preparatory materials for *Capital*, not only with regard to the texts themselves that it contains (which include items that even Engels was unaware of the existence of), but also its scholarly and bibliographic apparatus, perhaps now is the time for a new translation into English, which for good or ill remains the *lingua franca* of scholarly and political discourses, of *Capital* II, perhaps the ugly duckling amongst Marx’s works, a translation which will take into account what more we know now compared to when the more recent translations were made, so that Marx’s voice on the matters it contains may be heard more clearly than ever, and that the project he began, as necessary now as it was then, may be continued by others.

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