The *Grundrisse* (The 1857-58 Manuscript)

The Chapter on Capital: Part 16

The Transformation of Surplus Labour into Profit (III): The Effect of Rising Social Productivity (pp. 386-398)

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"It is now time to finish with the question of the value resulting from the growth of the productive forces," Marx announces. (Marx 1973, p. 386)

We have seen that a rise in productivity creates both a greater use value (more physical product) and a greater surplus value (by cheapening the cost to the reproduction of labour). (The result is the same as that produced by an absolute extension of the working period.)

If we say that per-worker necessary labour-time is given (say 6 hours), and that it is impossible to lengthen the working day (which stands, say, at 12 hours), then an increase in *absolute* labour-time is only possible by employing more workers (such that "the real working day is simultaneously multiplied instead of only lengthened". (Marx 1973, p. 386))

Should capital seek to increase production through an absolute increase in labour-time therefore then more capital would have to be laid out on labour, and also on material:[1] "this further realisation process ["*Verwertung prozess*", i.e. valorisation process] depends here on a previous accumulation of capital". (Marx, 1973, p. 386)

However, if there takes place an increase in productivity (Marx says "*Productivkraft*": "productive force" or "productive power"), then "less expenditure is necessary for wages" and (given that "we [...] regard capital as [...] directly engaged in the production of subsistence, raw materials etc.") "the growth in the material is created by the realisation process ["*Verwertungsprocess*": valorisation process] itself". (Marx 1973, pp. 386-7) This question, Marx states, belongs with an account of the *accumulation* of capital. (Unaccountably, Marx 1973 (p. 387) here renders "*die Accumulation der Capitalien*" (Marx 2006, p. 295) as the "*circulation* of capitals".)

"We now come to the point where we last broke off," Marx announces, indicating a return to

[1] "[B]eside the fact that the extra worker has to be *available*, i.e. that the working population has to have grown". (Marx 1973, p. 386)

his previous discussion of Ricardo.[2]

It was during this discussion that Marx imputed to Ricardo the notion that an increase in social productivity will lead to an increase in the output of *use value* but not to an increase in *accumulation*; not to an increase in the *scale* of production. (It was following this discussion that Marx pursued the question of the action of living labour in production, *vis-à-vis* the preservation of the value of the materials and instrument, the reproduction of the value of the living labour itself, and the production of the surplus, an investigation that led to the conclusion that we have just seen regarding the scale of the "invariable value" component of capital and the per-unit price of the product, and the implications of this for the rate of profit. This (crucially important) demonstration has in fact and in effect taken the form of an interlude in Marx's treatment of Ricardo's account of the effects of a rise in social productivity.)

Marx first summarises where he had got to in his critique of Ricardo.

> An increase in productivity increases the *surplus value*, although it does not increase the absolute amount of exchange values. It increases values because it creates a new *value as value*, i.e. a value which is not merely an equivalent destined for exchange, but which asserts itself as such; in a word, more money. The question is: does it ultimately also increase the amount of exchange values? This is, at bottom, admitted; for even Ricardo admits that along with the accumulation of capitals there is an increase in savings, hence a growth in the exchange values produced. The growth of savings means nothing more than the growth of independent values—of money. But Ricardo's demonstration contradicts his own assertion. (Marx 1973, p. 387)

(Marx's argument boiled down to the following. An increase in social productivity will mean, all else remaining equal, a fall in the wage level, and for a given production process an increase in that part of the product that falls to the capital as surplus value. No more new value is created, although the value of the total product will increase (because more material is transformed into product); of that *new* value created in production, however, less returns to labour in the form of means of subsistence, and more falls to the capitalist. It is then this that creates the basis for accumulation, and an expansion in the scale of production.)

Marx returns to the numerical example he deployed in his discussion of Ricardo.

There is a capital (advanced) of 100 thalers: 60 thalers are in the form of "constant value", and 40 in wages. Living labour produces a product of 80 thalers; hence the total product is equal to 140 thalers. The surplus value is equal to 40 thalers. (Marx notes parenthetically (the remark appears as a footnote on p. 387 of Marx 1973) that the surplus is equal to half of "the newly produced value", therefore equal in magnitude to the wage.[3] What the "relation" ("*Verhältnis*, better "ratio" or "proportion") of the surplus product is (i.e. what the rate of profit is; what the ratio of surplus to capital advanced is) is given by (1) the proportion between the "constant part of capital" and "the productive part";[4] (2) the proportion between necessary labour-time and surplus labour-time.[5] In addition, the *mass* of profit is also dependent on the magnitude of the capital sum advanced.) "Let these 40 in surplus value be absolute labour-time," Marx says

[2] Marx 1973, pp. 337-53.

[3] In other words, what Marx will come to call the "rate of surplus value" is equal to 100%.

[4] What Marx in *Capital* will call the *composition* of capital.

[5] The rate of surplus value just referred to.

(Marx 1973, p. 387)

Now let us suppose a doubling of productivity ("*Productivkraft*"), so that the worker will reproduce a day's living labour in four hours instead of eight (we are evidently dealing here with a 12-hour working day[6]). The money wage will now halve (assuming a constant real wage); the sum of the wage and the surplus (the new product created in production) will remain the same, i.e. it will stay at 80 thalers; the surplus will now be 60 thalers, and the capital required to begin production again will be 80.

Let us call the capitalist who operates at the old (pre rise in productivity) level of production capitalist A. On the sale of the product she has 140 thalers. Let us suppose she invests *all* of this in new production. If the proportion between invariable capital and necessary labour remains unchanged at 60 : 40, the division of the 140 now to be invested will be 84 invariable capital and 56 wages; the surplus will also be 56 (at a ratio of wages : surplus of 1 : 1); and the final product of this second round will be 196.

Capitalist B, on the other hand, is a capitalist who operates at the higher level of production. Her capital at the end of the first round of production is also equal to 140 (invariable: 60; wages 20; surplus 60). If all of this is reinvested then it will be as 105 thalers invariable capital and 35 wages. If the ratio of wages to surplus remains as it was in the first round, at 3 : 1, then a surplus of 105 will be produced, giving a total commodity product of 245 thalers (140 capital advanced plus 105 surplus).[7]

Marx notes:

> An increase in the productivity of labour means nothing more than that the same capital creates the same value with less labour, or that less labour creates the same product with more capital. That less necessary labour produces more surplus labour. The necessary labour is smaller in relation to capital; for the process of its realization this is obviously the same as: capital is larger in relation to the necessary labour which it sets into motion; for the same capital sets more surplus labour in motion, hence less necessary labour. (Marx, 1973, p. 388)

Marx reiterates parenthetically (text reproduced as a footnote on pp. 388-9 of Marx 1973) what he has just announced in the immediately preceding cited text.

(Then he adds the following. "In the first case [capital A], as already shown above, the absolute new value is greater than in the second, because the mass of labour employed is greater in relation to the invariable part; while in the second the former is smaller, precisely because labour is more productive." (Marx 1973, p. 388n) But this is not correct.

It is unclear what the "absolute new value" Marx mentions here might refer to: whether surplus value, or the total value of the product less the invariable part of capital.

If it is the former, it is not the case that the surplus value produced is less in the second capital (capital B) than in the the first: in the first round, there is more surplus value produced in capital B because the same amount of labour is deployed there as in capital A at a lower reproduction

[6] Surplus time would then increase by $\frac{1}{3}$ [of a working day, i.e. by 4 hours] ($\frac{2}{3}$ [eight hours] of a day to produce a whole day before, now $\frac{1}{3}$ [four hours]." (Marx 1973, pp. 388-9)

[7] Marx miscalculates here, taking the ratio of wages to surplus as 1 : 1, giving a total surplus of 35 and a total product as 175.

cost. In the second round, capital B operates on a greater scale than capital A (because there is more surplus value to accumulate), which compensates for the fact that there is less labour as a proportion of capital in B than in A. As a result, there is still more labour deployed in B than in A in this second round (in capital A the capital advanced as wages is 56 thalers, so if we take the reproduction of labour to be 10 thalers per worker this amounts to 5.6 workers; in capital B 35 thalers are advanced as wages, under the assumpiton that the reproduction cost of labour is half that of capital A, hence 7 workers).

If, on the other hand, "absolute new value" refers to the whole commodity product less the value of the invariable part of capital then this is simply a function of the amount of labour deployed in production. In the first round, both capitals employ the same amount of labour; the new value product is therefore the same. In the second round, as noted, capital B employs more labour, therefore the new value product is greater.)

Marx now addresses the view that machinery "saves" labour. This is misleading, he argues. In the first place, machinery *permits* labour to perform actions it would otherwise be incapable of.[8] But this refers only to the *use value* of labour. When we look at machinery's *exchange* value we see that it serves to "save" necessary labour and augment surplus labour. As a result of this, a rise in the productivity of labour means that capital requires less labour to create the same quantity of use values. This means that, with a growth in the productivity of labour, the invariable part of capital grows proportionally relative to the variable part (that part advanced as wages). This in turn means that a smaller mass of labour sets a larger mass of labour in motion.

Marx sets out to restate the numerical example he has been working with.

Imagine that the 100 capital is *agricultural* capital. 40 thalers are for seeds, fertiliser, etc.; 20 are for the instrument of production (completely consumed in production); 40 for wages (this last being equal to 4 days' necessary labour). The value of the product is 140 thalers (surplus is 40).

Now let the fertility double ("owing to improvement either in the instrument or in the fertiliser etc." (Marx 1973, pp. 389-90)), so the price of necessary labour is halved. Now wages are equal to 20. Before the rise in productivity the proportion between the variable and invariable components of capital was 60 : 40, i.e. 3 : 2, now (says Marx), it is 80 : 20, or 4 : 1. (Marx is wrong here: if all that has happened is a halving of the real wage, then 60 thalers of invariable capital will absorb 20 thalers of labour, so that the relation between invariable capital and variable will be 60 : 20 or 3 : 1.[9])

If the farmer were to spend the same on labour as before, by how much would his capital have to grow?[10] If 20 thalers of labour absorb 60 thalers of invariable capital, then 40 will absorb

[8] Marx refers to James Maitland, the 8th Earl of Lauderdale in support of this point. Later in the Manuscript (Marx 1973, p. 688), Marx will cite from Lauderdale 's 1819 work *Inquiry into the Nature and Origin of Public Wealth* to this effect: "It is one of the characteristic and distinguishing traits of the human species to replace labour in this way with a capital transformed into machines." And: "It may now be seen that the profit of capitals always arises either because they replace a portion of the work which man must do by hand, or because they accomplish a portion of work which is beyond the personal effort of man, and which he could not perform by himself."

[9] "Looking at the whole capital, necessary labour was $\frac{2}{5}$; now $\frac{1}{5}$." This is also wrong; the total capital will now be 80, so the necessary labour will be $\frac{1}{4}$.

[10] We are working under the assumption that the rise in productivity only affects the cost of reproduction of the capitalist's living labour. If it were the case that all the components of capital were similarly cheapened, then the proportion between invariable and variable components would not change. (This is how I interpret the two

120, and the total capital advanced will be 160.[11] "Therefore, when the force of production doubles, capital does not need to double in order to set the same necessary labour into motion." (Marx 1973, p. 392) To put it another way, when a cheapening of the reproduction of living labour frees up a part of capital, this capital is redeployed in a proportion such that "[t]he total capital which would be necessary in order to employ the old labour-time is therefore = to *the old labour fund multiplied by the denominator* of the fraction which now expresses the relation of the labour fund to the new total capital."[12] (Marx 1973, p. 393n)

(Marx notes that he is assuming that the proportional relationship between the invariable and variable components of capital will remain unchanged under conditions of a change in the scale of production; whether this is in fact the case, however, will be a matter to be addressed when we address the question of "accumulation".)

Marx spends several pages at this point recapitulating his conclusions.[13] Much of what he says need not detain us; I make note here only of what appears to me to be worthy of emphasis, or which adds something new.

"[S]urplus labour, or surplus time, is the presupposition of capital," notes Marx. "[I]t therefore also rests on the fundamental presupposition that there exists a surplus above the labour time necessary for the maintenance and reproduction of the individual; that the individual e.g. needs to work only 6 hours in order to live one day, or 1 day in order to live 2 etc." (Marx 1973, p. 397) In other words, capital itself is premised on the existence of a working period (working day, etc.) which is longer than necessary labour-time.

"With the development of the forces of production, necessary labour time decreases and surplus labour time thereby increases". (Marx 1973, p. 397) (This is true given the length of the working day.)

Thus it is not simply true that surplus labour-time is the basis of capital; capital too *creates* surplus labour.

> The relation of *necessary* labour time to the *superfluous* (such it is, initially, from the standpoint of necessary labour) changes with the different stages in the development of the productive forces. In the less productive stages of exchange, people exchange nothing more than their *superfluous* labour-time; this is the measure of their exchange, which therefore extends only to superfluous products. In production resting on capital, the existence of *necessary* labour-time is conditional on the creation of *superfluous* labour-time. In the lowest stages of production, firstly, few human needs have yet been produced, and thus few to be satisfied. Necessary labour is therefore restricted, not because labour is productive, but because it is not very necessary [...] (Marx 1973, p. 398)

footnoted remarks on Marx 1973, p. 388.)

[11] Inexplicably, it takes Marx a page and a half to arrive at this conclusion.

[12] In the example we have just seen, the ratio of the labour fund to total capital after the increase in productivity is $\frac{20}{80}$, or $\frac{1}{4}$. With the rise of productivity, 20 thalers are freed up. The new total capital required to absorb this amount is therefore 4 (the denominator) $\times 20$ (the capital freed up) $= 80$ thalers.

[13] This supports the view that the laborious numerical examples Marx has set out in this part of the Manuscript were not so set out so as to demonstrate a point Marx had already clear in his mind, but were rather a tool to allow him to work out the conclusions he has here arrived at; their purpose seems not to have been not didactic, but investigative.

References

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