

Chapter 11: The Rate and Mass of Surplus Value

Outline of Marx's Discussion

The rate of surplus value = s/v = (for example): (6 hours)/(6 hours), or 100%
or (3 shillings)/(3 shillings), or 100%

First Law:

$$\text{mass of surplus value} = S_m = V_t(s/v),$$

where V_t = (v=value of average labor power) (# workers)
= total variable capital
= total hrs necessary to reproduce LP

Implication of First Law:

A decline in one factor can be compensated by an increase in another in order to maintain the mass of surplus value.

e.g., if V_t declines, a rise in s/v can maintain S_m at the original level. Therefore, the level of exploitation is, to some degree, independent of the supply of workers.

e.g., a decline in s/v can be compensated by an increase in the number of workers.
(At the level of society, the growth of population sets a limit to such an increase.)

Second Law:

But, the absolute limit of the average working day (< 24 hrs) sets an absolute **limit** to the degree to which the decline in the number of workers can be compensated by a rise in s/v through an extension of the working day.

e.g., if $V_t = 1500$ for 500 workers, $s/v = 100\%$ for a working day of 12 hours, then $S_m = 1500$.

if the number of workers drops to 100 and $V_t = 300$, and the length of the working day is raised to its physical limit, say of 18 hours, the 100 workers will only be able to produce a S_m of 600.

Third Law:

The mass of surplus value varies directly with the investment in variable capital

$$\Delta S_m / \Delta V_t > 0$$

this is not affected by differences or changes in c/v
—either between different branches of industry
—or in the same branch

But, this law contradicts immediate experience which is that different industries tend to generate the same rate of profit even though their organic composition of capital may be quite different.

Observations on the Definitions of Classes:

Independent workers: own/control their means of production
e.g., small farmers concerned primarily with their own subsistence

Capitalist who-also-works: hybrid, e.g., a “small master”, such as those in the guilds

Capitalist qua capitalist: “capital personified”
—fully devoted to the “control of the labor of others”
—requires an increase in the number of workers controlled
—this was opposed by the guilds
—in order for this to happen some minimum amount of capital had to be available to the would-be capitalist
—if minimum too large then capitalists might acquire either 1) state subsidies or 2) a monopoly in the market for their goods.
—thus Hegel's quantitative change (increasing number of employees) which becomes qualitative (conversion of the small master into a capitalist)

Main Points:

1. Capital develops within production until it acquired command over labor
2. This command is coercive:
 - forces people to work more than necessary for their needs
 - more coercive than all earlier systems of directly compulsory labor — unbounded.

Chapter 11: The Rate and Mass of Surplus Value

3. At first this coercion is exercised with no change in technology.
4. But the relation between workers and their means of production is soon inverted and the MP
 - become the means for the absorption of the LP of others
 - come to consume the workers instead of visa versa

Commentary

This chapter provides a summary of some key ideas in section III on absolute surplus value. So, the first thing to keep in mind is that within the context of the discussion of *absolute* surplus value, the intensity and productivity of labor are held constant.

The First Law

Thus, the First Law states that the only way the capitalists can increase the mass of surplus value is by increasing the number of workers (which raises V_t) and/or increasing the length of the working day (which raises s/v by raising s {and $v + s$ }).

(It should be obvious that an increase in V_t that occurred because of an increase in the value of labor power would *undercut* the mass of surplus value, *not* increase it. Mathematically this would occur because an increase in V_t that occurred because of an increase in v would also result in a fall in s (and in s/v) as long as the length of the working day were held constant at $v + s$. In other words, the better paid workers would be producing less surplus value in the same work time. For this reason, Marx assumes v is constant in this chapter and changes in V_t are due solely to changes in the number of workers.)

Let's look at an example of the implications of the first law, a case in which a decline in the number of workers is offset by an increase in the length of the working day (which produces an increase in s/v)

Assume: $v = 3$ shillings [or 6 hours of work],
workers = 100,
so, $V_t = 300$ shillings, [or $(v \cdot \#) = (3 \cdot 100)$, or $(6 \cdot 100 = 600 \text{ hrs})$
if $s/v = .5$ (or 50%), [1.5/3 in shillings, 3/6 in terms of hours]
then, $S_m = 150$ shillings in a 9 hr working day [$9 = 6(v) + 3(s)$]
= 300 hrs surplus labor [$3 \cdot 100$].

If V_t declines from 300 to 150, because the number of workers falls from 100 to 50,
 S_m would fall to 75.

But, if the length of the working day is lengthened from 9 to 12, then s/v will rise
from 3/6 (or .5) to 6/6 (or 1, or 100%) and S_m will remain at 150 shillings.
[before 100 workers were producing 300 surplus hours ($100 \cdot 3 \text{ hrs}$), now
50 workers are producing 300 surplus hours ($50 \cdot 6$)]

In other words, if for some reason capitalists must reduce employment, then they can try to compensate by getting their remaining workers to work longer so as to raise the rate of surplus value and to keep getting the same amount of surplus value. The law also says that if workers somehow manage to reduce the rate of exploitation, e.g., by forcing up v (or wages), then the only way for the capitalists to maintain their total mass of surplus value would be by putting workers to work.

The Second Law

The point of the second law is that this process of compensation has its limits and those limits are set by the absolute length of the average working day. Biologically speaking, that absolute limit must be something less than 24 hours because no one can work continuously without rest and sleep without dying. At the height of capitalist power the level of such an absolute limit was explored as capital pushed the daily number of hours people were forced to work out to 14, 15 even 18 hours. Marx recognized that such

extreme limits, although sustainable for a number of years, had the long run effect of shortening the life time of the workers. This, of course, didn't matter to the capitalist as long as new recruits were available — from new generations or from immigration or through foreign conquest. Fortunately, as we saw in chapter 10, the absolute limit came to be set not biologically but socially, by the power of the working class. Moreover, that limit was forced down over time by working class struggle. Therefore, this “absolute limit” he evokes here is a very real historical reality which constrains the capitalists’ ability to cope with a contraction of their labor supply.

In the example given above, we have seen that a halving of the labor force (e.g., a drop from 100 to 50 workers) could be compensated by a doubling of the s/v from 50 to 100% so that S_m stayed at 150 shillings (or 300 hours). But what the second law says is that given some limit to the length of the working day (say 18 hours), at some point a drop in the number of workers cannot be compensated. We can calculate that limit in this case by working backward using $S_m = V_t (s/v) = (v \cdot \#)(s/v)$. If 18 hrs = $6v$ (assuming v fixed) + 12 (s), then extending the working day to its maximum means that an S_m of 150 shillings or 300 hours would be produced by “#” workers when 300 hrs = $(6 \cdot \#)(12/6)$ or 150 shillings = $(3 \cdot \#)(6/3)$. In both cases $\# = 25$. In other words, if the number of workers fell below 25, it would be impossible for those remaining to produce 150 shillings worth of surplus value even working the maximum of 18 hours. A similar calculation will show that there would be such a limit even if workers could be forced to work 24 hours a day. So the limit will exist even if the capitalists had the power to literally work people to death.

For Marx, as he suggests briefly, this limit is important primarily because while capital always seeks to produce the maximum mass of surplus value, there are also strong tendencies for it to also reduce the number of workers as much as possible in any production process in order to facilitate control over the remaining workers. This tendency he will discuss at length in the next section on relative surplus value. It will appear as a part of the technological changes capitalists introduce in order to raise the mass and rate of surplus value by raising productivity.

The Third Law

The third law, that with v and s/v constant, the mass of value and surplus value produced is exclusively dependent on the mass of labor set in motion, is clearly derived directly from the first law. We can also state the 3rd law as: S_m varies directly with the number of workers employed, or $\Delta S_m / \Delta V_t > 0$ or even, more directly, $\Delta S_m / \Delta \# > 0$.

Now, inasmuch as this is pretty evident from everything said to this point, the main issue Marx emphasizes is that this holds true regardless of the amount of investment in constant capital. He juxtaposes the cotton spinner who has a very high organic composition of capital (c/v) with a baker who has a very low organic composition. After showing how surplus value is uniquely dependent upon the living labor set in motion by the capitalist, Marx turns to the issue of constant capital. He does this because, as he says, immediate experience suggests that most capitalists earn more or less the same average rate of profit despite employing very different technologies and c/v 's. Yet this seems to contradict the assertion that s and S_m depend uniquely on v .

Remembering that the rate of profit = $S_m / (C_t + V_t)$ where C_t equals the total investment in constant capital, it would certainly seem that differing levels of C_t would produce differing rates of profit given the same V_t and S_m , even if S_m varies only with V_t and not with C_t . Given that C_t does vary enormously from industry to industry, and indeed from firm to firm, this would seem to contradict the notion of an average or general rate of profit. Marx deals no more with this issue in Volume I of *Capital*, but returns to this issue in part I of Volume III of *Capital*. In that discussion he argues that the notion of an average or general rate of profit remains valid because of the tendency for capital to reallocate itself across profit rate differentials and thus to create a tendency for profit rates to equalize. In that discussion the determining factor of the rate of profit is the organic composition of capital (the rate of exploitation is held constant) which tends to rise as a result of the substitution of controllable constant capital for less controllable workers —the dynamic discussed in part IV of Volume I of *Capital* under the rubric of relative surplus

value. His discussion of such a tendency to reallocation later finds an impoverished expression in the neoclassical theory of long term equilibrium in an industry via the mechanisms of firm entry and exit — impoverished because emptied of its explicit class content.

Definitions of Classes and Individual Psychology

These comments emphasize the class distinction between worker and capitalist in two ways. The first is the question of control. While independent workers (not members of the working class —and thus not really “workers” but just people, or peasants, or artisans, etc) control their tools only in order to live, capitalists control tools in order to control people. The “capitalist” who also works is but a “small master” as in the feudal guilds where, say, a goldsmith would both work at his craft and employ a small number of apprentices. The capitalist qua capitalist, or the capitalist properly speaking, only works in the sense of controlling the labor of others, but not even in the sense of coordinating and managing their labor, rather in the simplest sense of making sure that they do in fact work —usually by hiring someone else to make sure that happens, e.g., a supervisor or manager. For small masters to become such capitalists they must have enough money to put to work enough people to generate a surplus value not only large enough for their own consumption but also large enough to allow investment and growth. (This aspect of capitalism will be emphasized and studied by Marx in part VII on “accumulation.”)

This discussion of intermediate cases between the extreme class prototypes (the worker who only works and the capitalist who only imposes work on others) is useful not only because it shows Marx’s awareness of such real life complexity, but also because it speaks to the issue of class in the age of the “middle class.” The contemporary counterpart to Marx’s “small master” would appear at first to be the middle class, lower level corporate managers who both work (have work imposed on them by those higher up) and impose work on others (those lower down). Further consideration shows that virtually everyone in contemporary capitalism lives this dichotomy somewhere in the highly segmented corporate wage hierarchy. Moreover, given the nature of contemporary social institutions for converting life into labor power, e.g., the public school system, virtually everyone lives this dichotomy internally, psychologically, as well as externally in their work situation. The inculcation of self-discipline, which is a prime prerequisite for getting middle and higher waged jobs, is a primary objective of schooling.

To the degree that such inculcation is successful, each person lives a continual tension between their capitalist side that keeps reminding them of their obligation to work and their working class side which repeatedly rebels against the subordination of their life to work. Among students such tension takes the form of internal conflict between the sense of obligation to go to class or to complete assigned homework and desires to play or to follow one’s own intellectual curiosity down uncharted, and unassigned paths. Among workers such tension takes the form of conflict between the sensed need to always be on time and always be focused on their work and the desire to carve out free time through absenteeism or playing on the job.

Resolution of the tension through the suppression of desire leads to the pathologies of workaholism, unidimensionality and social isolation. Resolution of the tension through the complete rejection of imposed work while perhaps leading to a happier and psychologically healthier life in the short run, may also lead to problems of survival in the longer run. Most people experiencing the unending pressures of capital to work and the insurgence of their own needs and desires struggle to work out a compromise whereby they can live with the tension. They learn how to resist the internalized “ought” enough to preserve space for some personal fulfillment, while giving in to it enough to survive. The tradeoff capital offers is clear enough: the more you are willing to subordinate your life to work, the more (on the average) you will be rewarded with income. At least that is the promise. In reality, of course, there are all kinds of limitations (such as sexual or racial discrimination as well as the wage hierarchy itself) which prevent some from being rewarded no matter how much they internalize the capitalist work ethic, no matter how hard they work.

What all this shows is that the issue of class in capitalism, whether at the level of society or at the level of the individual, concerns the struggle over competing ways of life: the capitalist way in which life is subordinated to work and alternative ways in which life is self-constructed and work is subordinated to that self-construction.

Main Points

In these four points Marx sketches what he considers vital aspects of the emergence of capitalism. First: capital develops within production (or takes it over) until it acquired direct command over labor. Thus the merchant capitalist becomes an industrial capitalist only as putting out and then the factory provide mechanisms to control other peoples' labor. Capital is power over others, power to command their lives and make them convert their lives into labor. This is the basic point of part VIII on primitive accumulation.

Second, this command, which makes capital what it is, is coercive. Capital *forces* people to be workers, to be part of the working class; it *forces* them to work more than they otherwise would. Especially, it *forces* them to work longer than they would. This was the point of the discussion in Chapter 10 of the capitalist success at forcing out the length of the working day, at introducing night work and so on. Here he repeats what he emphasized in section 2 of chapter 10, that capitalism is more successful in the imposition of work than all earlier systems of directly compulsory labor. Unlike such earlier systems which imposed labor to achieve some finite purposes (building a pyramid or a Gothic cathedral or a chateau or a castle or the feeding of royalty, etc) the capitalist imposition of work knows no limits; it is unbounded, there is an endless "thirst" for surplus labor and its monetary equivalent. Where the imposition of work is the substance of the social order, the backbone of civilization, then the eternal maintenance of that order requires that such imposition be endless.

Third, command over labor, over life as labor, is prior to any question of technology. The capitalists at first take command, impose work, using the technologies available, whatever they are. The imposition of work is the main thing; how it is imposed is secondary. This priority is obvious in the putting out system and in early factories where traditional methods of production dominate. However....

Fourth, the method of production as embodied in the means of production themselves, soon become the vehicle for capitalist command. They are no longer tools in the hands of workers, but tools of the capitalist for the control of workers. Instead of being the means workers use to produce useful things, the means of production become, under the control of the capitalists, the means of absorbing the labor power of others, the means for putting people to work. Instead of the workers consuming their tools in the accomplishment of their own ends, the workers are consumed by the means of production in the accomplishment of the capitalists' own ends which may involve the fetishistic chase after money and, quite independently of the consciousness of the capitalist, always involves the imposition of work. Note: there are many times and places where capitalists understand quite explicitly their role in maintaining social order. One common example is in periods of high unemployment when policy makers worry about the lack of jobs leaving too many people too free – people who's free time threatens to be used in ways inimical to capitalist plans. Another example occurs during strikes by school teachers in which those same policy makers worry about the dangers of having vast numbers of young people loose in the streets instead of safely incarcerated in school houses.

This discussion which ends section III on absolute surplus value, sets up the reader for the next section on relative surplus value by focusing attention on the issue of technology and the means of production. Relative surplus value, Marx will show, is that surplus value obtained through the manipulation of technology for the purpose of imposing more work on the workers or of obtaining a greater proportion of the work they are already performing.

Concepts for Review

rate of surplus value
mass of surplus value
variable capital

First Law and Implication
Second Law
Third Law

Questions for Review

1. Practice thinking about the meaning of the First Law in terms of hours of abstract labor time. In the following table it is assumed 1) that the cost of reproducing each worker is given at 6 hrs of labor per day, 2) that the length of the working day is 12 hours and 3) that the rate of exploitation is set at 100%. Calculate the missing values in the table using the “first law.”

# workers	v (hrs)	V_t	work day	total hrs	ave. s/v	S_m in hrs
1	6	6	12	12	100%	6
2	6	12	12	24	100%	12
3	6		12		100%	
100	6		12		100%	

2. Practice thinking about the meaning of the first law in terms of money. In the following table it is assumed 1) that the cost of variable capital per worker is 3 shillings a day, 2) that the length of the working day is 12 hours, and that 3) the rate of exploitation = 100%. Calculate the missing values in the table using the first law.

# workers	v (shillings)	V_t (shillings)	work day (hrs)	total value (shillings)	average s/v	S_m (shillings)
1	3	3	12	6	100%	3
2	3	6	12	12	100%	6
3	3		12		100%	
100	3		12		100%	

3. A central implication of the first law is that capitalists can compensate for a decline in V_t by raising s/v through an increase in the length of the working day. In the following table, use the first law to calculate by how much the length of the working day and s/v must be increased in order to maintain an $S_m = 300$.

Chapter 11: The Rate and Mass of Surplus Value

# workers	V_t @ $v = 3$ shillings	working day (hrs)	s/v	S_m
100	300	12	100%	300
90	270			300
80				300
70				300
60				300

4. The second law says there are absolute limits to the ability of the capitalists to compensate for a decline in the number of workers through an increase in s/v and the length of the working day. Extend the above table and calculate the # of workers below which S_m will fall even if they could be made to work 24 hours a day.

50				300
40				300
—				300

5. The Third Law states that the mass of surplus value will vary directly with the number of workers set to work given the length of the working day and s/v. Calculate the values in the following table to show this, starting from the employment of 100 workers.

# workers	V_t @3 shillings.	working day	s/v	S_m (Shillings)	d#	dS_m (shillings)
200		12	100%			
150		12	100%			
100	300	12	100%	300	-0-	-0-
50		12	100%			

6. As Marx showed in Chapter 10, eventually workers struggled successfully to reduce the length of the working day. Fill in the following table to see what the impact on s/v and S_m would be with no compensating increase in the number of workers.

Chapter 11: The Rate and Mass of Surplus Value

# workers	V_t (@ 3 shillings)	working day (hrs)	s/v (shillings)	S_m (shillings)
100	300	12	6/6 = 100%	
100	300	10		
100	300	8		

Now, calculate how many *more* workers the capitalists would have to set to work to make up for the fall in working hours in order to maintain the same mass of surplus value. How much capital will they have to invest in mobilizing labor?

# workers	V_t (@ 3 shillings)	working day (hrs)	s/v (shillings)	S_m (shillings)
100	300	12	6/6 = 100%	300
		10		300
		8		300

7. What do you think is the principle purpose of this chapter? Why didn't Marx just leave it out?

8. Discuss Marx's analysis of workers who embody both elements of the working class (they work) and elements of the capitalist class (they impose work on somebody). Does this make sense to you for the period Marx is describing? Does it make sense to you today, in your experience and what you know of the corporate wage hierarchy?

9. What do you think of the application of the class dichotomy to the analysis of individual psychology? Do you recognize the tensions being discussed in your own life? In others? What other explanations might be offered for just such tensions? What kind of resolutions are possible? Might these be the object of some kind of "therapy"?

10. How might Hegel's view of quantitative changes becoming qualitative changes apply to the emergence of capitalism as a whole as well as to the emergence of the particular capitalist or capitalist company? Think about the quantitative growth of the elements of capital, such as money, or people available for waged work, etc.