

The breakdown of the profit system: perception and scientific analysis

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The following is a reply by WSWs editorial board member Nick Beams to a letter from a reader, IM. The reader's letter can be found at: <http://www.wsws.org/articles/1999/aug1999/cor2-a24.shtml>

IM's latest letter and Beams's reply continue an exchange that developed chronologically as follows:

1. Beams's July 8 article, "When will the US 'debt bomb' explode?": <http://www.wsws.org/articles/1999/jul1999/econ-j08.shtml>

2. IM's letter in response to Beams's July 8 article: <http://www.wsws.org/articles/1999/jul1999/lett-j28.shtml>

3. Beams's reply: <http://www.wsws.org/articles/1999/jul1999/eco-j28.shtml>

4. A letter from IM on the impact of growing labour productivity: <http://www.wsws.org/articles/1999/aug1999/cor2-a20.shtml>

5. Beams's reply: <http://www.wsws.org/articles/1999/aug1999/corr-a20.shtml>

Dear IM,

Thank you for your e-mail responding to my explanation of the way in which increasing labour productivity tends to bring about a reduction in the rate of profit and a crisis in the process of surplus value accumulation—the driving force of capitalist production.

As your calculations demonstrate, an increase in the productivity of labour will bring about an increase in the quantity of output, which constitutes the surplus. This, however, is not at variance with my analysis but points to the very contradiction which I was seeking to illuminate: that the increase in labour productivity, while increasing material wealth on the one hand, produces a crisis of capital accumulation on the other.

The question which must be answered is why, in the midst of what is undoubtedly a tremendous increase in labour productivity, we find that in every country, the social position of the majority of the population is worsening. Why in the midst of a vast expansion in material wealth do we have the social disorders which characterise present-day capitalist society? In short, why in the midst of increased production of material wealth do we have increased impoverishment?

There is a contradiction between the production of material wealth and the production of surplus value. You point to this contradiction when you write that "even though the capitalist obtains a doubling of the physical surplus each period, because the value of each unit of output is reduced by one-half, the total value of the surplus does not increase."

But having, so to speak, come face to face with this contradiction, instead of grasping it, you make a retreat. "Readers can ask themselves," you write, "if this accords with their own sense of value." Let us grant that it contradicts their own sense of value, that it does not accord with their perceptions of the operations of the profit system. Does this settle the matter? Is it not the case that a scientific analysis is necessary precisely because everyday or common-sense assessments of economic and social relations cannot produce a true picture of objective reality?

What would you say, for example, to someone who questioned the scientific understanding that the earth goes round the sun, rather than vice

versa, on the basis that it did not accord with his or her own sense of reality? Or consider the more complex theories of quantum mechanics which continually contradict our sense of reality but without which modern science is impossible.

As Marx's famous aphorism put it: If essence corresponded to appearance, there would be no need for science. In the study of capitalism we are dealing with a social formation which, by the nature of its own spontaneous development—not to speak of the powerful interests which hold sway ideologically—generates appearance forms which conceal, not reveal, the underlying objective reality.

To take the most obvious example: Every capitalist knows, if he knows anything at all, that the road to increased profits is the introduction of new methods of production which reduce labour costs in the production process. The road to greater profitability lies in the elimination of labour, so how could it possibly be that labour is the sole source of surplus value and profit?

The contradiction to which you have pointed—that between the production of greater physical output (that is, material wealth) and the accumulation of surplus value—is the contradiction between the development of the productive forces and the social relations of production under capitalism based on commodity production and wage labour.

This contradiction, as Marx points out in Chapter I of *Capital*, is rooted in the cell-form of capitalism, the commodity.

A commodity is both a use value—a particular good which satisfies a definite want—and a value. Its use value is determined by its physical characteristics. Its value, as revealed in the act of exchange with another commodity, is determined by the amount of socially necessary labour time it embodies.

Consider the simplest form of the exchange relation: 1 coat = 20 yards of linen. This equation tells us that embodied in the coat and linen are equal amounts of socially necessary labour. Now suppose that the productivity of coat production doubles. Then the equation will read: 2 coats = 20 yards of linen. The value of the coat, as revealed by its exchange with the linen, has decreased.

Examining this result, Marx writes: "An increase in the quantity of use values is an increase of material wealth. With two coats two men can be clothed, with one coat only one man. Nevertheless, an increased quantity of material wealth may correspond to a simultaneous fall in the magnitude of its value. This antagonistic movement has its origin in the two-fold character of labour" (Marx, *Capital*, vol. I, p. 53).

The two-fold character of labour arises from the fact that it is both a creator of value and a creator of use values. Labour employed for one hour will yield a certain quantity of commodities. If the productivity of labour increases, then more use values will be created in one hour, but the value produced in that hour will remain the same. "However ... productive power may vary, the same labour, exercised during equal periods of time, always yields equal amounts of value. But it will yield, during equal

periods of time, different quantities of values in use; more if the productive power rise, fewer, if it fall. The same change in productive power, which increases the quantity of use-values produced by that labour, will diminish the total value of this increased quantity of use-values, provided such changes shorten the total labour-time necessary for their production; and vice versa” (ibid).

The contradiction, which Marx examines in embryonic form in the production of the commodity, reaches its full development under capitalist production in which we have production of commodities for the purpose of the extraction of surplus value.

The surplus value, which is extracted by the capitalist in the process of production, will be embodied in the accumulation of commodities. An increase in the productivity of labour will lead to production of more use values. But these commodities may well embody less surplus value than they did previously.

Before dealing with your specific question on the relationship between technology and employment, let me take up the general point you make about Marx's outlook. You write that Marx was “profoundly influenced by the time he lived in” and “did not foresee the capacity of workers to develop new products. The economy of Marx's period was dominated by agriculture and textiles. Truly novel products were rare; most technological improvements were improvements in production methods of existing goods. Thus Marx's concern that workers who lost their jobs to improved machines would be permanently unemployed was entirely sensible. Fortunately, the historical experience in the industrialized countries has been that new industries producing new products have been able to provide employment. Whether this is a natural tendency of capitalist economies or historical accident is open to debate, and I will not discuss it here. The point is that the creativity and imagination of workers have created sources of surplus value which Marx did not fully anticipate.”

The claim that Marx could not see past the immediate forms of capitalist industry existing in his day simply does not stand up. In fact one could argue the reverse: that is only today that the processes which Marx identified as being central to the development of capitalism are reaching their fruition. In other words, rather than Marx failing to anticipate the future development of capitalism, it could well be argued that only now is capitalism, so to speak, catching up to Marx.

Even Marx's fiercest opponents would not deny that there was no one who was more aware of the far-reaching dynamic of the capitalist mode of production, based on the continuous revolutionizing of the processes of production.

At the risk of belabouring the point permit me to make just a couple of citations.

Consider this passage from the Communist Manifesto: “The bourgeoisie has through its exploitation of the world market given a cosmopolitan character to production and consumption in every country. To the great chagrin of Reactionists, it has drawn from under the feet of industry the national ground on which it stood. All old-established national industries have been destroyed. They are dislodged by new industries, whose introduction becomes a life and death question for all civilised nations, by industries that no longer work up indigenous raw material, but raw material drawn from the remotest zones; industries whose products are consumed, not only at home, but in every quarter of the globe. In place of the old wants, satisfied by the productions of the country, we find new wants, requiring for their satisfaction the products of different lands and climes.”

In the *Grundrisse* Marx traces out the inherent logic in capitalist production through the development of new technology and machinery pointing to the time when “large industry has already reached a higher stage, and all the sciences have been pressed into the service of capital; and when ... the available machinery itself already provides great

capabilities. Invention then becomes a business, and the application of science to direct production itself becomes a prospect which determines and solicits it” (p. 704).

The list of such citations is almost endless.

Now to the specific issue of the relationship between technology and employment. You cite agriculture in the United States pointing out that whereas once 90 percent of the population was employed in agriculture today it is less than 5 percent.

“The evidence strongly supports Marx's contention that productivity growth results in a decline in employment. Since the amount of labour time needed to produce a bushel of wheat has plummeted over the past century, the labour value of wheat has also plummeted. Thus it may well be the case that the total labour value of US wheat output has either stagnated or declined, despite the enormous increase in production. Thus agriculture may correspond to Marx's analysis of the effect of productivity change. And yet if we look at the economy as a whole, there is little evidence to suggest that the profit rate has declined. This is because new industries have developed to exploit the labour previously employed in agriculture. Although employment in agriculture has plummeted, in both absolute and relative terms, overall employment has increased.”

Taking your example as our starting point we can formulate the question as follows: what is the effect of technological innovation upon overall employment? We have seen that in the past while labour has been reduced in particular industries—first in agriculture and now in manufacturing—overall employment has nevertheless increased. Does this not mean that this process will continue as the labour displaced from one industry is employed in new industries which arise on the basis of new technologies?

To answer these questions we need to examine the basic driving forces of the process of capitalist production. Capitalism as a social mode of production is based not on the production of material wealth as such but on the accumulation of surplus value. It will continue to expand so long as sufficient surplus value can be extracted to expand the mass of capital employed. The impact of technological innovation upon the overall level of employment must be examined from this standpoint. The question we have to answer is: what is the effect of technological innovation upon the accumulation of surplus value?

All technological innovation, which increases the productivity of labour, will result in a reduction of the mass of labour employed in relation to a given quantity of capital. That is, a smaller amount of labour will set in motion ever-larger amounts of capital.

The effect this has on the employment of labour in the economy as a whole depends on whether the increase in labour productivity resulting from new technology tends to increase or decrease the overall mass of surplus value. In the numerical example which I gave in my previous reply, I pointed out that when the productivity of labour was relatively low—that is, when the time taken by workers to reproduce the value of their labour power formed a relatively large portion of the working day—increases in productivity tended to increase the overall mass of surplus value.

Under these conditions, the mass of capital expands, further investment is undertaken, new industries are developed, the scale of production expands and the labour displaced from one industry is re-employed in the new industries. These processes operate over a relatively long period.

The history of American industry is a case in point. The vast developments in American agriculture at the end of the nineteenth century, coupled with new forms of transport—the railways and shipping—displaced millions of people from agriculture not only in the US but in Europe as well. Those displaced peasant farmers and artisans, or at least their sons and daughters, provided the labour force for the vast expansion of American industry which took place in the first decades of this century.

In the final analysis, this expansion took place because the new production technologies based on mechanisation and the use of electricity and assembly-line processes—first in food processing and then in the metal-working industries, in particular auto production—resulted in an expansion of surplus value, leading to further capital accumulation and industrial expansion.

Now we are in the midst of a further development of production technologies based on micro-electronics and computerisation. The vast increases in labour productivity have displaced millions of workers from the old assembly-line industries—in steel, auto production etc—and from the sales, service and financial apparatuses associated with them.

The following question immediately arises: on the basis of previous historical experience can we anticipate that after an initial period of “social disruption” capitalism will experience a new upswing in which the workers so displaced, or least their offspring, will enjoy rising wages and living standards from employment in new and expanding industries or are there inherent limits to the process of capitalist expansion?

The answer is to be found in the assessment of technological innovation, and the associated increase in labour productivity, upon the accumulation of surplus value. If we find that increasing productivity can bring about an increase in the mass of surplus value, then we would have to grant that a new period of upswing was possible.

But, as I pointed out in my previous reply, Marx demonstrated why, at a certain point, an increase in labour productivity must tend to diminish the accumulation of surplus value. He showed that the proportionate increase surplus value arising from a given increase in labour productivity would tend to diminish, the greater had been the previous development in labour productivity.

On the basis of this analysis, I have sought to demonstrate that technological innovation in the present period tends to bring about a decrease in the mass of surplus value precisely because of previous developments in the productivity of labour. Put simply the argument is this: when the productivity of labour is low and it takes the worker 6 hours out of every working day of 8 hours to reproduce the value of his labour power (necessary labour) and surplus labour comprises just 2 hours, capital has a vast field for expansion before it by converting necessary labour time into surplus labour through the introduction of new technology. But under conditions where necessary labour time has already been reduced to say 1 hour or even half an hour and less, then further reductions will only bring a very small increase in surplus labour.

In the first case, the proportionate increase in surplus value resulting from technological innovation will vastly outweigh the loss of surplus value arising from the displacement of workers from the production process and the overall mass of surplus value will increase, fuelling an expansion of capitalist production. In the second case, the proportionate increase in surplus value will be so small as to be outweighed by the loss of surplus value arising from the displacement of workers and the mass of surplus value will tend to decline. This means that technological innovation, rather than tending to resolve the crisis in surplus value accumulation, as it did in the past, will tend to intensify it.

The analysis I have presented has been based on the labour theory of value discovered by Marx. You write that: “While the labour theory of value is intuitively appealing, it seems to have counterintuitive implications when we think in physical terms.”

The central question, however, is the development of a scientific rather than an intuitive approach to the question. Granted, it certainly does seem at variance with “common sense” and “intuition” that the vast increase in material wealth arising from the development of labour productivity under capitalism could actually result in a decline in surplus value. But that contradictory appearance is rooted in the contradictory nature of the commodity, which is the unity of two opposed determinations, use value and value.

Our analysis of this contradiction has revealed that the social relations of capitalism, based on the commodity and the extraction of surplus value from wage labour, are such that the further development of labour productivity—the basis for the advance of civilisation—have led to the development of an irresolvable social crisis.

The task before socialists is not, as you put it to work harder for the collapse of capitalism. It is first all to reveal the origins of the social breakdown already underway in order to politically re-arm the working class with a new perspective. That perspective must be based on the scientific understanding that the social crisis it confronts in ever more malignant forms can only be resolved through the development of a political movement, the goal of which is the reconstruction of society on new foundations, in order that the vast increases in labour productivity can be utilised to meet human needs.

Yours sincerely,
Nick Beams



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