

## **Technological Change and Impoverishment\***

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The fact that the socio-economic effects of technological change depend upon the property relations within which such change occurs is obvious but often not appreciated.

Consider a simple example. Suppose on a certain area 100 labourers were engaged for harvesting the crop at a total cost of Rs.5000; but the capitalist-landlord decides to use a harvester combine instead. Then the labourers' income goes down by Rs.5000. The capitalist-landlord's wage-cost goes down by Rs.5000, which accrues therefore as an addition to his profits. But suppose the harvester combine were to be owned by a collective of the workers. Then they can earn the same Rs.5000, now no longer as labourers but as the collective owners of the harvester combine; what they would lose as wage-income they would get back as profit income from using the combine. Their total income would remain unchanged while their leisure time would have gone up and the drudgery of work for them would have gone down.

The harvester combine displaces living labour in both instances; but who owns the harvester combine makes the crucial difference to the socio-economic implications of using it. The substitution of dead labour for living labour, which such technological change entails, has the effect of impoverishing labourers when it occurs under the aegis of the capitalist-landlord; but it has the effect of liberating the labourers from the drudgery of work without impairing their income, when it occurs under the aegis of a collective of labourers, who operate under a "work-sharing, product-sharing" ethic.

The above example was of a microeconomic kind. But its conclusion holds powerfully when we adopt a macroeconomic perspective, i.e. compare technological change under capitalism with technological change under socialism, which is a system imbued in its totality with a "work-sharing, product-sharing" ethic.

Suppose labour productivity doubles through the introduction of a particular technological change within a capitalist setting. Earlier, 100 workers were employed to produce 100 units of output, of which 50 came to them as wages and 50 went to the capitalists as profits. But now only 50 workers are required to produce the same 100 units of output; the remaining 50 therefore will become unemployed. And because of this unemployment, the real wage rate of the workers who continue to remain employed cannot possibly rise as productivity rises; indeed, if anything, it will fall, but let us assume for simplicity that it remains unchanged. The doubling of labour productivity therefore will bring down the wage-bill from 50 earlier to 25, while capitalists' surplus will go up from 50 to 75.

This "shift from wages to profits" will create a problem of aggregate demand (since a larger share of wages is consumed than of profits), because of which the entire produced surplus of 75 may not get "realized". In such a case there will be a crisis of "over-production" and even the output of 100 will no longer be produced. There will therefore be even larger unemployment, i.e. additional unemployment caused by technological change will not be just 50 but even larger.

In contrast, since in a socialist economy there is no question of persons wanting to work in the prevailing conditions being unemployed involuntarily, a doubling of labour productivity will have the effect either of doubling the total output to 200 while keeping employment as before at 100 so that each worker's income doubles (this would no doubt have to occur over a certain period of time during which the stock of equipment will have to double); or of keeping the output at 100 as before while halving the labour-input of each worker, who now has a larger amount of leisure but with the same income; or of bringing about some combination of the two, i.e. some combination of larger income and larger leisure for the workers.

In one case, that of capitalism, we have technological change causing absolute impoverishment (with the income of the workers in their totality going down from 50 to 25 or even less), while in the other case the same technological change improves the condition of workers. And this happens because of the logic of the working of the two systems, not because of any particular malevolence or spite in the one case as opposed to another.

Many these days express concern over the unemployment that is likely to arise because of the automation that is occurring in production processes. Such concern is perfectly justified within the framework of capitalism; but it would be wholly misplaced under socialism. Indeed such automation constitutes a particularly powerful reason why mankind must embrace socialism; if the dire consequences of such automation are to be avoided then there is no alternative to socialism.

The logic of capitalism not only entails that technological change, which is typically labour-displacing, has the effect of causing unemployment and impoverishment for the workers, but also that such technological change occurs at a rate that cannot be controlled and is dictated entirely by competition between capitals in the market. And this has very important implications for our own economy.

We often hear political leaders and ministers exhorting the country to increase labour productivity so that it can stay competitive in the world market. They are right to the extent that under neo-liberal capitalism, where the economy is open to foreign competition, not remaining competitive can have serious consequences. But what is not mentioned by them is that the faster the rate of growth of labour productivity, the greater, for any given rate of output growth, is the scale of unemployment and poverty in the economy. If the rate of growth of the economy is, say, 8 percent, then a 7 percent rate of labour productivity growth would increase employment in the economy at the rate of 1 percent per annum, while a 5 percent rate of labour productivity growth will increase employment at the rate of 3 percent per annum.

It may be thought that if labour productivity grew rapidly then output growth rate itself would also increase, so that one need not be worried on the employment front; but there are limits to the rate of output growth anyway, and especially in an open economy whose dynamism depends upon the rate of growth of net exports. This is so because other countries are not simply going to sit back and watch their markets being taken over by one particular rapidly growing economy. They would retaliate in various ways to restrict export growth from this country and therefore its overall growth.

Hence even if the output growth rate happens to be high, this growth rate must remain within certain limits. The high rate of growth of labour productivity that typically occurs because of competition in the world market in a neo-liberal universe, often ensures therefore that the rate of growth of employment is insufficient to prevent a rise in unemployment and impoverishment.

A comparison between the experience of the Indian economy under neo-liberalism and that under dirigisme is instructive in this context. In the period of neo-liberalism while GDP growth rate is supposed to have accelerated to 7 percent per annum or beyond, the rate of growth of employment has been only 1 percent, while in the dirigiste era the GDP growth rate was almost half the neo-liberal figure, i.e. around 3.5 percent, but employment growth rate was double, i.e. 2 percent per annum.

The employment growth rate under neo-liberalism is below even the natural rate of growth of the work-force. It is of course way below the work-force growth-rate when we additionally include within it the displaced peasants and petty producers, brought to distress by the greatly accelerated pace of the process of “primitive accumulation of capital” unleashed by neo-liberalism, and looking for work outside their traditional occupations.

It is not surprising that under neo-liberalism, far from there being any tightening of the labour market, precisely the opposite has happened: the relative size of the labour reserves has expanded greatly, which has contributed towards an absolute worsening in the conditions of life not only of those who directly belong to the labour reserves, but even of those who belong to the active army of labour but whose bargaining strength is diminished by the burgeoning labour reserves.

The galloping increase in inequality in income and wealth in the neo-liberal era, which is an absolutely undeniable fact, is the direct result of this. And so is the growing absolute “poverty”, which the government assiduously denies, but which is equally incontestable even when “poverty” is defined by the government’s own criterion, of using a nutritional norm.

The reason for the difference between the dirigiste and neo-liberal periods in this respect arises because during the former period there were certain restrictions on the rate of technological-cum-structural change, as indeed upon the magnitude of the price-crashes to which the bulk of the peasantry was subjected (which are an important cause of its present debt and impoverishment). An obvious example of the former was the reservation for “handlooms”; and an obvious instance of the latter was the insulation of domestic farm prices from the wildly-fluctuating world market prices, through tariffs, quantitative trade restrictions, foodgrain procurement by FCI, and market intervention by various commodity boards in the case of commercial crops.

Neo-liberalism removes all these restraints and restores the “spontaneity” of capitalism, including in the matter of introducing technological change. Little wonder then that the prospect that capitalism is forever open to, of technological change giving rise to growing relative labour reserves, and hence impoverishment, has manifested itself in our economy.

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