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Technology and Employment in an Open Underdeveloped Economy

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Abstract

The process of trade and financial liberalisation under a capitalist economy, which links the pace of technological and structural change to that of the advanced capitalist world, must necessarily lead to increase in unemployment, a constant wage rate at subsistence and increase in absolute poverty for a larger section of the work-force. This trend is further strengthened by the demand pattern of the classes whose income shares increase in this scenario. A socialist economy, in comparison, can opt for an alternative trajectory of development through control over the pace of technological change, brought about through trade and capital controls.

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Capitalism, employment, technological change, labour productivity, wages, development, socialist economy

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Technology and Employment in an Open Underdeveloped Economy[1]

Prabhat Patnaik

Nicholas Kaldor, the Cambridge economist, had used the term "stylized facts" to refer to certain factual generalizations which can be made in any particular context, and which are broadly correct if we ignore the minutiae. Let me accordingly begin with certain "stylized facts" about our current context. First, China and India have been witnessing rates of growth of GDP, as conventionally defined, which are much higher than those prevailing either in the first world or in the rest of the third world. Secondly, in both these economies this high growth phase has been associated with "opening up" to international trade. Thirdly, in both these economies there has been, precisely during this period, a remarkable increase in income inequalities. And fourthly, in the case of both countries, the rate of employment growth has been much lower in absolute terms in this phase of high output growth than was the case when the rate of output growth was lower. In the case of China this is partly explained by the fact that in the pre-"reform" period she avoided having any open unemployment, in keeping with the prevailing practice in socialist economies; so, comparisons between pre- and post-reform China in this respect are beset with conceptual difficulties. Nonetheless, what is still striking about post-reform China is that extraordinarily high rates of output growth sustained over a long period of time have still not led to the exhaustion of her labour reserves, or even to any noticeable tightening of the labour market. The absence of any significant impact of growth on employment therefore appears to be a phenomenon common to both these economies.

Normally, each of these "stylized facts" is seen separately, as dissociated from the others. Indeed it is this separation which makes possible such ideas as "the trickle down effect", "liberalization with a human face", and "we-need-still-higher-growth-rates-to-overcome-unemployment". I propose to argue instead that these "stylized facts" are inter-related, that they are causally interlinked, *and therefore constitute one integrated totality*. I shall present this argument analytically, that is, in terms of certain inherent tendencies of an open underdeveloped economy with vast labour reserves. I shall first focus on a *capitalist* underdeveloped economy; the possible implications of the difference between *socialist* and *capitalist* third world economies will be taken up subsequently.

I

Technological progress, in the sense of the introduction of new processes and new products, occurs initially in the metropolitan capitalist countries and is then transmitted to the third world. Since the tastes and preferences of the third world "elite" are strongly influenced by those in the metropolis, new products get adopted fairly soon in the third world economies, once the barriers to their entry into such economies are removed. New products necessarily come with new processes; but even when new processes are introduced for the production of some existing products, the outcome of a new process is rarely identical with the pre-existing product, because of which the distinction between new processes and new products is, to an extent, arbitrary. But even if we can think of a *pure* process innovation, it too typically gets introduced first in the metropolitan capitalist countries; if the third world countries are open to international trade and are not insulated from foreign competition, then the new process soon makes an appearance in the third world economies as well. *Thus technological progress, no matter of what sort, occurring in the metropolis, makes its way to open third world economies after a fairly short time lag*.

Technological progress in the metropolis, however, takes the form predominantly of an increase in labour productivity, whether at a given capital-output ratio as claimed by neo-classical growth theory or at a rising capital-output ratio as suggested by Marx. The fact of its being transmitted rapidly to the third world entails a correspondingly rapid increase in labour productivity within the "modern sector" of open third world economies.

There is also an additional factor at work. The so-called "modern sector" which experiences rates of labour productivity growth comparable to the metropolis, also increases over time its relative weight within the third world economies, if the share of the "elite" in total income increases. To be sure, even if this share remains constant, traditional technology keeps getting replaced over time, i.e. the "modern" sector's weight increases over time, but this process gets a boost if the share of "elite" income in total increases.

All this has two important implications. First, once an underdeveloped economy has undertaken "trade liberalization", it ceases to have any control over the rate of labour productivity growth within its frontiers. The rate of growth of labour productivity appears, for all practical purposes, as an exogenously-determined variable in open underdeveloped economies. Secondly, the rate of growth of labour productivity is likely to be higher after the "opening up" of such economies than before, for the simple reason that a *dirigiste* economy takes steps to defend employment in traditional activities, by putting curbs on technological and structural change, while the rolling back of *dirigisme,* which is what "opening up" entails, makes any such defence of employment impossible. The rate of growth of labour productivity therefore increases noticeably after trade liberalization.

Now let us see what happens to the growth rates of GDP in these economies. The GDP being identically equal to the sum of three components, namely, private expenditure on consumption and investment, government expenditure, and the current account surplus on balance of payments[2], the determinants of its growth can be analyzed by looking at how these expenditure items behave. Let us assume to start with that income distribution within the economy is given, and that the consumption-GDP ratio, the tax-GDP ratio, and the import-GDP ratio remain constant over time in the open underdeveloped economy (they may be different from what they were during the *dirigiste* phase, but that does not concern us here) and that the government is constrained to maintain the ratio of its fiscal deficit to GDP at a low and constant level, in keeping with the caprices of globalized finance. Since the magnitude of private investment is itself determined by the growth of GDP, it follows that the *independent variable* which determines the growth rate of GDP is the growth rate of exports[3].

Now, suppose there were only two economies in the world, the "metropolis" and the "third world". Then the rate of growth of exports from the latter would depend essentially upon the rate of growth of demand from the former. And if the commodities produced by the two were distinct, then the third world's export growth would depend upon the growth rate of the metropolis' demand *for those particular commodities* which are produced by it, and this demand would not be particularly responsive to the prices of these commodities. In fact however there is an activity overlap between the two worlds, so that relative competitiveness does matter for the third world's export growth.

There are however strict limits to the diffusion of activities from the metropolis: even if at any point of time there is an activity overlap (the *particular* activities where there is an overlap may keep shifting over time as technological change occurs, but an old "overlap fringe" will be replaced by a new "overlap fringe"), the activities open to the third world are always limited.

Within the "overlap fringe" the market share of the third world will depend upon its competitiveness, a possible measure of which is the relative dollar wage per efficiency unit of labour. But since the "fringe" itself is limited, for any given rate of growth of world trade, the third world's share in total world trade will flatten out beyond a point even as its relative dollar wage per efficiency unit of labour keeps declining. It follows then that the rate of growth of exports from the third world would be the same as the rate of growth of world trade for any *given* relative dollar wage per efficiency unit of labour. If the latter keeps declining, it would exceed the rate of growth of world trade by a small margin transitionally, but will eventually approximate the rate of growth of world trade. Thus, for any given configuration of real wage and labour productivity in the metropolis and the third world, and any given rate of growth of world trade, there is a certain rate of growth of its exports, and hence a certain rate of GDP growth.

So far we have talked of the third world as if it consisted of a single entity. In fact it consists of several economies which compete fiercely against one another for capturing the metropolis' market. While such competition will tend to equalize the relative dollar wage per efficiency unit of labour across these economies (the mechanism for such equalization would be exchange rate depreciations in the less competitive economies, accompanied by non-compensation of workers for real wage loss), differences will persist in practice, allowing some third world economies to do better than the others. But the fact of some countries thus stealing a march over other similarly-placed countries can arise only if the latter are acquiescent in accommodating the exports from the former. Thus the rate of growth of exports from an open underdeveloped economy depends upon the rate of growth of world trade and the extent to which its exports are accommodated by others, over neither of which it has any control.

It follows then that even the rate of GDP growth in an open underdeveloped economy is largely determined by factors upon which it has little control, and hence can be taken as being exogenously-determined. This does not mean that the country can do nothing to boost its growth rate, but the degree to which its efforts bear fruit is dependent on factors outside its control.

The rate of growth of labour demand is merely the difference between the rate of growth of GDP and the rate of growth of labour productivity. If at any given level of income distribution both these elements are determined by factors over which the country itself has little control, then the rate of growth of labour demand too becomes an exogenously-determined variable. If the rate of growth of labour demand so determined falls short of the rate of growth of the workforce, then the unemployment rate in the economy will increase; and in the opposite case, it will decline. But the basic point is this: *in an open underdeveloped economy, the unemployment situation evolves spontaneously; it is outside any control by the State*. This fact has important implications.

II

If the exogenously-determined rate of growth of labour demand (for any particular income distribution) equals or falls short of the rate of growth of the workforce, then the labour reserves in the economy, instead of getting depleted, grow at least at the same rate as the workforce; or putting it differently, the ratio of the reserve army of labour to the active army does not fall. The real wages therefore remain more or less pegged to the subsistence level, defined not as a biologically-determined level but as the level that prevails by convention. In such a case, notwithstanding the high rate of GDP growth and the high rate of growth of labour productivity, the bulk of the working population remains tied to the subsistence level. The working population gets squeezed in two ways: through declining job opportunities and through stagnant real wages at the subsistence level.

We thus have a peculiar "trap" here. If the exogenously determined rate of growth of labour demand (at the base income distribution) exceeds a certain threshold level (given by the rate of growth of the workforce), then the reserve army shrinks relative to the active army and real wages increase, improving the condition of the workers through both these avenues. If on the other hand this exogenously-determined rate of growth of labour demand falls below the threshold rate, then the relative size of the reserve army increases and real wages remain tied to the subsistence level. The working population loses on both counts and the relative magnitude of absolute poverty increases over time.

Now, it may be thought that if real wages remain constant while labour productivity keeps increasing, then the unit labour cost of the economy would be falling, which, by making it more competitive internationally, would raise its rate of growth of exports and hence its rate of GDP growth. This would raise the rate of growth of labour demand in this economy and thereby get it out of the "trap" mentioned earlier.

But this argument is untenable. If other open underdeveloped economies are similarly placed, then the unit labour costs in all of them would be declining similarly over time. The question of any one of them stealing a march over the others and experiencing a higher rate of growth of exports at the expense of the others does not therefore arise. As for declining unit labour costs in all of them leading to a higher rate of growth of exports for all of them at the expense of producers in the metropolis, we have already seen that the effect of declining relative dollar wage per efficiency unit of labour is a limited one.

The "trap" is thus a real trap; its effectiveness arises precisely because it applies to *every* open underdeveloped economy with labour reserves. No single third world economy can hope to get out of it as long as others are stuck in it, since competition from the others will always pull it down. The only hope for each of them is if all of them experience such high rates of growth of labour demand that their labour reserves begin to get depleted. But the rate of growth of the world economy does not permit this.

The fact that it does not is not a mere accident. The period of liberalization is marked by the hegemony of international finance capital, which alters the nature of the capitalist State, prevents the adoption of Keynesian demand management policies in every capitalist economy, except the leading one, and imposes policies of deflation of expenditure, especially of State expenditure, everywhere. It thereby also lowers the rate of growth of the world economy. Keynes in his *General Theory* had asked for the "euthanasia of the rentier" as a means of ensuring high levels of activity and employment under capitalism. But the rise to hegemony of international finance capital, as a result of the immanent tendencies of capitalism itself, has brought about the "euthanasia of Keynesianism", because of which the levels of activity, employment and growth in the capitalist world have come down compared to the period of the so-called "Golden Age of capitalism" when Keynesian policies were in vogue. The possibility of the depletion of third world labour reserves under the "neo-liberal" regime therefore is non-existent in this context; while on the other hand it is only this context which imposes the "neo-liberal" regime on the third world. *Thus the very conditions that force an "opening up" of third world economies also prevent a using up of their labour reserves.*

III

If real wages remain unchanged while labour productivity increases over time, then the surplus produced per worker within the third world economy keeps increasing, and so does the surplus as a proportion of GDP. If State expenditure as a proportion of GDP does not increase (in fact neo-liberal regimes bring about a *reduction* in State expenditure as a proportion of GDP in deference to the caprices of finance capital), then there must either be an increase in the GDP of the share of capitalists' consumption, private investment and net foreign lending taken together, or a realization crisis. Such a crisis, even if we ignore its second-order effects, must entail a reduction in capacity utilization *and a further fall in the rate of growth of labour demand* (both of which will only be compounded by the second-order effects causing a downswing).

Now, net lending abroad, though sizeable in the case of China, cannot be considered a significant avenue for the absorption of the surplus. And even though the Indian economy has been a demand-constrained system with very low rates of growth of labour demand, the fact that the GDP growth rates, as conventionally measured, have been quite high, suggests the absence of any acute realization crisis. (The absence of a realization problem is even truer of China). This confronts us with the familiar question raised by Baran and Sweezy (1966): how has the increasing surplus been realized? In China's case the answer may lie partly in the high rates of investment and these have been possible because her economy is not capitalist. But this answer cannot hold for the Indian economy. Not only has the investment ratio refused stubbornly to register any increase, but it has even declined relative to what it was on the eve of liberalization. Besides, increasing investment as a means of absorbing a rising share of surplus in output is an altogether unrealistic proposition under capitalism, even though this had been the scenario visualized by the Russain economist Tugan-Baranovsky[4].

He had claimed, in conformity with the views of J.B.Say and David Ricardo that capitalism could never be afflicted by any generalized over-production, since all surplus in the hands of the capitalists in excess of what they consumed was invested. To the argument that such investment would only worsen the problem in the next period, since the amount of surplus seeking investment would be even larger, not just in absolute terms but even relative to GDP, Tugan's answer was that this too would be invested. Amounting to postulating "production for production's sake", this view stretched to the extreme and to the point of caricature a genuine insight into capitalism, namely that this system is not concerned with consumption as such. But this lack of concern *for consumption as such* should not be confused with a lack of concern on the part of capitalists with *demand prospects altogether* in deciding on their investment plans. Tugan however perpetrated this confusion, as Ricardo had done earlier.

In arguing that the introduction of machinery, though harmful for employment in the short run, gave rise to a higher employment profile in the long run, Ricardo had assumed that, with real wages fixed at the subsistence level, the increase in labour productivity caused by the introduction of machinery would raise the share of profits and *hence the share of savings and investment in the economy's output*. This, under unchanged technology (if we considered only a one-shot introduction of machinery), would raise the growth rate of output and hence the growth rate of employment.[5] The time-profile of employment with machinery would eventually therefore overtake the time-profile of employment without machinery. The fallacy of his argument, as with Tugan, lay in the assumption that all unconsumed surplus value was automatically invested without any concern for prospective demand.

What has prevented a realization crisis of a serious magnitude in open underdeveloped economies like India is the increase, not so much in the direct consumption of the capitalists, but in the consumption of a whole mass of persons, which includes those engaged in the business of circulation of commodities and of transactions involving finance; those engaged in providing personal services to the capitalists, skilled workers and to other persons in the service sector; those engaged in providing "professional" services to these groups; the various "hangers-on" of capitalists, of MNCs and of other representatives of metropolitan capital, and a whole new army of speculators, fixers, wheeler-dealers, middlemen and "parasites". These groups constitute the modern version of Struve's "third persons"[6] and of Adam Smith's "unproductive labourers". Their economic weight increases tremendously with the shift from *dirigisme* to a "neo-liberal" regime.

While their incomes relative to GDP increase greatly, their numbers relative to the workforce do not increase correspondingly, or indeed to any significant extent. This is to be expected, for if their relative numbers did increase, then labour reserves in the economy would actually start getting depleted, giving rise to an increase in the wage rate which would prevent a rise in the share of surplus and hence a rise in the army of such "third persons". *Thus, if their relative numbers did increase significantly, then this fact itself would have negated the very basis of their existence*. It follows that they constitute a segment of the population which is on average higher paid than the working class, or even the older sections of employees within the service sector itself. This clearly means that income distribution gets worsened in an underdeveloped economy pursuing "neo-liberal" policies: personal income distribution gets worsened because of the emergence of this class of highly-paid "parasites", and class distribution of income gets worsened when we look at surplus inclusive of these incomes.

The cause of the increase in income inequality, no matter how we define it, lies, however, not in the emergence of this class *per se*, but in the fact of an acceleration in the growth rate of labour productivity in the context of stagnant subsistence wages. This not only increases inequality *in the transition from dirigisme to neo-liberalism*, but it continues to raise inequality *during the tenure of the neo-liberal regime itself*.

The increase in inequality, in the distribution of both personal and class incomes, which we have so far considered to be the *consequence* of the increase in the relative size of the labour reserves which the "opening up" of an underdeveloped economy entails, becomes in turn an additional *cause* of this increase in labour reserves itself. This is because the increase in the rate of growth of labour productivity gets an additional boost owing to the rise in income inequalities, since the "elite" consumption demand is much more influenced by what prevails in the metropolis than the demand of other sections of the population.

The really puzzling question however is this: why does the income rise at all of the mass of "third persons" whose consumption provides the way out of a realization crisis? After all, the macroeconomic consequences of such a rise cannot constitute the reason for its occurrence; then why does it occur so conveniently, precisely at the time when the system otherwise is threatened with the prospects of a realization crisis? This question can be asked of the Baran-Sweezy argument as well in the context of advanced economies, where the answer is difficult. In the context of third world economies, by contrast, the answer is more simple, namely the "opening up" to world trade and financial movements also brings in its train an "opening up" to practices, systems and structures prevailing in the metropolis. And since metropolitan economies have over the years come to be characterized by a large and increasing category of "parasitic" incomes, emulation of these structures by the "opened up" third world economies in a fairly short time replicates the phenomenon within their own frontiers.

The argument presented so far should be contrasted with two other arguments to underscore its specificity. The first is the Samuelson-Stolper theorem of conventional trade theory (Samuelson 1970), which states that "opening up" to trade should *increase the share of wages* in an economy whose comparative advantage lies in the labour-intensive good. According to this theory, the share of wages should be *increasing* in underdeveloped economies after they have "opened up" to international trade flows, *which is the exact opposite of what is being argued here and which flies in the face of reality.* The reason for this difference lies in the obvious fact that we have avoided making such palpably untenable assumptions as full employment, an aggregate production function, and trade being governed by "comparative advantage".

The second argument is the one advanced by W. Arthur Lewis (1954), who also emphasized that the development of the third world hinged crucially on the using up of its labour reserves, which could only occur if the third world protected herself from international trade and ushered in her own agricultural and industrial revolutions by using the State as an instrument. The difference between the Lewis position and what is argued above lies in our explicit acknowledgement of the fact that imitative technological change, introduced as a consequence of "opening up", is a development-retarding factor.

IV

There is a long tradition in radical economics which argues that it is not the pace of technological change and of productivity growth per se that impinges adversely on the living conditions of the people, but the social formation within which such change occurs. Let us examine this view.

When we talked of the rate of growth of labour demand above, that referred to the demand for labour-time, not to the number of *labourers.* If we have a socialist economy with a work-sharing, product-sharing ethic, then the same number of labour hours can be distributed among a larger number of labourers, indeed among all the members of the workforce, in which case unemployment as we know it, would cease to exist. Each worker would have a larger number of labour hours to pursue his or her creative interests, free from the drudgery of work. Such freedom moreover would not entail any material deprivation, since the total output, including what otherwise accrues to the class of "third persons" and "parasites", would now be distributed among the entire workforce on some appropriate principle of equity.

An example will clarify the matter. Suppose to start with 1000 units of output are produced by 100 workers, each of whom works for 10 hours during the unit period and obtains a wage-rate of 8 units during this period; the remaining 200 units of the product are used for investment and looking after those not in the workforce. Now, if in the next unit period, both output and labour productivity increase by 10 percent (both being determined from "outside") and the workforce by 5 percent. In this new situation in a socialist economy each worker would work for 9.5 hours and obtain 8.4 units of the product (or to be precise $9 + {}^{11}/_{21}$ hours and $8 + {}^{8}/_{21}$ units respectively), which means a 5 percent increase in income and a 5 percent reduction in work for each worker. There would still be full employment and 20 percent of output would still be kept aside for investment and social expenditure.We can express this formally as follows. If the growth rate of output is denoted by *q*, of productivity by *b*, of the workforce by *n*, of the hours of work by *h*, and of the wage rate by *w*, then, assuming that the proportion set aside for investment and welfare expenditure remains unchanged (and taking continuous time) we have the following two identities:

$$h = q - b - n \quad (1); \text{ and}$$

$$w = q - n \quad (2).$$

The very fact of the right-hand side of (1) being negative, which is a "problem" in capitalist countries, can become an asset in socialist countries since in lieu of unemployment there can be greater leisure. Even so as (2) shows, the wage rate can increase at the same rate as per capita output.

The real issue however is whether an immediate end to unemployment and underemployment, such as is implicit in the "work-sharing, product-sharing ethic" is practicable, especially in an "open" underdeveloped socialist economy. In general, the more the time taken to overcome unemployment and underemployment, the greater is the danger that the contradiction between the employed and the unemployed will get ossified: if the rate of growth of labour productivity is high relative to the growth rate of output, and the size of the labour reserve and the rate of growth of the workforce are large, then even with the persistence of subsistence wages it would take a long time for the labour reserves to get used up and during this period pressure would mount for an increase in the wage rate among the employed, especially since productivity growth happens to be quite high.

The problem gets compounded in an "open" underdeveloped socialist economy, since its very "openness" to trade flows creates pressures for a similar "openness" to capital flows, which, if successful, would compromise the autonomy of the socialist State and jeopardize the existence of the system by exacerbating fissures within it. (This is in addition to the fact that “openness” makes the economy vulnerable to “international demonstration effects”, and more crucially to pressures from outside to subvert socialist values). It is instructive that the only successful examples of using up labour reserves till date are the Soviet Union and the Eastern European countries, which were not “open” and which controlled the rate of technological change and hence the rate of growth of labour productivity.

In the case of capitalist underdeveloped countries, the problem is of course far more serious since there is no question of a “work-sharing, product-sharing ethic”. Here “openness” necessarily produces a dualistic structure not just with growing *income* inequalities, but with absolute worsening of the conditions of the vast labouring mass accompanying growing affluence on the part of a small stratum consisting of the local agents of the MNCs, the speculators, the capitalists and their “hangers-on”. Since the bourgeoisie which had earlier embarked upon a process of relatively autonomous development has itself given up this path and is pursuing “neo-liberalism” instead, the idea of a “closed” capitalist system with a controlled pace of technological change has little relevance in today’s context. *The process of extricating the economy from this dualism therefore has to be a part of an alternative trajectory of development which leads towards socialism.*

But since any regime that puts in place this alternative trajectory cannot hope to realize a “work-sharing, product-sharing ethic” in the immediate future, unrestricted technological change will have to be eschewed if the recreation of dualism that undermines this alternative trajectory is to be avoided. It follows that restrictions on the rate of technological change would have to be enforced and these in turn require not of course autarky but a degree of control over trade, and complete control over financial flows.

There is a view, not just among bourgeois liberals but even in sections of the Left, that any such restrictions on free commerce and capital flows necessarily entail curbs on the democratic rights of the people. This view is unfounded. There are, no doubt, many authoritarian regimes which keep their countries hermetically sealed from the outside world; but at the same time there are numerous regimes pursuing “neo-liberal” policies which attenuate democracy in order to facilitate this pursuit. Indeed one can argue that “neo-liberalism” *necessarily* entails an attenuation of democracy in a way that relatively closed *dirigiste* regimes do not: for instance, nobody in India can possibly argue that in Nehruvian India, which saw the apogee of *dirigisme*, democracy was attenuated in comparison to the India of the “neo-liberal” 1990s. And in any case, to talk of the democratic rights of the people being ensured by a regime that produces dualism, leading to the growth of affluence at one pole and absolute poverty at the other, is sheer travesty of the truth. Democracy under all circumstances requires for its preservation the struggle of the people, and such struggles are best carried on when the people are economically empowered, something that constitutes, besides, a hallmark of democracy itself.

V

Let me summarize the argument. The "opening up" of an underdeveloped economy to trade and capital flows implies that the pace of technological and structural change within the economy gets linked to what prevails in the advanced capitalist world. This implies an increase in the rate of growth of labour productivity compared to what prevailed under *dirigisme.* At the same time, the rate of GDP growth becomes dependent upon the rate of growth of exports, which, unless the underdeveloped countries eat into each other's market share, gets linked to the rate of growth of world trade, which is essentially outside the country's control. The difference between these two rates of growth, of GDP and of labour productivity, is the rate of growth of labour demand. If this falls short of the rate of growth of the workforce, then the ratio of labour reserve to workforce increases, which means a constancy of the wage rate of workers at the subsistence level and increase in absolute poverty for a larger section of the workforce. At the same time, the rise in surplus per worker has the effect of sustaining a larger income share for a group of "parasites" and "hangers-on" of the MNCs, of international finance and of domestic capitalists. Their demand pattern, influenced by the lifestyles prevailing in the metropolis, has the effect of increasing the pace of technological change still further, thus creating a vicious circle. (The demand for FDI in retail trade is an obvious example of the manner of its working).

In a socialist economy, technological change need not result in unemployment; indeed under a "work-sharing-product-sharing ethic" it can benefit the workers through both greater leisure and higher incomes. But an "open" socialist economy may find it difficult to introduce such an "ethic". When it comes to an "open" capitalist underdeveloped economy, it certainly has little prospect of escaping the fate outlined above. Any alternative trajectory of development in such an economy must therefore involve a transition towards socialism, with control over the pace of technological change, brought about through trade and capital controls.

Notes

[1] This paper was originally delivered as the Sumitra Chishti Memorial Lecture, 2005.

[2] Since we are talking about the GDP, the current account surplus should exclude net factor payments from abroad.

[3] Kaldor (1979) emphasized the fact that in a situation where investment is determined by the growth of income itself, we have the operation of what Hicks (1950) had called the "super multiplier" and Lange (1964) the "compound multiplier" and that the overall rate of growth is determined by the rate of growth of the exogenous stimulus (exports in this case).

[4] For a discussion of Tugan-Baranovsky's views, see Luxemburg (1963) and Kalecki (1971).

[5] See Ricardo (1951) and Hicks (1967).

[6] For a discussion of Struve's views, see Luxemburg (1963).

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