Technological Change: A Critique of the Treasury View

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The impact of technological change on the level and nature of employment has stimulated much concern in Australia. The establishment of the Committee of Enquiry into Technological Change in Australia (the Myers' Committee) was the Fraser Government's means of channelling debate on this potentially explosive subject. Among the submissions presented to that Committee was one from the Federal Treasury, Technology, Growth and Jobs[1]. The submission is of substantial interest for a number of reasons - it is representative of Treasury opinion on a range of 'economic' issues; its argument is almost completely without merit; and it displays clearly how the assumptions of orthodox economics pervade the Treasury's approach to policy formulation.

TREASURY ON TECHNOLOGICAL CHANGE

This paper outlines the theoretical weaknesses in the Commonwealth Treasury's submission ("Myers" Committee), and to point out some of the implications of those weaknesses. Treasury argues a laissez-faire position, stating that unencumbered technological change will enhance efficiency, output, incomes and general community welfare (Technology Growth and Jobs, p.2.). Furthermore, "....technological change has not caused, nor is it likely to cause, unemployment in any overall and continuing sense...." (p.2.)

TREASURY'S ASSUMPTIONS

In reaching these conclusions, a number of assumptions - common to much of contemporary orthodox economic thought - are relied upon. The five most important of these are:

(i) consumer sovereignty;
(ii) that technology is somehow "neutral";
(iii) that a capitalist economy, if "left to itself", will spontaneously generate equilibrium;
(iv) that increases in profitability necessitate increases in social welfare generally; and
(v) that economic growth will continue at post-war boom levels.

(i) CONSUMER SOVEREIGNTY

Treasury places great faith in the notion that the subjective wishes of "consumers", which are presumably exogenously determined, determine the course and pace of accumulation and reproduction. Technological change is seen as just one means by which the economy adjusts itself to more ably satisfy "the wants of the community" (p.11). The chain of determination is, for the Treasury, quite clear: "as the pattern of community wants changes ... so the pattern of economic activity required to satisfy those wants changes". (p.11)

Such a view, relying on the "givenness", or exogeneity of consumer preferences, neglects the dialectical interaction between consumer tastes and demand, and between consciousness and reality. In actuality, human values are formed socially, so that the social system both conditions and responds to individual and collective preferences. Once this endogeneity is admitted, the 'sovereignty' of the consumer disappears.

This assumption has another effect. By positing as central economic actor the "consumer", or "the community", Treasury glosses over the real conflicts that exist over production and distribution. Winners and losers in a continuing and dynamic struggle are replaced by a vague "community" with a unanimous will of its own.

(ii) THE "NEUTRALITY" OF TECHNOLOGY

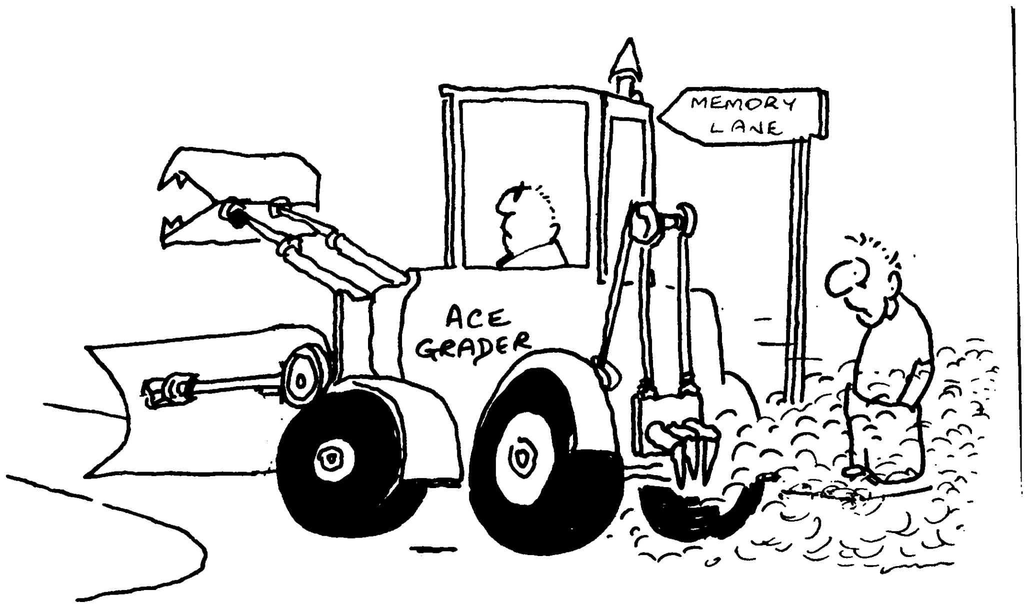
For Treasury, technology appears "neutral" in a dual sense. Firstly, it is believed that technological change will affect the various sectors of the economy in such a way as to cause no overall structural imbalances in the economy as a whole. This is related to the equilibrium assumption which will be discussed presently. In order for technological change not to produce imbalances and permanent uneven development, then a number of conditions must hold:

(a) the increased output generated by technological change must be consumed;

(b) labour displaced in one sector must be re-absorbed in another; and

(c) restrictions on technology transfer must be minimal.

The first of these conditions is a requirement for equilibrium capitalist economic growth in general, and stems from the separation in capitalist economy of production from exchange. This separation means that there is no necessary equation of supply and demand, and that technological change that increases total output cannot guarantee the sale of that output. Even if unit prices are reduced consequent upon the innovations in production, the level and structure of demand (which are functions of a whole host of other, often unquantifiable, and generally unpredictable factors) cannot be assumed to adjust to swallow up all of the increased volume of commodities. Indeed, it is more likely that any initial change may stimulate disequilibrating tendencies rather than the reverse (e.g. an overproduction may lead to the sacking of workers, the raising of prices by monopolies to maintain profits, and the



spreading of these tendencies throughout industry). If we divide the economy into producer goods industries and consumer goods industries, a technological change causing an overproduction of consumer goods may be translated, via drops in demand, into a decreased need for producer goods. This will, ceteris paribus cause overproduction in producer goods industries. Increases in output following technological changes may cause serious problems, whether they be throughout industry as a whole or (as is more likely) in some particular sections of industry in relation to others.

Re-employment of sacked workers also does not follow automatically from technological change. This depends on changes in the nature and level of demand, as well as on capitalists' expectations, wage levels, worker militancy, the extent of labour-displacement in other industries etc. Further, a decline in employment may produce a decline in demand for consumer goods, so that any initial retrenchment of labour may be productive of further retrenchments.

The presumed mobility of technology is also suspect. If research and development is largely concentrated in large corporations, and the products of such R and D remain with those corporations almost exclusively (through the patent system, prohibitive costs of development, cartel arrangements etc.) it is likely that technological change may result in a further concentration and centralisation of production. Large corporations could use their innovations to drive smaller competitors from the market, thus gaining increased economic and political leverage. This would further aggravate inflationary pressures by increasing such firms' ability to increase prices even when faced with falling demand. Indeed, some writers (e.g. Mandel) have argued that "technological rent" is rapidly becoming the main source of monopoly profits. Such eventualities would tend to make a mockery of the "neutrality" of technological change.

There is thus no guarantee that technological change will be "neutral" in the sense of neither producing nor aggravating structural imbalances within the economy. This is not to say that technological change necessarily creates such imbalances, but rather to admit that the smooth introduction of such change cannot be assumed as in the Treasury position.

There is a second sense in which Treasury assumes the "neutrality" of technology - that its impact is independent of the character of the prevailing socio-economic system. In the Australian context, we are confronted with capitalist technological change. Such technology is introduced under the whip of competition with the aim of increasing (privately appropriated) profits. Such technology is introduced to:

(a) increase productivity and output; and/or
(b) decrease unit costs; and/or
(c) increase management control over the work process.

Such technology may decrease the amount of living labour required to produce a given output, increase the speed of workers' labour, extend the division of labour and de-skill many occupations. Far from being a neutral, technical factor of production, capitalist technology is a necessary weapon in the battle between capitalist and capitalist, on the one hand, and capitalist and worker, on the other. In class societies, technology selected by one class cannot fail to be a weapon in the conflicts among the classes.

(iii) THE "EQUILIBRATING" TENDENCIES OF CAPITALIST ECONOMIES

Treasury constantly refers to: "...the tendency of the adjustment mechanisms inherent in the economy to work toward equilibrium ..." (p.19) "...the inherent tendency of the adjustment mechanisms, if allowed to operate, to work toward equilibrium in factor markets..."

(p.4); "...the adjustment mechanisms inherent in the economy (that) tend to bring about the equality of supply and demand" (P.27) etc.

Treasury's third major assumption is explicitly argued [5] with reference to the hypothetical introduction of a "technological improvement" into an equilibrium situation (p.26). Treasury traces through the effects of such a change, producing two scenarios: either demand will not absorb increased output, or it will. In either case, it is argued that the economy's "adjustment mechanisms" will restore equilibrium. The logic of Treasury's first scenario rests on the following assumptions:

- that equilibrium existed at the outset
- that price competition exists in the industry concerned
- that wages are flexible upwards and downwards
- that labour is highly mobile
- that capitalists' expectations are totally positive
- that initial decreases in employment are not cumulative
- that employers will hire more workers rather than replace them with machines
- that a significant proportion of increased real wages is not saved
- that a significant proportion of increased profit is neither saved, sent abroad, nor spent on imports.
- that increases in demand are met by increasing the scale of production rather than by running down stocks, speeding up existing facilities, or increasing prices to raise profits.

If these conditions do not hold (and it would be a brave person who would argue that they have held in Australia for at least the last five years), then there can be no guarantee of a restoration of equilibrium consequent upon a major "technological improvement".

Treasury's second scenario relies on similar assumptions, as well as mobility of technology and the overlooking of predatory and monopoly behaviour by the innovating firms.

Treasury presents a model with a number of "simplifying assumptions", and then argues that the relaxation of the assumptions "leads to qualification rather than invalidation of results" (p.21). We are presented however, with a fictional world without substantial monopoly, without uncertainty, without the availability of widespread labour-replacing technology, without savings, without price-hikes, without substantial foreign ownership and foreign trade, without predatory corporate behaviour etc. In fact, the relaxation of the assumptions destroys, rather than qualifies, the expected outcome of the analysis.

(iv) INCREASES IN PROFITABILITY AND INCREASES IN WELFARE

Another key assumption is that of the equation of profitability with general social well-being; in each case the decisions of the businessmen, industry associations and specialised private and public agencies involved guided by appropriate economic signals, are likely to be a more reliable means of ensuring that the most efficient technological decisions are made than centralised and generalised forecasts, judgements or (or what it boils down to) ad hoc decisions by governments and/or the bureaucrats who advise them (p.3).

What is disturbing about this assumption is that it is not qualified in any way by reference to historical reality. We are not told that given certain circumstances (e.g. rapid economic growth, cheap raw materials, abundant markets or whatever) high profitability will most likely generate high overall incomes, better standards of health care and education, improved housing and recreational facilities etc. for the majority of the people. On the contrary, we are asked to believe that high profitability itself generates these things. A few references to the history of western capitalism should suffice to show that increased profitability does not of itself increase social welfare. Three examples shall be cited.

The first is the period of the genesis of the capitalist mode of production itself in Western Europe in the 15th, 16th and 17th centuries. During this period, a combination of the Enclosure Acts, the Poor Laws, State-guaranteed foreign trade monopolies, and falls in the price of gold (consequent upon the exploitation of the colonies and resulting in reduced real wages) saw the growth of capitalist agriculture, giving huge profits to (especially English) farmers hiring wage labour.[2] These same developments, however, saw "... the agricultural people, first forcibly expropriated from the soil, driven from their homes, turned into vagabonds, and then whipped, branded, tortured by laws grotesquely terrible, into the discripline necessary for the wage system."[3] The increased profitability of capitalist farmers (and, later, of industrial capitalists) derived from, and for a period reproduced, the poverty of the labouring population.

The second example showing the lack of a necessary correspondence between profitability and social welfare is that of Brazil since the military coup of 1964.[4] Brazil's rapid economic growth (9 per cent per annum in the period of the "economic miracle" - 1969-73) has been presented (along with Korea's) as a model for Third World Development. The military has concentrated on attracting transnational capital to the country to take advantage of cheap raw materials, cheap labour, and low taxation. The junta's labour laws "provide that (trade) union funds be used for social services and not for strikes; that there should be only one union per occupation and geographical area; that unions should be controlled through the Ministry of Labour and network of State selected and trained union leaders ..."[5] From 1966 to 1972, the real income of managers and executives rose by 7.2 per cent, whereas that of unskilled workers (the majority of the population) actually declined by 1.3 per cent. In the largest industrial city, Sao Paulo, the real minimum wage fell by 16 per cent between 1966 and 1974, and only 60 per cent of workers even receive the minimum wage. This has been a deliberate policy decision of the junta. Two-thirds of the income of the poor must be spent on food, and over recent years food prices have increased at about 85 per cent per annum. Despite rapid growth and high profits at the top end of the scale, the majority of workers have found their living standards actually declining.

Thirdly, consider Australia from 1975 to the present. Over this period, the profit share of national income increased by over 3 per cent, the wages share correspondingly declined. Between 1975-6 and 1979-80 real wages declined by 0.4 per cent, and unemployment increased from 269,100 to 426,700.[6] Profit increases for the (especially monopoly) capitalist class have been at the cost of the real incomes of workers.

Indeed, one need only look at the structure of capitalist society, with the conflicts inherent in that structure, to realise that increased profitability in certain spheres of industry, or in industry generally, need not generate increases in overall living standards. Competition among various capitals, necessitates a differential spread of profitability between sectors depending on capital-labour ratios, timing of technique changes, barriers to capital migration, ferocity of capital/labour conflict etc. Further, the opposition of interests between workers and employers over wages, conditions and control over the work process ensures that the gains of one class are at the expense of those of the others, rather than complementary to them. Only if labour continues to struggle for a share of the increased profits will some of those increases percolate downwards in the form of increases in wages or improvements in conditions. And indeed, as the countries of Asia and Latin America show, the more internationalised the capitalist economy becomes, the less the capitalist class will need domestic demand to maintain profits, and the more it will fight for reduced worker incomes.

(v) NO REDUCTION IN LONG-RUN GROWTH

Both explicit and implicit in Technology Growth and Jobs is the assumption that "economic growth" has only been temporarily curtailed by the current turn of events, and that, given the right circumstances (which, for Treasury, generally means a reduction in the wages share of national income), such growth would sprout forth unbounded yet again. Treasury's assertions that employment - destroying changes in some sectors will be met by growth in demand for workers in others, that "the economy" adjusts after a traumatic (exogenous) disturbance until "overall levels of profitability have been restored" (p.25), that the post-war boom was not just "an accident of history" (p.26), and that it is possible (even though "slow and painful" (p.26) to put Australia "back on the right path" after having been "driven off course earlier in the decade", (p.26) are all based on the presumption of a continued ability of Australian industry to grow at 1945-70 levels.

It is probable that the record economic stability and growth in the 1945-1970 period was the result of a certain combination of factors, <u>the incidence of which were historically specific</u>. These factors have been explained in detail elsewhere, and it is sufficient to list them here. Significant international factors include:

- the rebuilding of Western Europe after World War Two relying on disciplined labour and latest technology;
- the strength of the American economy due to its war effort, high pre-war protection, freedom from physical destruction and release of stored up consumer demand after the war;
- the hegemony of the U.S. dollar as international currency, supported by international organisations (e.g. GATT, IMF, World Bank) formed to promote international trade, and facilitated by the Bretton Woods Agreement and dollar-gold convertibility;
- intensive exploitation of "Third World" countries using cheap labour, power and raw materials
- a successful intervention by the State in advanced capitalist countries to counter cyclical fluctuations and defuse the class struggle;
- the rapid expansion of credit to maintain sales of commodities;
- the Cold War, which stimulated demand via military spending and acted as an ideological weapon against worker militancy.

These were combined with a number of Australian factors, including

- large-scale immigration of cheap docile labour,
- the growth of manufacturing behind high protection;
- the existence of ready markets for rural and mineral exports
- the extension of Cold War ideology beyond its life in the main capitalist powers.

These conditions helped secure fairly stable economic growth in the 25 years after the War, although recessions of a minor nature still occurred at about 5-yearly intervals.[8]

The last decade, however, has seen many changes that may have shaken the ability of the international or Australian capitalist economy to grow at such high rates. At an international level, such changes include

- the collapse of the U.S. dollar as link-pin of international trade and investment;
- the collapse of the U.S. economy and the spreading of its inflation internationally via transnational corporations and export pricing;
- the emergence of rival centres of economic power including West Europe and Japan;
- the international synchronisation of industrial, credit and "political" fluctuations;
- the loss of control of individual States over deomestic economic activity;

- the evaporation of some sources of cheap raw materials;
- the strengthening of barriers to free trade;
- the re-awakening of working class movements;
- the increased monopolisation of capital with the consequence of rising prices even in periods of falling demand;
- the squeezing of much competitive capital by monopoly capital on the one hand and organised labour on the other;
- and the widespread automation of many production units.

In Australia, key changes have included:

- re-direction of capital away from the rural sector and some sectors of manufacturing towards mining and finance;
- an increased foreign ownership, and concentration, of sectors of Australian capital;
- the emergence in South East Asia of strong competition for manufactures;
- a decline in population growth;
- an increase in capital intensity in many of the growth industries (e.g. mining, finance);
- a resurgence of worker militancy coupled with a strong and fairly inflexible set of wage relativity conventions;
- an increasing tendency for females to enter the workforce;
- growing conflict between various levels of the State as different 'fractions' of capital fight for access to favourable Government policy.

All of these changes indicate that the environment into which technological change is now being introduced is a significantly different one, with much greater instability than that of the post-war boom period. This does not of course mean that economic growth <u>will</u> not occur at reasonable levels, but merely that conclusions resting on an <u>assumption</u> of such growth rates need a great deal of justification - justification not provided by the Treasury.

<u>THE IMPLICATIONS OF TREASURY'S ASSUMPTIONS</u>

The first point that should be made is that the location of the focus of decision making in a capitalist society on individual consumers, or simple aggregations of consumers ("society" or "the community") precludes analyses of the dynamics of the society based on conflicting interest and power groups. Class relations are automatically excluded, as are the loci of power, from examination.

Secondly, the treatment of technology as a neutral, technical factor of production abstracts from the real nature of capitalist technological change. Such change is a response to, and is generative of competition and conflict among capitalists, and between capitalists and workers. The aim, of course, is profitability, rather than community welfare or maximising consumer satisfaction.

The use of the assumption that a capitalist economy will adjust to equilibrium after an initial disturbance is one that relies on so many other (unreal) assumptions as to make such an equilibrating tendency practically ineffectual in real capitalist life. Indeed, and in combination with the other unrealistic assumptions, it obscures the dynamic conflicts which generate disequilibrating forces within capitalist economies.

By assuming that profitability can be equated with social welfare, Treasury has painted the picture of a capitalist economy with no struggle between capital and labour over the division of the social product. It is thus impossible, using Treasury's framework, to conceive of a rise in general profitability with a simultaneous fall in living standards of workers. History, however, shows that such opposite movements can, and do, occur.

Finally, Treasury fails to analyse the particularities of the post war boom and assumes that such growth is just, in Treasury's case, a 'real wage cut away'. This standpoint neglects the numerous and quite basic changes that have taken place internationally and domestically since the mid-sixties. The use of this device allows the Treasury to present continued, and even intensified, technological change as a mere extension of facets of the boom period, where such change was seldom questioned. This is a powerful ideological device which can be used against those who wish to question the direction of such change.

Overall, we are presented with an a-historical approach to technological change which abstracts from, and obscures, the underlying conflicts which provide the dynamic forces of Australian capitalism. The world into which Treasury introduces its technology is a fiction - a world in which there is no point in workers challenging such technology because it must necessarily be introduced in everybody's interests. The technological change in the Treasury's submission does not de-skill, does not routinise work, does not create lasting unemployment and does not aggravate existing income and wealth inequalities. As such it has none of the qualities that are currently observable in contemporary Australian society. The society presented by the Treasury does not have conflict, foreign ownership, monopoly, immobility of capital, barriers to technology transfer, nor predatory corporations. Neither has this society any real-world history.

In general, the Treasury submission is an extra-ordinarily simplistic document. The tragedy is that such nonsense has to be taken seriously because of the central role of the Treasury in the direction of economic policy in Australia.

FOOTNOTES:

1. Department of the Treasury, Technology, Growth and Jobs, Treasury Economic Paper No. 7, A.G.P.S. Canberra, 1979.

2. K. Marx, Capital, Vol. 1, pp. 671-695.

3. Marx, op.cit., p.688

4. R. Ireland, "Brazil Facing the Eighties", Current Affairs Bulletin, 57,3, August 1980.

5. Ireland, op.cit., p.26.

6. Budget Speech 1980-81, p.12, p.18.

7. M. Breazniak & J. Collins, "The Australian Crisis from Boom to Bust", Journal of Australian Political Economy, No.1, October 1977; K. Rowley, "The End of the Long Boom", Intervention, No.6, June 1976; K. Windshuttle, Unemployment, Penguin, Melbourne, 1980; E. Mandel, Late Capitalistm, Verso, London, 1973.

8. B. Silver, "The Economic Cycle in Post-War Australia", Arena, No.49, 1977.