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COMMENTAIRES

A NAIVE ARGUMENT

E. F. BEACH

Over the long history of the Compensation Controversy — the economic theory of the employment effects of mechanization — there has appeared repeatedly an interesting argument which has become accepted by common agreement as « naive ». We wish to examine the naivete of the argument.

Blaug¹ states it as « . . . the naive argument that all technically displaced labor will necessarily be absorbed in the making of the machines themselves. » He notes that it is only a part of the question of the total re-absorption effects because there are additional aspects to be considered, such as the possible increased output of the final product. The argument is stated clearly by Ross² :

« As more intensive study is made of technology's impact, what has already been learned should not be forgotten. We have learned that almost every technological change is labor-saving in the sense of reducing labor requirements per unit (including the labor required to make the equipment). If this were not true, the additional investment would ordinarily not be economical . . . »

Neisser³ labelled the argument as « naive » in 1942, and it may be found in the literature both before and since.⁴

THE LONG RUN

The argument implies a long run comparative statics kind of economic theory. A comparison is made between two economies, both in long run

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¹ M. Blaug *Economic Theory in Retrospect* Irwin, 1962, p. 172.

² A.M. Ross, ed. *Unemployment and the American Economy* Wiley, 1964, p. 13.

³ H. Neisser, « Permanent' Technological Unemployment », A.E.R., March, 1942, p. 58.

⁴ J.A. Hobson, *The Evolution of Modern Capitalism* Allen & Unwin, 1st ed. 1894, Chapter XII, Section I (P. 318 of the 1926 ed.) and B.S. Kierstead, *The Theory of Economic Change* (Macmillan, Toronto, 1948).

stationary equilibrium, in one of which the machinery⁵ is installed and working, and in the other the machinery is non-existent. The rate of production of the output may be assumed to be the same in the two economies, or for this particular argument the rates can be different, because we are concerned only with the unit cost of production of the product. In this context, it would indeed appear that the argument is naive.

Consider next a comparative dynamics context, in which both economies are growing at the same rate — as measured, say by the rate of growth of the total product of the economy. In this context there would be an accumulation of capital equipment, and the measure of final product should include the increase in such equipment. If the accumulation of capital is sufficiently rapid, say through the gradual mechanization of the whole industry, it is surely possible for all of the displaced workers to be re-absorbed in the making of machinery for this industry. In that case, however, the reabsorption is in the growth aspect of the economy, and not strictly in the mechanization as such⁶.

THE SHORT RUN

In the short run there is not time for the capital equipment to wear out, and hence a comparison of the per unit costs in the two cases of stationary equilibrium entails only the depreciation allowance for the mechanized production. Thus the cost of the units produced in the first year or two cover no more than a fraction of the total cost of the machinery, and hence only a fraction of the labour cost entailed in the production of the machinery.

It is, of course, usual for the production of machinery to take but a few weeks or months, and yet last for years. The employment entailed in the production of the machinery is usually shortly before the time of installation. Thus, in considering the employment implications for a short period near the time of the installation, we have but to extend our coverage to a few weeks before and after the time of the installation to realize that there can certainly be more employment entailed in the making of the machinery than the unemployment entailed in its installation — even in a stationary context, and more so if the economy is growing⁷.

⁵ The term « machinery » may, of course, be interpreted very broadly.

⁶ This is essentially what was done by J. Robinson, *Essays in the Theory of Economic Growth* Macmillan, London, 1962, p. 108. It seems to have been the version which was labelled the « most extreme form » on p. 78 of S.D. Anderman, ed. and trans., *Trade Unions and Technological Change*, George Allen & Unwin, 1967.

⁷ On p. 98 of *Essays in the Theory of Employment* (1947), J. Robinson hints at somethings like this, but in a cautious statement, excluding those cases... « when inventions are highly capital-saving ». The footnote on this page is most interesting :

« In general, capital-using inventions require a larger amount of investment than capital-saving inventions, while the amount of investment required to restore equilibrium with the rate of interest will be greater the greater the elasticity of substitution. Thus, once more... the change most deleterious to employment in the long period is most beneficial in the short period. »

It seems difficult to escape the conclusion, therefore, that when there is technological unemployment as a result of the introduction of capital equipment, there may well be, and usually there would be, more than an equivalent amount of employment created during that general period of time in the production and installation of the equipment itself. The naivete lies in the economists who use the argument.⁸

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⁸ The list of naive economists includes the illustrious name of Karl Marx, who may have originated the argument. It is one of Marx's arguments that has escaped the sharp eyes of the neoclassical economists for over a hundred years — nay, it has been repeated by them as authoritative! See *Capital*, vol. I, Part 4, Chap. XIII, Section 6. In the Everyman ed., it is in vol. I, pp. 474, 5. »