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FISCAL MEASURES TO IMPROVE EMPLOYMENT
IN DEVELOPING COUNTRIES— A COMMENT

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1. INTRODUCTION

Professors Peacock and Shaw in their article in *Public Finance/Finances Publiques*, No.3/1971, seeks to find out which of the two fiscal incentives for increasing employment in developing countries would be preferable: (1) to give a subsidy related to employment or (2) to impose a tax on capital.

Though they don't say it so explicitly, the criterion set for adjudging which one of the two alternatives posed is to be preferred should read something like this: If the total amount of tax to be imposed on capital works out to be less than the total amount of subsidy which would have to be given on employment in order to obtain a given shift from capital to employment, then the former is to be preferred; if it is the other way round, then the employment subsidy is to be preferred to capital tax.

Using the Cobb-Douglas production function, the additional condition (i.e., in addition to the conditions implicit in the Cobb-Douglas production function), which Peacock and Shaw postulate in

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arriving at their result, is that the budget should be balanced such that if a given amount is paid by way of employment subsidy it must be matched by the same amount of tax to be raised in the form of output tax; likewise if a given amount is raised by way of capital tax it must be matched by an output subsidy involving an equivalent amount

The result arrived at is that whether the amount to be raised in capital would have to be higher or less than the amount to be paid in employment subsidy would depend upon the existing ratio of factor shares of labour and capital. According to Peacock and Shaw, the ratio of labour subsidy to capital tax turns out to be the same as the ratio of the share of labour to that of capital. In these circumstances, if the share of labour is higher than that of capital, then it should be preferable to seek the requisite shift from capital to labour through a tax on capital rather than through a subsidy on employment. Since, according to them, the labour share is likely to be higher than the capital share, developing countries should impose a capital tax than grant an employment subsidy.

According to the Peacock-Shaw formulation, as outlined above, it is virtually inevitable that the level of output declines as a "trade-off" for increased employment regardless of whether resort is made to labour subsidy or capital tax. This comes out clearly in their diagram which we reproduce below (see Diagram 1). The post-tax cum-subsidy output in both the alternatives posed, at point B, lies on a lower isoquant than the output at point A. As they themselves say, "whatever the method adopted, it will be noted that the increased

employment of labour is obtained only at the expense of a loss of output and the unemployment of capital".¹

The above result is clearly related to the self-financing assumption made by Peacock and Shaw which imposes the balanced budget constraint on the Government. Even though the budget constraint is put forth purely as a methodological device, its output implications cannot be overlooked easily. Once the balanced budget constraint is imposed, it is inevitable that the total output declines, since the previous level of output could be produced with the new factor combination ^{at} only/a higher level of total cost. Thus, although in the Peacock-Shaw formulation a formal balance is sought to be maintained between Government receipts and expenditure, there is implicit in their formulation a more important imbalance with respect to output because the budget is balanced at a lower level of output.

It is true that Peacock and Shaw speak also of keeping the total outlay of the firm constant. On the face of it, this constant outlay condition could be said to derive from the balanced budget constraint in that once it is assumed that ~~the~~ capital tax is offset by an equicost subsidy which does not distort factor prices, and that labour subsidy is offset by a tax of equal yield which too does not distort factor prices, it is almost tautological to say that the firm's outlay remains constant. Thus the outlay constraint becomes redundant when

1. See also Alan T. Peacock and G.K. Shaw, "Fiscal Policy and the Employment Problem in Less Developed Countries", OECD Employment Series, No.5/1971. The point regarding trade-off between output and employment is elaborated upon by the authors in Chapter III.

the balanced budget constraint is adhered to. As we hope to show later, however, maintaining a firm's outlay is a condition that can be secured even without insisting on a balanced budget.

The question remains, however, whether in the solution of the problem posed, namely choice between capital tax and employment subsidy it is at all essential to proceed on the basis of the above constraint

II. TRADE OFF BETWEEN OUTPUT AND EMPLOYMENT

As pointed out earlier, in the Peacock-Shaw solution there is a "trade-off" between employment and output and an increase in employment is obtained at a lower level of output. While it is perfectly true that under-developed countries with labour surplus would like to raise the level of employment as far as possible, they would, at the same time, be averse to the idea of the output falling from what is likely to be already a low level. Is it possible to achieve the same increase in employment without any accompanying fall in output? Given the employment objective, could not, for instance, the choice of the policy instrument i.e., of employment subsidy or capital tax, be determined without having to face any decline in the level of output?

Let us examine the implications of increasing employment while at the same time maintaining the same (i.e., before the proposed fiscal action) level of output. Thus, constancy of the level of output becomes a constraint. While we do not impose any additional constraint, we still follow Peacock and Shaw in that our own demonstration does envisage offsetting budget operations of the type used by them, viz., capital tax to be offset by an output subsidy and labour subsidy to be offset by an output tax without distorting factor prices. However,

the offsetting budgetary operations we envisage do not have to secure a balanced budget. This situation is demonstrated in Diagram 2.

The slope of the line AB gives the factor price ratio in the pre-tax-cum-subsidy situation. When a tax on capital is imposed, the new post-tax price ratio is given by the slope of BC. Now, since the output has to be maintained at the pre-tax level, let us draw a line DE parallel to BC and the point of tangency of DE with the isoquant QQ' provides for increased employment of labour without any fall in output. At this new factor price ratio, however, the total cost of production would have increased in the proportion of $\frac{BD}{OB}$.

Let us examine the budgetary implications of the above situation. For this purpose, the first step is to find out the amount of revenue that can be collected from the capital tax. Let us draw A'B' (parallel to AB) but intersecting DE at its point of tangency with QQ'. The amount of capital tax collected by the Government will be in the proportion of $\frac{B'D}{OB}$. The next step is to find out the amount of output subsidy which would have to be given by way of counterveiling budgetary operation for maintaining the output at the old level but at the new factor price ratio. As shown above, the total cost of production would have arisen in the proportion of $\frac{BD}{OB}$. If the Government were to make good the increase in total cost by an output subsidy, the subsidy will have to be in the proportion of $\frac{BD}{OB}$, thereby keeping the firm's outlay unchanged. It can thus be seen that while the amount of tax collected would be in the proportion of $\frac{B'D}{OB}$, the counter-veiling output subsidy would have to be in the proportion of $\frac{BD}{OB}$, thus involving a net subsidy in the proportion of $\frac{BB'}{OB}$ and a corresponding budget deficit.

If, instead of a tax on capital, the given employment target is to be reached by a labour subsidy the effects of this alternative can also be illustrated in the same diagram. The slope of the line AF gives the post-subsidy price-ratio and it is drawn parallel to DE. In order to estimate the proportionate subsidy, draw FG parallel to AB, and the subsidy will be in the proportion of $\frac{AG}{OA}$. The amount of output tax that can be collected without disturbing the level of output which, according to our constraint, must be maintained at the pre-subsidy level, will be in the proportion of $\frac{A'G}{OA}$.

Since $\frac{AG}{OA}$ and $\frac{A'G}{OA}$ are equal to $\frac{BF}{OB}$ and $\frac{B'F}{OB}$ respectively, we can also express correspondingly the labour subsidy and its counter-veiling output tax as $\frac{BF}{OB}$ and $\frac{B'F}{OB}$. Thus expressed, it can be seen that if the Government uses the instrument of capital tax or employment subsidy in order to maintain the same level of output, it would have to incur the same level of budget deficit $\frac{BB'}{OB}$ in either case.

What diagram 2 demonstrates is that in order to secure a given increase in employment, while at the same time maintaining the previous level of output, the choice of either of the two fiscal instruments, viz capital tax or employment subsidy, results in the same level of budget deficit. This result, it must be also seen, is obtained independently of what the pre-capital-tax or pre-labour subsidy factor share ratios are between labour and capital.

Thus, if the criterion for the choice of fiscal instrument were the level of budgetary deficit, which, we feel, is a far more important consideration in terms of its impact on the overall economy than the size of the budget itself, we reach a position where either of the two fiscal instruments, or even a combination of them, could be picked up without any reservation on the above score.

III. CHOICE OF THE PRODUCTION FUNCTION

The choice of the Cobb-Douglas production function, though quite crucial to the result obtained by Peacock and Shaw, is itself fraught with several questions. Its relevance to even developed countries is often questioned; in developing countries its usefulness might be even more questionable. Further, this particular production function with its implicit assumptions as to not only unit elasticity of substitution but also unit price and outlay elasticities of demand for each of the inputs seems to us to impose unduly severe limitations on the analysis of the problem posed.

Besides, Peacock and Shaw in their application of the result based on the Cobb-Douglas production function, appear to imply that the ratio of factor shares which might obtain for the economy as a whole would hold good for the various sectors, subsectors or industries, taken separately. They assume that normally the labour share would exceed that accruing to the owners of the capital. As various studies using the production function of the simple Cobb-Douglas type, but excluding any provision for evaluating technological change, have indicated, this might be true for the economy as a whole, but need not be so when disaggregated production functions are fitted to industry data. Further, available evidence, though scanty, seems to indicate that for developing countries the share of wages for the manufacturing sector as a whole is likely to be less than half of the value added.

For the Indian manufacturing sector, for instance, the average share of wages for the period 1950-64 works out to less than 50 per cent

of the value added.² When the ratio of wages in value added is estimated for 59 industries for the year 1967, it is seen that it varied from 0.90 for iron and steel (which possibly includes a large number of steel fabricating units as well) to 0.172 for petroleum refining. Industries where the ratio of wages to value added was found to be less than half accounted for 35% of the aggregate value added by all industries in that year.

IV. CONCLUSION

In the light of the above analysis it appears to us that contra to the claim of Professors Peacock and Shaw, on purely theoretical grounds the choice between capital tax and labour subsidy with a view to promoting employment is not so clearly indicated. The choice appears to us to be still an open one. Depending upon the particular circumstances obtaining in a country and within a country depending upon the circumstances within a sector/subsector/industry, the actual choice may well be made in favour of one or the other fiscal tool or even a certain combination of the two.

In the light of the above findings the observation of Peacock and Shaw that in certain circumstances pragmatic reasons might well argue in favour of a capital tax is not at all difficult to accept. In this connection their reference to those economies which rely upon

2. See K. Mukerji, "Wages in Large-scale Industries and National Income, 1939-58", in N.S.R. Sastri et al. (eds.), Papers on National Income and Allied Topics, Asia, Vol.3, London 1965, and M.M. Dadi and S.R. Hashim, "An Adjusted Capital Series for Indian Manufacturing, 1946-64", in ANVESAK, December 1971.

imports of capital equipment is very apt. Also we see no quarrel with their observation that to the extent that capital items are used by all sectors of the economy, the capital tax would exert a widespread effect upon the factor mix. But we suspect that Peacock and Shaw overstate "the disadvantages and difficulties associated with labour subsidy". The one particular "insurmountable" difficulty they refer to in connection with limiting the subsidy to the marginal worker is that any such attempt "would probably be accompanied by companies going into liquidation one day and re-appearing as entirely new and renamed concerns on the next". But this really is a problem which authorities even in developing countries are quite familiar with by now in the context of various tax holiday schemes and the problem has reasonably and successfully been tackled at both legislative and administrative levels.

It might be of interest in this connection, that a number of developing countries have started experimenting with subsidising incremental labour employment. In Trinidad and Tobago, for instance, an employment allowance, effective from 1972, has been offered for incremental employment in manufacturing industries, other than those specifically excluded in the legislation. While it is too soon to assert whether or not this particular measure has been successfully implemented, the legislation seems to have taken adequate safeguards against the problems of possible abuse, particularly the one posed by Peacock and Shaw.



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