

THE EXPORT DIMENSION OF THE MAHALANOBIS MODEL*

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DURING the last two decades there has been a considerable progress in the development of 'growth models' to guide the formulation of economic plans. Their theoretical foundations have been greatly improved by increasing the number of relevant variables of growth, by refining the methods of disaggregation and sectoral approach and by systematising the transformation of analytical models into policy models. However, studies relating to the empirical validity of such models involving a scientific examination of how far the projections of the model with regard to the target variables have been accomplished are rare. This paper is an offshoot of such a study which examined the empirical validity of the celebrated Mahalanobis model which formed the basis of the Second and Third plans of India. It purports to offer a new dimension, namely the 'export sector' to the Mahalanobis model. This paper is divided into four sections: Section 1 develops the export participation rates; Section 2 highlights the revised investment pattern; Section 3 demonstrates the efficacy of the revised model; and Section 4 presents the export capacity rates.

Nearly 30% of the total investment was covered by the external resources in both the second and third five year plans.¹ This reflected in increasing deficits in the balance of payments, a typical characteristic of an 'open economy'. To counter the forces of instability inherent in an 'open economy' a strong export sector would be needed. The role of exports is only implicit in the Mahalanobis model.² The Mahalanobis Model took the following form :

$$Y_t = Y_0 \left[1 + L_0 \frac{\lambda_k \beta_k + \lambda_c \beta_c}{\lambda_k \beta_k} \left\{ (1 + \lambda_k \beta_k)^t - 1 \right\} \right]$$

where Y_0 is the initial national income, Y_t is the national income in time 't', L_0 is the initial investment rate, λ is the fraction of total investment, β is the capital output ratio and the subscripts K and C

* This is based on a doctoral dissertation completed by the former under the latter's guidance and approved for the Ph.D. degree of the Indian Institute of Science, in 1971.

¹ Planning Commission, Government of India, *Basic Statistics Relating to Indian Economy*, Dec. 1966.

² Mahalanobis, P. C., "Approach of Operations Research to Planning in India", *Sankhya*, Vol. 16, p. 25.