

Book Reviews

Relative Rates of Growth—Agriculture and Manufacturing by Ashok Rudra.
Bombay: University of Bombay, 1967. Price Rs. 8.00. p. 89.

The question of balance between the growth rates of agriculture and industry has been an important one in formulating development plans for the underdeveloped countries. In both India and Pakistan, agriculture has proved to be the lagging sector leading to a rise in the relative prices of agricultural products. That such an imbalance in the relative rates of growth cannot be continued much longer without arresting the growth rate of the industrial sector itself is almost universally recognised these days.

In the theory of planning one frequently comes across the concept of balanced growth between agriculture and industry. Various authors have emphasised different aspects of the interrelationship between agriculture and industry in defining the criteria of balanced growth. A very important theory has been propounded by W. Arthur Lewis in which the lagging agricultural production results in the shortage of foodgrains while the income generated by manufacturing keeps raising the demand for food. The result is a rise in wages and the decline in capitalists' share of national product. Although such theories are very illuminating they are by no means adequate guides for the practical planner. In formulating balanced plans for sectoral expansion one has to have some quantitative idea about the required relative rates of balanced growth of the major sectors of the economy. The present book by Dr. Ashok Rudra is an attempt at such quantification.

Relative rates of growth are defined by Rudra to be balanced if the rates of expansion in the capacities of various sectors are such that base-year relative prices are maintained, while at the same time satisfying the requirements that i) the demand for current inputs of each sector is matched by supplies made available by other sectors and ii) the demand for consumer goods arising from income generated in various sectors is met by the supplies made available by the sectors producing consumer goods. Balanced growth rates are estimated for the Indian economy for the period 1960/61 to 1970/71 with a three-sector classification of the economy—agriculture and agriculture-based industries (called

agriculture for short), other industries (called industries) and universal intermediaries, *viz.*, coal, electricity and transport (called intermediaries).

In so far as the supply of current inputs is concerned there is very little interdependence between agriculture and industry, so that from this limited point of view one can have an arbitrarily large rate of growth of industry, with agriculture growing at an arbitrarily low rate. But industrial growth generates income and a large proportion of incremental income is diverted to the purchase of food. Taking this factor into account changes the picture. Rudra uses Stone's linear expenditure system to estimate demand for consumer goods. The linear expenditure system classifies all consumer goods and services into a number of exhaustive groups and expresses the expenditure on each group as a linear function of the prices and total consumption expenditure. Thus, consumption demand for balanced growth can be projected with given base-year relative prices while the same model can be employed to determine the price implications of unbalanced growth. To give some example of balanced growth rates that Rudra obtains, we present the following table.

Balanced Growth Rates

<u>Agricultural</u>	<u>Industrial</u>	<u>Intermediaries</u>
(per cent)	(per cent)	(per cent)
2	6.6	5.2
3	7.8	6.3
4	9.0	7.4
5	10.2	8.6
6	12	10.3

Using the same model Rudra analyses the foreign-exchange and price repercussions of unbalanced growth. It is found that given a rate of industrial growth, foreign-exchange deficit decreases as agricultural growth rate rises. The price effect of unbalanced growth is analysed in complete abstraction of the effect of monetary expansion and monetary policy. While balanced-growth rates in the table indicated above would leave relative prices unchanged at the base-year level, unbalanced growth will result in a relative rise in the price of the product of the lagging sector. With a 10 per cent rate of growth for industry, the ratio of agricultural price to industrial price will change from 1.2 to 1.75 if agricultural growth rate declines from 5 per cent to 4 per cent.

Rudra finds that past experience in India corroborates his results. He also finds that the Indian Perspective Plan's growth rates of 10.5 per cent for indus-

try and 3.7 per cent for agriculture for the period 1960/61 to 1970/71 turn out to be markedly unbalanced in the light of his findings. (Compare Pakistan's Perspective Plan growth rates: 10.2 per cent for industry and 5.6 per cent for agriculture slightly unbalanced *in favour* of agriculture according to Rudra's criterion, though it is doubtful if his estimates for India are applicable to Pakistan without modification).

Rudra's work is an extremely interesting piece of analysis and, in spite of the somewhat demanding style, it keeps the reader's interest alive right to the end. One, however, hopes that the study were carried further to make it operationally more useful. It is not the intention of the reviewer to go through all the criticisms that one could make of Rudra's assumptions. Rudra himself is keenly aware of the limitations of many of his assumptions. One could, however, point out two possible lines of further development of the work. One is the level of aggregation. Rudra's agriculture is really not agriculture proper; it includes all the agriculture-based industries. But in a country like Pakistan such "industries" would cover the majority of the manufacturing output because they include cotton and jute textiles and all leather and rubber products. Planners are often interested in knowing the balanced growth rate not of this rather heterogeneous sector but of agriculture proper (or even individual agricultural sectors), given a certain rate of growth for the rest of the economy. If these agriculture-based industries are separated out, the interdependence between agriculture and industry as supplier of current inputs will no longer be unimportant.

Secondly, Rudra's is a framework in which sectors are related through deliveries of current inputs and supplies of consumption goods to meet the demand generated by income creation in other sectors. Intersectoral deliveries of capital goods are not explicitly introduced. In his highly aggregated model capital goods are supplied by only the industrial sector and he makes the demand for total capital endogenous (as a linear function of total consumption and import surplus) through the manipulation of a large number of proportionality assumptions. But the capital requirements of the capacity expansion of various sectors are not taken into account explicitly in the model. Thus, we are deprived of the interesting analysis of the question of industry (or construction) becoming a brake on agricultural expansion through its failure to provide enough tractors or dams. But this raises the much bigger question of the production possibilities in agriculture. Dr. Rudra admittedly avoids this.

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