BOOK REVIEW

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AGRICULTURAL PRICES IN A CHANGING ECONOMY – AN EMPIRICAL STUDY OF INDIAN AGRICULTURE

MUNISH ALAGH

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Review by

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This slim volume as the name suggests raises at a most opportune moment the important issue of the role of prices in coaxing up aggregate output in agriculture. The general consensus has been that while prices (variously considered as gross agricultural prices, WPI of food items, terms of trade of agricultural sector with the rest of the economy, ratio of output to purchased input prices, etc) have and do influence the output of specific crops and subsectors within the economy, they do not determine the overall output. Conceptually at least if even a significant part of the agriculture sector is carried out by profit maximizing entities, and if land can be left uncultivated or partially cultivated in relation to its potential, there is no a priori reason for such a position. However the consideration that agriculture houses vast disguised unemployment being the “residual non capitalist sector” in the sense of Arthur Lewis ("Economic Development with Unlimited Supplies of Labor,". Manchester School of Economic and Social Studies, Vol. 22, pp. 139-91, 1954), and is therefore dominated by peasant farms who maximize value added minus purchased inputs, and the profit maximizing farms entities have very small shares, then the absence of overall price responsiveness can be a priori expected. Yet if in particular areas the there is no little or no disguised unemployment and the market wages are too high to support agriculture at the national level prices then lands can be left uncultivated, especially if very fragmented holdings, and or local chauvinism, prevent the use of cheaper migrant labour. Not all scholars who have dwelt on the issue of price responsiveness have been clear. Alagh makes the argument clear, and in an open economy whence imports through the demand side can affect output , and with the increasing role of capitalist farms should at this juncture reopen the question. It now becomes an empirical issue. Already the observation that in Goa and Kerala significant amounts of land (earlier cultivated) are allowed to go fallow due to high cost of cultivation (largely due to relatively “high” market wages), means that the assumption of universal disguised unemployment would no longer be valid. Thus the book picks up a very significant issue for Indian agriculture. The hallowed ground of a near universal consensus that it is public investments, seeds and fertilisers, and irrigation, and not prices that affect aggregate output can be questioned only cautiously, and the book takes the first significant steps. It is notable not only because of the empirical analysis but also because of the discussion and the arguments that the author puts forth for a reconsideration of the problem. The latter could have been clearer if the author had not been overly reverent to the past consensus.

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To show price responsiveness through multivariate models would result in collinearity with the associated input use such as fertilisers and private irrigation; i.e. even if there is responsiveness it would be through input use. Hence as a first cut analysis Alagh has studied the area response to relative prices. He shows that during the period 1981-82 to 2001-03/03-04, the area response of the non-food grain sector has been significant to the terms of trade (TOT) of agriculture as a whole. In doing so he goes through a number of specifications – linear, log-linear and log-log models. This is the principal conclusion of the book. He estimates the same model but now over a restricted set of data to make forecasts over the last six years or so for which the TOT information is available, in the chapter on policy analysis. These forecasts are then compared to the actual realized area use in non-food grains, to show that there is agreement in terms of the upswings and downswings being able to match the data.

Prior to these analyses, the carries out a series of Chow-tests to establish that there has been change in growth rates and in the level of agricultural output from period to period. This justifies the periodization, so that that the period from 1975-80 onwards up to 2003-04 stands out as significantly different for a number of crops. While the Chow tests are meaningful on levels and on regression on other determinant variable to establish structural shifts in causation (i.e. in the parameters), the Chow tests when used to elicit significant changes in growth rates (the dependence being on time) would have to be necessarily cast on a log(of Output)-linear(on time) model specification, because the a priori is no shift in the slope (= the growth rate). With specification as above and with adjacent periods, the test while conceptually is jointly for change in the constant(log value) and the slope (growth rate), would in effect be for the latter, given the adjacent aspect of the period. It is of course better to have carried out a dummy variables specification where significant t-values for α_2 and β_2 in the model below would reveal level shifts and growth rate changes respectively (Gujarathi, Damodar (1998) *Basic Econometrics,* McGraw Hill).

$$\log(y_t) = \alpha_1 + \beta_1 \cdot t + \alpha_2 \cdot D_p + \beta_2 \cdot t \cdot D_p$$

Thus the chow tests for the exponential trend coefficient for production are enough with regard to production or output. For area since there is no a priori expectation of continuously increasing area the linear model is appropriate. For yield it is debatable what needs to be used. These are rather marginal considerations that should not take away the value of the analysis which clearly shows structural change in the growth rates for a number of crops some declining (eg. coarse cereals), and many others increasing levels (area) and yields and production. That growth rates during the latter period have differed significantly for a large number of crops and for food grains as well is firmly established. Chapter 3 as mentioned before shows that the supply response of non-foodgrains (as measured) by the acreage has been sensitive to prices during the last period. This is through a single factor model and justification for the same is in terms of prices determining other associated variables and area itself. Nevertheless use of an additional factor in the form of rainfall suggests itself, though it is an empirical issue if the small number of data points would not limit the degrees of freedom. That could possibly give robustness to the impact of the TOT.

The critique of the literature provides a gentle but nevertheless pointed exposure to the price responsiveness debate. The study should open the door to further inquiry on this important issue.

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