ELSEVIER

Discussion

The impact of prices and macroeconomic policies on agricultural supply: a reply

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In his comment on my review of the links between agricultural prices, macroeconomic policies, and agricultural supply (Mamingi, 1997), the Reviewer (1998) pointed out that "a key theoretical as well as political and practical issue, that is the variability of prices, and, consequently, price stabilisation policies" are missing. I welcome his remark, although these omissions dealing with risk are also present in many related literature reviews. This state of affairs is, perhaps, due to the lack of consensus on the exact meaning of risk. Indeed, "risk is like love" (Stiglitz cited by Roumasset, 1979, p. 4) in the sense that "we have a good idea of what is, but we can't define it precisely" (Roumasset, 1979, p. 4). My task in this note is to pinpoint a range of issues concerning some points raised by the Reviewer.

The Reviewer underlined that empirically many authors have acknowledged the importance of "risk considerations in shaping agricultural supply" (see, for example, Freund, 1956). I believe that, besides price variability, the common risk measurement in agriculture, variability in yields (production instability) must also be considered as the two types of risk have an impact on income stability as well as price stabilisation (see also, Lele and Christiansen, 1989, p. 8).

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The Reviewer also indicated that the "political" consequences of the sensitivity of agricultural supply to price variability are important. Indeed, according to him, "if price volatility is more important than their average level in explaining agricultural supply, then the relevant price policy instrument is not mean, but variance". Three issues can be raised here. First, the question of how to measure price variability (i.e., variance and autoregressive conditional heteroscedasticity type of measure) is of paramount importance to the extent that the different measurements do not necessarily give rise to the same impact on agricultural supply. The question of which measurement is superior to the others is a theoretical and an empirical one. Second, suppose the agricultural supply function is as follows:

$$y_t = \alpha + \beta p_t + \gamma v_t + \sum_{i=1}^{n} \delta_i x_{it} + u_t$$

where $t = 1,2,3,\ldots T$ is the time index, y_t stands for agricultural supply, p_t represents (output) price, v_t is (output) price variability measured in variance, x_i represents any other factor affecting agricultural supply (i.e., fertilizer) and u_t is a well-behaved error term. Since v_t is a function of p_t, v_t is correlated with u_t; that is, basically, v_t is an endogenous variable. In other

words, the impacts resulting from an ordinary least squares estimation will be inconsistent. Third, as a corollary to the second point, the endogeneity of v_t means that v_t cannot be used as a policy instrument contrary to what the Reviewer seems to imply. Summing up, the question of the possibility of price volatility being more important than the (average) price level needs to be examined carefully at least on econometric grounds.

The Reviewer went on elaborating that price support at a lower level should be recommended if production needs to be boosted as presently in Africa. He further stated that price floating may be extremely efficient in achieving the goal of reducing production, as in Europe and America. He added "especially in French speaking Africa the price guarantee given to export crops, when at the same time food crops were subject to large market fluctuations, is a major explanation of the inability of these countries to feed themselves". Concerning the latter case of French-speaking Africa, I am of the view that it is not advisable to put all countries in the same basket. To corroborate somewhat, although Chad, Côte d'Ivoire, Cameroon and the Democratic Republic of Congo (formerly Zaire) are all French-speaking countries, they do not necessary face the same constraints in terms of agricultural development. In the Democratic Republic of Congo, for example, the absence of an efficient rural transportation infrastructure is, perhaps, the major impediment to food self-sufficiency. Cameroon has one of the best records in terms of food provision, [1] but the major impediment, for quite a long period, was the overvaluation of the CFA currency. Summing up, price volatility has to be analyzed in conjunction with other agricultural supply constraints. Moreover, one should resist the temptation of hasty generalization.

The Reviewer also indicated that Boussard and Gerard (1996) showed that, statistically, price stability is an important determinant of the long-run growth of agricultural supply. Although I did not read this reference because of its unavailability, it is appropriate to articulate whether there is a need for price stabilisation in the first instance. Indeed, the consensus on price stabilisation is far from being reached because for some researchers like Newbery and Stiglitz (1981), price stabilisation is not a good objective since it can lead to an increase in income variability. For other writers, that is not necessarily the case (for details, see Lele and Christiansen, 1989, p. 9–10).

Acknowledgements

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[1] Although the statistics are outdated, in 1980/1982, Gabon, Côte d'Ivoire, Cameroon and Mauritius were the four countries with the lowest percentage of populations with food insecurity in Sub-Saharan Africa: 7, 8, 9, and 9%, respectively. The percentage for Zaire was 42. (Cleaver and Donovan, 1995, p. 33, Table A2).