The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Australian Journal of Agricultural Economics, Vol. 23, No. 1 (April 1979), pp. 67-68.

THE ELASTICITY OF DEMAND FOR EXPORTS: A REPLY

C. D. THROSBY and D. J. S. RUTLEDGE
Macquarie University

We welcome the comments of Scobie and Johnson (hereafter S-J) on demand elasticities for Australian farm exports, although we feel that, in their zeal to press their case for high elasticities, they have read more into our paper than is actually there.

At issue is our specification of a joint price/quantity system in the external sector of our model. Our equations (8) to (10) hypothesise that export prices for each of the farm commodity groups we studied are a function, in part, of Australian exports of those commodities. We rationalised inclusion of this variable and these equations on the grounds that Australia might exercise 'significant market power' with respect to some of the products involved. In fact 'significant' rather overstates the case here; we would argue that sufficient justification for inclusion of equations (8) to (10) in a model like this is simply that the world demand elasticity for Australian exports of the product groups in question might be less than infinite, not that it necessarily has to be particularly low. Alternatively this rationale might be more precisely stated as an hypothesis that world prices of certain commodities are to some extent responsive to the quantity of Australian exports of those commodities; that is, we expect for at least some product groups (i.e. where regulatory constraints do not interfere too strongly) to find price flexibilities of greater than zero. Stated in this way, our position can hardly be regarded as a stand for low demand elasticities, as S-J interpret us as taking. Rather, we constructed the model in a theoretically plausible way, and hoped that, in due course, the empirical results would indicate the magnitude of these unknown parameters.

In the event, the export equation estimates we obtained were not particularly satisfactory. Even though five of the six estimated export equations fell into our categories of 'good' or 'reasonably consistent with the underlying hypotheses' (p. 166), the results could not really be taken as either confirmation or denial of the price responsiveness hypothesis. But they did at least indicate the potential for bringing the external sector into such industry models (whether constructed for Australia or for another country) using something like the approach we adopted. Hence we ourselves are surprised that S-J should find surprising our carefully-qualified conclusions on this point. Certainly we did not pretend to find that world demand elasticities for Australian farm exports are low.

This said, we must venture the view that S-J's efforts to provide empirical support for their own proposition of relatively *large* export demand elasticities are scarcely convincing. Lest the casual reader be taken in by the precision of S-J's results in their Table 1, he or she should spend a few minutes assessing their sensitivity to the assumed parameter values on which they are based. The short-run world demand for the goods under study is likely to be very inelastic; S-J assume it to be $-0{\cdot}1$ as an 'extreme lower bound'. But it might equally plausibly be, say,

—0·01, in which case the final column in Table 1 is reduced by a factor of 10, and the S-J conclusions are turned upside-down. The point is not that one set of assumptions is better than another, but that such spurious analytics are no substitute for the real thing, in this case the proper estimation of the relevant export demand equations, as S-J themselves imply in saying that 'in an actual application one would want to use the best available estimates'.

Finally, S-J chide us (footnote 3) for not presenting our implied export elasticities. We are glad of the opportunity to rectify this omission, as far as this can be done. Our equations (8), (9) and (10) are in principle capable of yielding export price flexibilities, though the lack of statistical significance of the coefficients on export quantities in these equations makes such an exercise hazardous. Neglecting equation (8) (unprocessed food), which is clearly unsatisfactory, we might, for the sake of argument, assume that the coefficients on XC in equations (9) and (10) (unprocessed nonfood and processed food respectively) are acceptable. Given our hypothesis of a partial adjustment mechanism, the results in our Table 2 indicate an adjustment coefficient of 0·044 for equation (9) and 0·217 for (10), with corresponding structural coefficients on current exports of —0·680 and —0·724 respectively. At the means of the variables these results indicate flexibilities of export prices of unprocessed nonfood and processed food with respect to quantities of Australian exports in these groups of —1·525 and —0·467 respectively. The corresponding world demand elasticities can strictly only be taken as the reciprocals of these flexibilities if the simple correlation coefficient between prices and export quantities is unity (see, e.g. Fox 1958, pp. 114-5), which is clearly not the case. But making the further heroic assumption that the reciprocals will do as approximations, we arrive at world demand elasticity estimates of about —0·7 for Australian exports of unprocessed nonfood, and about —2·1 for processed food.

We hasten to stress that these calculations are so obviously shaky (and this is the main reason why we did not include them in our original paper) that they cannot be regarded as providing serious support for hypotheses of low demand elasticities for the products in question; apart from the questionable assumptions used to derive them, they are also subject to some of the qualifications raised in the works mentioned by S-J. By the same token, however, we believe S-J have not substantiated the counter-argument either. On this question, then, we prefer to remain for the time being open-minded.

Reference

Fox, K. A. (1958), *Econometric Analysis for Public Policy*, Iowa State University Press, Ames.