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Forum

Forecasting Beef Prices : A Reply

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In forecasting, as in other forms of modelling, alternative forms of models which may be more accurate are always possible. This is particularly true in price forecasting which in agriculture is not renowned for its record of success.

Revell has highlighted the fact that alternative modifications of the Box-Jenkins models reported in my article (my models forecast U.S. manufacturing beef prices, not Australian beef prices) are possible and that, as he states ". . . there is often a 'non-uniqueness' in Box-Jenkins model diagnosis . . ."

He expresses concern at the choice of models used and the view that as a consequence the Box-Jenkins models may have been shown in a poorer light than otherwise.

While agreeing that alternative models are possible and *may* have provided more accurate forecasts, I feel the relative positions of the techniques would have changed little. The Box-Jenkins models were considered slightly more accurate than the econometric models in the study. While improvement of the Box-Jenkins models might occur, it is equally true to suggest that improvements of the econometric models should not be ruled out. As a consequence, the overall conclusions of my article would be altered little, particularly the point expressed in the last sentence of my article ". . . the findings of this study indicate that a high degree of accuracy cannot be expected from the methods evaluated."

The purpose of my study was to select, within the bounds of time and finance, acceptable models for comparison. No attempt was made to search for an 'ultimate' model.

The models chosen for estimation are certainly not the only ones possible, and less complex forms than those used may have been acceptable. The models selected were, however, considered adequate and the most accurate of the forms tested (logarithmic transformation of the series *was* evaluated and the models found less satisfactory).[1] Certainly other forms such as those suggested by Revell could have been tested.

Whether or not his suggested alternatives are more acceptable models is far from obvious though. There is little to suggest that as Revell states ". . . the choice of alternative differencing and transformation might, however, produce more acceptable models". Acceptable in the context of my article must be considered to mean practically useful in a forecasting context, and in this respect Revell himself admits ". . . is is suggested that equivalent, more parsimonious forms than those estimated exist, although ones which are perhaps less useful for the forecaster."

While freely acknowledging that improved models may exist I must admit to a feeling of unease about the more parsimonious (the word intrigues me since it means 'frugal to excess, miserly, sordid') models indicated by Revell. To a degree they represent mathematical manipulation. For example, in the quarterly model his

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[1] As pointed out by Revell the notation of the AR parameters and MA parameters in the Quarterly model have become transposed in my article.

conclusion is that a random walk process might be an equally acceptable representation. This conclusion was developed by showing none of the parameters to be significantly different from unity. Equally, however, they can be shown to be not significantly different from, for example 0.9, suggesting the great simplification used could just as well be replaced by a different and more complex alternative.

The models chosen by me were chosen from a number of alternative forms. Other forms are certainly possible. As highlighted by Revell's comments, the search for improved forecasting models is far from over, particularly in the field of price forecasting.