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An application of econometric modelling to Hawkes Bay apple supply.

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ABSTRACT

To enhance their standing in the market place the New Zealand Apple and Pear Marketing Board (NZAPMB) must maintain a balanced 'portfolio of products' (NZAPMB, 1990). This portfolio includes substantial volumes of traditionally traded varieties. Recent changes in the NZAPMB price mechanism have meant that orchardists are now paid closer to true market returns. There is now increasing financial pressure on orchardists to change their varietal mix to new 'preferred' and more profitable apple varieties. These varietal changes are expected to have serious consequences on the volume of traditional varieties supplied to the NZAPMB.

New Zealand apple orchardists are expected to be profit maximising. Orchardists are expected to adapt to varietal price movements by renovating their orchards to a more profitable varietal mix. In the short run orchardists can reduce their varietal supply through tree removal. However, the apple production function dictates the speed at which orchardists can increase supply. Consequently, supply expansion to the NZAPMB can only occur some time after a price signal, while supply contraction can occur instantly.

The French and Matthews (1971) supply response model provided a theoretical framework for this study. However, it is often limited by its exhaustive data requirement. The derivation of models within the French and Matthews framework was again restricted by data limitations. Simple models explaining varietal supply expansion and supply contraction were developed. The models showed that price significantly influenced supply contraction and supply expansion.

The NZAPMB forecast supply expansion through monitoring varietal plantings and then applying yield functions. Supply expansion can be forecasted with reasonable accuracy. A robust econometric model which forecasts short run supply contraction would be of immediate use to the NZAPMB. This study identified the data required and the potential of a model to be developed for this purpose.

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