

Conclusions

The models presented in this technical bulletin for corn and wheat prices use a stocks-to-use ratio formulation to capture the effects of market supply and demand factors on price determination. The models also address issues regarding the historical influence of government commodity loan and storage programs on price determination. Commodity loan and storage programs had an effect on prices in the late 1970's through mid-1980's, when loan rates were high and the programs affected accessibility of privately held stocks in the FOR. Program changes under 1985 legislation resulted in less program influence on market prices as price supports were reduced and privately held stocks under the loan programs were largely accessible to the marketplace. Publicly held stocks owned by the Government also influence prices for corn and wheat as these stocks are typically not readily available to the marketplace.

For wheat, prices are also influenced by international market conditions, represented by the stocks-to-use ratio of four major competitors. The role of wheat feeding and competition with corn for feed use in the summer quarter also affects the pricing of wheat.

Statistical model evaluation measures as well as the graph of actual prices and model estimates indicate good performance for the price models. This is particularly the case given the large range of corn and wheat prices over the sample period used to estimate the model (1975-96), as well as the changing nature of the influence of government programs on price determination.

The relatively simple structure of the estimated price models and their small data requirements lend themselves to use in price-forecasting applications in conjunction with market analysis of supply and demand conditions. In particular, the models are used within USDA as part of the Department's short-term market analysis and long-term baseline projections activities. In these applications, the models provide an analytical framework for forecasting prices, as well as a vehicle for making consistency checks among supply, demand, and price forecasts.