Dynamic Analyses of Major Fruit Markets in Taiwan

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Abstract

Fruit production and consumption have increased considerably in the past few decades in Taiwan. Market prices of fruits fluctuate in response to seasonality, changes in production costs, imports and exports, and demand. Some factors are more influential to fruit price changes. This research utilizes the Vector Autoregressive Model to analyze effects of exogenous shocks to market prices of fruits. Dynamic models were developed for bananas, grapes, guavas, papayas, pineapples, and watermelons. For the market of bananas, prices of pesticides have delayed positive effects; an increase of watermelon prices raises the prices of bananas; prices of banana exports explain some variations of domestic banana prices. For the market of grapes, income, interest rates, and prices of pesticides positively affect the prices of grapes; prices of imported grapes have delayed influences to domestic grape prices; and costs of labor inputs explain some changes of grape prices. For the market of guavas, changes of labor costs and prices of pesticides have negative effects to the prices of guavas, which indicate increases in production costs are not reflected to market prices of guavas. For the market of papayas, prices of pesticides have negative effects, also indicate market prices of papayas cannot reflect increases in production costs. For the market of pineapples, interest rates and prices of pesticides have delayed positive effects to prices of pineapples; an increase of banana prices slightly lowers pineapple prices. For the market of watermelons, income has negative effects to the prices of watermelons, which implies demand of watermelons does not expand as income increases; prices of watermelons are responsive to changes in prices of machinery and interest rates.

Key words: Dynamic analysis, Fruit market

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The complete paper can be obtained upon request.