Volatility and Integration of Rice Markets in Java, Indonesia: A Comparative Analysis before and after Trade Liberalisation

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Abstract

Indonesia's rice economy is in a transition from being a sector heavily regulated by a state trading enterprise (BULOG) to being market-oriented. Before September 1998, BULOG defended a floor price and a ceiling price for rice through a combination of the following policy instruments: domestic procurement to lift paddy prices, market operation to defend ceiling rice retail prices, and import monopoly. To support its operation, BULOG was equipped with financial support from the Indonesian Central Bank. Since September 1998, BULOG's import monopoly was removed.

Trade liberalisation is expected to bring about a better functioning of markets. Two essential measures of market performance are price volatility and market integration. While higher stability of prices would protect rice producers from fluctuating farm income, higher market integration is necessary for efficient resource allocation. Therefore, this paper particularly addresses the following research questions: **(1)** How volatile were paddy and rice prices in the pre- and post-liberalisation period? **(2)** Did integration of domestic rice markets improve after trade liberalisation? While standard deviation of inter-year price growth is used to address the first question, the second question is addressed via multivariate and bivariate price transmission analysis using the Johansen maximum likelihood method.

Using monthly producer price series from 1987 to 2002 and monthly retail price series from 1981 to 2004, the results show that the volatility of both producer and retail prices are higher in the post-liberalisation period. Before trade liberalisation, markets are integrated. In the post-liberalisation period, 2 co-integrating vectors among 5 markets on Java — which should be 4 if markets are integrated — are found with multivariate co-integration. The ensuing test for bivariate co-integration finds that 60 percent of market pairs are co-integrated. Full integration is not found, which may be due to the delayed adjustment of markets to the new policy.

Keywords: Indonesia, market integration, price volatility, rice

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