SPATIAL MARKET INTEGRATION AND PRICE TRANSMISSION: EMPIRICAL EVIDENCE FROM WHEAT, WHEAT-FLOUR AND RICE MARKETS IN AFGHANISTAN

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Title : **SPATIAL MARKET INTEGRATION AND PRICE TRANSMISSION: EMPIRICAL EVIDENCE FROM WHEAT, WHEAT-FLOUR AND RICE MARKETS IN AFGHANISTAN (**空間的市場統合と価格伝達に関する計量経済学的研究：アフガニスタンにおける小麦、小麦粉、及び米市場を事例として**)**

Category：Kou

Thesis Summary

A renewed interest in studying market integration and price transmission was triggered by the dramatic spikes in global prices of foodgrains during 2007–2008 and 2010–2011, which have seriously affected the net food importing and financially poor countries such as Afghanistan. Ensuring the efficient functioning of domestic agricultural markets is necessary for promoting agricultural growth, reducing poverty and enhancing food security. The methods of market integration and price transmission have been used to measure the efficiency of markets functioning. Hence, the present research mainly examines spatial market integration and price transmission among domestic markets of wheat, wheat-flour (flour), and high and low quality rice in Afghanistan as well as their price transmission dynamics with those of the supplier (exporting) countries and global markets. Several other important aspects of wheat, flour and rice sectors in the country are analyzed as well. Unit root tests, cointegration tests, symmetric and asymmetric vector error correction models, Autoregressive Conditional Heteroscedasticity (ARCH) and Generalized ARCH (GARCH) models, double-log linear import demand function, compound annual growth rates and Herfindahl–Hirschman Index are employed to produce the results in this dissertation.

The results indicated that the dramatic increases in global wheat prices during 2007–2008 may have directly and/or indirectly affected the dynamics of price transmission between global and domestic wheat markets. Domestic markets of wheat and flour are found to be cointegrated not only among themselves but also with their corresponding global, Pakistani and Kazakh markets. They adjust to any disequilibria with respect to their relevant Pakistani, Kazakh and global markets. While the provincial wheat markets in Afghanistan react to any disequilibria with respect to the principal market of Kabul, some of the provincial flour markets may be weakly exogenous with respect to that of Kabul market. The process of equilibrium adjustment is not symmetric for all the pairs of markets studied, implying the existence of imperfections in the wheat and flour markets. The speeds of adjustment, impulse responses and elasticities of price transmission are generally small in magnitude. This suggests that the pairs of wheat and flour markets may be weakly integrated.

Several essential features of rice markets and trade in the country are examined. It is also

observed that the dynamics of global to domestic price transmission are different between high and low quality rice markets under both symmetric and asymmetric price transmission. The magnitude of price transmission is larger for the pairs of low quality rice markets whereas the speed of adjustment is faster for the pairs of high quality rice markets. Domestic market of low quality rice is found to be more negatively affected by a sudden shock in that of global and Pakistani markets. In addition, the major provincial markets of high and low quality rice in Afghanistan have a long-run equilibrium relationship with the respective principal markets of Kabul, exceptions being Kandahar and Maimana markets of low quality rice. They are also cointegrated with their corresponding Pakistani and global rice markets. Evidence of short- and long-run asymmetric adjustment among the provincial markets of high and low quality rice with respect to their corresponding Kabul, Pakistani and global markets were also observed. This indicates the presence of persistent and temporary inefficiencies in the rice markets. The pairs of high and low quality rice markets studied may be weakly integrated and the dynamics of price transmission appear to be different between them.

This dissertation underlines the need for, *inter alia*, mitigating the adverse effects of swings in global foodgrains prices on domestic markets, giving particular attention to the low quality rice market for reducing the vulnerability of poor households to price shocks and enhancing the efficiency of wheat, flour, and high and low quality rice markets in Afghanistan through an integrated approach.