Public Abstract

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Graduation Term:SS 2013
Department:Agricultural Economics
Degree:PhD

Title:THREE ESSAYS ON BLACK SEA GRAIN MARKETS

Russia and Ukraine (often referred to as the Black Sea region) have recently emerged as major world grain exporters. Just in the 2011/12 marketing year, according to the USDA (2013) they were among the top ten global suppliers of wheat (27 mln. tons), of corn (17.2 mln. tons), and of barley (5.8 mln. tons). The conquest of the world markets, however, did not come with a similar openness in the approach of the Ukrainian and Russian governments to policy implementation. Until recently it has still been rather dominated by frequent and rather ad hoc policy interventions in the grain markets and especially export markets.

The purpose of this dissertation is to analyze the efficiency of Back Sea grain markets within the context of highly regulated markets. The first part of Essay 1 summarizes the short- and long-run wheat price dynamics between these two countries, and other major wheat exporters - United States, European Union (EU), and Canada – from 2004 to 2010. Tests of market price cointegration (Johansen ML test and residual-based tests) as well as threshold error correction techniques were performed for this purpose. The results suggest that Russian wheat prices were cointegrated with EU (France was considered a representative country of the EU) and US wheat prices but not with Canadian wheat prices. Ukrainian wheat prices were found to be cointegrated with French wheat prices only. The estimated long-run wheat price transmission elasticities were estimated to be equal to 1.04 between Russian and French wheat prices, 1.16 between Russian and US wheat prices, and 1.05 between Ukrainian and French wheat prices. We also found the short-term relationships between the cointegrated series to be statistically significant.

In the second part of Essay 1, the focus is on the short- and long-run barley price dynamics between Ukraine, and other major barley exporters (Australia, EU, and Canada) from 2004 to 2010. U.S. corn prices were also included with the purpose of checking if there is any long-run relationship between these two feed grain prices. Tests of market price cointegration (Johansen ML and residual-based tests) as well as threshold error correction techniques were performed for this purpose. The cointegrated pairs of prices were Ukraine-Australia, Ukraine-France, Australia-Canada, and Australia-France. The estimated long-run barley price transmission elasticity was 0.71 between Ukrainian and French barley prices and 0.59 between Australian and Ukrainian barley prices. Moreover, Ukrainian barley prices were found to be weakly exogenous with regards to the Australian and French barley prices in the analyzed period.

The second essay analyzes price transmission along the Ukrainian wheat supply chain from January 2005 until December 2012 and identifies potential market and policy failures that could lead to different levels of price transmission. In our analysis we relax the assumptions of linearity and symmetric adjustment by extending the traditional cointegration models, such as Engle and Granger (1987) procedure and the Johansen Maximum Likelihood method (1988), with the Bai and Perron (2003) structural break test and threshold autoregressive (TAR and M-TAR) models, respectively. The overall results suggest that long run relations hold between world wheat price and Ukrainian wheat farm price, as well as between farm price and flour price. Results of the structural break tests reveal that during the times of excessive government interventions in the grain export markets, the long-run price transmission between world and farm prices significantly decreases. Price transmission was also found to by asymmetric between farm and flour prices, suggesting that Ukrainian millers tend to exhibit market power and not pass on decreases in wheat prices to the bakers.

Essay 3 investigates the development of price volatility in the Ukrainian wheat market from 2005 till 2012 within a dynamic conditional correlation GARCH framework. The results indicate that the export controls in

Ukraine have not significantly reduced price volatility on the domestic wheat market as was suggested by the Ukrainian policymakers. On the contrary, our findings suggest that the multiple and unpredictable interference of the Ukrainian government on the wheat export market coincided with increased market uncertainty and pronounced additional price volatility in the market. The estimates of the conditional correlations show that interdependency between Ukrainian and world wheat markets volatility is very low while volatility transmission between two markets is statistically insignificant. This further suggests that increased volatility in the domestic wheat market was caused by internal rather than external factors.