PRICING BEHAVIOUR OF KAZAKH, RUSSIAN AND UKRAINIAN EXPORTERS IN THE INTERNATIONAL WHEAT MARKET

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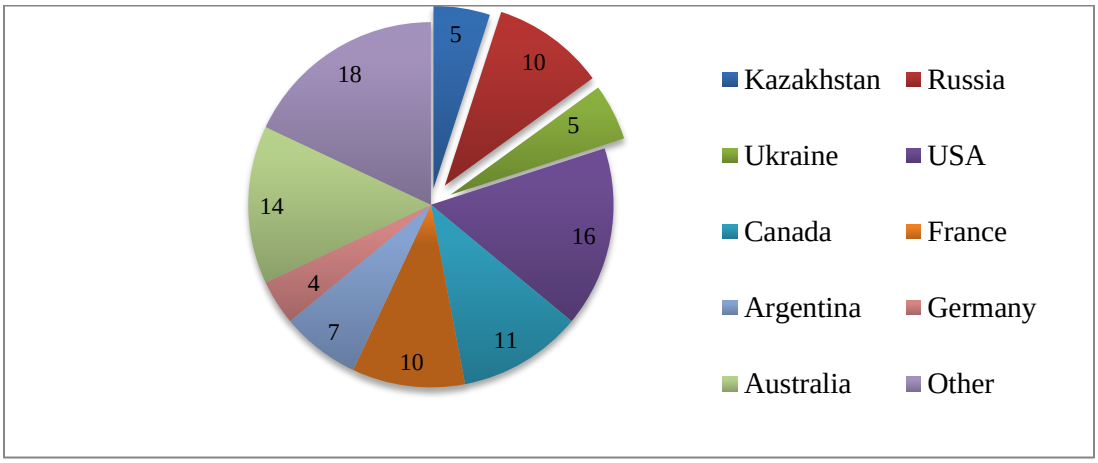
Problem Statement

It is argued that the pricing behavior of the main wheat exporters of the world - the USA, Argentina, the EU, Canada, Australia, Russia, Ukraine and Kazakhstan determines the world wheat prices and affects global food security in a large extent (OECD/FAO, 2012, p. 209). It is also broadly discussed that the former Soviet Union countries – Kazakhstan, Russia and Ukraine, (KRU) have more chances to raise grain production and support the world food security, since they have enough potential to expand grain area and increase yields (Tothova, Meyers and Goychuk, 2013). Due to the geographical location (being close to the European Union countries, Middle East and Northern Africa), steady domestic market, and close relationship between domestic and world prices, KRU countries are important players in international grain market (Lioubimtseva, 2010). Because of two reasons – restructuring total agricultural production, consumption and trade (moving to open market economies in the 1990s); and large increase in grain production (during the 2000s), KRU has become main grain exporting region (Liefert, Liefert and Luebehusen, 2013). Figure 1 shows that total share of KRU was 20% in 2012.

Figure 1. Export share of the main wheat exporters in 2012, (%)



Source: United Nations Commodity Trade Statistics Database

It is expected that Russia will achieve the highest export share (17%) in the wheat market in 2021 (OECD/FAO, 2012, p. 126-7). Changing market shares of main wheat exporters affect world price volatility significantly (OECD/FAO, 2012, p. 129). Different trade policies - export bans by Kazakhstan in 2007-08, and Russia in 2010; quotas by Ukraine

in 2007-08; and export taxes by Russia in 2007-08 significantly affect the provision of the importing countries with wheat products and bring uncertainty to the world wheat market (Goetz, Glauben and Brümmer, 2010).

There are a lot of empirical studies which examine the pricing behavior of agricultural good exporters and find pricing-to-market behavior by grain exporters in the destination countries. By investigating mainly the U.S., Canadian and Australian wheat exporters' pricing behavior, Pick and Carter (1994), Yang and Lee (2001), Lavoie (2005) and others argue that wheat exporters exercise pricing to market behavior, meaning that they price discriminate (set different prices) and achieve different markup of prices over marginal costs in some destination countries due to the exchange rate volatility. One of the recent studies by Pall et al. (2013) considers pricing behavior of the Russian exporters and concludes that Russia can implement the price discrimination in Armenia and Azerbaijan, but it does not exert market power in the world wheat market.

Research Question

The main goal of this study is to examine: how does the effects of exchange rate fluctuations on price markups differ across wheat exporting countries – Kazakhstan, Russia and Ukraine? If KRU countries are able to exercise pricing to market behavior and get market power in international wheat market for the period 1996-2012? Which exporting country is expected to adjust prices to achieve foreign currency price stability in the destination markets? Pricing-to-market model will be used to check the existence of market power.

Methodological Approach

In order to test the pricing behavior of Kazakh, Russian and Ukrainian exporters in international wheat market, the pricing-to-market model (PTM), which was introduced by Krugman (1986) and developed by Knetter (1989), will be extended in this study:

$$\ln p_{it} = \lambda_i + \theta_t + \beta_i \ln e_{it} + u_{it} \quad \forall i = 1, \dots, N \text{ and } \forall t = 1, \dots, T$$

where a dependent variable - p_{it} is a wheat export price in export country's currency to importing country i in period t. The independent variables - λ_i and θ_t represents the country effect and time effect, respectively; e_{it} is the destination-specific exchange rate

expressed as units of the domestic currency in export country's currency in period t. The parameter - β_i denotes the elasticity of the domestic currency export price with respect to the exchange rate. And finally, u_{it} is an i.i.d. error term $N(0, \sigma_u^2)$.

The PTM occurs when the exporters maintain or increase the export prices in response to the currency depreciation relative to the importer's currency. Krugman (1986) summarizes the PTM situation as the following: PTM occurs when export prices increases, or does not change as the currency of the importing country appreciates. PTM is price discrimination and arises when a change in bilateral ERs between an exporter and some buyers causes the changes in the ratio of prices paid by the buyer (Pall. et al., 2013). The PTM model investigates if an exporter can differentiate export prices in different importing countries in response to exchange rate shifts. The PTM is connected to markup over marginal cost, and so, imperfect competition (Jin and Milijkovic, 2008).

The historical bilateral ER data are available from the International Monetary Fund (IMF), OANDA – online ER source; and Russian Federal State Statistics Service (ROSSTAT). Exchange rate data for Tajikistan, Turkmenistan and Uzbekistan are built by converting old currencies to the new one. Similarly, exchange rate data for the EU countries which accepted the euro in 1999 is fixed to the euro for the 1996-1998 periods. Export quantity and value data are provided by the United Nations Commodity Trade Statistics Database (COMTRADE). The harmonized code description for the wheat is categorized as "wheat and meslin" (HS code is 1001).

The number of destination countries varies across the exporting countries: 46, 69 and 62 for Kazakhstan, Russia and Ukraine, respectively. However, the data is unbalanced panel, since not all the countries import wheat from Kazakhstan, Russia and Ukraine each year.

Discussion of Results

The PTM model is estimated by using a fixed-effects regression for each exporting countries separately. According to the regression results, there is evidence of PTM (significant β) in 7 out of 46 observed countries for Kazakhstan[1]; 4 out of 69 for Russia[2];

[1] Albania, Azerbaijan, Cyprus, Germany, Dominica, the United Kingdom and Lithuania
[2] India, Japan, Romania and Saudi Arabia

and 7 out of 62 for Ukraine[3]. The Kazakh wheat exporters stabilize the local currency prices in Albania and the United Kingdom (negative β), but amplify the effect of exchange rates in Azerbaijan, Cyprus, Germany, Dominica and Lithuania (positive β). Similarly, the Ukrainian wheat exporters stabilize the local currency prices in Djibouti, Egypt and Eritrea, but amplify the effect of exchange rates in Belgium, Bulgaria, Thailand and Uzbekistan. However, the Russian wheat exporters amplify the effect of exchange rates in all the countries, where they exercise PTM behavior.

Additionally, Kazakh exporters observe price discrimination with constant markup (in case of significant λ, but not significant β) in Greece, Iran, Lebanon, Moldova, Poland, Tajikistan and Uzbekistan. In the same way, Russia achieves price discrimination with constant markup in Armenia, Bangladesh, Germany, Finland, the United Kingdom, Iran, Iraq, Syrian Arab Republic and Turkmenistan, whereas Ukraine in Philippines.

In case of other countries the null hypothesis of competitive pricing cannot be rejected (λ and β are not significant). It means, Kazakhstan in 32 countries (including Kyrgyz Republic and Turkmenistan); Russia in 56 countries (including Kyrgyz Republic, Tajikistan and Uzbekistan) and Ukraine in 54 countries (including Tajikistan) either face with the perfect competition, or get common markup with their competitors in the imperfect market. It should be mentioned that Kyrgyz Republic and Turkmenistan is not included in the estimation for Ukraine, since the number of observations for those countries was few and dropped from the sample.

In conclusion, especially Kazakhstan owns large market share in Central Asian countries over the last 17 years. Kyrgyz Republic is a wheat competitive market for the Kazakh and Russian wheat exporters. Kazakhstan achieves price discrimination with constant markup in Tajikistan and Uzbekistan, but acts as a perfect competitor in Kyrgyz Republic and Turkmenistan. Russia faces with perfect competition on all Central Asian countries, except Turkmenistan. Ukraine pursues PTM in Uzbekistan, but competes with other exporters in Tajik wheat market. The PTM results for Kazakhstan are not expected, since Kazakhstan is the main wheat exporter to Central Asian countries and it was anticipated that it gets market power and exercises pricing to market behavior in those countries. Although Central Asian countries imports more than 90% from Kazakhstan, Kazakh

[3] Belgium, Bulgaria, Djibouti, Egypt, Eritrea, Thailand and Uzbekistan

exporters do not price discriminate in these countries, but either face with competition or get constant markups.

In case of Caucasian countries, KRU countries do not have enough market power to price discriminate; they face with perfect competition in Georgia. Although Kazakhstan gets market power in Azerbaijan, Russia and Ukraine compete with other exporters in Azerbaijani wheat market.

Most interesting results are obtained for those destination countries, which import in big quantity from KRU countries. For example, KRU countries face with perfect competition in Egypt (except Ukraine, since it pursues PTM), Turkey, Republic of Yemen, Greece and Spain.

The general conclusion of PTM model is that KRU countries still are not the biggest exporters of wheat, which exercise price discriminating behavior in the destination countries. However, they have great opportunities to become important players in the international wheat market.

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