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Price Transmission on Wheat Flour Market in Georgia

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Introduction

World food prices have significantly spiked upward in July 2012 driven by higher cereal prices due to adverse weather in the United States and Eastern Europe (FAO, 2013).

Between August 2014 and May 2015, wheat prices declined by **18%**, rice prices dropped by **14%** and maize prices declined by **6%** (World Bank, 2015).

Introduction

Why is it important to study price transmission?

- Studies of price transmission are used to understand how changes in prices are transmitted from one market to another;
- Studies of price transmission may help forecast prices based on trends in related prices;
- Studies of price transmission help diagnose poorly functioning markets.

Introduction

Why prices might not be transmitted perfectly?

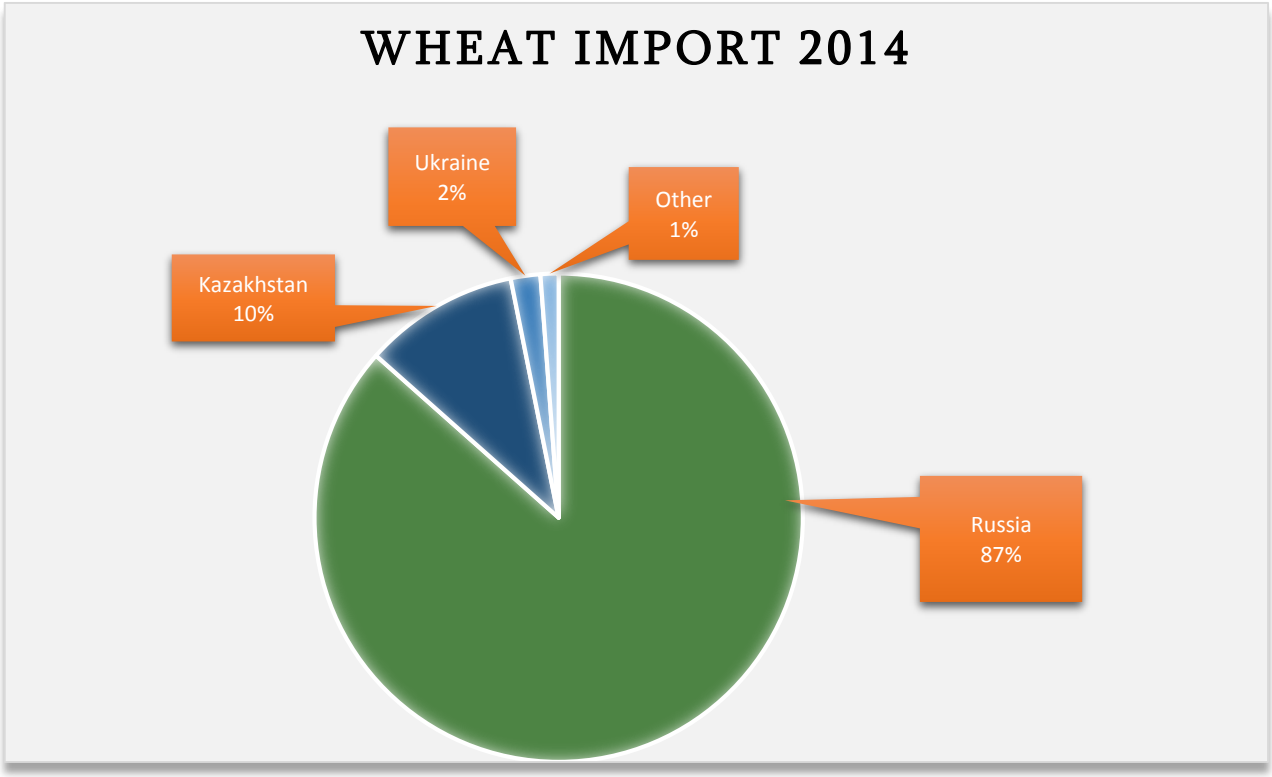
- High transportation cost and/or other trade barriers make trade unprofitable
- Goods are imperfect substitutes (e.g., imported wheat and local wheat)
- Lack of information about prices in other markets
- Transportation from one market to another takes long time(lagged transmission)

Literature Review

- Swinnen J.F.M.(2010) – “The right price for food.“
- Goodwin & Piggott (2001) – “Spatial market integration in the presence of threshold effects.”
- Meyer and von Cramon-Taubadel (2004) – Asymmetric price transmission: A survey.”

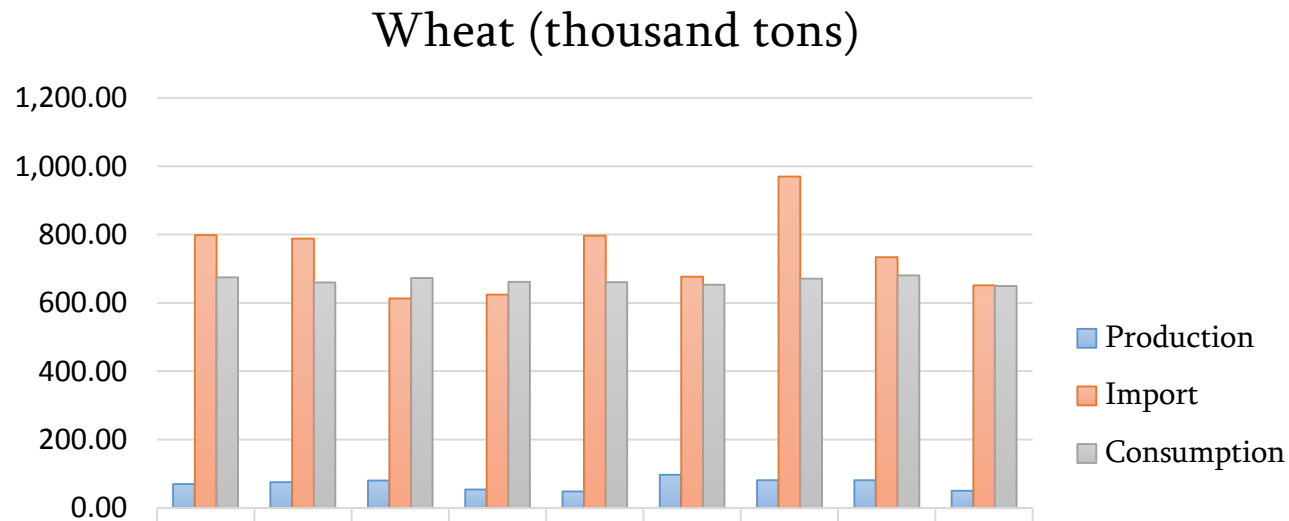
Georgian Flour Market

- Georgia mostly imports wheat from Russia, Ukraine and Kazakhstan



Source: Revenue Service of Georgia

Georgian Flour Market



	2006	2007	2008	2009	2010	2011	2012	2013	2014
Production	70	75	80	54	48	97	81	81	50
Import	798	788	613	624	797	677	970	734	651
Consumption	675	660	673	662	661	653	671	680	650

Source: National Statistics Office Georgia

Wheat and its products are the main staple foods both in rural and urban areas in Georgia. Wheat accounted for 41% of the total dietary energy supply in 2005-07. On average in 2005-09 per capita consumption (as food) of wheat and wheat products was 150 kg/yr.

Georgian Flour Market

- Local millers are the important players on the flour market. There are about 54 flour mill plants in Georgia.

- Out of these, 13 are large flour mills

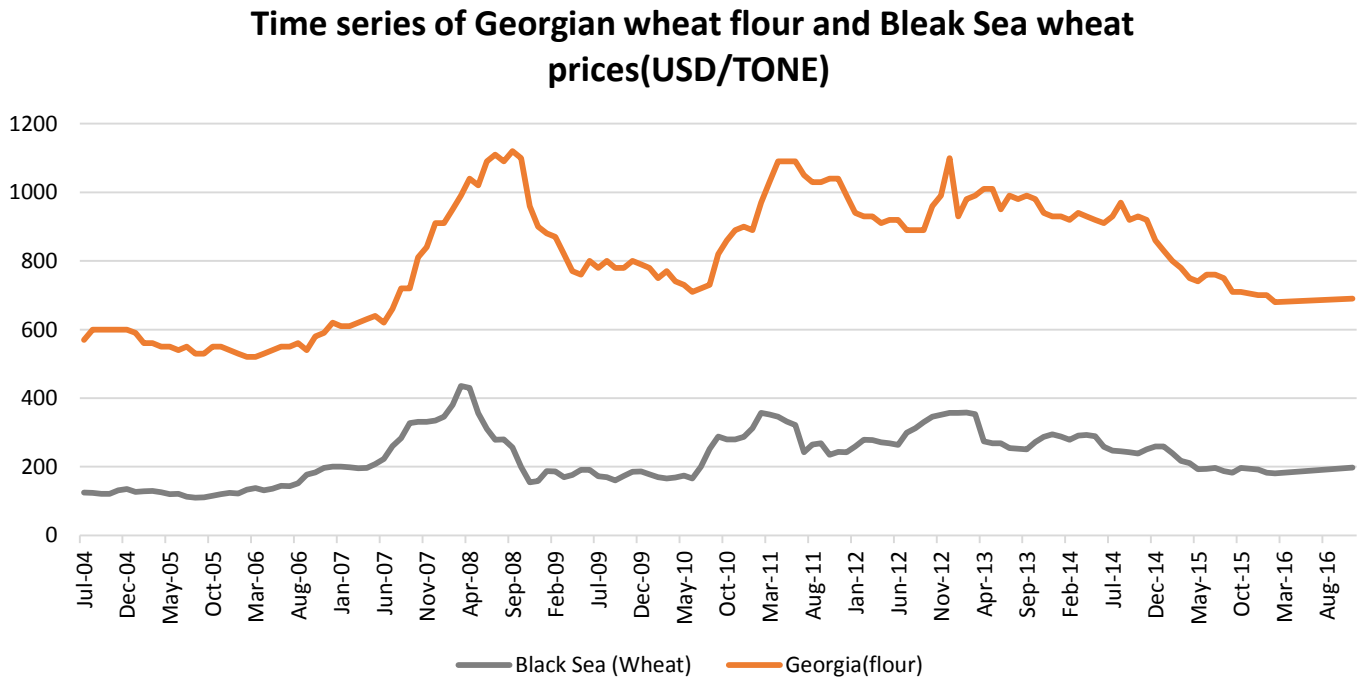
- "Karat Holding", an Azeri company, holds 3 large scale mill plants in Georgia, which daily produce around 1400 tons of flour. This constitutes about 40% of the flour market.

Data and Methodology

- FAO GIEWS provides monthly wheat flour national average prices for Georgia with 141 observations starting from December 2004 to February 2016 and world market prices (Black Sea) for the same period
  - Georgia: national average wheat flour (high grade), retail
  - International prices: Black Sea wheat (Russia, Ukraine, Kazakhstan

Data and Methodology

- Graphical representation of two time series shows a possible long-term connection between the Georgian and Black Sea prices



Data and Methodology

- VECM are used to study price transmission
- The data show the existence of rank 1 cointegration. This can be interpreted as an existence of a long-run relationship between Georgian wheat flour and Black Sea wheat prices (I(1) processes).
- As Georgia is a small country it is obvious that Georgian wheat flour prices do not have impact on international wheat prices and we have a case of price taker.
- Granger causality test (Granger, 1969) is performed with null hypothesis of having no causality. This test implied that Georgian wheat flour prices do not Granger cause Black Sea wheat prices.

The Main Findings

The long run relationship between prices in Georgia and Black Sea are following:

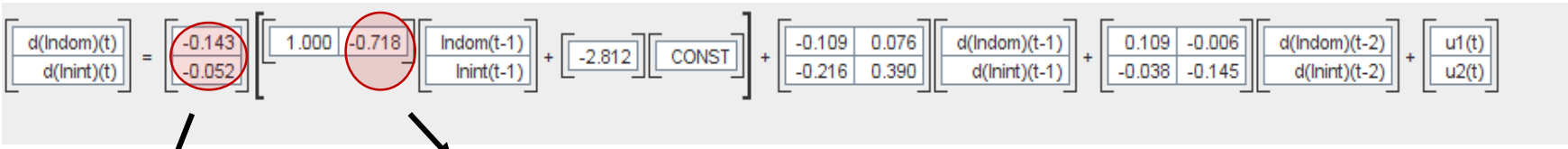
$$lndom_t = 2.812 + 0.718 lnInt_t$$

- As analysis were conducted using natural logarithms we can interpret 0.72 as long run elasticity of transmission between these two prices. So, 1 percentage point increase in Black Sea wheat price would lead to corresponding 0.72 percent price increase of flour in Georgia.

The Main Findings

VECM Estimation Results

- VECM results for these prices (*dom*= flour, *Int*= wheat, estimated with two lag, prices in logarithms)



Adjustment parameters

Long run coefficient of price transmission

- The magnitudes of the adjustment parameters suggest that Georgian flour prices react to international wheat prices and not vice versa. This is also what we would expect (wheat prices in Georgia are largely determined by world market conditions and policies which are largely exogenous to conditions in the milling industry)
- As analysis showed roughly 14% of deviation from long run equilibrium is corrected in one period. Our data is monthly and 4 months is needed to correct more than half of the deviation and 7 months to fully adjust.

Outlook

Limitations of the VECM:

Not structural, only uses prices, no consideration of trade flows or transaction costs

- **Recent Developments**:
    - The average price of one tone of Black Sea wheat was 206 USD in 2015, it dropped and costs 182 USD in 2016.
    - GEL depreciated around 32% to USD in 2015

Next:

- The existence of non-competitive market?
- Test for asymmetry

Thank you