China-Russia Trade Relations and Their Impact on Europe

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Outline

• Background

• Reflection on EU’s Competition with China and Russia

• Empirical Analysis

• Conclusions
Background: Why China-Russia Relations Matters

- China and Russia are key strategic partners for Europe.
  - Russia’s largest trading partner.
  - China’s major economic competitor in terms of export capacity.

(Million, USD)
EU Relations

• EU-Russia v.s. China-Russia relations
  • The EU-Russia relations are challenged by Russia-Ukraine gas dispute and Russia’s annexation of Crimea in 2014.
  • China-Russia has increased their economic collaborations over the past years.
A Brief History of China-Russia Relations

- **Pre-1991: Sino-Soviet Relations**

- **1992** - Russian President Boris Yeltsin made first official visit to China.

- **1994 - 1996**, from “Constructive partnership” to “strategic partnership of coordination”.

- **1998**, Following China Prime Minister Li Peng’s visit to Moscow, Russia and China issued a joint communique pledging to build an ‘equal and reliable partnership’.


- **2004**, a proposed pipeline from Eastern Siberia to the Pacific and increase oil export.

- **2009**, the 60th anniversary of established diplomatic relations, coincided with the signing of over 40 contracts worth roughly $3 billion.

- **2013**, China proposed the belt and road initiative, with Russia being an important partner.
Comparison of China and Russia

Figure 1: China and Russia’s exposure to globalization
Import Competition from EU and Russia in China

Figure 2: Import share of EU and Russia in China

Figure 2A: Top 10 imports from EU in China

87 Vehicles other than railway or tramway... 27 Mineral fuels, mineral oils and products of...
84 Nuclear reactors, boilers, machinery and... 44 Wood and articles of wood; wood charcoal,
85 Electrical machinery and equipment and... 84 Nuclear reactors, boilers, machinery and...
90 Optical, photographic, cinematographic,... 75 Nickel and articles.
88 Aircraft, spacecraft, and parts. 26 Ores, slag and ash.
30 Pharmaceutical products. 31 Fertilisers.
39 Plastics and articles 03 Fish and crustaceans, molluscs and other...
71 Natural or cultured pearls, precious or... 71 Natural or cultured pearls, precious or...
29 Organic chemicals. 29 Organic chemicals.
73 Articles of iron or steel.
Import Competition from the EU and China in Russia

Figure 3: Import share of EU and China in Russia

Figure 4A: Top 10 imports from EU in Russia

- 84 Nuclear reactors, boilers, machinery...
- 87 Vessels other than railway or...
- 85 Electrical machinery and equipment...
- 30 Pharmaceutical products.
- 39 Plastics and articles thereof
- 90 Optical, photographic,...
- 33 Essential oils and resinoids;
- 48 Paper and paperboard; articles of...
- 73 Articles of iron or steel.
- 88 Aircraft, spacecraft, and parts thereof.

Figure 4B: Top Imports from China in Russia

- 85 Electrical machinery and...
- 84 Nuclear reactors, boilers,...
- 64 Footwear, gaiters and the like;...
- 87 Vehicles other than railway or...
- 62 Articles of apparel and clothing...
- 61 Articles of apparel and clothing...
- 39 Plastics and articles thereof
- 94 Furniture; bedding, mattresses,...
- 73 Articles of iron or steel.
- 95 Toys, games and sports requisites;...
Estimates of Elasticity: Method

• Following Diewert (1976) and Feenstra (2003), we choose a translog expenditure function to estimate the elasticity of substitution in Allen-Hicks sense.

\[ \ln(E_i) = \ln(U_i) + \alpha_{0i} + \sum_j \alpha_j \ln(p_{ji}) + \sum_j \sum_k \lambda_j \ln(p_{ji}) \ln(p_{ki}) \]

• With some reasonable assumptions it is possible to show that

\[ s_{mj} = \alpha_m + \sum_k \lambda_{km} \ln(p_{kj}) \]

• The elasticity of substitution can be retrieved from the parameters along with the market share value. See technical details in the appendix of the paper.
Two Key Results

• I. The EU and Russia are complementary in the Chinese market as shown by the negative and significant elasticity.

• II. China and EU countries are competitive in the Russian market as shown by a positive and significant elasticity.

<table>
<thead>
<tr>
<th>Country Pair</th>
<th>China Market</th>
<th>Russia Market</th>
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<tbody>
<tr>
<td>EU-Russia Substitution</td>
<td>-0.15** (complement)</td>
<td>--</td>
</tr>
<tr>
<td>EU-China Substitution</td>
<td>--</td>
<td>1.30** (substitute)</td>
</tr>
<tr>
<td>EU-ROW Substitution</td>
<td>0.73 (substitute)</td>
<td>1.24 (substitute)</td>
</tr>
</tbody>
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Product-level Analysis

• The competition between countries are more pronounced within each sector, as shown that the within-sector substitution for the three areas are positive for most sectors.

• The complementarity between Russia and EU in the Chinese market is driven by cross-sector complementarity.
Evolution of the Elasticity of Substitution

• The elasticity of substitution between the EU and Russia in China has experienced a dramatic decline over the past years.

• The EU and China have maintained a competitive relations in the Russian market, but the elasticity has increased during the last three years when EU-Russia relations sharply deteriorated.
Stimulating the Impact for Europe

• Scenario simulation:
  • Assuming that a closer economic relations implies a reduction in China-Russia bilateral exporting prices of 20%.
  • Interacting the effect of the substitution in Russia and the effect of complementarity in China, we show that there will be a reduction of 4% of EU exports to Russia and China.

• Three issues concerning the simulation:
  • ceteris paribus assumption
  • the possible deterioration of EU-Russia relations
  • slowdown of China and Russia economy
Conclusions

By estimating the elasticity of substitution, we show that:

- Russia and EU countries are complementary on China’s market and this is increasingly the case over time.
- China and EU economies compete in Russia’s market and increasingly so in more recent years.

Simulation results indicate that a 20% reduction in bilateral exporting price between China and Russia would reduce EU exports to these two countries by 4%, with most of the negative impact born by exports to Russia.