Estimating the Trade Duration of Kazakhstan’s Wheat Exports

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Estimating the Trade Duration of Kazakhstan’s Wheat Exports

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Introduction

Kazakhstan’s wheat market in figures:
- World’s eights largest wheat exporter in 2014 (UN COMTRADE);
- wheat exports have increased sharply from $230 million in 1995 to $1600 million in 2012;
- 31% export market share in the Black Sea region (Kazakhstan, Russia and Ukraine).

Barriers for wheat export:
- Land-locked country;
- Poor infrastructure;
- Government intervention (export restriction in 2008);
- Russian dominance in Black Sea region.

Kazakhstan has stable export relations with “close” trading partners.

Objectives

- Estimation of trade duration for Kazakhstan’s wheat exports.
- Identify factors that contribute to explaining the instability in Kazakhstan’s wheat export for the period 1995-2012;
- Explore avenues for strengthening the long-term competitiveness of wheat exports;
- Whether generally accepted trade duration variables can explain the patterns of trade duration for single agricultural product.

Methods

- Trade duration model (Besedes and Prusa 2006);
- Discrete-time duration model;
- no problems in dealing with ties,
- controls for unobserved heterogeneity,
- does not impose proportionality of duration hazards (Hess and Persson 2012).

Estimation Strategy

- Discrete time duration models can be maintained in binary hazard models using standard probit, logit, and clog-log.
- i) an unconstrained model with all data and ii) adjusted data-excludes single year trade and trade <$1,000/year.
- Both models are regressed with and without random effects to test for the presence of unobserved heterogeneity (frailty).

Estimation results

<table>
<thead>
<tr>
<th>Log_distance</th>
<th>All data</th>
<th>Adjusted data</th>
</tr>
</thead>
<tbody>
<tr>
<td>With frailty</td>
<td>Without frailty</td>
<td>With frailty</td>
</tr>
<tr>
<td>Soviet Union</td>
<td>-0.510***</td>
<td>-0.485***</td>
</tr>
<tr>
<td>Nr. of import markets</td>
<td>0.014***</td>
<td>-0.038***</td>
</tr>
<tr>
<td>Nr. of export markets</td>
<td>0.005</td>
<td>0.005</td>
</tr>
<tr>
<td>Russian share</td>
<td>1.951***</td>
<td>1.982***</td>
</tr>
<tr>
<td>Multiexport</td>
<td>0.023***</td>
<td>0.031***</td>
</tr>
<tr>
<td>Log_duration</td>
<td>-0.267***</td>
<td>-0.302***</td>
</tr>
<tr>
<td>Log_production</td>
<td>-0.054***</td>
<td>-0.056***</td>
</tr>
<tr>
<td>Log_Price</td>
<td>0.798***</td>
<td>0.808***</td>
</tr>
<tr>
<td>Real Exchange Rate</td>
<td>0.007</td>
<td>0.007</td>
</tr>
<tr>
<td>Restriction</td>
<td>0.048***</td>
<td>0.042***</td>
</tr>
<tr>
<td>Log_GDP_pc_KAZ</td>
<td>-0.503***</td>
<td>-0.499***</td>
</tr>
<tr>
<td>Log_GDP_pc_imp</td>
<td>-0.010</td>
<td>-0.012</td>
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<tr>
<td>Log_Population_KAZ</td>
<td>0.338</td>
<td>0.328</td>
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<tr>
<td>Log_Population_imp</td>
<td>0.305</td>
<td>0.309</td>
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<tr>
<td>Distance</td>
<td>-0.009</td>
<td>-0.015</td>
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<tr>
<td>Turkish group</td>
<td>-0.747***</td>
<td>-0.673***</td>
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<tr>
<td>Common border</td>
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<td>0.184</td>
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<tr>
<td>Log_initial export</td>
<td>-0.051</td>
<td>-0.045</td>
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<tr>
<td>Dummy-100.000$</td>
<td>0.074</td>
<td>0.059</td>
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<tr>
<td>Observations</td>
<td>582</td>
<td>562</td>
</tr>
<tr>
<td>Spells</td>
<td>194</td>
<td>194</td>
</tr>
<tr>
<td>Trade relations</td>
<td>86</td>
<td>86</td>
</tr>
<tr>
<td>Log-Birth</td>
<td>-253.48</td>
<td>-259.64</td>
</tr>
</tbody>
</table>

*, **, *** shows statistical significance at 10, 5 and 1 percent level, respectively.

Conclusions

- KAZ wheat exports critically depend on the market share of Russian wheat exports (Russian share).
- Government should avoid restrictive export policies (Restriction).
- Focus on possible big and close markets-China and Middle East (distance).
- Kazakhstan has stable export relations with “close” trading partners (Distance, Soviet Union).
- Competitiveness can be achieved in both pricing and productivity (Production and Price).
- Generally accepted determinants of trade duration discussed in previous empirical studies are largely unable to explain the patterns of commodity (wheat) trade on the extensive margin (GDP_pc, Population etc.).

Bibliography


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