Regional price effects of export restrictions in Russia, Ukraine and Kazakhstan

Linde Götz, Ivan Djuric, Oleg Nivievskyi, Dmytro Serebrennikov, Thomas Glauben and Ulrich Koester

26-27 March 2015, Kaliningrad, Russian Federation
Types of export restrictions:

- Export tax
- Export quota
- Export ban
- Indirect restrictions

Aim:

- Reduce exports induced by high world market prices
- Increase domestic supply
- Dampen domestic food price inflation
Trade-oriented policy measures food crisis 2007/08

Implementing export barriers

- Worldwide: 37 countries
- For example,
  - Belarus (export tax wheat),
  - Egypt (export tax and export ban on rice),
  - Jordan (export ban vegetables and eggs),
  - Lebanon, Ukraine (export quota on wheat, maize, barley, rye)
  - Tajikistan (export ban grains)
  - Uzbekistan (flour and wheat export tax)

Abolishing import barriers

- Worldwide 59 countries
- For example,
  - Algeria, Azerbaijan (import tariff on grain and rice eliminated),
  - EU (import tariff removal wheat),
  - Jordan, Lebanon, Morocco (import tariff on wheat, animal compound foodstuffs, milk powder suspended)

Source: FAO 2008
Article XI of the GATT 1994 requires Members to eliminate all prohibitions and quantitative restrictions on exports:

<table>
<thead>
<tr>
<th>Export tax</th>
<th>Export quota</th>
<th>Export ban</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Exceptions: „the prohibition on export restrictions does not extend to restrictions temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party“
Export controls in the KRU

**Kazakhstan**
- Export ban 2008
- Indirect controls 10/11

**Russia**
- Export tax 2007-08
- Export ban 2010-11
- Export tax 2015

**Ukraine**
- Export quota 2006-07
- Export quota 2007-08
- Export quota 2010-11
- Indirect controls 12/13

---

31/03/2015
Research questions & approach

Research questions:

- How did export controls effect domestic wheat prices in the KRU?
- Do regional price effects of export controls within a country differ?
- Are there differences in those effects between the KRU countries and how can they be explained?

Model approach:

- Price transmission model approach: domestic price – world market price
- Develop indicators for the effectiveness of export controls
Export restrictions & (regional) domestic price effects

Baylis et al. 2014; Diao et al. 2014, Djuric et al. 2014,
Götz et al. 2013, 2012

Weather shocks, export restrictions & domestic price effects

Baffes et al. 2015
Fellmann et al. 2014
Economics of export controls

Domestic price effects of export controls:

1. Price damping effect
2. Price insulating effect

31/03/2015
Regime switching long-run equilibrium model

\[ p^d_t = \begin{cases} \alpha^f + \beta^f \cdot p^{wm}_t + u^f_t & \text{regime „free trade”} \\ \alpha^r + \beta^r \cdot p^{wm}_t + u^r_t & \text{regime „restricted trade”} \end{cases} \]

- \( p^d_t \) = domestic price
- \( p^{wm}_t \) = world market price
Regime switching long-run equilibrium model

\[ p_t^d = \begin{cases} 
\alpha^{fs} + \beta^{fs} * p_t^{wm} + u_t^{fs} \\
\alpha^{rs} + \beta^{rs} * p_t^{wm} + u_t^{rs}
\end{cases} \]

regime „free trade during production shortage”
regime „restricted trade during production shortage”

Total grain production

Harvest shortfall -30%

Russia

Export ban

Wheat export
World market
Central
Black Earth
North Caucasus
Volga
Ural
West Siberia

Total grain production

Mar-05
Jul-05
Nov-05
Mar-06
Jul-06
Nov-06
Mar-07
Jul-07
Nov-07
Mar-08
Jul-08
Nov-08
Mar-09
Jul-09
Nov-09
Mar-10
Jul-10
Nov-10
Mar-11
Jul-11
Nov-11
Mar-12
Jul-12
Nov-12
Mar-13
Jul-13
Nov-13

Mar-05
Jul-05
Nov-05
Mar-06
Jul-06
Nov-06
Mar-07
Jul-07
Nov-07
Mar-08
Jul-08
Nov-08
Mar-09
Jul-09
Nov-09
Mar-10
Jul-10
Nov-10
Mar-11
Jul-11
Nov-11
Mar-12
Jul-12
Nov-12
Mar-13
Jul-13
Nov-13

In 1,000 t

Mar-05
Jul-05
Nov-05
Mar-06
Jul-06
Nov-06
Mar-07
Jul-07
Nov-07
Mar-08
Jul-08
Nov-08
Mar-09
Jul-09
Nov-09
Mar-10
Jul-10
Nov-10
Mar-11
Jul-11
Nov-11
Mar-12
Jul-12
Nov-12
Mar-13
Jul-13
Nov-13

In RUB/t

Mar-05
Jul-05
Nov-05
Mar-06
Jul-06
Nov-06
Mar-07
Jul-07
Nov-07
Mar-08
Jul-08
Nov-08
Mar-09
Jul-09
Nov-09
Mar-10
Jul-10
Nov-10
Mar-11
Jul-11
Nov-11
Mar-12
Jul-12
Nov-12
Mar-13
Jul-13
Nov-13

Russia
Russia - Regional wheat prices

- Export tax
- Export ban

Wheat export
- World market
- Central
- Black Earth
- North Caucasus
- Volga
- Ural
- West Siberia

31/03/2015
Russia - grain production regions

- **URALS** (6)
- **WEST SIBERIA** (9)
- **VOLGA** (8)
- **NORTH CAUCASUS** (10)
- **CENTRAL BLACK EARTH** (5)
- **CENTRAL** (13)

- Strong variation in distance to the world market
- Some regions only trade regionally
Russia – regional variation in production shortfall

![Graph showing regional variation in production shortfall from 2005 to 2014 for different regions: North Caucasus, West Siberia, Volga, Black Earth, Ural, Central. The y-axis represents production shortfall in 1,000 t, and the x-axis represents years from 2005 to 2014. Each region has a distinct line color and style, indicating variations in production outputs across the years.](image-url)
North Caucasus - regional grain trade during export ban 2010/11

North Caucasus: 2.5 million grain exports
West Siberia - regional grain trade during export ban 2010/11

West Siberia: 1.2 million grain exports
Export ban Russia: Indicators effectiveness

Strong variation in regional price effects:

- Large distance between regions
- Some regions export only regionally others only to the world market
- Differing grain production development between regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Price Insulating Effect</th>
<th>Price Damping Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Caucasus</td>
<td>-76%</td>
<td>-67%</td>
</tr>
<tr>
<td>Central</td>
<td>-44%</td>
<td>-50%</td>
</tr>
<tr>
<td>Black Earth</td>
<td>-46%</td>
<td>-50%</td>
</tr>
<tr>
<td>Volga</td>
<td>-31%</td>
<td>-44%</td>
</tr>
<tr>
<td>West Siberia</td>
<td>-2%</td>
<td>-53%</td>
</tr>
<tr>
<td>Ural</td>
<td>-35%</td>
<td>-32%</td>
</tr>
</tbody>
</table>

31/03/2015
Spatial price equilibria during export ban 2010/11

2 spatial price equilibria:
1. North Caucasus, Black Earth, Central and Volga
2. West Siberia and Ural

URALS (6) CENTRAL BLACK EARTH (5)
WEST SIBERIA (9) CENTRAL (13)
VOLGA (8)
NORTH CAUCASUS (10)
Regional effects are small:

- Price insulating effect: -13% to -32%
- Price damping effect: 0% to -4%
- Distance between different regions is small
- Grain producing regions are affected by similar weather conditions
Most regional prices further increasing during export ban:

- Market intransparency: Wrong inform. on harvest size 2007/8
- Scarcity of wheat on the domestic market
- Increased domestic demand for wheat to export flour
Effectiveness of export controls (1)

- Large price damping effects only for a few weeks
- Price damping effects are counteracted by storage
- Damping effects on domestic end consumer food prices questionable
- Often supplementary means required to bring bread prices down
- Mills, bakeries and retailers may increase their profits, nonetheless consumers have to pay higher bread prices
Costs for wheat have a minor share on bread production costs which reduces the transmission of price damping effects to the bread price.

<table>
<thead>
<tr>
<th>Region</th>
<th>North Caucasus</th>
<th>Central</th>
<th>Black Earth</th>
<th>Volga</th>
<th>West Siberia</th>
<th>Ural</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Price insulating effect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-76%</td>
<td>-44%</td>
<td>-46%</td>
<td>-31%</td>
<td>-2%</td>
<td>-35%</td>
</tr>
<tr>
<td><strong>2. Price damping effect</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-67%</td>
<td>-50%</td>
<td>-50%</td>
<td>-44%</td>
<td>-53%</td>
<td>-32%</td>
</tr>
</tbody>
</table>

Bread price is damped by 5% in Moscow.
High economic costs of export restrictions

**In the short-run:**

- Economic losses for farmers & traders
- Increased market and price risk
  - Impossible to engage in futures markets
- Wheat storage increases
- Reliability of contracts decreases
- Risk premium on wheat export prices
- Wheat production costs increase
- Further increasing the world market price level

**In the medium-run & long-run:**

- Profitability of grain production decreases
- Disincentives for investments in the grain sector
- Grain production decreases
- Grain exports decrease
- Grain production potential is not mobilized
- Negatively affects domestic and global food security
Avoid trade-oriented measures
Let domestic food prices go up
Help poor consumers to cope with high food prices
Consumer-oriented measures have less negative market distorting effects, can better be targeted and are more effective, e.g.
  - Food vouchers
  - Food subsidies
  - Direct income transfers
Russia wheat export tax of 15% since Feb 2015

- Revaluation Rouble against US$ since February 1, 2015 by 7.4% → reinforcing price damping effects of the tax
- Export activity continues on a high level (ca. 30% higher compared to previous season) → price increasing effects
- Large amounts of wheat stored → price increasing effects
- Strict monitoring of food prices

Source: Grain Union Russia
Thank you very much for your attention!
## Export ban Russia: Transport costs & prices

<table>
<thead>
<tr>
<th>Transport costs &amp; prices</th>
<th>626</th>
<th>780</th>
<th>688</th>
<th>982</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exports from North Caucasus to ...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exports from West Siberia to ...</td>
<td>(1355)</td>
<td>1311</td>
<td>1228</td>
<td>1073</td>
</tr>
<tr>
<td>Avg. wheat producer price</td>
<td>5,951</td>
<td>6,358</td>
<td>6,698</td>
<td>6,711</td>
</tr>
</tbody>
</table>
Aggregated price effects export controls Ukraine

Effeciveness export quota 2006/7, 2007/8 and 2010/11:

- No unambiguous difference in effectiveness
- Probably export control regimes need to be further split up