Agrifood sector transformation and its implications on development of small farmers in Kazakhstan

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Integration processes in the CIS region and their implications for agricultural trade
Content

• Structural changes in Central Asia
• Emerging export opportunities
• The case study: Kazakhstan
• Summary and conclusions
Structural changes in Central Asia

- Collectivization process during the FSU period
  - establishment of kolkhozes and sovkhozes
  - State procurement organizations and retail outlets instead of bazaars

- Collapse of agrifood sector in the early years of independence
  - High importance of subsistence farming
  - Growing share of food imports

- Developments in the last decade
  - Growing share of industry in GDP
  - Urbanization process
  - Re-emerging processing industry
  - Growing share of formal retail outlets
Emerging export opportunities

Russia Looks to Boost Food Imports from Central Asia
Published by John C. K. Daly
December 22, 2014

Russian, Uzbek presidents to discuss boosting agricultural supplies to Russia

Central Asia Stands to Gain as Russia Bans Western Food

Tajikistan to hugely raise fruit, vegetable exports to Russia
Constraints to boost agri-exports

“...we shouldn't expect that our products to get straight to the supermarket shelves (in Russia).”

“...the country must meet Russia’s import requirements.”

“....the lack of a specialized laboratory that gives international certificates.”

“...to think about increasing the added value of our products.”

“...fruit and vegetable products from these countries do not always meet the phytosanitary regulations of the Customs Union”

Are there any additional challenges that need to be taken into account?
Farm level marketing options

Marketing options in Kazakhstan
Source: Petrick and Oschakbayev, forthcoming

Marketing options in Kyrgyzstan
Source: own estimation based on DIW, 2011
Retail modernization in CIS

How do these developments in the supply chain impact on small producers’ welfare in CA?

Source: own presentation based on CISStat (2014)
Case study: Kazakhstan

- Large share of land occupation by enterprises
- Monoculture in grain but important role in the export growth
- High volatility of production associated with weather and prices
- Low input use strategy as risk management option (e.g. insurance does not provide hedging effect)
- Diversified production patterns at smaller units
- Production of high value commodities (comparative advantage)

**Average farm sizes in 2011**

<table>
<thead>
<tr>
<th>Farm Type</th>
<th>Farm Size, ha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural enterprises</td>
<td>6900</td>
</tr>
<tr>
<td>Individual farms</td>
<td>286</td>
</tr>
<tr>
<td>Households</td>
<td>0.11</td>
</tr>
</tbody>
</table>

*Source: Statistical Agency of Kazakhstan*
Transformation in *agrifood* sector

- Growing demand for packaged and processed food
- Growing share of formal retail channels
- Growing demand for fruit, vegetable and livestock products
- Developments in the processing industry

**Per capita consumption of some commodities**

**Gross value of retail trade according to the trade channels**
Regional diversity in agriculture

- Agro-ecology
- Population density and land availability
- Off-farm employment options
- Market infrastructure and access
- Processing industry
- Contract options

Share of farm types in Gross Regional Agricultural Product in 2011; Source: Own presentation based on data from StatKaz (2012)
Panel data from 14 regions of Kazakhstan for the period 1995-2011:

• Gross agricultural output of individual farms
• Gross agricultural output of households
• Retail food trade
• Value of processed food
• Share of modern trade outlets
• GRAP and GRIP
• Share of livestock production in ind. farm revenues
• Share of livestock production in household revenues
• Prices of main agricultural products

Photo: Prischepov, 2013
Determinants of agrifood sector development

<table>
<thead>
<tr>
<th></th>
<th>Modern retail</th>
<th></th>
<th>Food processing</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficient</td>
<td>Std. Err</td>
<td>Coefficient</td>
<td>Std. Err</td>
</tr>
<tr>
<td>GRP per capita</td>
<td>-0.179</td>
<td>0.09</td>
<td>-0.117</td>
<td>0.12</td>
</tr>
<tr>
<td>Urbanization</td>
<td>0.417*</td>
<td>0.19</td>
<td>0.617*</td>
<td>0.25</td>
</tr>
<tr>
<td>Information services</td>
<td>0.050**</td>
<td>0.02</td>
<td>-0.027</td>
<td>0.02</td>
</tr>
<tr>
<td>Marketing and advertisement</td>
<td>0.078*</td>
<td>0.04</td>
<td>0.118*</td>
<td>0.05</td>
</tr>
<tr>
<td>services</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.512*</td>
<td>0.75</td>
<td>6.136***</td>
<td>0.98</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.828</td>
<td></td>
<td>0.921</td>
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<tr>
<td>Adjusted $R^2$</td>
<td>0.798</td>
<td></td>
<td>0.907</td>
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</tbody>
</table>

Legend: * $p<0.05$; ** $p<0.01$; *** $p<0.001$
## Impact on individual farmers’ revenues

<table>
<thead>
<tr>
<th>Factor</th>
<th>Coefficient</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail food trade</td>
<td>0.335***</td>
<td>0.08</td>
</tr>
<tr>
<td>Modern retail</td>
<td>0.241*</td>
<td>0.11</td>
</tr>
<tr>
<td>Food processing</td>
<td>0.351**</td>
<td>0.11</td>
</tr>
<tr>
<td>Share of livestock production in farm revenues</td>
<td>-0.220***</td>
<td>0.05</td>
</tr>
<tr>
<td>Share of non-agricultural sector in GRP</td>
<td>-0.637***</td>
<td>0.16</td>
</tr>
<tr>
<td>Grain price</td>
<td>0.300*</td>
<td>0.14</td>
</tr>
<tr>
<td>Meat price</td>
<td>0.514**</td>
<td>0.18</td>
</tr>
<tr>
<td>Neighborhood with Almaty oblast</td>
<td>0.718***</td>
<td>0.19</td>
</tr>
<tr>
<td>constant</td>
<td>-8.696***</td>
<td>2.52</td>
</tr>
<tr>
<td>$R^2$</td>
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<td>Number of obs. (N)</td>
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Legend: * $p<0.05$; ** $p<0.01$; *** $p<0.001$
## Impact on household producers’ revenues

<table>
<thead>
<tr>
<th>Term</th>
<th>Coefficient</th>
<th>Std. Error</th>
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</thead>
<tbody>
<tr>
<td>Retail food trade</td>
<td>0.022</td>
<td>0.032</td>
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<tr>
<td>Modern retail</td>
<td>0.118**</td>
<td>0.044</td>
</tr>
<tr>
<td>Food processing</td>
<td>-0.001</td>
<td>0.043</td>
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<tr>
<td>Share of livestock production in household revenues</td>
<td>-0.535***</td>
<td>0.099</td>
</tr>
<tr>
<td>Share of non-agricultural sector in GRP</td>
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<td>0.061</td>
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<tr>
<td>Grain price</td>
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<tr>
<td>Meat price</td>
<td>0.092</td>
<td>0.073</td>
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<tr>
<td>Neighborhood with Almaty oblast</td>
<td>0.483***</td>
<td>0.076</td>
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<tr>
<td>constant</td>
<td>5.998***</td>
<td>0.997</td>
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<tr>
<td>$R^2$</td>
<td>0.962</td>
<td></td>
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<tr>
<td>Number of obs. (N)</td>
<td>193</td>
<td></td>
</tr>
</tbody>
</table>

*Legend: * $p<0.05$; ** $p<0.01$; *** $p<0.001$*
Results

• Important role of urbanization process on agrifood sector development
• Increasing food retail enabled small farms to improve their revenues
• Individual farmers gain more benefits compared to household producers
• Structural changes in retail have positive impact on private farms, but not on households
• Food processing has positive effect on individual farms and limited impact on household producers
• Access to market has significant positive effect, especially for individual farms
Conclusions

• Important role of industrialization and urbanization
• Spillover effects of agrifood industry development to small producers
• Need for investment into rural infrastructure (e.g. roads, service organizations)
• Slow developments in the formalization of the procurement mechanisms
• Reducing transaction costs for household producers in order to boost export potential of the country
Thank you for your attention!!!