To Attest or Not to Attest: China Requires Registration of Overseas Dairy Manufacturers

Elizabeth Gooch and Astha Sen

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To Attest or Not to Attest: China Requires Registration of Overseas Dairy Manufacturers

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IATRC Conference, Washington DC

Dec. 5, 2017

Views expressed here do not represent the USDA or Economic Research Service.
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In-time effect  Starting in May 2014, U.S. dairy facilities began to encounter significant delays in registering their plants and products.

In-time effect  China automatic certified 200 U.S. dairy facilities in May 2014. Over next 3 years, wait list grew to 130.
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In-time effect  China automatic certified 200 U.S. dairy facilities in May 2014. Over next 3 years, wait list grew to 130.

Our results  Using a difference-in-difference-in-difference causal inference methodology.

Our results  We find that dairy exports increased.
Background

Decree 145, Article 1
To strengthen the supervision and management of overseas manufacturers of imported food...

**Meat:** Began on May 1, 2013.

**U.S.** Slaughter facilities are exempt because of superseding provisions of the 1999 U.S.-China Agreement on Agricultural Cooperation.

**Seafood:** Began for all seafood on May 1, 2013.

**Dairy:** Began for all dairy on May 1, 2014.
Background

Article 7

Submit the statement made by the competent authorities of the country (region) where the manufacturer is located that the recommended manufacturer is in compliance with the requirements as defined by the laws and regulations of China.

Seafood: No issues from FDA.

Dairy: On May 1, 2014, after China automatically certified 200 U.S. dairy export facilities, no other U.S. dairy export facilities were registered until after June 2017 MOU allowing third-party attestation.
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Article 7

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Research Question

Did the miscommunication between the FDA and CNCA affect U.S. dairy exports?
What type of intervention?

- A miscommunication over a food safety regulation.
- Failure to coordinate, began in May 2014 for U.S. dairy exports.

What is the empirical strategy?

- A single commodity, single trading-partner issue.
- Difference-in-difference-in-difference (DDD) methodology.

An ambiguous predicted effect

- Restricted access to a market should decrease trade.
- Altered competition (200 grandfathered-in U.S. exporters.)
Data

**Outcome** U.S. Exports
- June 2010 to June 2017 (one year June to June).
- Grouped by two-digit harmonized description code.
- Includes only agricultural trade, HS code 1 to 24.

**Intervention** June 2010 - May 2014 is pre-treatment. June 2014 - May 2017 is treatment period.

**Covariates** Trading partner characteristics (yearly)
- GDP per capita
- Total trade/total imports
- Purchasing power parity with dollar
- Population density
Methodology

\[ v = \phi_C + \phi_t + \phi_D + \beta_0 + \beta_1 dD + \beta_2 dC + \beta_3 dD \cdot dC + \delta_0 d^2 + \delta_1 d^2 \cdot dD + \delta_2 d^2 \cdot dC + \delta_3 d^2 \cdot dD \cdot dC + u \]  

- \( v \) is the value of U.S. exports.
- \( \phi_C, \phi_D \) and \( \phi_t \) are commodity type, destination market, and time effects.
- \( d2 \) is a dummy variable for the second period (after June 2014).
- \( dC \) captures possible differences between China and other trading partners.
- \( dD \) captures possible difference between dairy and other commodities.
Estimate

\[ \hat{\delta}_3 = (\bar{v}_{C,D,2} - \bar{y}_{C,D,1}) - (\bar{v}_{A,D,2} - \bar{v}_{A,D,1}) - (\bar{v}_{C,N,2} - \bar{v}_{C,N,1}) \] (2)

- A subscript means the trading partner is not China and the N subscript represents non-dairy commodities
- *Difference-in-difference-in-difference* (DDD) estimate finds the expected value of the six groups appearing in the equation.
Methodology

Successful DDD
Decree 145 does not spillover into counterfactual units both directly and indirectly.

- Non-dairy exports to China.
- Non-dairy exports to other countries.
- Dairy exports to other countries (130 facilities on waitlist over three years).
Overview of Empirical Analysis

Baseline Analysis  Impact on U.S. Dairy Exports
Sensitivity Checks  Changing counterfactual for U.S. Exports
  ▶ Removing soy exports
  ▶ Comparing dairy to meat exports
Placebo Test #1  U.S. Seafood Exports
Placebo Test #2  New Zealand Dairy Exports
## Baseline Analysis

<table>
<thead>
<tr>
<th></th>
<th>Baseline (1)</th>
<th>No Soy (2)</th>
<th>Only Meat (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decree 145=1</td>
<td>0.152*</td>
<td>0.148</td>
<td>-0.894*</td>
</tr>
<tr>
<td></td>
<td>(0.0873)</td>
<td>(0.0913)</td>
<td>(0.481)</td>
</tr>
<tr>
<td>Decree 145=1 × China=1</td>
<td>-0.362**</td>
<td>-0.365**</td>
<td>-0.662</td>
</tr>
<tr>
<td></td>
<td>(0.169)</td>
<td>(0.177)</td>
<td>(0.477)</td>
</tr>
<tr>
<td>Decree 145=1 × Dairy=1</td>
<td>-0.497***</td>
<td>-0.491***</td>
<td>-0.150</td>
</tr>
<tr>
<td></td>
<td>(0.183)</td>
<td>(0.182)</td>
<td>(0.284)</td>
</tr>
<tr>
<td>Decree 145=1 × China=1 × Dairy=1</td>
<td>0.701***</td>
<td>0.700***</td>
<td>1.039***</td>
</tr>
<tr>
<td></td>
<td>(0.243)</td>
<td>(0.248)</td>
<td>(0.284)</td>
</tr>
<tr>
<td>Obs.</td>
<td>11017</td>
<td>10477</td>
<td>969</td>
</tr>
</tbody>
</table>

Standard Errors are clustered at the partner country-commodity unit.
## Placebo Tests

<table>
<thead>
<tr>
<th></th>
<th>US Seafood (1)</th>
<th>NZ Dairy (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decree 145=1</td>
<td>0.148*</td>
<td>0.146</td>
</tr>
<tr>
<td>(0.0841)</td>
<td>(0.175)</td>
<td></td>
</tr>
<tr>
<td>Decree 145=1 × China=1</td>
<td>-0.278</td>
<td>0.789***</td>
</tr>
<tr>
<td>(0.181)</td>
<td>(0.267)</td>
<td></td>
</tr>
<tr>
<td>Decree 145=1 × Seafood=1</td>
<td>-0.0709</td>
<td></td>
</tr>
<tr>
<td>(0.131)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decree 145=1 × China=1 × Seafood=1</td>
<td><strong>0.0175</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.212)</td>
<td></td>
</tr>
<tr>
<td>Decree 145=1 × Dairy=1</td>
<td>-0.167</td>
<td></td>
</tr>
<tr>
<td>(0.251)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decree 145=1 × China=1 × Dairy=1</td>
<td><strong>-0.372</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.367)</td>
<td></td>
</tr>
<tr>
<td>Obs.</td>
<td>11544</td>
<td>5532</td>
</tr>
</tbody>
</table>

Standard Errors are clustered at the partner country-commodity unit.
Overview of Results

Baseline Analysis  Impact on U.S. Dairy Exports (+)

Sensitivity Checks  Changing counterfactual for U.S. Exports
  ▶ Removing soy exports (+)
  ▶ Comparing dairy to meat exports (+)

Placebo Test #1 U.S. Seafood Exports (no effect)
Placebo Test #2 New Zealand Dairy Exports (no effect)

▶ Supported with U.S. seafood and New Zealand dairy which remain unchanged.
▶ Change in competition for 200 U.S. export facilities may have countered negative effects of increased costs.
How could there be a positive effect on trade value?

▶ Reduced competition → economies of scale → charging a lower price for the product in a foreign market.
▶ Elastic demand for dairy in China.
Thank you - Comments welcome

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