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

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United States Department of Agriculture

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

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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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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

$$v = \phi_C + \phi_t + \phi_D + \beta_0 + \beta_1 dD + \beta_2 dC + \beta_3 dD \cdot dC + \delta_0 d2 + \delta_1 d2 \cdot dD + \delta_2 d2 \cdot dC + \delta_3 d2 \cdot dD \cdot dC + u \quad (1)$$

- ▶ v is the value of U.S. exports.
- ▶ ϕ_C , ϕ_d and ϕ_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

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

- ▶ **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

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

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



Placebo Tests

	US Seafood (1)	NZ Dairy (2)
Decree 145=1	0.148* (0.0841)	0.146 (0.175)
Decree 145=1 × China=1	-0.278 (0.181)	0.789*** (0.267)
Decree 145=1 × Seafood=1	-0.0709 (0.131)	
Decree 145=1 × China=1 × Seafood=1	0.0175 (0.212)	
Decree 145=1 × Dairy=1		-0.167 (0.251)
Decree 145=1 × China=1 × Dairy=1		-0.372 (0.367)
Obs.	11544	5532

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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