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## **Implications of CETA for Canadian, EU, and U.S. Processed Food Markets**

**Stephen Devadoss and Jeff Luckstead**

*Selected Paper prepared for presentation at the EAAE XV Congress, "Toward Sustainable Agri-Food Systems: Balancing between Markets and Society", August 29 – September 1, 2017 in Parma, Italy.*

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# Implications of the Comprehensive Economic and Trade Agreement for Processed Food Markets

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EAAE Congress, 2017, Parma Italy

# Outline

- 1 Introduction
- 2 Model
- 3 Simulation and Results
- 4 Conclusions

## Introduction

### Industrial organization of food processing firms

- Economy of scale & differ in size
- Highly differentiated food products & monopolistic competition
- Operate only domestically or also export

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Sustained growth (domestic sales & exports) on both sides of the Atlantic

In Canada, the processed food and beverage industry

- employs more workers than any other manufacturing industry
- exports support more than 180,000 jobs
- over 200,000 producers
- thousands of small- to medium-sized agri-food entrepreneurs

## Canada's Agri-Food Industry

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  - 33% of the value-added in agriculture
  - 22% of food and beverage manufacturing

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Canada is a top-five agri-food exporter and exports result in new records every year

## EU Processed Food

The EU processed food industry is

- the largest manufacturing segment of the economy based on labor employment and also value added

The EU is the leading processed food exporter, with \$173 billion worth of exports in 2014

EU processed food exports to Canada were worth \$3.13 billion in 2014

- The important export commodities encompass
  - beverages, spirits, vinegar, cereals, flour, and starch.

The EU protects the processed food sector more than any other manufacturing sector.

## Canada, EU, and US

Only 25 percent of EU tariff lines on Canadian goods are duty-free.

	Processed Food Trade (\$ Mil.)			Tariffs		
	Ca	EU	US	Ca	EU	US
Ca	0	4,490	17,762	-	19.16%	2.01%
EU	1,349	0	7,914	18.05%	-	3.21%
US	17,372	21,282	0	14.17%	10.74%	-

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Canada, EU, and US key players in the world processed food market

- About a third of global trade in this market

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- CETA does not cover NTBs
  - all imports from Canada have to satisfy EU rules and regulations
- Preferential quotas access remains for
  - sensitive products (beef, pork, sweetcorn for EU and dairy for Canada).
- poultry and eggs are not covered under CETA

# Objectives and Contribution

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## Contribution

- Analyze impacts of CETA by accounting for
  - imperfect competition
  - productivity differences among firms
  - cross hauling

# Model

## Four-region model - Luckstead and Devadoss (2016) AJAE

- Canada, European Union, United States, and ROW
  - Monopolistic competition
  - Firm heterogeneity
  - Accounts for differences in
    - preferences across countries
    - firm-level production technologies
    - regional sizes
    - trade policies: tariffs and NTBs

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## Operating Decision: domestic and export markets

## Market clearing conditions

- Output markets
- Composite input

## Data and Sources

Main data source: sectors 19-26 from GTAP 9 Data Base for 2011

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Measure of firms:  $n_i$  normalized to one

## Calibration

Given the above data and parameters, following Luckstead and Devadoss (2016), we calibrate

- fixed operating cost:  $f_{ij}$
- scale parameter, Pareto dist:  $\mu_{ij}$
- scale parameter, supply function:  $\gamma_i$

# Simulation

Baseline simulation - Replicates GTAP 9 data

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Alternate scenarios:

- 1 Canadian-EU tariff elimination
- 2 Canadian-EU tariff elimination and 40% reduction in NTBs

# Trade Liberalization Results

## Bilateral Trade Flows

Elimination of Canadian tariff of 18.05% and EU Tariff of 19.16%

	Ca	EU	US	ROW
Ca	-14.419	55.975	-6.394	-6.295
EU	49.859	-1.685	0.571	0.677
US	-8.226	-1.871	0.380	0.486
ROW	-8.562	-2.231	0.013	0.118

## Trade Liberalization Results

### Cutoff Productivity and Operating Firms

	Cutoff Productivity $\bar{\omega}_{ij}$				Measure of Op. Firms $\bar{n}_{ij}$			
	Ca	EU	US	ROW	Ca	EU	US	ROW
Ca	4.76	-14.24	1.67	1.64	-16.96	84.86	-6.42	-6.29
EU	-12.57	0.62	-0.14	-0.17	71.12	-2.46	0.54	0.68
US	2.94	0.67	-0.09	-0.12	-10.95	-2.64	0.35	0.49
ROW	3.04	0.76	0.01	-0.03	-11.28	-2.99	-0.02	0.12

## Trade Liberalization Results

### Aggregates and Welfare

Aggregate Price Index and Output (% Change)				
	Ca	EU	US	ROW
$Y_j$	-0.67	0.59	-0.08	0.01
$P_j$	-2.97	-0.78	-0.03	0.01
Welfare (\$ Millions)				
Changes in	Ca	EU	US	ROW
Prod. Surplus	1,581.84	-1,013.87	-378.28	-339.03
Cons. Surplus	3,123.34	6,063.18	170.12	-143.13
Gov't Revenue	-3,735.93	-4,832.38	-14.88	-303.11
Net Welfare	969.25	216.93	-223.04	-785.27

## Conclusions

Lowering of trade barriers through CETA brings more competition:

- Highly efficient foreign firms force inefficient domestic firms out
- Domestic market: low productivity firms exit and average productivity increases
- Export market: firms enter and average productivity declines



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In all three regions, aggregate price index decreases

Canada and EU:

- Domestic sales decline
- Bilateral trade flows expand
- Consumption increases
- Welfare gain