

## **Firms and Agricultural Trade Policy: New Evidence from China**

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*Selected Paper prepared for presentation at the International Agricultural Trade Research Consortium's (IATRC's) 2017 Annual Meeting: Globalization Adrift, December 3-5, 2017, Washington, DC.*

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# FIRMS AND AGRICULTURAL TRADE POLICY: NEW EVIDENCE FROM CHINA

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IATRC Commissioned Project

Presented at IATRC Annual Meeting, Washington, DC, Dec 3<sup>rd</sup>, 2017

We thank the IATRC for funding for this Commissioned Paper Report. However, the views expressed are those of the authors and should not be attributed to the Economic Research Service, USDA or the IATRC.

# Outline

- Background Motivation
- Project Goals
- Overview of Data and Analysis
- Future Work

# Background

- Significant traction of firm heterogeneity in the international economics literature. The ‘new-new trade theory’ (Melitz (2003) and Bernard et al. (2003)) shifts the unit of analysis from industries to firms.
  - Origins of firm-level work: Bernard and Jensen (1995) (US Data); Roberts and Tybout (1997 Columbian Data)
- Melitz (2003) provided first & seminal theoretical paper connecting firm heterogeneity with trade. (See also HMR 2008 at the country level)
- Chaney (2008):
  - Trade costs influence trade flows more on homogeneous products.
- In 2006 IATRC Annual Meeting Theme Day discussed “Firms and International Trade”.
  - Presentations reviewed empirical challenges to standard trade model and development in the theory realm.
  - Gopinath, Sheldon, Echeverria (2007) summarized key insights and implications for agriculture
- **An obstacle for empirical analysis--- access to Firm-Level Data.**

# Selected Literature

**Wagner (2012), “International Trade and Firm performance: A Survey of Empirical Studies Since 2006)**

<b>Study</b>	<b>Country</b>
Bernard and Jensen (1995)	U.S. data (1976-1987)
Bernard et al. (2009)	U.S. data (1993-2000)
Muûls and Pisu (2009)	Belgium data (1996-2004)
Castellani et al. (2010)	Italian data (1993-1997)
Manova and Zhang (2012)	Chinese data (2005)
Kugler and Verhoogen (2012)	Columbia data (1982-1994)
Fontagné et al. (2015)	French data (1995-2005)
Feng et al. (2017)	Chinese data (2000-2006)

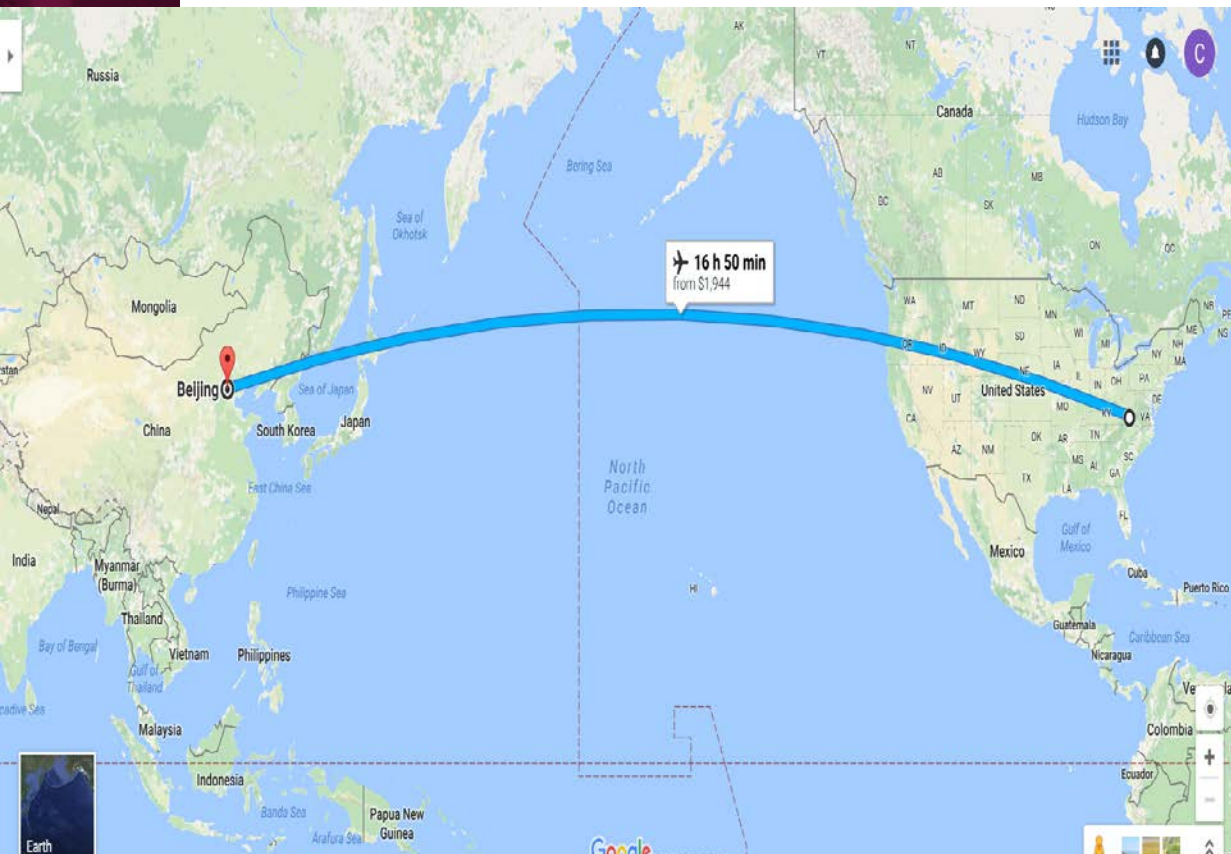
# Commissioned Paper Objectives

1. Overview of China's firm level export and imports in selected agricultural markets characterizing China's impressive import/export growth
2. Assess firm-level structure of China's agricultural import and export growth in selected markets:
  - Data covers two important periods
    - 2000-2004/2005 Fulfilling WTO Commitments
    - 2006-2016 Post-Trade Policy Adjustment Period
3. Quantify firm-level intensive and extensive margin adjustments in select case-studies of trade policy events and price and market adjustments
  - a) Cereal imports under TRQs
  - b) Select SPS issues in China



# The Data

Two trips to China Customs in Beijing (Jul 2016 and again in October 2017)



# Data Summary

2001-2016	Obs.	Destination/Source	Product No.	Firm No.
Overall Trade	178,696,323	214	7,659	1,236,894
Ag Trade (Chapter 1-24)	3,112,711	205	1,729	120,209
Cereals (Chapter 10)	25,612	176	54	4,216

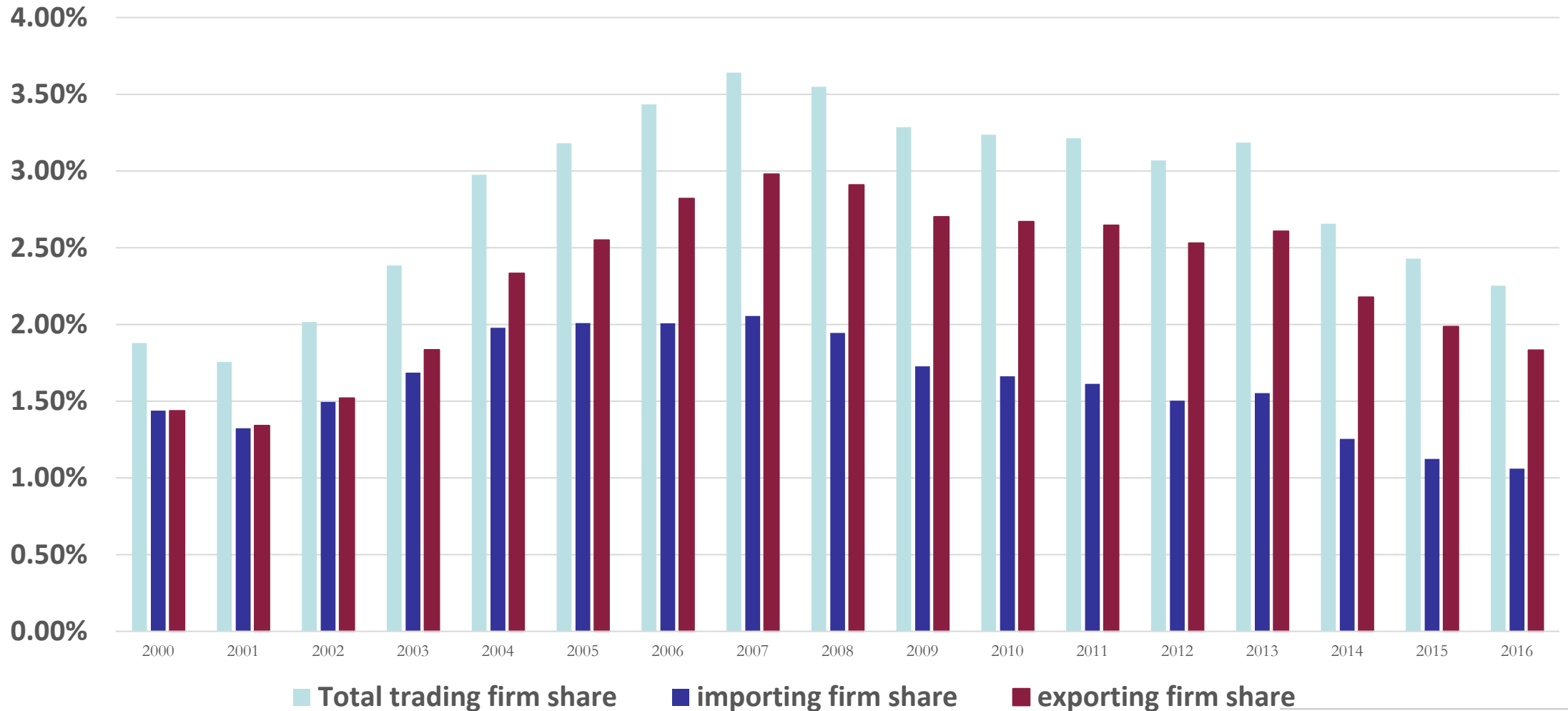
**Observe:** Value and Q, Q unit, date, HTS-8 code, customs port of entry, source/destination country, any trans-shipment country, transport mode, ownership type, firm id, firm location, firm name, firm address, etc.



# Overview of the Data

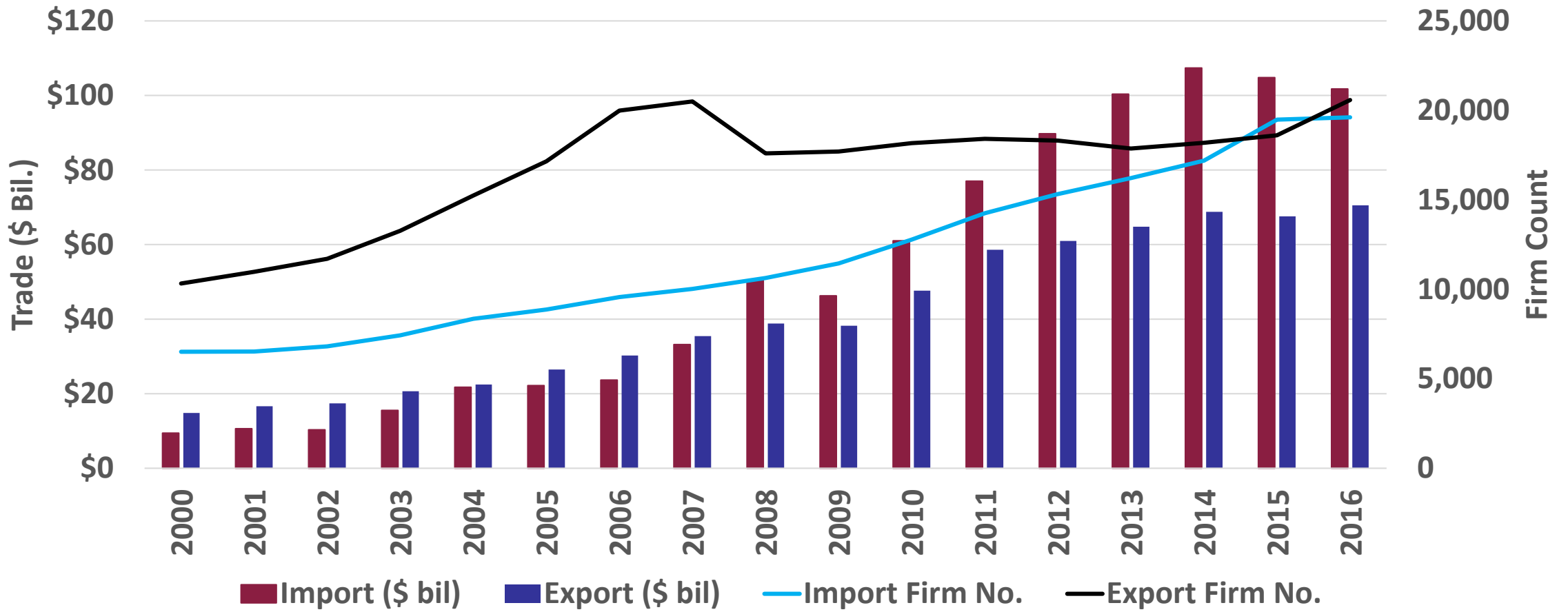
# Trading Firms are Rare -- Even in China!

Share of Trading Firms over Total Number of Chinese Firms



# China's Agricultural Imports, Exports and Firms

Chinese Agricultural Imports, Exports and Number of Firms



# Firm Concentration, All Trade

	Firm Export Concentration						
Year	Top 1%	Top 5%	Top 10%	Top 25%	Top 50%	Firm Number	
2001	42.25%	67.10%	78.59%	91.87%	98.26%	68,487	
2005	50.73%	71.99%	81.42%	92.72%	98.43%	144,030	
2010	50.74%	71.83%	81.33%	92.68%	98.40%	233,758	
2015	50.78%	73.87%	83.23%	93.75%	98.73%	312,395	
	Firm Import Concentration						
Year	Top 1%	Top 5%	Top 10%	Top 25%	Top 50%	Firm Number	
2001	51.59%	76.02%	85.64%	95.34%	99.20%	67,588	
2005	60.74%	82.29%	89.87%	97.03%	99.55%	113,456	
2010	64.03%	85.33%	92.14%	97.91%	99.72%	145,492	
2015	65.84%	86.89%	93.20%	98.23%	99.75%	176,749	

# Firm Concentration, Agricultural Trade

<b>Agricultural Firm Export Concentration</b>							
<b>Year</b>	<b>Top 1%</b>	<b>Top 5%</b>	<b>Top 10%</b>	<b>Top 25%</b>	<b>Top 50%</b>	<b>Firm Number</b>	
2001	30.85%	58.68%	73.13%	90.32%	98.19%	10,976	
2005	29.99%	58.28%	73.13%	90.82%	98.37%	17,151	
2010	24.95%	53.60%	69.38%	88.80%	97.88%	18,166	
2015	25.21%	54.14%	70.04%	89.34%	98.07%	18,607	
<b>Agricultural Firm Import Concentration</b>							
<b>Year</b>	<b>Top 1%</b>	<b>Top 5%</b>	<b>Top 10%</b>	<b>Top 25%</b>	<b>Top 50%</b>	<b>Firm Number</b>	
2001	53.46%	79.72%	89.23%	97.25%	99.64%	6,524	
2005	57.30%	82.24%	90.80%	97.71%	99.66%	8,868	
2010	63.43%	86.23%	92.85%	98.17%	99.68%	12,775	
2015	57.74%	83.54%	91.64%	97.92%	99.63%	19,478	

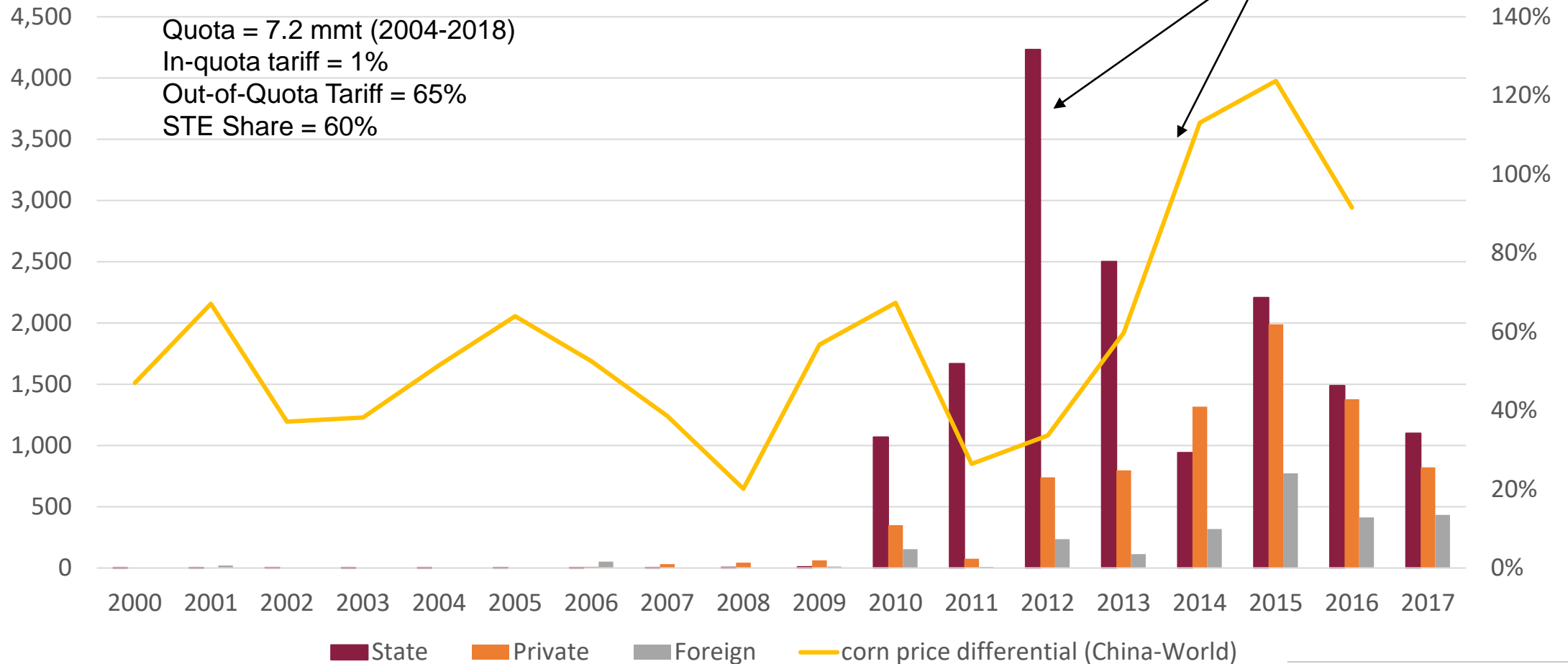
# China's Grain TRQs



# China's TRQ Corn Imports

Note the inverse relationship between  $P_d - P_w$  differential and the intensity of State trader corn imports vs. positive relationship between price differentials and private firm imports

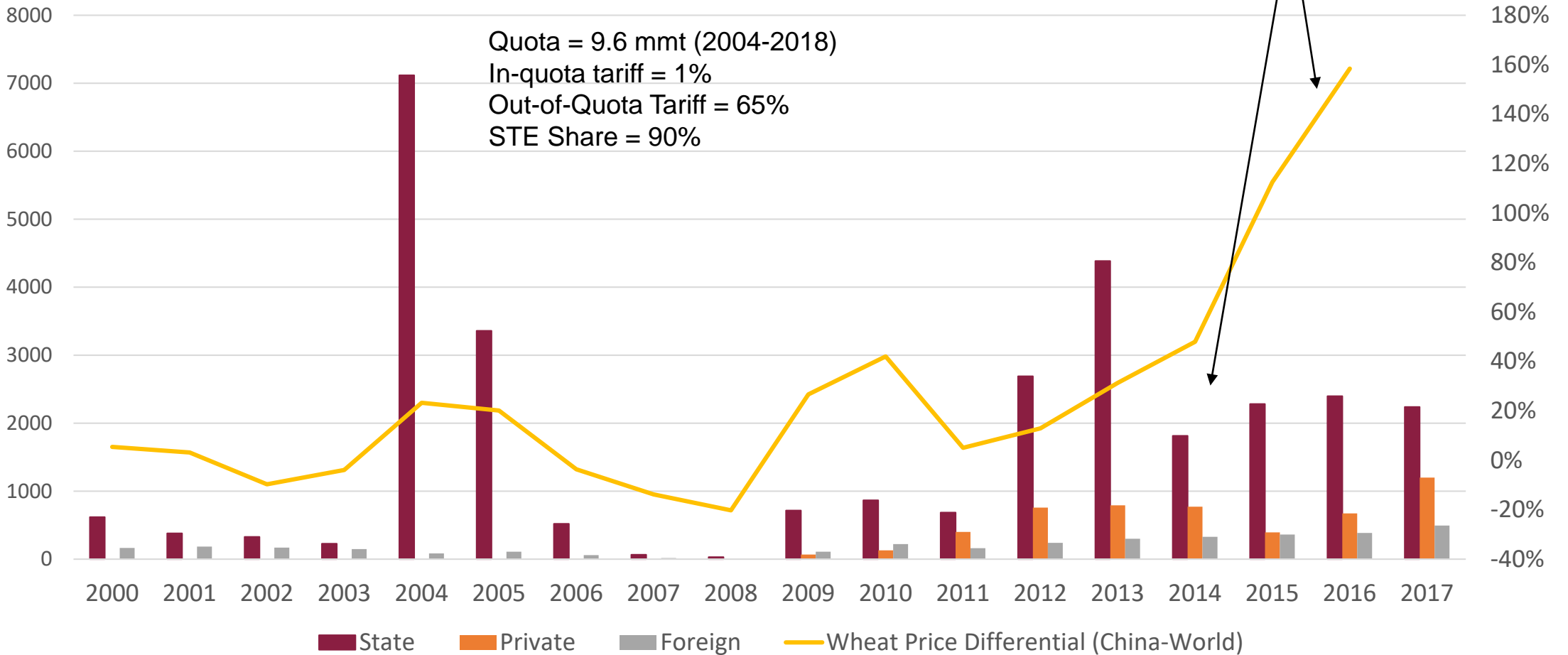
Chinese Corn Imports by Ownership Structure (1000 metric tons)



# China's Wheat Imports

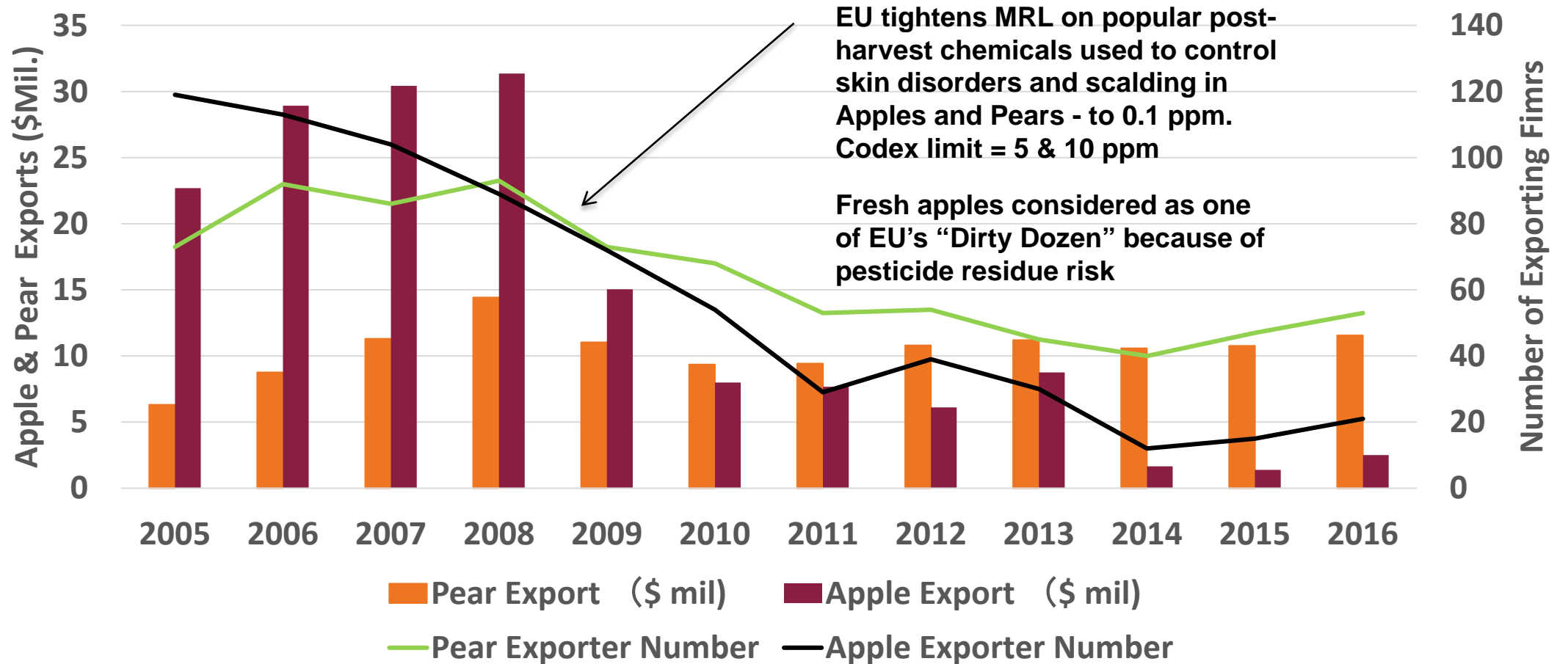
Relationship between  $P_d - P_w$  differential and the intensity of State vs. private firm imports less clear for wheat

Chinese Wheat Imports by Ownership Structure (1000 metric tons)



# Select SPS Issues

# Exploring SPS Impacts at Chinese Firm Level



# Conclusions

- The growing ‘firms and trade’ literature has offered limited analyses of the dynamics of agricultural firms – particularly in an emerging economy such as China.
- While the insights generated from the economics literature may also hold for agriculture, given the homogeneous nature of some products (i.e., corn & wheat) within this sector where price competition is tough and product differentiation is minimal, this is not necessarily the case.
- Further, firm-level extensive and intensive margin adjustments have not been examined in China’s evolving agricultural policy environment and the active participation of state-owned and private firms in the marketplace provides interesting new dimensions.
- Working with firm-level data, as opposed to countries & industries, has the potential to uncover exciting new insights and implications for agricultural trade policy.
- The overall goal of this commissioned paper is to bring new insights and serve as an important stepping stone to future research.

**THANK YOU!**