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The Long and Short of Empirical Evidence on the Impact of NAFTA on Canada

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Overview

- Evolution of the debate and evidence
- The pre-NAFTA world:
 - “little white lies and malicious whoppers”
 - Giant sucking sounds

Pre-CUSTA/NAFTA: The State of Trade – and understanding trade

Major transformation in the global economy:

- Technology revolution
- No Global value chains
- No China

Understanding trade:

- No gravity
- No firms – or identical firms – no firm-level data



Overview

- Predicted impacts
- The emerging evidence
- New models and new evidence

Predicted impact: trade under Monopolistic Competition

Gains From Trade

- Lower prices
 - From increased productivity for surviving firms due to larger market & increasing returns to scale.
- Increased varieties
 - Fewer product varieties made within each country, consumers have **more** product variety because they can choose products from the firms of both countries after trade opens.

Empirical Application of the Monopolistic Competition and Trade

- This model applied to Canada convinced policy makers to pursue free trade with the US
- The MacDonal Commission
- The potential for Canadian firms to expand output was a key factor in Canada's free-trade agreement with the U.S. in 1989 and entry into NAFTA (along with Mexico) in 1994.

Predicted impacts of CUSTA and NAFTA

The economics of free trade: Three different perspectives		
Model	Focus	Assumptions
<u>Classic trade theory</u> 2. comparative advantage 3. interindustry trade	a) Long run gains in economic efficiency	I. Perfect competition II. Full employment a) Factors are mobile between sectors
	a) Income distribution: affect of trade on wages of skilled and unskilled workers	
<u>New trade theory</u> 1. intra-industry trade	i. Rationalization effects	a) Scale economies b) Imperfect competition
<u>Macroeconomic</u>	ii. Stimulus (or drag) from added exports (or imports) iii. Effect on the labour market	

Canada: the emergence of "New trade theory": The Predicted Effect of CUSTA on Canada

Model	Assumptions/Focus	Study	Results
<u>General equilibrium:</u>			
<ul style="list-style-type: none"> • Classic trade theory 	<p>perfect competition; constant returns to scale</p>	<p>Brown and Stern (1987) Hamilton and Whalley (1985)</p>	<p>-0.3% 0.6%</p>
<ul style="list-style-type: none"> • New trade theory 	<p>imperfect competition; rationalization effects (scale economies)</p>	<p>Markusen and Wigle (1987) Wigle (1988) Canadian Dep. of Finance (1988) Harris and Cox (1985)</p>	<p>0.6% -0.1% 2.5% 8.9%</p>
<u>Macroeconomic:</u>	Sectoral	Magun et al (1988)	2.5%

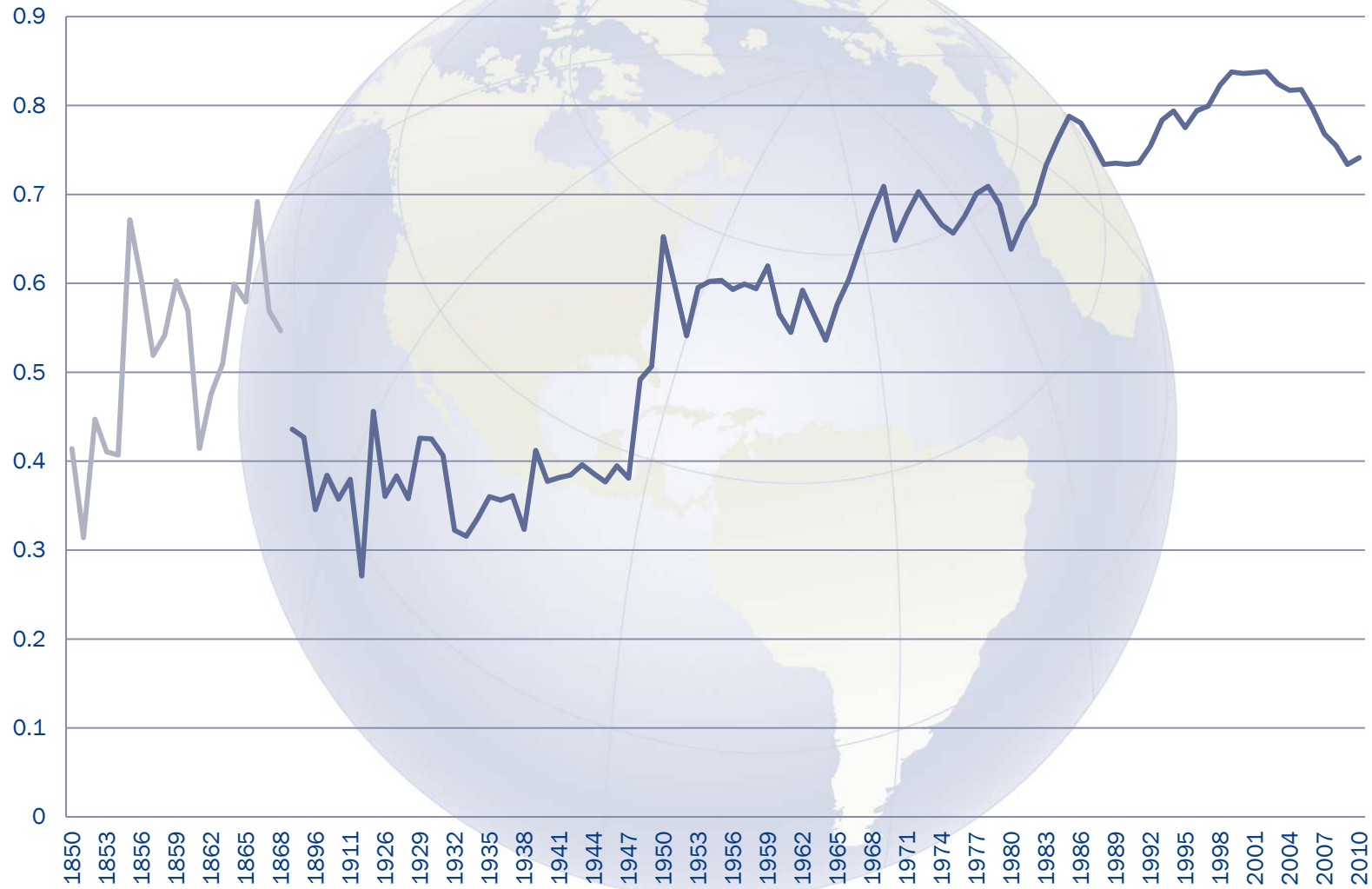
What is the evidence

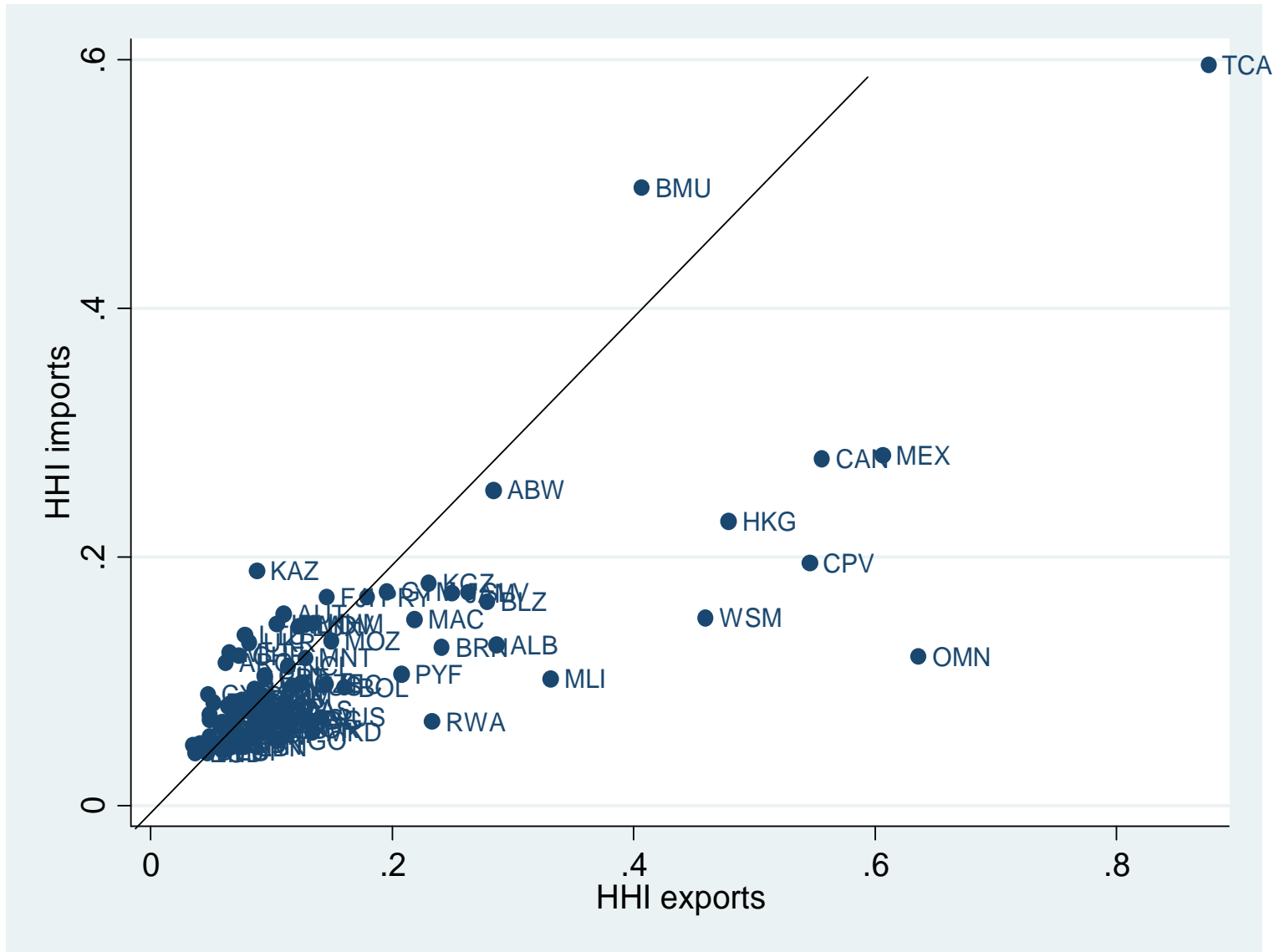
- On trade
- On labour markets
- On firms and productivity

What happens to trade?

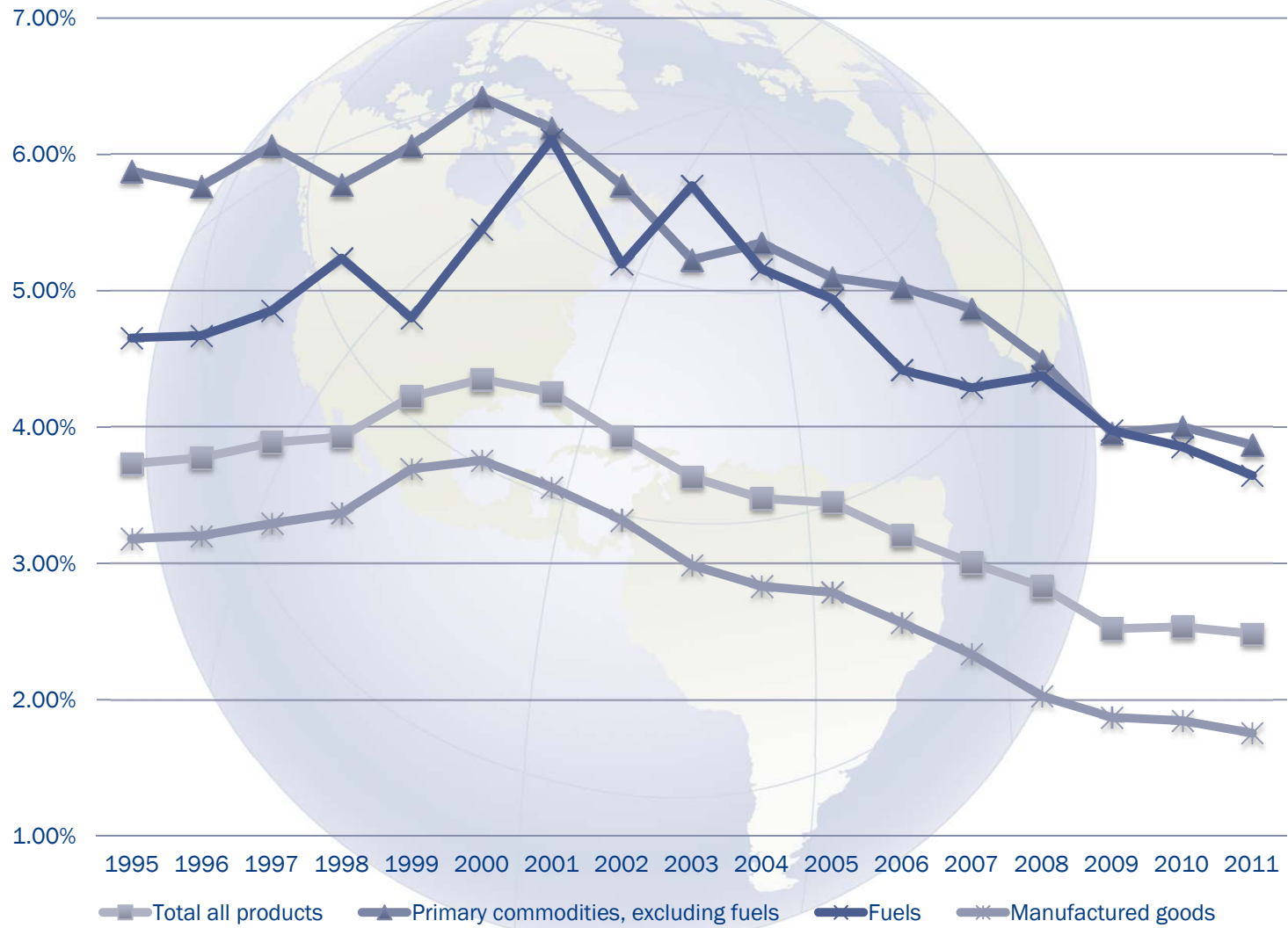
- Does Canada become too dependent on trade with the US?

Share of Total Canadian Exports to the United States, 1850-2010

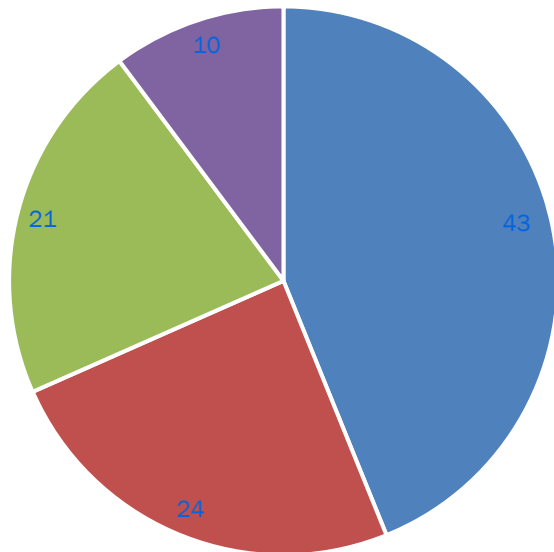




Canadian Share of World Exports: 1995-2012

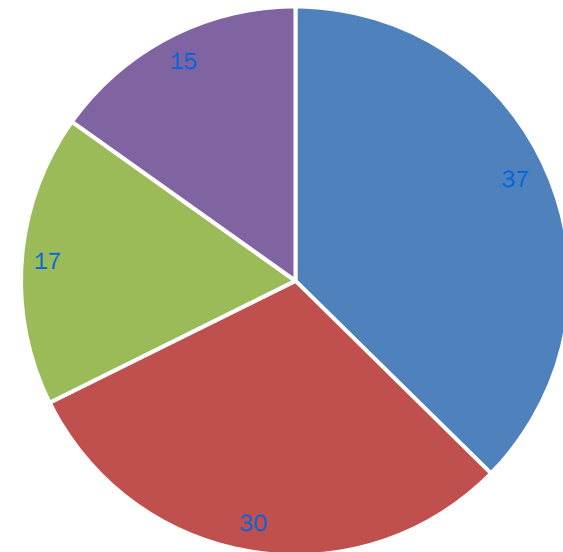


Share of World Merchandise Trade by Region (%):
2005



■ Europe ■ Asia ■ North America ■ Rest of World

Share of World Merchandise Trade by Region (%): 2012



■ Europe ■ Asia ■ North America ■ Rest of World



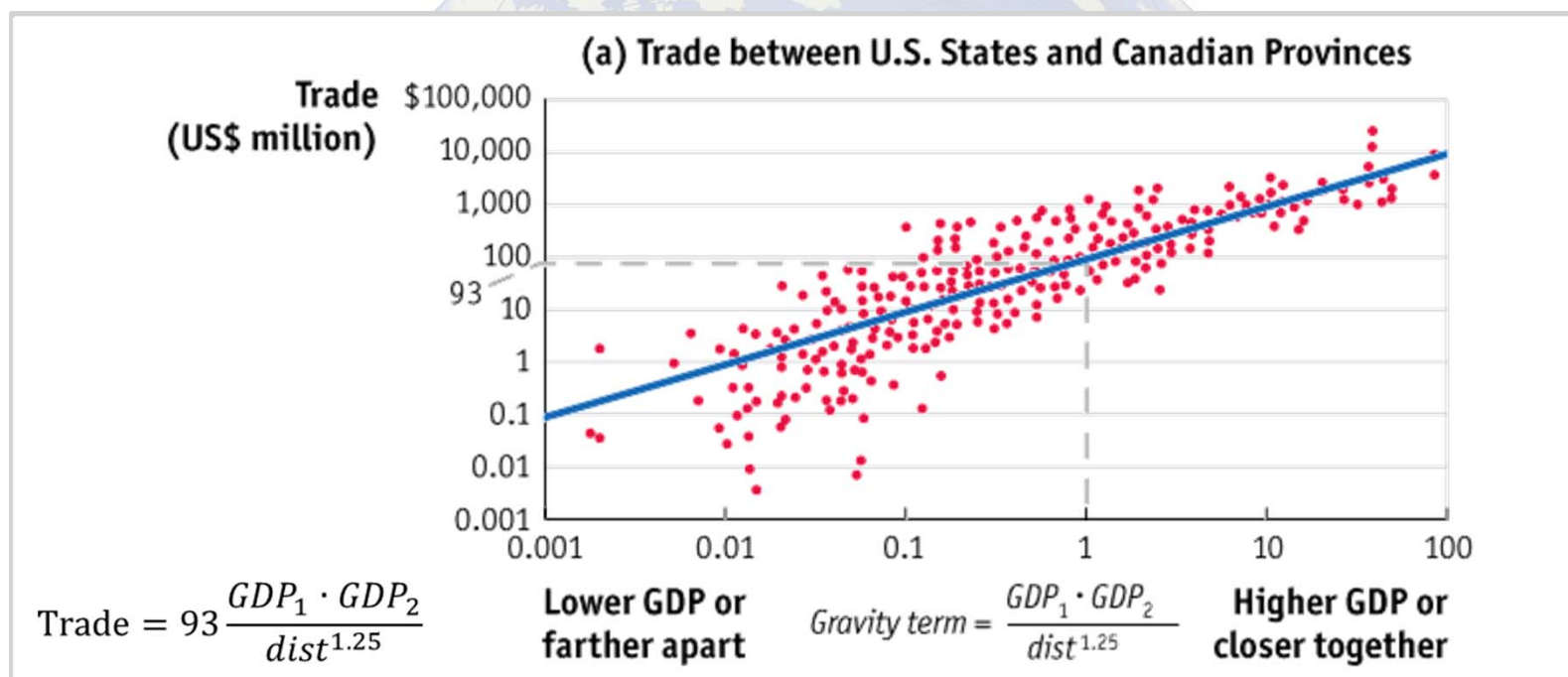
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Gravity is discovered



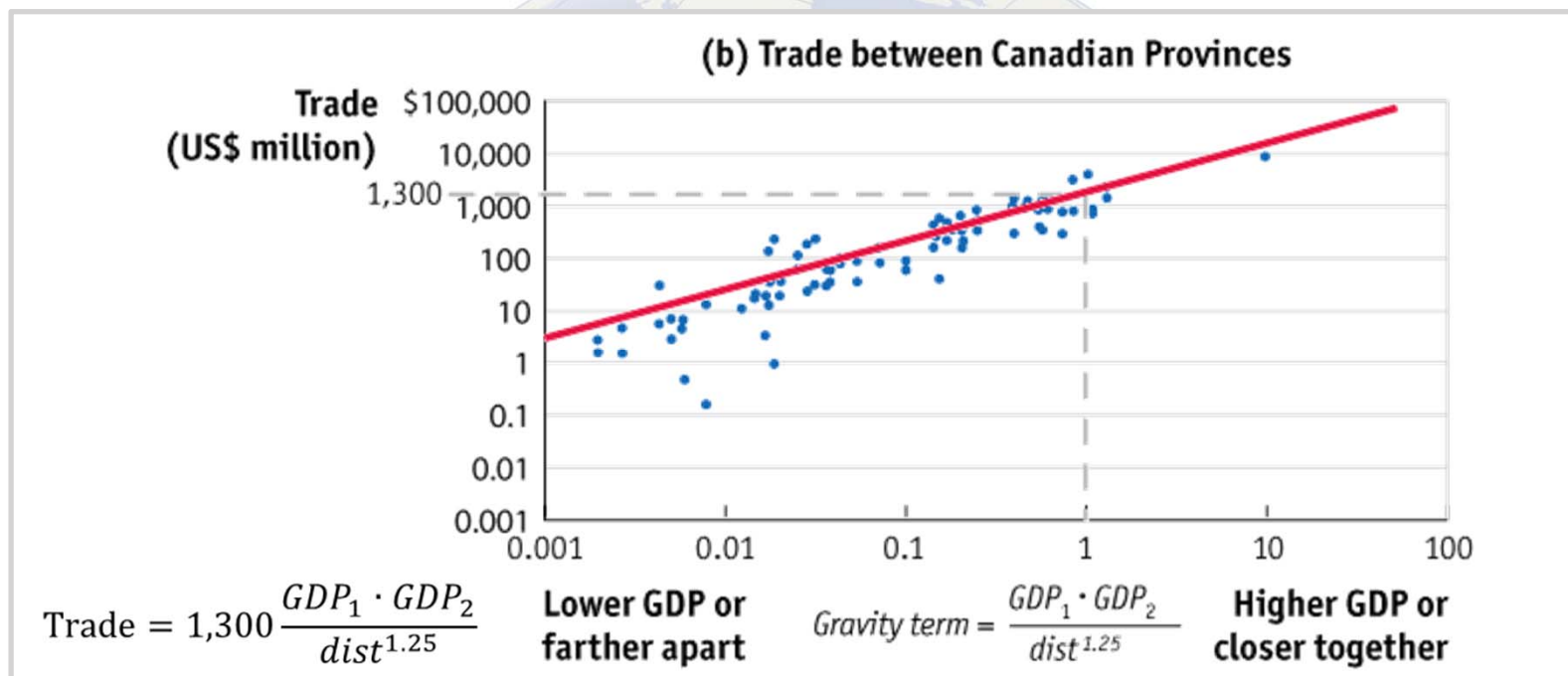
The Gravity Equation for Canada and the United States

$$\text{Gravity term} = \frac{GDP_1 \cdot GDP_2}{dist^{1.25}}$$



Source: Feenstra and Taylor

The Gravity Equation for Canada and the United States



Source: Feenstra and Taylor

The Gravity Equation

Gravity model show there are barriers to trade continue to exist between those countries.

These border effects include the following:

- Tariffs and quotas
- Administrative rules and regulations affecting trade, including the time required for goods to clear customs
- Geographic factors
- Cultural factors
- 9/11 and the impact of security measures at the border

The long and short of the impact on labour

Trefler on CUSTA:

- Short-run adjustment costs of 100,000 jobs, or 5% of manufacturing employment.
- Some industries that had very large tariff cuts saw employment fall by as much as 12%
 - Over time, however, these job losses were more than made up for by creation of new jobs elsewhere in manufacturing.
 - There were *no long run job losses* due to NAFTA.

Using diff-in-diff: CUSTA/NAFTA and labour

- Focus: Skilled and unskilled workers
- **Summary of CUSTA**
- Tariffs eliminated over a ten year period
- the average tariff decline 3.8 % in Canada and 2.2 % in the US.
- the high tariff industries in Canada had a 6.1 % decline; low tariff industries had a 1.2 % decline.

Results:

- CUSTA did not affect earnings.
- Canadian tariff reductions lowered employment among production workers but no effect on non-production employment.
- Explanation: most protected industries prior to the CUSTA tariff cuts were intensive in the use of less-skilled workers.

CUSTA and rationalization

- Evidence from Head and Ries (1998)
- 1988-94, the number of plants decreased by 21% while output per plant increased by 34%
- a change in the structure of the Canadian manufacturing sector and an overvalued Canadian dollar.
- CUSTA led to fewer plants but also led to a reduction in plant scale

In the long run, large positive effects on productivity

- 15% over eight years in industries most affected by tariff cuts—compound growth of 1.9%/year.
- 6% for manufacturing overall—compound growth of 0.7%/year.
- The difference of 1.2%/year is an estimate of how free trade with the U.S. affected the Canadian industries over and above the impact on other industries.
- There was also a rise of 3% in real earnings over this period.
- Consistent the monopolistic competition model – with firm heterogeneity.

Firm level data: Exchange rates

Purpose: use Canadian firm level data to examine the effect of exchange rate movements on entry, exit and sales

Why do we care?

1. Policy context

How does the exchange rate affect firm performance? Productivity implications?

2. Understanding the impact of integration and the nature of industries

New empirical trade literature (Melitz, Yeaple, Helpman)

3. Canadian context

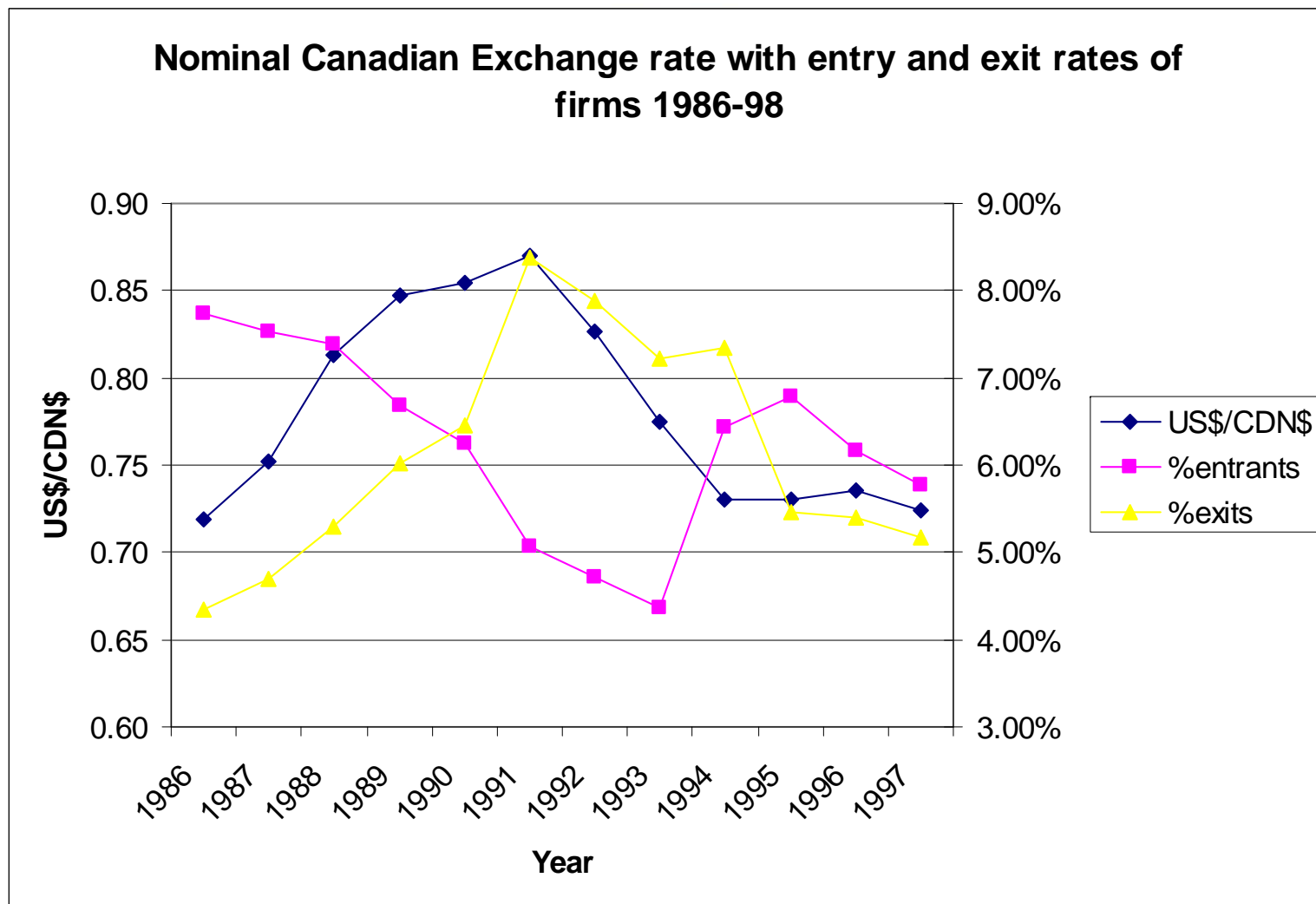
Relatively small tariff changes have been found to have had large effects on the Canadian manufacturing sector [Head and Reis (1999); Beaulieu (2000); Trefler (2004); Baggs (2005)]

Large exchange rate movements may have had comparable effects

- How large an effect?
- This is an empirical question that has not been examined

Little, or no evidence, of exchange rate effects:

- Using micro-level data
- Focused on developing countries



Results

- Adverse effect of currency appreciation on firm survival; firm entry and firm sales
- the exchange rate effect is larger for larger firms
- Some evidence that currency appreciation led to productivity growth
- The effect of the exchange rate on survival is three times larger than the effect of the tariff changes

Impact of CUSTA/NAFTA

CUSTA/NAFTA extremely successful

- Reduction in trade barriers increased NA trade dramatically – and trade dependence
 - Rationalization, increased scale
 - Continental integration - NA supply chains
 - Increased productivity
- Maybe “too” successful?
 - Still large border effect – more attention required
 - North American file has been dropped – complacency, lack of political will