Trade Costs and Firm-Based Trade Theory

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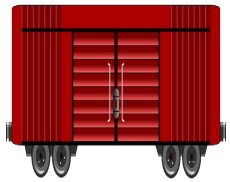
Trade Costs



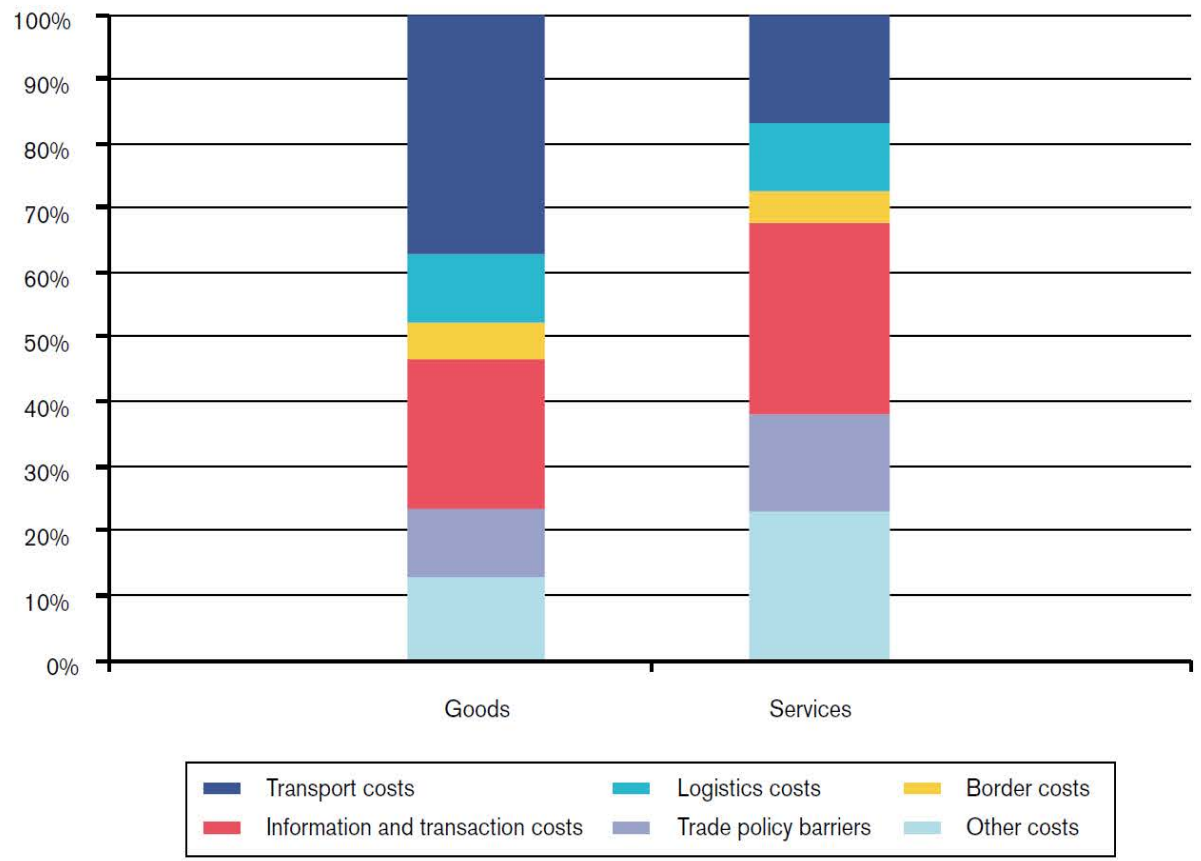




Types Trade Costs

- Transport, Travel, and Logistics Costs
  - Costs of delivering goods from suppliers to customers
- Information and Transaction Costs and Uncertainty
  - Firms searching for trading partners; acquiring information about local market conditions and regulations; currency conversion
- Trade Policy Barriers
  - Tariffs; non-tariff barriers; licensing

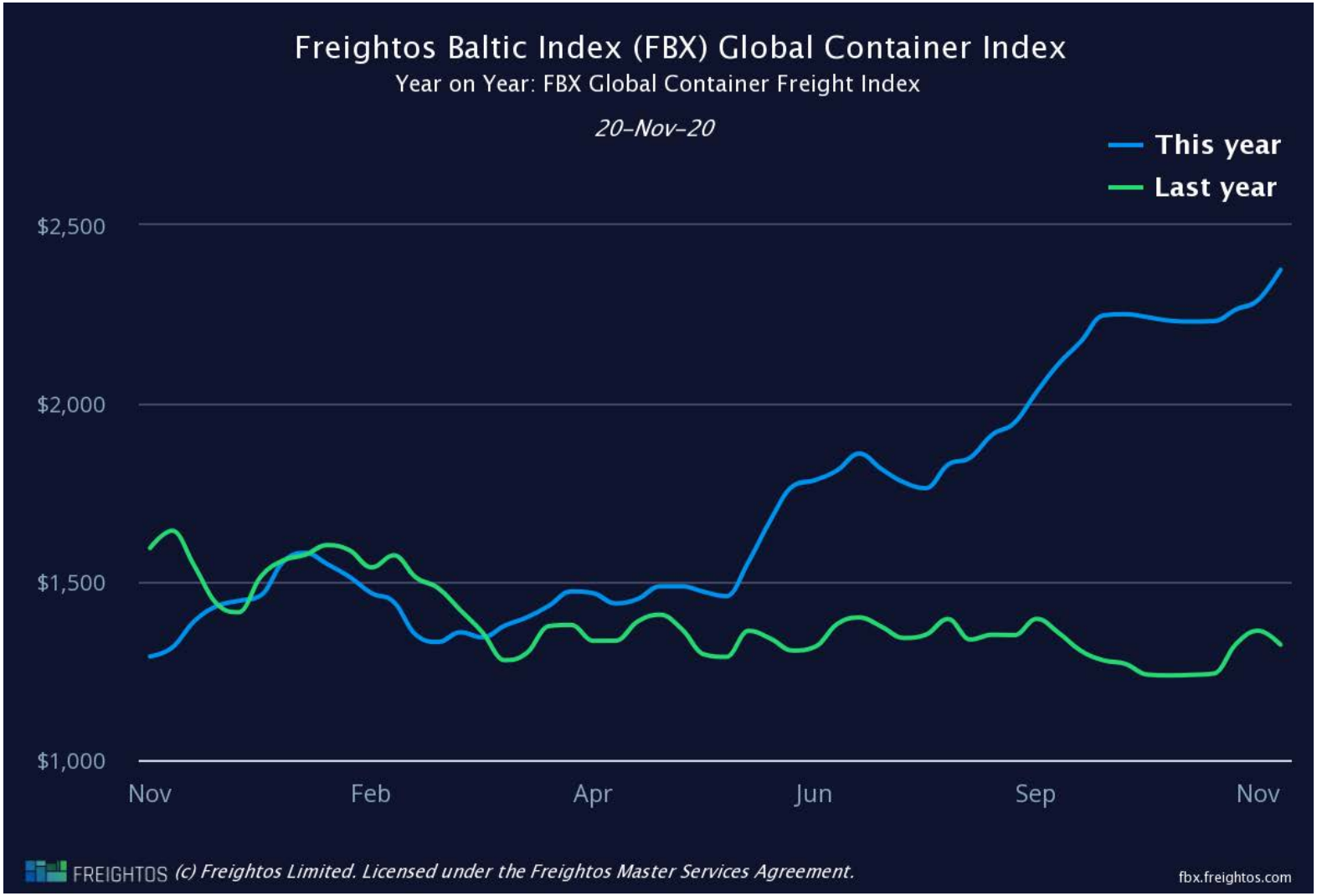
Figure C.2: Trade costs breakdown, based on data from 2014 (per cent)



Source: WTO (2018)

Impact of the Pandemic on Transport, Travel, and Logistics Costs

- Travel Restrictions
- Border Closures and Delays
- Business Travel Disruptions
- Fewer Face-to-Face Interactions
- Port Closures and Regulations
- Fewer Sailings by Container Ships
- Increased Shipping Prices



Source: Freightos (2020)

Impact of the Pandemic on Information and Transactions Costs and Uncertainty

- Sanitation Regulations
- Increased Documentation Requirements
- Increased Financing Frictions
- Significantly Increased Uncertainty

Impact of the Pandemic on Trade Policy Costs

- Import Facilitation Measures
- Export Restrictive Measures
- Customs Clearance Facilitation Measures
- Relatively small impact

Modern Trade Theory and Policy Implications

Modern Trade Theory: Firm-Level Analysis

- Incorporates variable and fixed costs of trade.
- Assumes that firms within an industry differ in their productivity – firms are heterogeneous.

Effects of Changes in Trade Costs

Modern Trade Theory Identifies

New Effects on Productivity

New Distributional Effects

Basic Model — Melitz (2003)

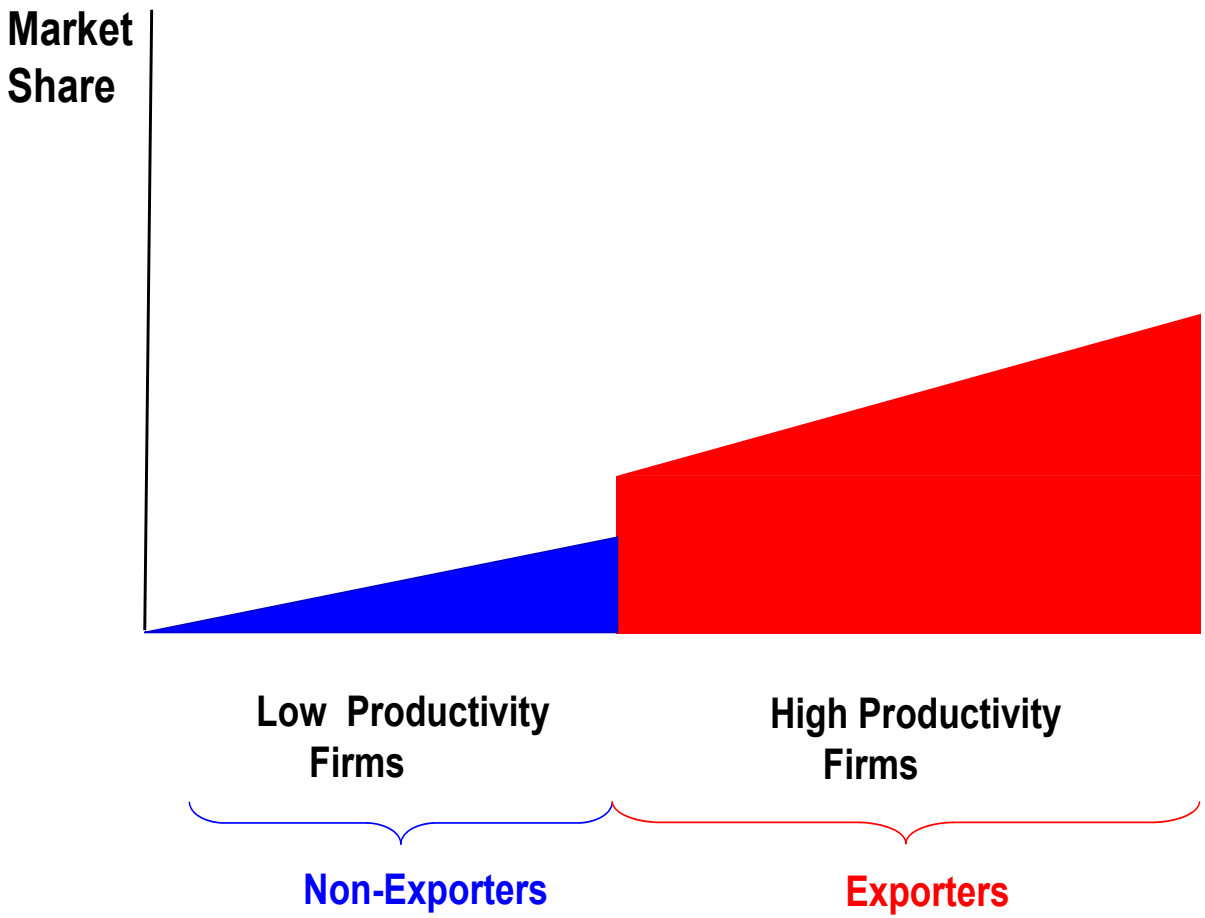
Costless trade is boring.

Heterogeneous firms in the same industry choose whether or not to export and how much to export.

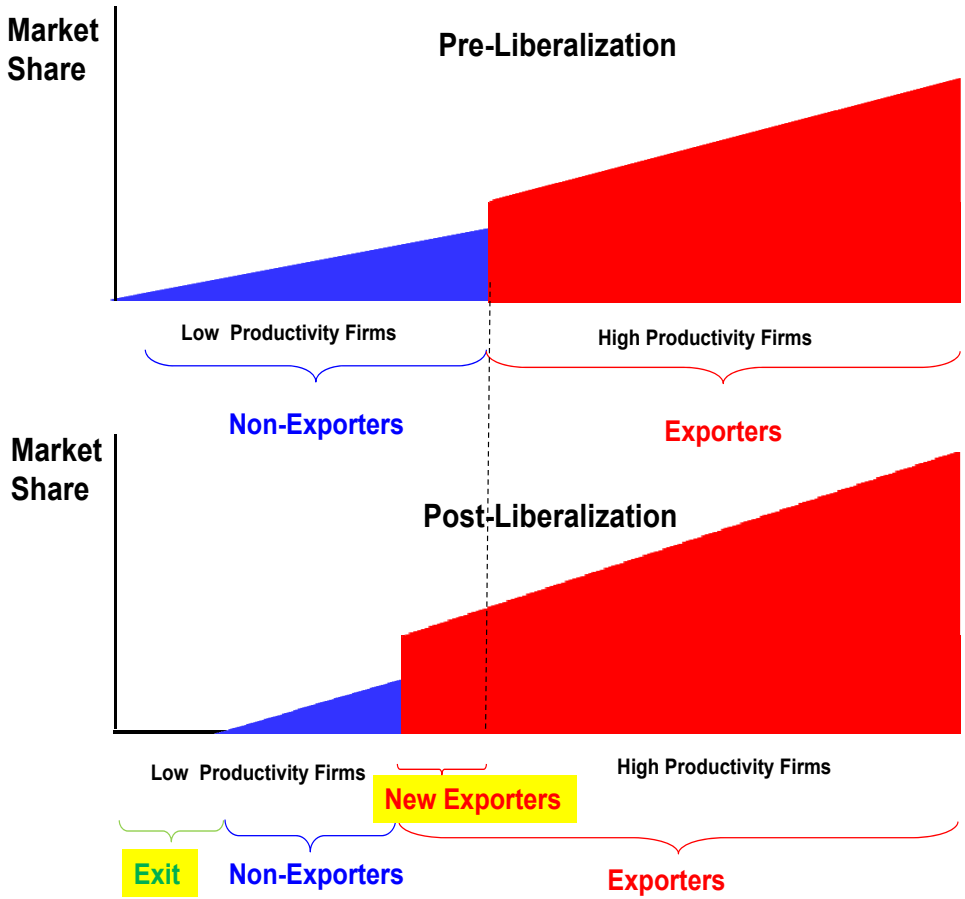
Because there are fixed costs of exporting, the more productive firms will export while the less productive will not export.

Basic Model

Melitz (2003)



Effects of Increased Trade



Effects of a Fall in Trade Costs

A decrease in transport costs, a decrease in tariffs, or expanded trading opportunities $\Longrightarrow$

- An increase in profits from exporting $\Longrightarrow$
- Expansion by incumbent exporters
- Entry by new exporters

These firms gain from increased trade.

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  - An increase in wages $\Longrightarrow$
    - A decrease in profits from domestic sales $\Longrightarrow$
      - Contraction by some non-exporters
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These firms are harmed by increased trade.

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Contraction and exit by less productive firms and expansion by more productive firms $\Longrightarrow$

- An increase in average industry productivity due to reallocation within an industry
- Winners and losers within an exporting industry

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Some Empirical Evidence: US-Canada Free Trade Agreement

Estimates of effects of US-CFTA on Canadian manufacturing productivity:

Source	Productivity Increase
Growth of most productive plants	4.1%
Contraction & exit of least productive plants	4.3%
Incumbent exporters' investments	1.4%
New exporters' investments	3.5%

Sources: Trefler (2004) and Lileeva and Trefler (2010)

Policy Implications

- There should be increased emphasis on the links between trade policy, trade costs, and firm, industry, and aggregate productivity.
- Trade policies which affect variable and fixed trade costs should be coordinated with productivity, innovation, investment, and industrial policies.

Policy Implications

- There should be increased emphasis on the impact of trade policy on the fixed costs of trade because of important *extensive margin* responses:
  - Exit and entry of firms into international markets.
  - Exit and entry of products into international markets.

Policy Implications

- There should be increased emphasis on lowering fixed costs and regulatory obstacles that inhibit market access for trading firms.

Policy Implications

- The degree of firm heterogeneity within an industry matters for the impact of trade policy.
- Trade policy negotiators need access to quantitative studies based on firm-level and plant-level data.
- There should be increased attention to the distributional impacts of changes in trade costs across firms and workers within industries.

Empirics

Modern Trade Theory Leads to Modern Empirical Analysis

Firm-level Empirical Analysis

Firm-based trade theory implies an increased need for firm-level and plant-level empirical analysis to:

- guide the theory
- test the theory
- assess the impact of changes in trade costs
- assess the impact of changes in trade policy

Firm-based trade theory guides firm-level empirical analysis.

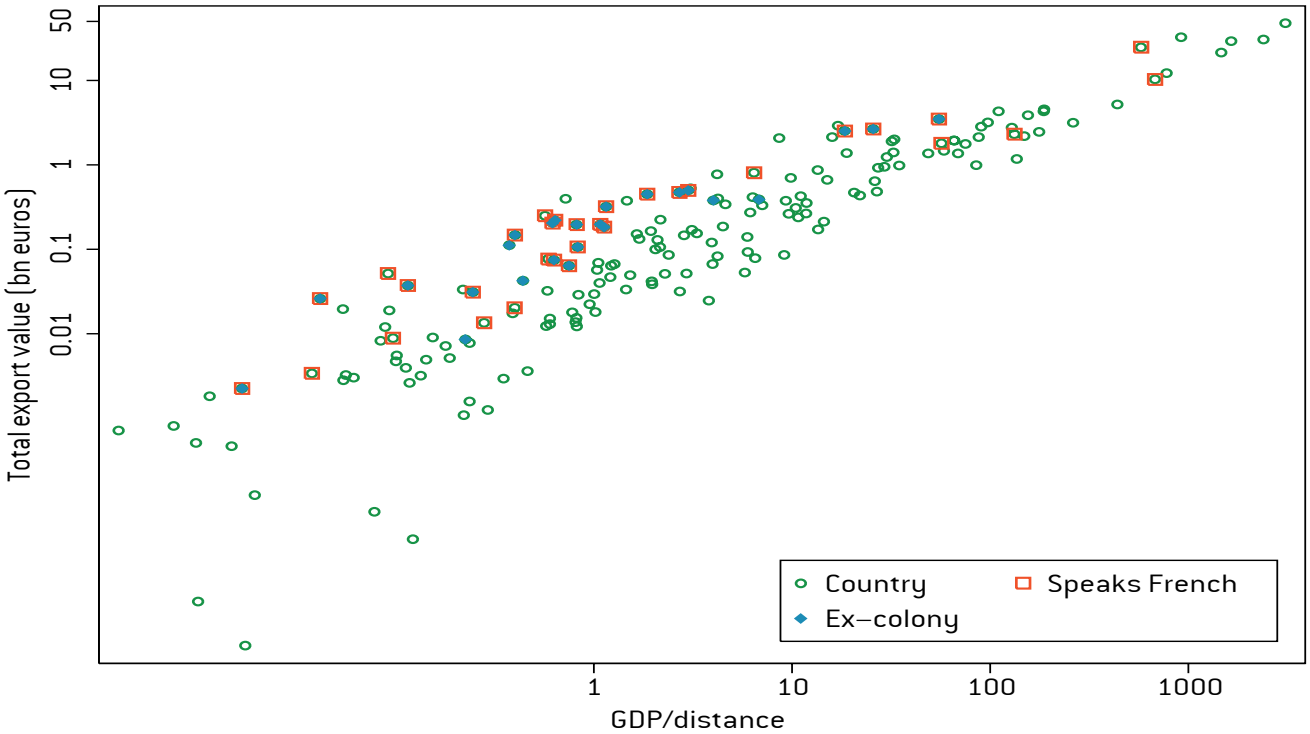
Empirical Gravity Analysis

Traditional empirical gravity analysis is based on the idea that the volume of trade between two countries depends on

- Their size
- Measures of trade costs such as:
  - Distance between countries
  - Whether countries share a common language
  - Whether countries have a regional trade agreement
  - ...

Empirical Gravity

Figure 16: The forces of gravity for France in 2003



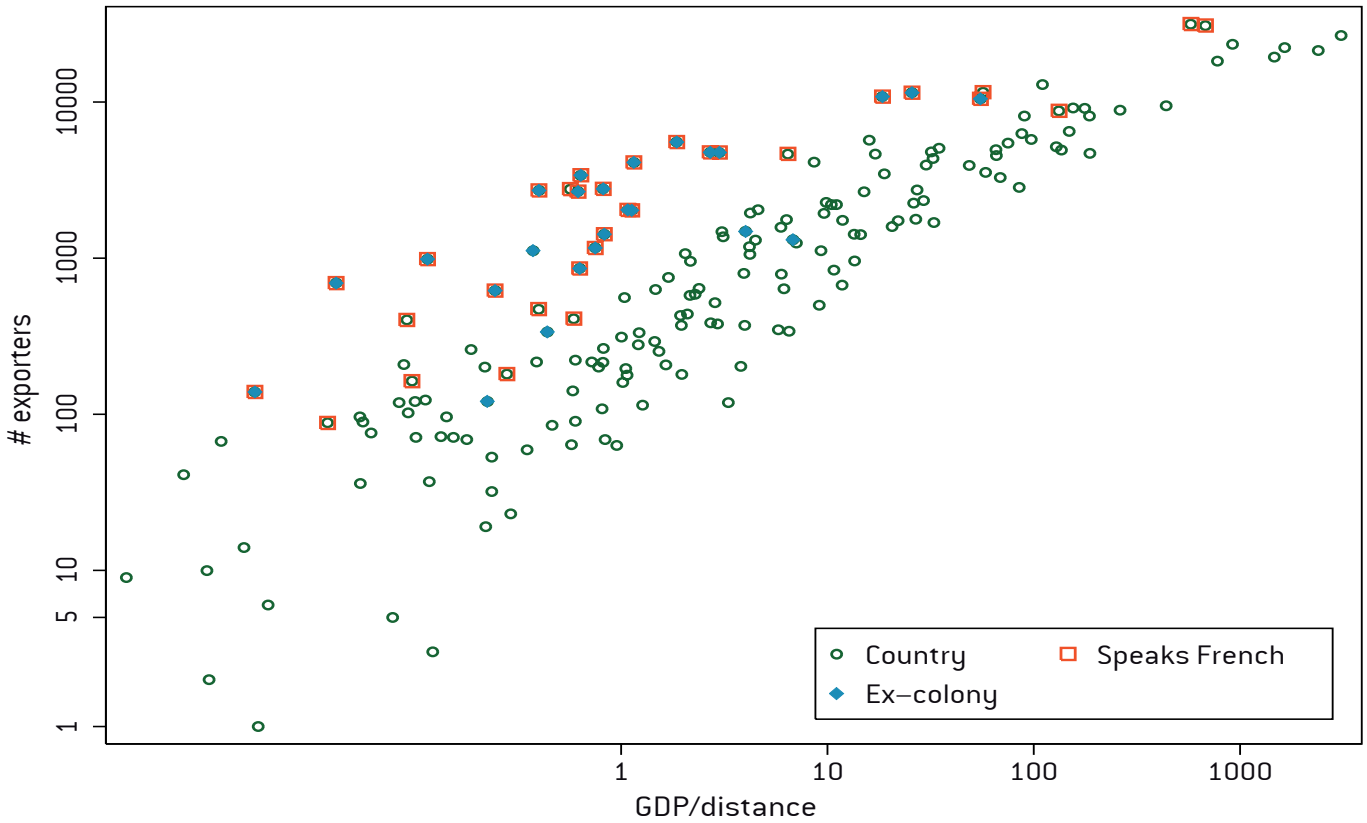
Source: Mayer and Ottaviano (2007)

Empirical Gravity

Modern trade theory implies that, because of the important role of trade costs, we should examine extensive and intensive margin responses separately.

Empirical Gravity

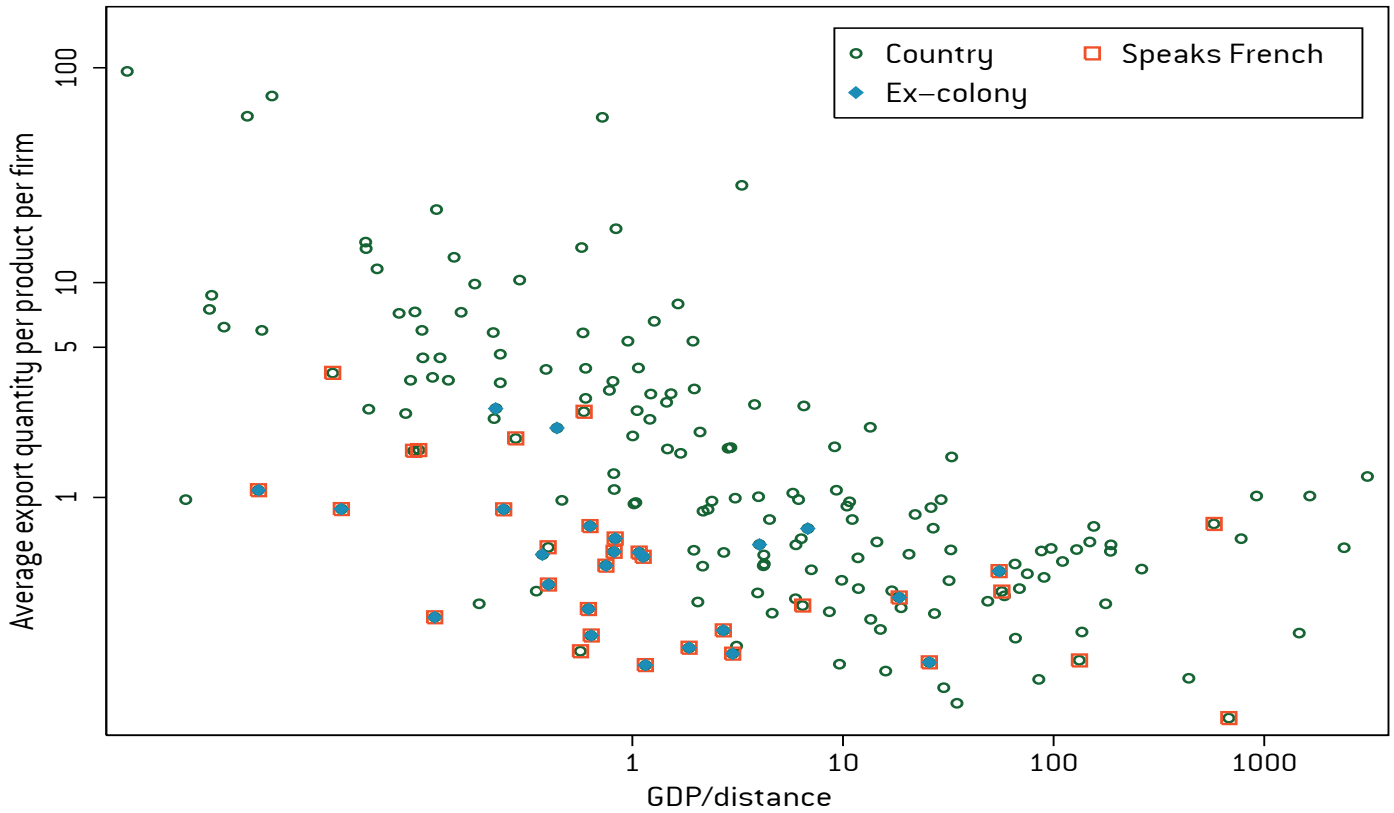
Figure 17: The extensive margin



Source: Mayer and Ottaviano (2007)

Empirical Gravity

Figure 18: The intensive margin



Source: Mayer and Ottaviano (2007)

Empirical Gravity

Modern trade theory demonstrates that some traditional estimation approaches were misspecified.

For example, consider the “Distance Puzzle"

Measuring the Impact of Distance on Trade Volumes

1% Increase in Distance	**Traditional Estimation**	**Theory-Based Estimation**
1986	-11.68%	-8.57%
1990	-11.55%	-8.19%
1994	-12.11%	-7.96%
1998	-12.48%	-7.70%
2002	-12.41%	-7.67%
2006	-12.61%	-7.54%
Change Between 1986 & 2006	7.95%	-11.97%

69 countries; 1986-2006

Source: UN & WTO Publication (2016)

Measuring the Impact of Shipping Costs

10% Increase in Freight Rates	**Traditional Estimation**	**Theory-Based Estimation**
Trade Value	-5.20%	-27.95%
Trade Weight	-8.37%	-36.31%
Trade Value Per Weight	3.17%	8.36%

21 ports; 2011-2016

Source: Wong (2020)

The Impact of the Pandemic on Trade Costs

1. Transport, Logistics, and Border Costs have increased significantly
2. Information and Transactions Costs and Uncertainty have increased significantly
3. Costs associated with Trade Policy have experienced smaller changes

Contributions of Firm-Level Theoretical Analyses of Trade

4. Models with firm heterogeneity have improved our understanding of the mechanisms through which economies respond to changes in trade costs.

5. This increased understanding of the margins along which an economy adjusts to changes in the trading environment are important for evaluating and quantifying the welfare and distributional effects of changes in trade costs.

Estimating the Effects of Changes in Trade Costs

6. Modern Theory allows for separate measures of intensive versus extensive margin responses.

7. Provision of estimates based on firm-based, theoretically grounded empirical analysis.

The Importance of Heterogeneity

8 Recent developments in trade theory and firm-level data analysis recognize the importance of heterogeneity in:

- Countries
- Regions within countries
- Industries
- Firms' technologies
- Firms' participation in international markets
- Firms' responses to changes in the trading environment
- Products

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