

The Effects of Trade Agreements: A Firm-Level Perspective

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Trade Theory: Country-Level Analysis

- Assumes that average production cost is independent of output level.
- Gains from trade result from across-industry reallocations of labour, capital, etc.

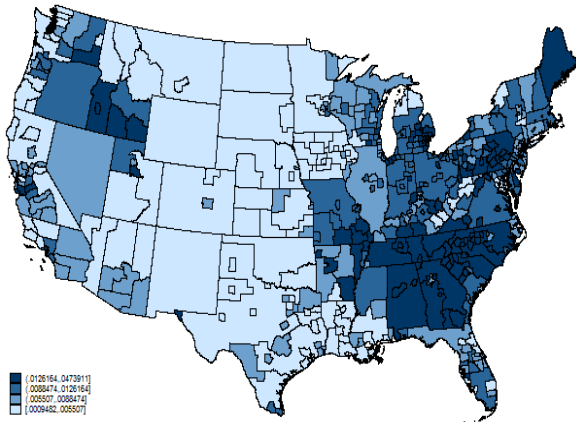
Trade Theory: Industry-Level Analysis

- Assumes that average production cost falls as output increases.
- Additional gains from trade result from
 - Higher productivity from higher output
 - More product variety available to consumers
 - Lower mark-ups due to increased competition

Predicted Distributional Impacts of Trade

Export-oriented regions, industries, and workers benefit from trade while import-oriented ones are harmed by trade.

US Regional Exposure to Trade with Mexico



Source: Hakobyan and McLaren (2016)



US Regional Exposure to Trade with China

Focus on Three Insights from Modern Trade Theory

- 1 There are Additional Effects on Productivity of Increased Trade
- 2 The Fixed Costs of Participating in International Markets Matter
- 3 Modern Trade Theory Leads to Modern Trilateral Analysis

Basic Model

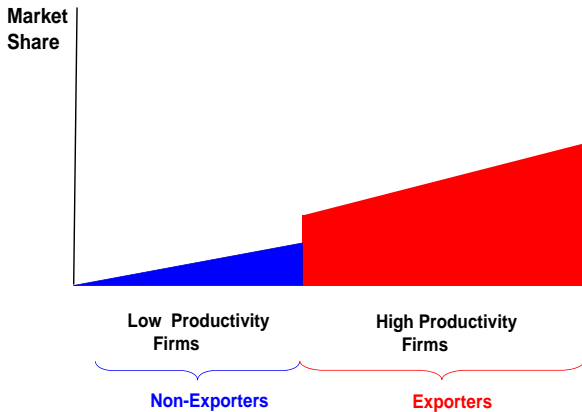
Melitz (2003)

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

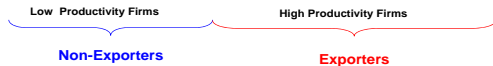
Because there are fixed costs of exporting, the more productive firms will export while the less productive will not export.

Basic Model

Melitz (2003)



Effects of Trade Liberalization



Effects of Trade Liberalization

A decrease in trade costs, a decrease in tariffs, or expanded trading opportunities ⇒

- An increase in profits from exporting ⇒

Expansion by incumbent exporters

Entry by new exporters

These firms gain from increased trade (winners).

Effects of Trade Liberalization

Effects of Trade Liberalization

Expansion by exporters =>

- An increase in the demand for labour =>

An increase in wages =>

A decrease in profits from domestic sales =>

Contraction by some non-exporters

Exit by some non-exporters

These firms are harmed by increased trade (losers).

Effects of Trade Liberalization

Expansion by exporters ⇒

- An increase in the demand for labour ⇒

An increase in wages ⇒

A decrease in profits from domestic sales ⇒

Contraction by some non-exporters

Exit by some non-exporters

These firms are harmed by increased trade (losers).

Effects of Trade Liberalization

Contraction and exit by less productive firms and expansion by more productive firms ⇒

- An increase in average industry productivity due to reallocation within an industry



Effects of Trade Liberalization

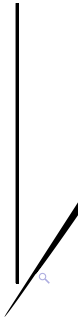
Contraction and exit by less productive firms and expansion by more productive firms ⇒

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

Extensions

These effects extend to firms' decisions regarding innovating, importing intermediates, global value chains, ...

Trade can increase differences in productivity across firms *within an industry*.



Policy Implications

Policy Implications

- Trade policy negotiators need access to quantitative studies based on firm-level and plant-level data.

(For example, to obtain estimates of the degree of heterogeneity within an industry.)

Policy Implications

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

Effects of Trade Liberalization



Empirical Analysis

3 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 trade policy

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

Empirical Gravity

Modern trade theory implies that we should examine extensive and intensive margin responses separately.

Empirical Gravity

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Source: Mayer and Ottaviano (2007)



Gravity: Canadian Inter-Provincial Trade Agreements

Estimated Impact on Inter-Provincial Trade Volumes

Provincial

Gravity: Importance of Provincial Borders

Estimated Intra-Provincial Trade Volumes Relative to Inter-Provincial Trade Volumes

Year	Theory-Based Gravity Without International Flows	Theory-Based Gravity With International Flows
1995	26	119
2001	25	114
2007	25	112
2013	24	108

10 provinces, US, ROW; 1992-2013

Source: Lapham & Teeter (2019)

Based on Beaulieu & Zaman (2019)





The Importance of Heterogeneity

- 4 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 trade policy
 - Products

References: Survey Papers

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