

Accounting for Firm Heterogeneity within U.S. Industries: Extended Supply-Use Tables and Trade in Value Added using Enterprise and Establishment Level Data

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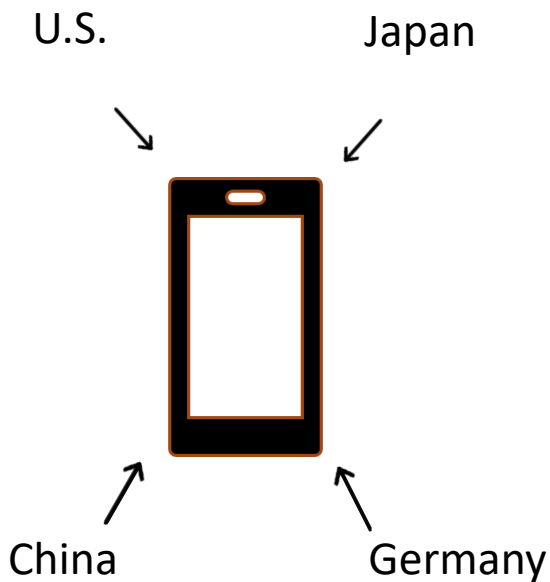
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- Motivation
- Data sources
- Methodology of extended SUTs
- Results: Firm heterogeneity in domestic and foreign content (imported content in this paper) of exports
 - U.S. MNEs account for bulk of domestic and foreign content in goods industries
 - Non-MNEs account for about two-thirds of domestic and foreign content in service industries
 - Foreign-MNE domestic production concentrated in a few industries
- Conclusion and next steps

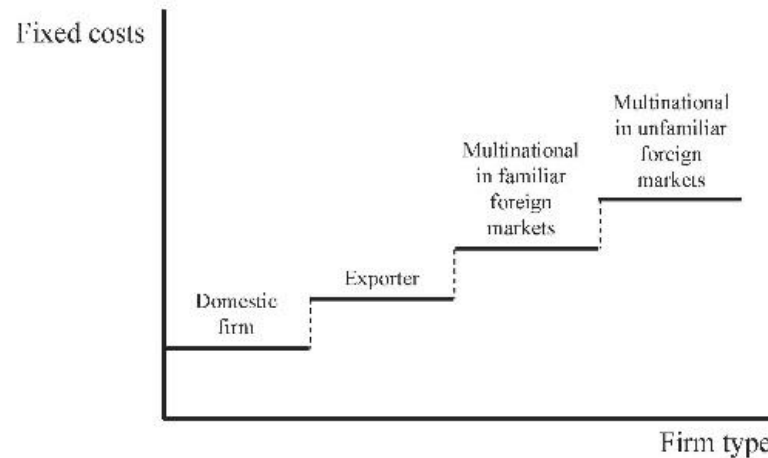
Motivation

Fragmentation in production



Intraindustry heterogeneity in the literature

The Productivity Sorting Model



Theory: Melitz (2003)
Empirics: Zeile (1998) and Helpman, Melitz, and Yeaple (2004)

Dimensions of firm heterogeneity

Ownership	Export orientation	Import orientation	Firm size class
Foreign-owned MNE	Exporter	Importer	Small
			Medium
			Large
		Non-Importer	Small
			Medium
			Large
	Non-Exporter	Importer	Small
			Medium
			Large
		Non-Importer	Small
			Medium
			Large
Domestic-owned MNE	Exporter	Importer	Small
			Medium
			Large
		Non-Importer	Small
			Medium
			Large
	Non-Exporter	Importer	Small
			Medium
			Large
		Non-Importer	Small
			Medium
			Large
Non-MNE	Exporter	Importer	Small
			Medium
			Large
		Non-Importer	Small
			Medium
			Large
	Non-Exporter	Importer	Small
			Medium
			Large
		Non-Importer	Small
			Medium
			Large

Data for extended SUTs

- BEA SUTs based mainly on
 - Economic Census data
 - Census and BEA trade data
- BEA AMNE data for MNE classification
- Experimental tables (2005 and 2012)
 - Combines SUTs and AMNE data at the industry level
- Microdata linking
 - Combines underlying firm level AMNE, establishment level Census of Manufactures, and firm level trade data

Incorporation of AMNE data

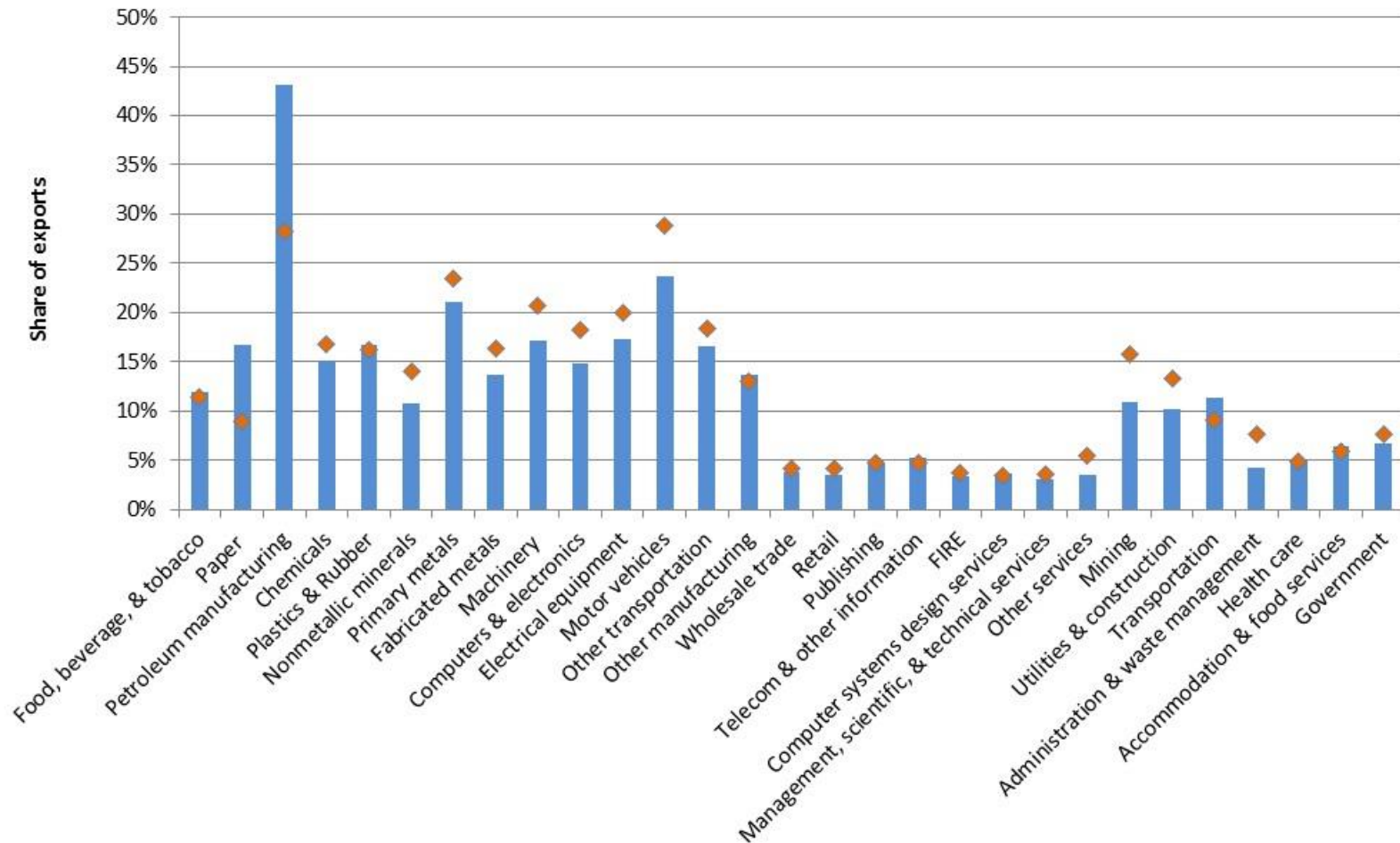
- Two types of AMNE data
 - U.S. parent firms
 - Majority-owned U.S. affiliates of foreign parent firms
- Overlap between U.S. parents and U.S. affiliates removed
- Employment based enterprise to establishment conversion matrix
- Non-MNE calculated as a residual

- Converted use table from purchaser prices to basic prices
- Converted ESUTs to input-output tables
- TiVA indicators using Leontief inverse
- TiVA indicators
 - Typically decompose trade or final demand on a value added basis
 - Focus on import content and domestic value added in exports

Import content similar to OECD estimates

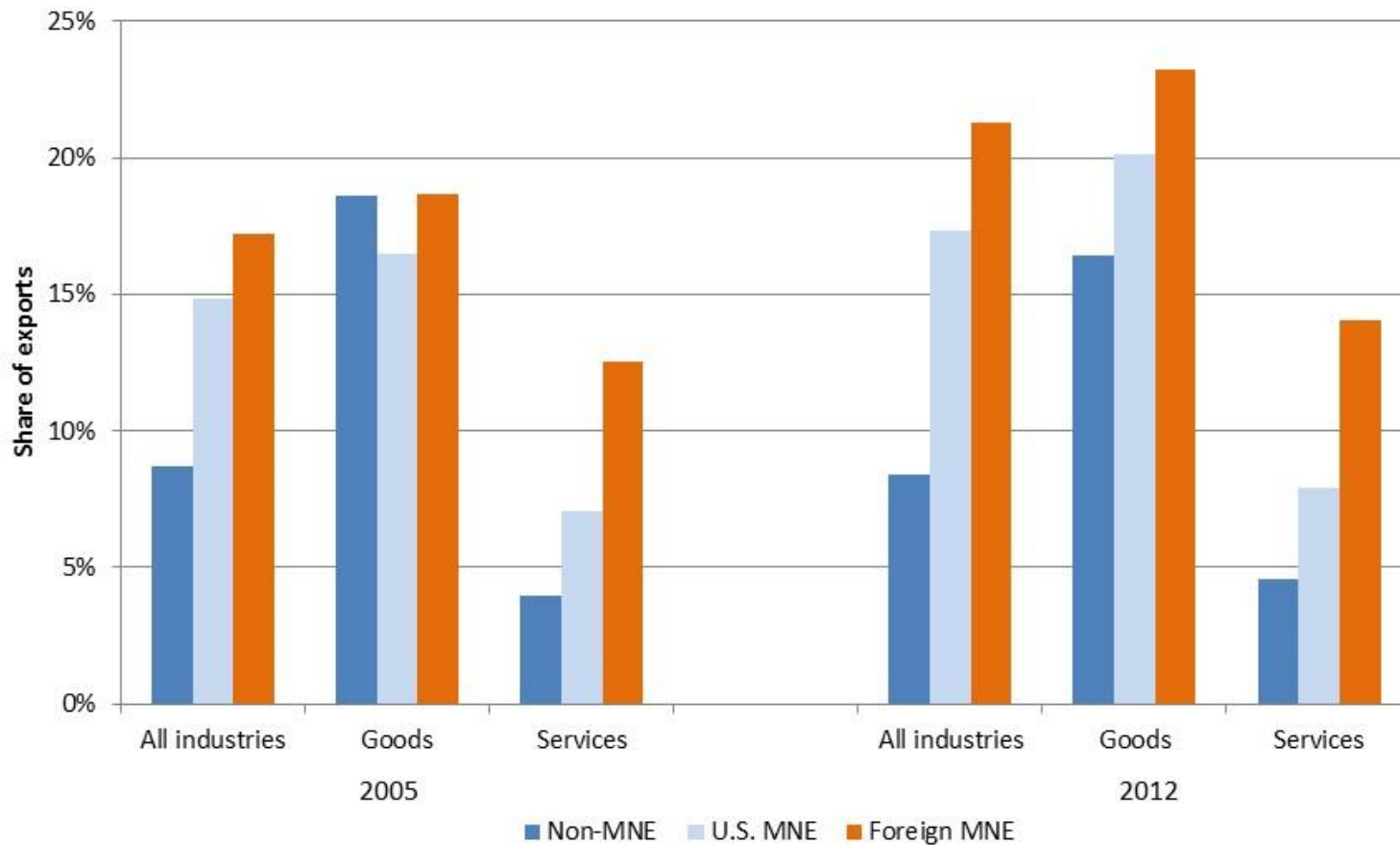
Imported/foreign value added content-2005

■ BEA imported content ◆ OECD foreign value added content



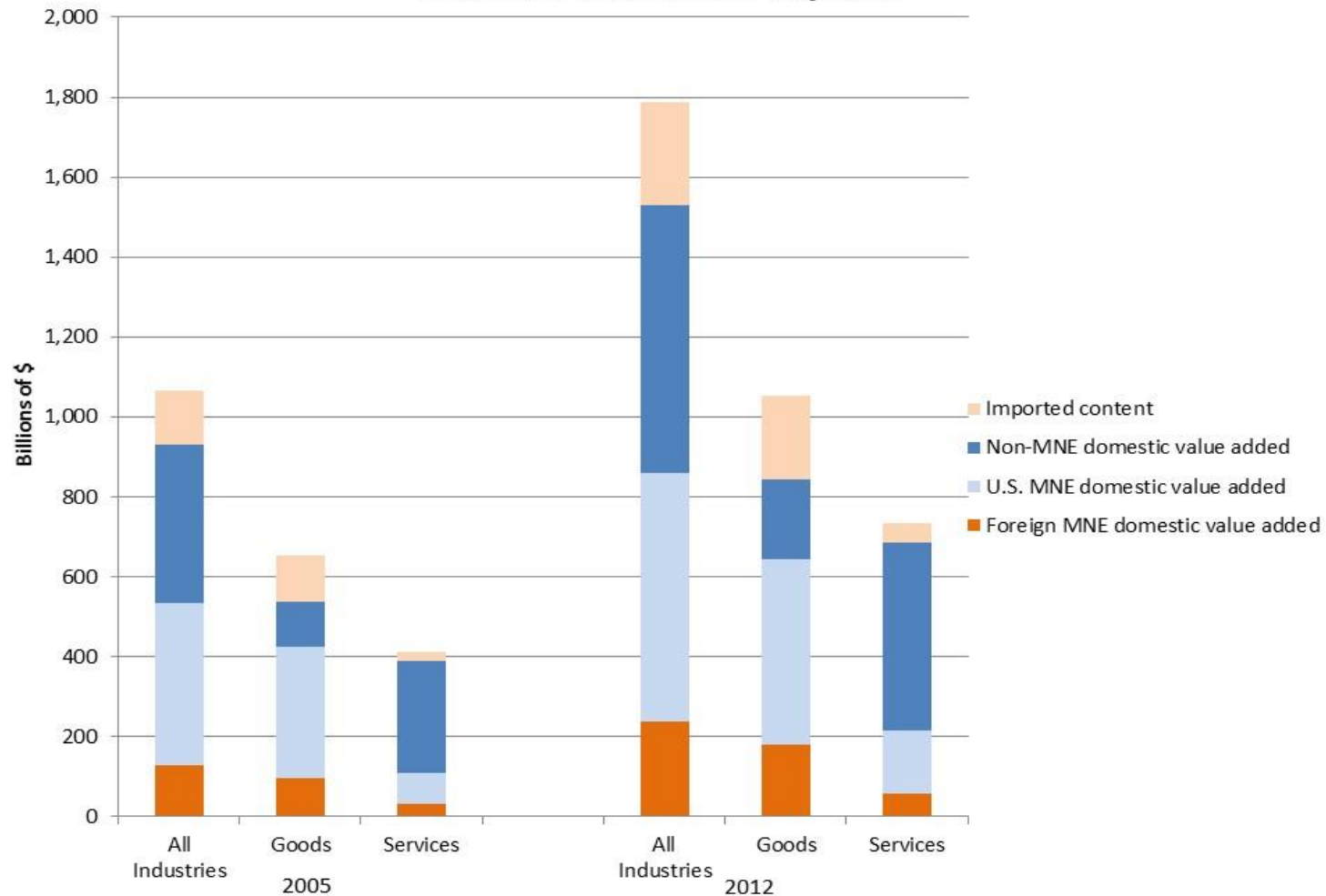
Firm heterogeneity in imported content

Imported content in exports



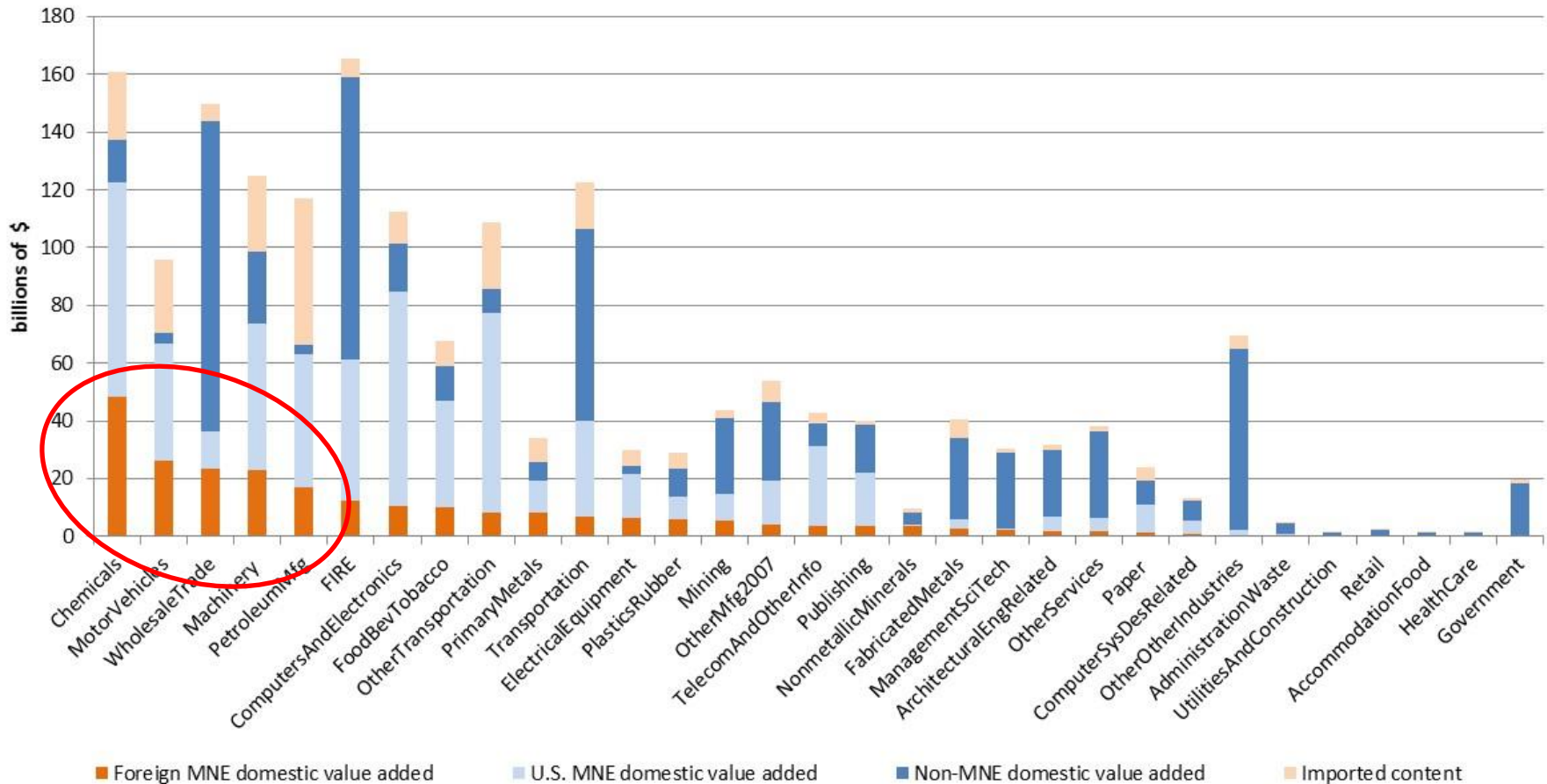
Source of content: goods vs. services

Source of content in exports



Foreign MNE content concentrated in a few industries

Source of content in exports of goods and services-2012



- Accounting for heterogeneity by ownership looks most promising and is theoretically grounded
- Better understanding of role of MNEs in global and domestic value chains in the U.S.
 - U.S. MNEs account for the bulk of domestic and foreign content in goods industries
 - Close to two-thirds of domestic and foreign content in service industries is from non-MNEs
 - Foreign-MNE domestic production is concentrated in a few industries

- Enhancements to supply-use tables
 - Consider publication of SUT sub-matrices used in TiVA calculations
- Incorporate establishment-level AMNE data
- Work with other countries to reconcile bilateral asymmetries in source data
- APEC initiative and North America Regional SUTs