

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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March 9, 2018

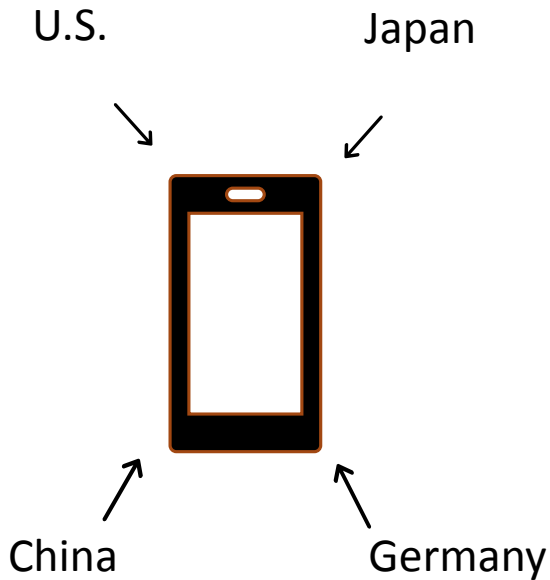


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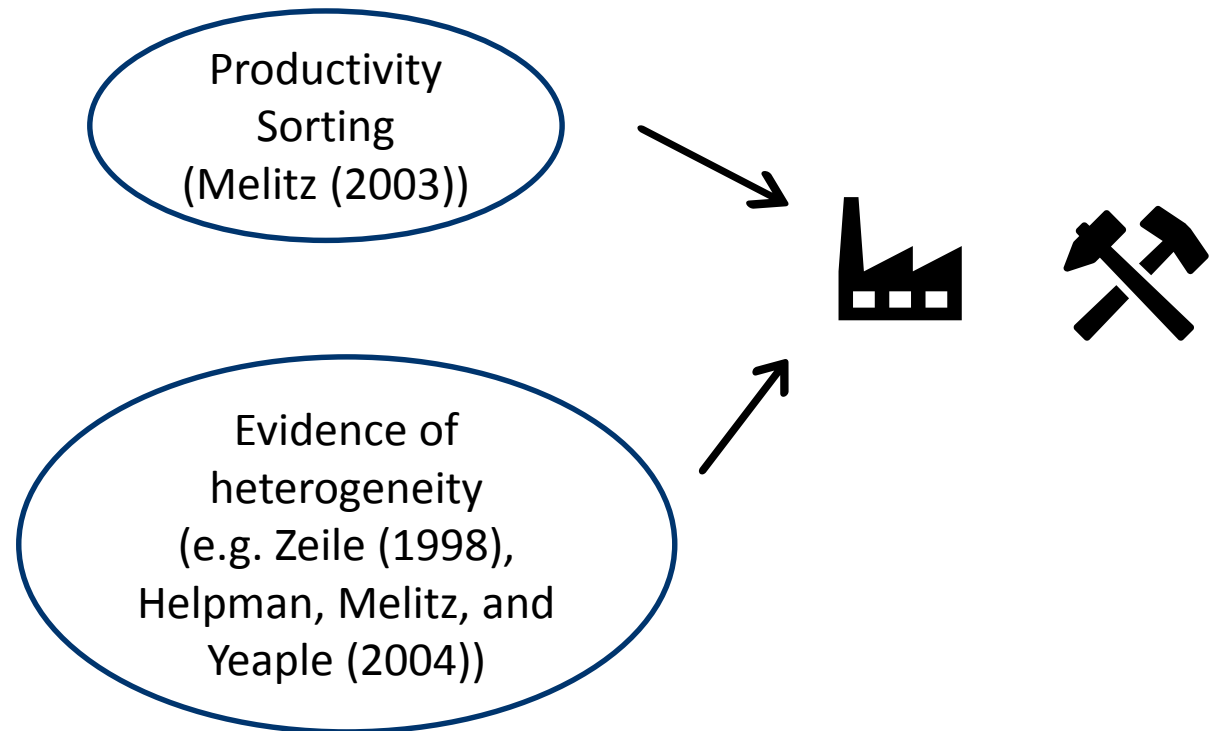
- Motivation
- Data sources
- Methodology of extended SUTs
- Results: TiVA and firm heterogeneity
 - Evidence of heterogeneity in components of output
 - Foreign ownership relevant for value added share of exports in some industries
- Conclusion and next steps

Motivation

Fragmentation in production



Intraindustry heterogeneity in the literature



Dimensions of firm heterogeneity

Foreign-owned MNE						Domestic-owned MNE						Non-MNE					
Exporter			Non-Exporter			Exporter			Non-Exporter			Exporter			Non-Exporter		
Imp	Non-Imp		Imp	Non-Imp		Imp	Non-Imp		Imp	Non-Imp		Imp	Non-Imp		Imp	Non-Imp	
S	M	L	S	M	L	S	M	L	S	M	L	S	M	L	S	M	L

- Dimensions: Ownership, Export orientation, Import orientation, Firm size class
- OECD “possible” breakdown of columns and rows for each industry in extended supply use table (SUT)
- Experimental approach
 - Focus on **MNE** breakout
- Microdata linking
 - Expanded to **export orientation** and **firm size class** in current work
 - Will consider import orientation and other possible criteria in long-run research

Data for extended SUTs

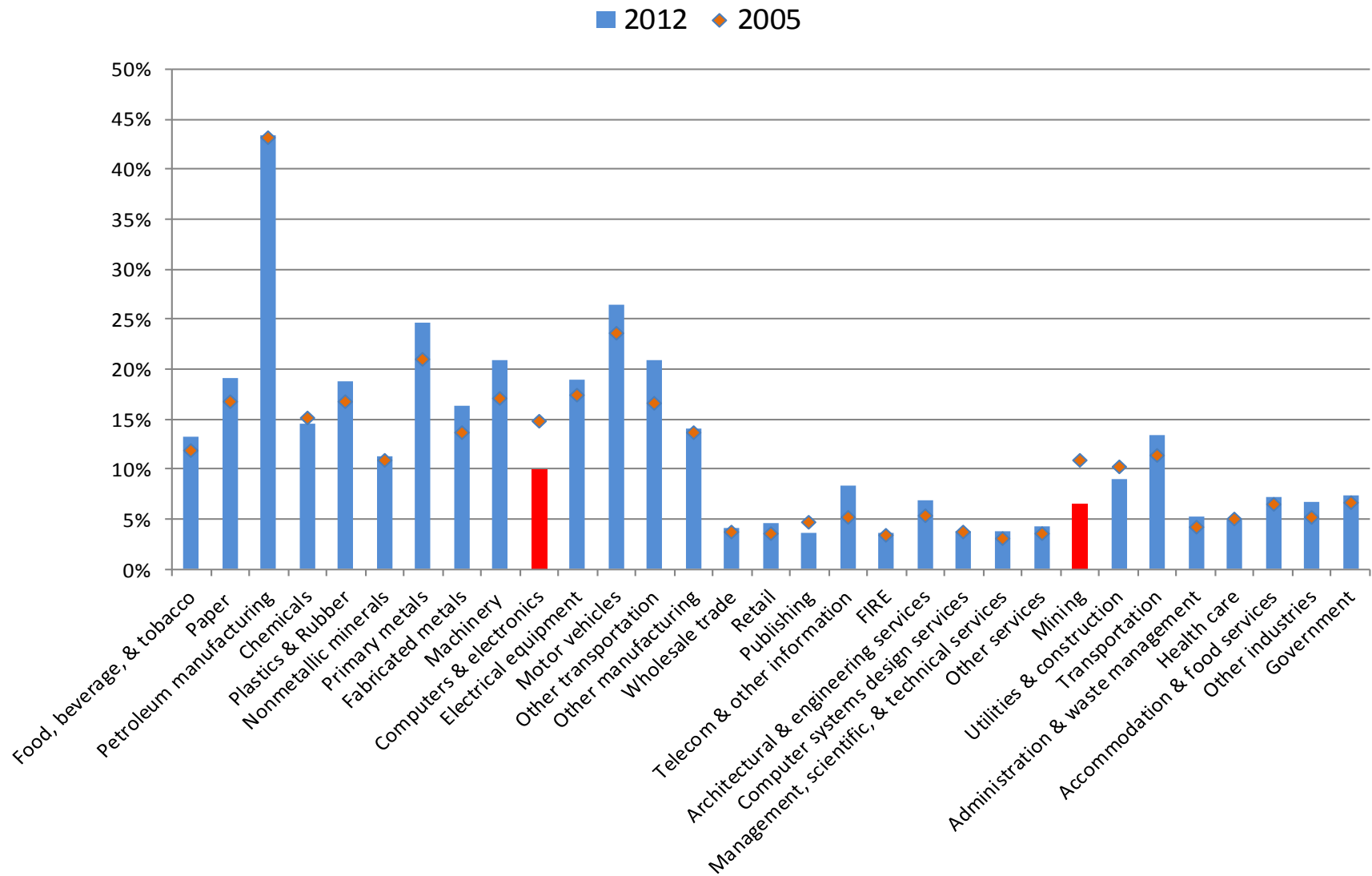
- BEA SUTs based mainly on
 - Economic Census
 - Census and BEA trade data
- BEA AMNE data for MNE breakout
- Experimental tables (2005 and 2012)
 - Combines SUTs and AMNE data at the industry level
- Microdata linking (Semiconductor industry 2012)
 - Combines underlying firm level AMNE, establishment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

Incorporation of AMNE data

- Use two types of AMNE data
 - U.S. parent firms
 - Majority-owned U.S. affiliates of foreign parent firms
- Foreign MNEs=Majority-owned U.S. affiliates
- U.S. MNEs=U.S. parents less majority-owned U.S. affiliates (that are also U.S. parents)
- Employment based enterprise to establishment conversion matrix
- Non-MNE = SUT less MNE data for 30 industries

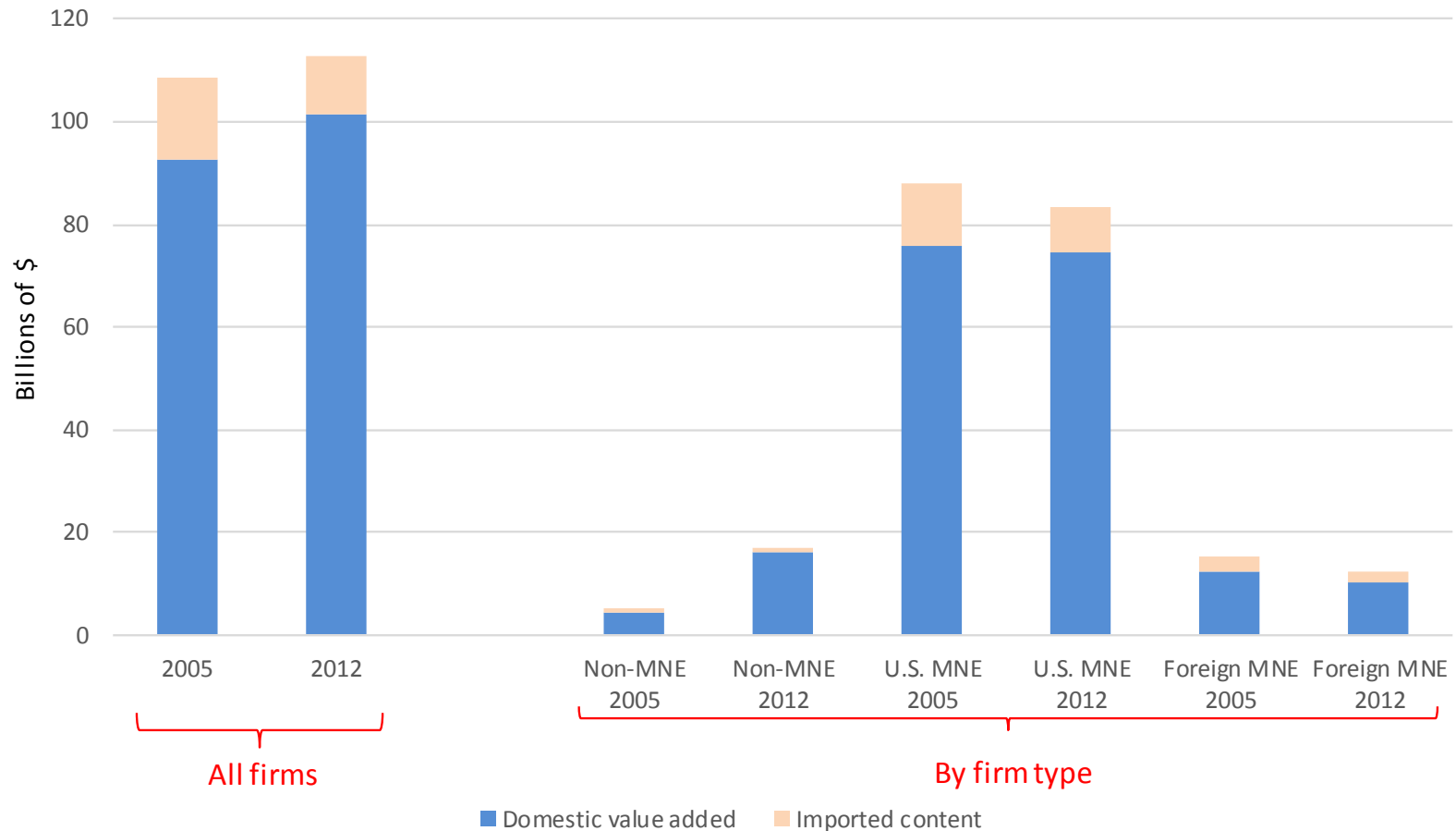
- Converted use table from purchaser prices to basic prices
- Converted ESUTs to input-output tables
- TiVA indicators using Leontief inverse
- TiVA indicators
 - Typically decompose trade or final demand on a value added basis
 - Focus on import content and domestic value added in exports

Import content as a share of exports



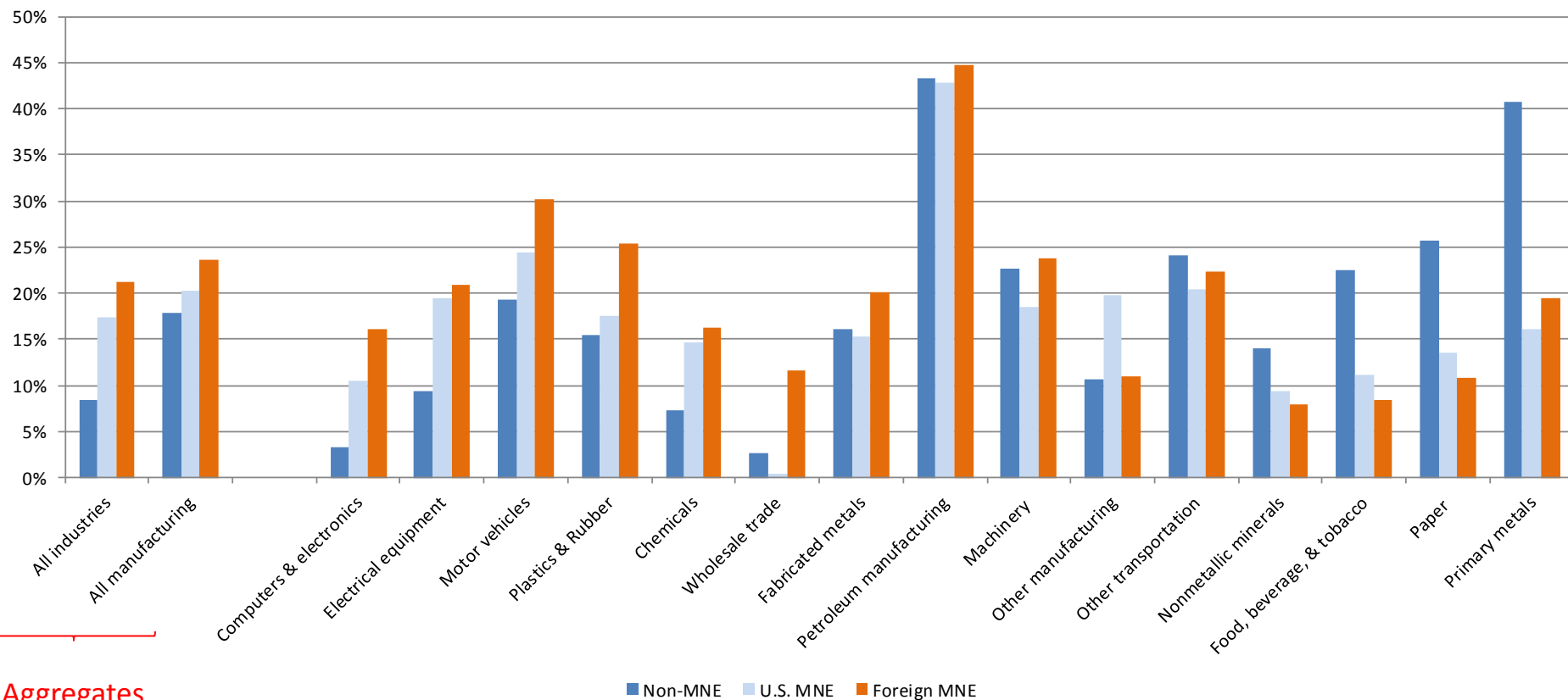
Import content as a share of exports

Computers and Electronics-2005 and 2012



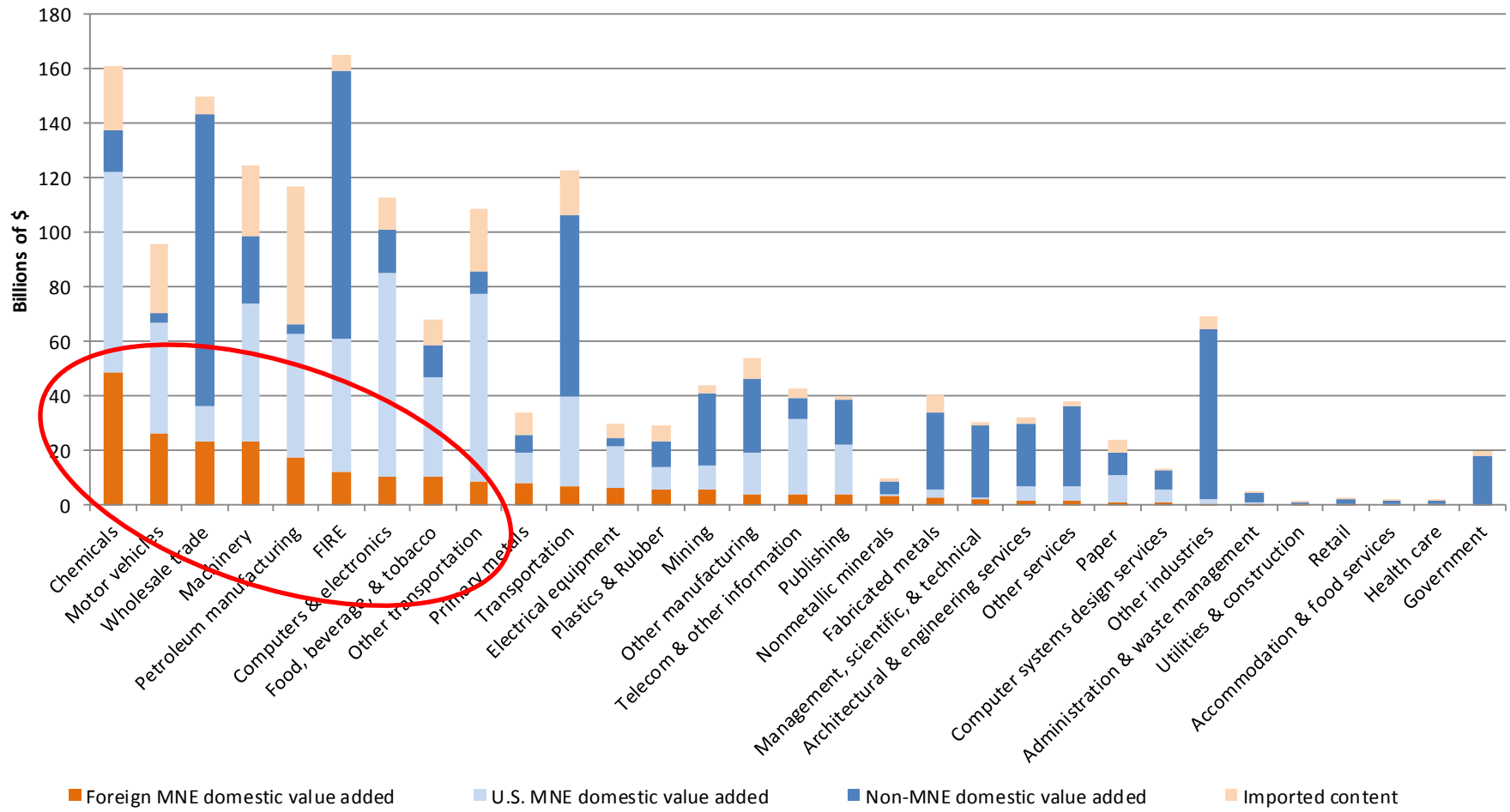
Import content as a share of exports by firm type

Manufacturing Industries-2012



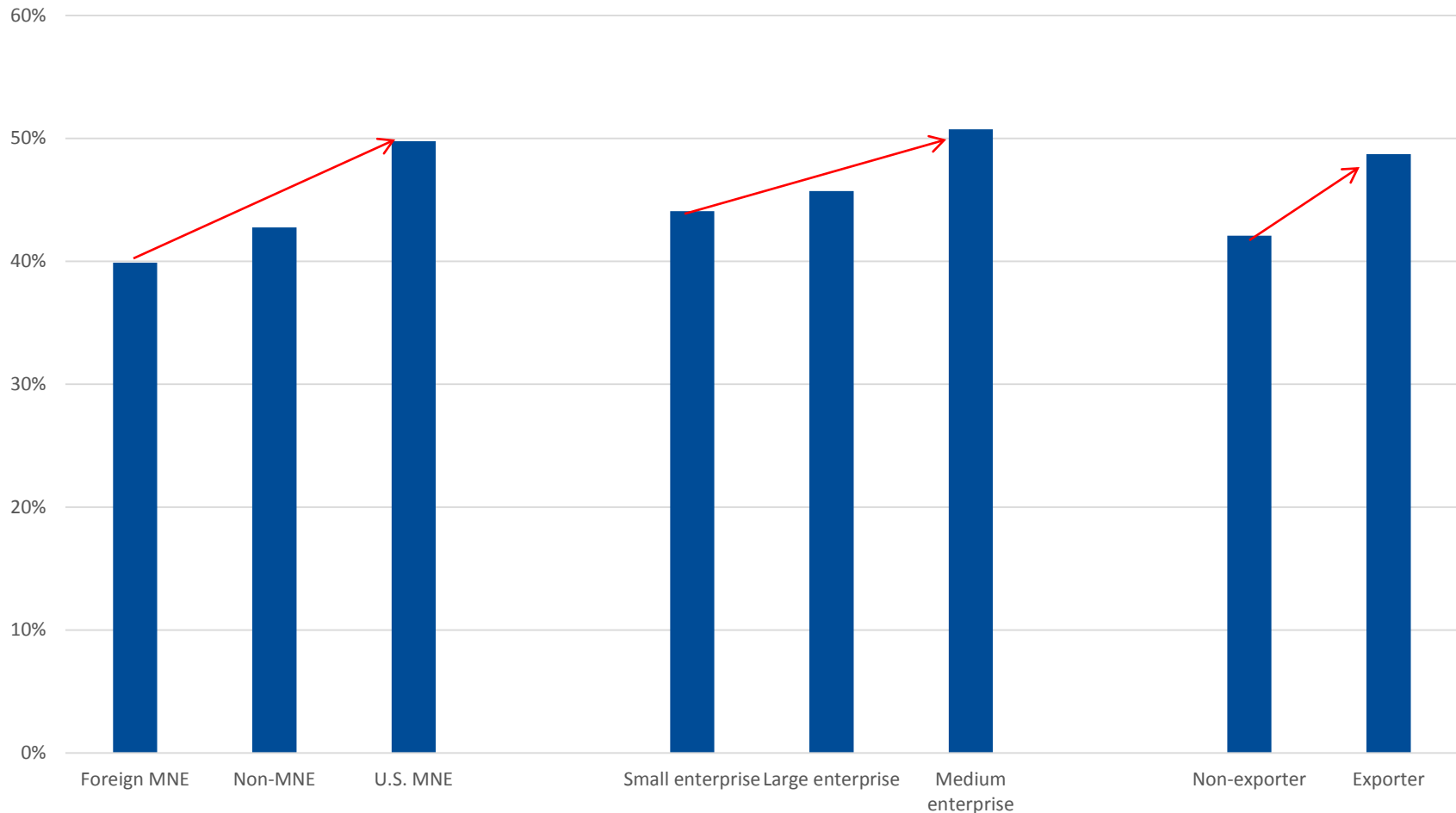
Aggregates

Source of content in exports, 2012



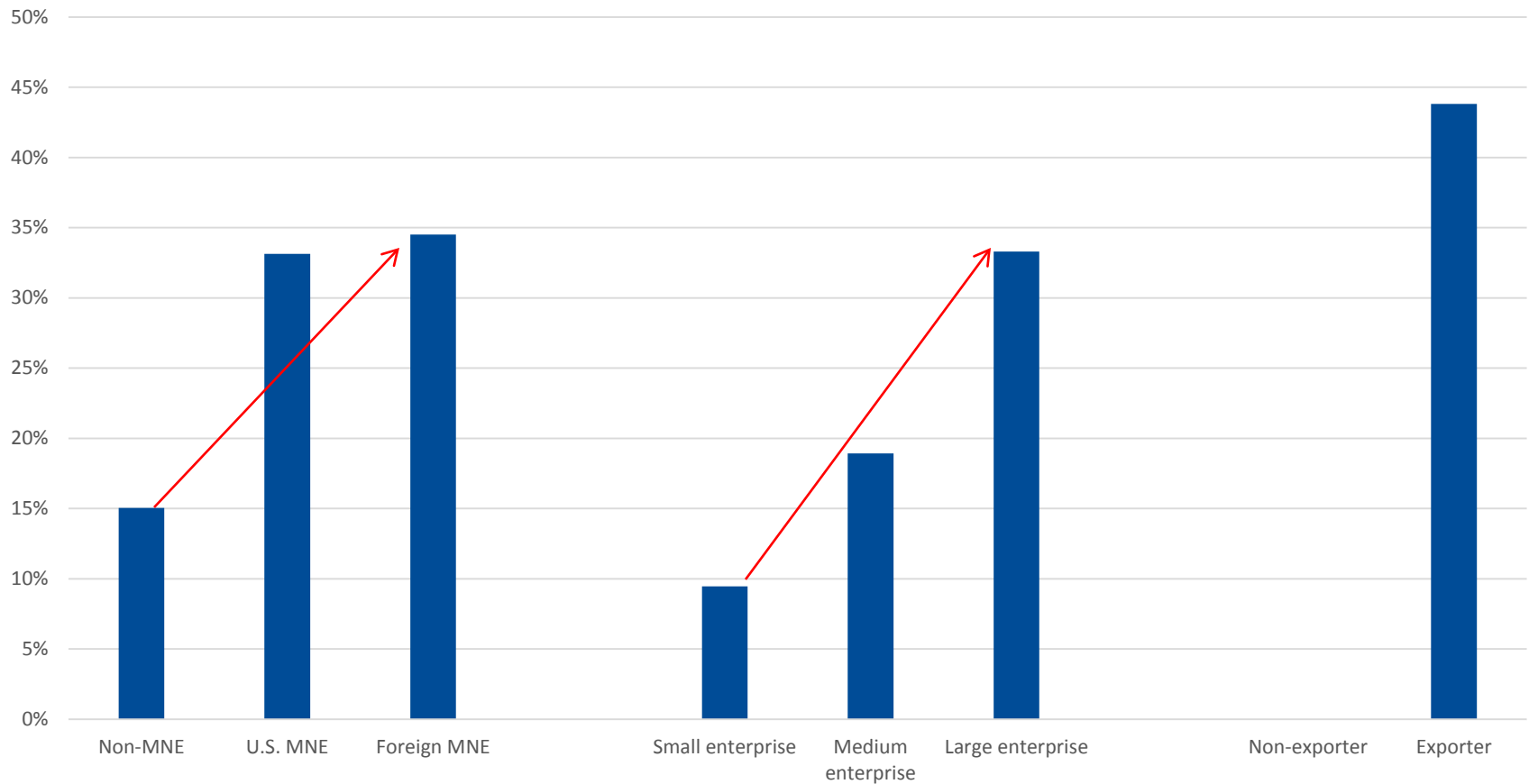
Value added share of gross output

Semiconductor Industry-Value added-2012



Export share of gross output

Semiconductor Industry-Exports-2012



- Accounting for heterogeneity by ownership looks most promising and is theoretically grounded
- Better understanding of role of firm types in global and domestic value chains in the U.S.
- For semiconductors, no one firm type best accounts for heterogeneity in all aspects of production

- Enhancements to supply-use tables
 - Consider publication of SUT sub-matrices used in TiVA calculations
- Expand BEA-Census microdata link project beyond semiconductors
- Work with other countries to reconcile bilateral asymmetries in source data
- APEC initiative and North America Regional SUTs
 - Regional SUTs projected by end of 2018