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# Global Supply Chains: The Looming “Great Reallocation”

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# Global Supply Chains (GVCs)

## In the Spotlight

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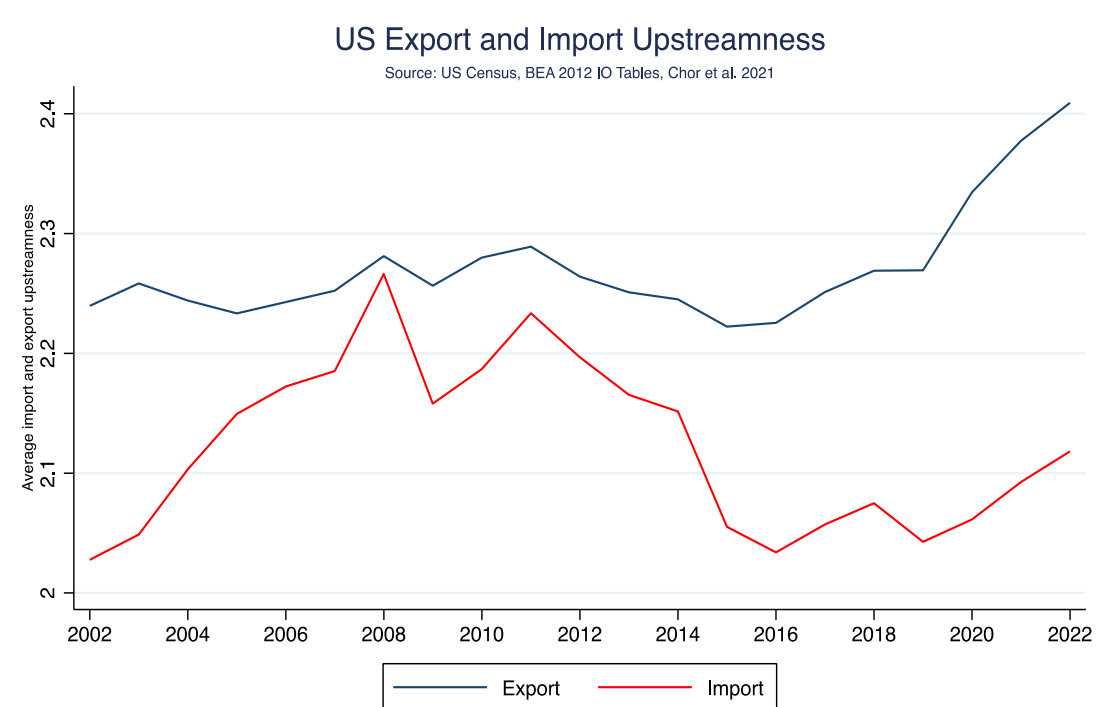
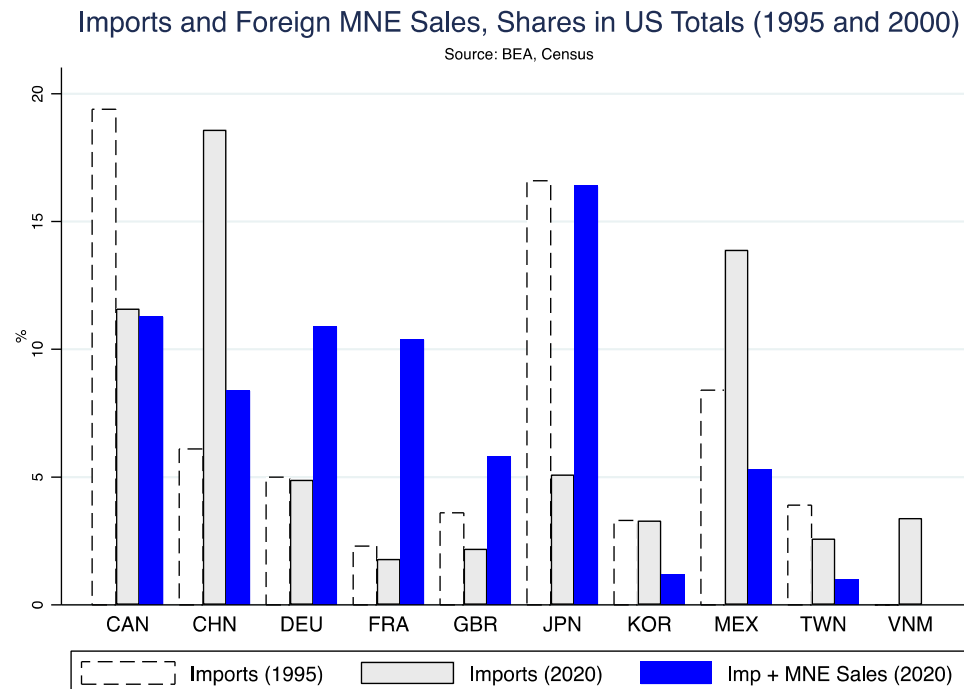
- **Optimism of 1990s-2000s:** Falling transportation costs & policy barriers + technological change
  - **Supply chains...** improve **efficiency**, by allowing firms to perform stages/procure inputs in different locations
    - Opportunities for growth and development (WB, 2020)
- **Concerns of 2010s-20s:** Natural disasters, climate change, pandemic, war (Invasion Ukraine, terrorist attack against Israel), national security
  - **Supply chains...** expose firms and countries to **disruption risks**
    - Backlash in developed nations (Colantone et al., 2022; Alfaro, Chen and Chor, 2023) → rise in trade barriers
      - “Favoring the friendshoring of supply chains ... will lower the risks to our economy” (Yellen, 2022)
- **This Paper:** Broad-ranging look at the **evolution of US supply chains** from 1990s to 2022 (focus on post-2017; available data)
  - Partners, products, modes, value chain position, economic activity; for signs of friend/near/reshoring
- ✓ **Not Deglobalization (yet):** Trade flows have rebounded, US imports at all-time high in 2022 (Antràs, 2020; Baldwin, 2021)
- ✓ **A “Great Reallocation”:** GVC reconfiguration (2017-2022).
  - Decrease in China’s product-level import shares → Increase in import shares from “friends”, including: Vietnam (low cost), Mexico (nearshoring / regional GVCs)
- ✓ **Caution:**
  - i. Rising costs: Evidence of **rising unit values** from Vietnam and Mexico
  - ii. And **may not** ultimately **reduce dependence** on China

# US Supply Chain Patterns

## A Longer-Run Perspective (1990s-2017)

- **Partners:** Shift in import sourcing from High-Income (Japan & Canada) → Low-Wage (China & Mexico)
  - Though regional patterns persist: NAFTA, EU, Asia Pacific
- **Mode:** High-Income countries remained engaged via FDI (to circumvent policy barriers, rising costs at home)

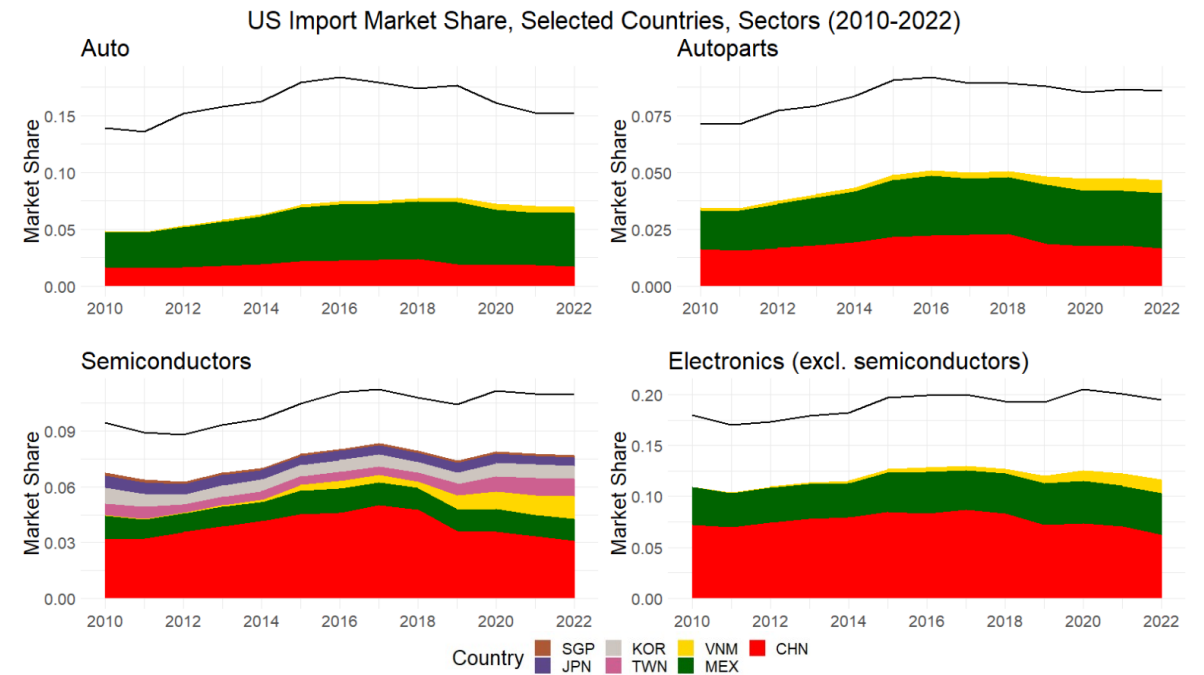
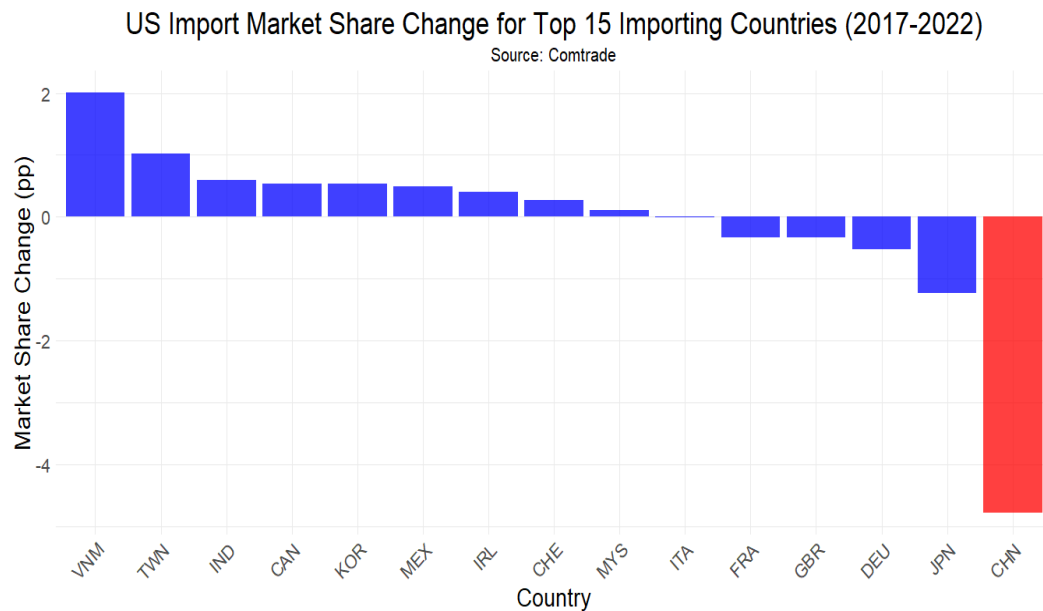
- **Products:** Measure of value chain positioning to final goods (c.f., Chor et al. 2021)
  - Exporter of upstream products; importer of final goods
  - Rise in US export upstreamness: partly, energy independence
  - Also: **Recent ↑ in US import upstreamness**



# The Great Reallocation 2017-2022

- US imports grew 6.7% (non-petroleum real imports: 4.2%)
- **Imports from China grew 1.2%**. Down in 2023.
- **BUT... lost 5pp market share** to among other “friends”: Vietnam, Mexico (Freund et al., 2023)

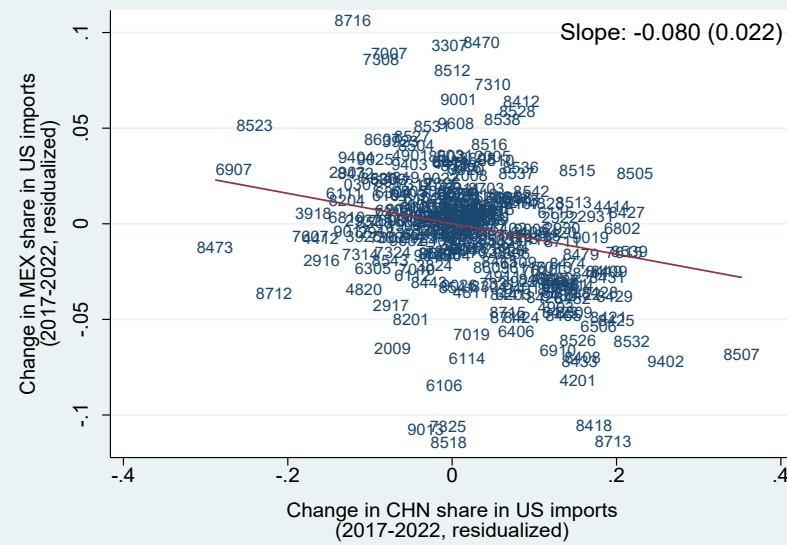
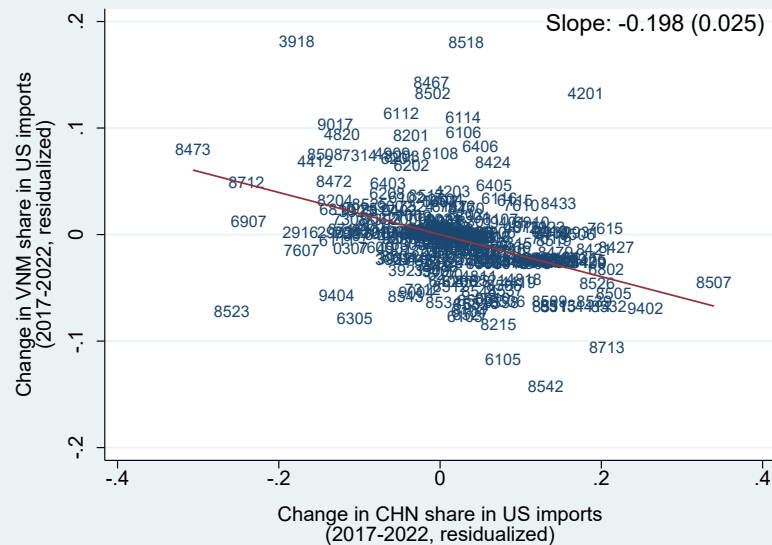
- In sectors central to policy debate: autos, auto parts, semiconductors, electronics



# Import Market Share from “Friends”

Product-level Regressions (HS4):  $\Delta y_{p,22-17} = \beta_1 \Delta CHN sh_{p,22-17} + \beta_2 \Delta y_{p,17-12} + D_{p0} + \varepsilon_p$

Dependent variable:	Δ US product-level import share from c (2017-2022)						
Import sources, c:	VNM	MEX	CAN	IND, THA, MYS, IDN	KOR, TWN, SGP	IRL, CHE	ROW
ΔCHN import share (2017-2022)	<u>-0.198***</u> [0.025]	<u>-0.079***</u> [0.020]	<u>-0.012**</u> [0.005]	<u>-0.136***</u> [0.044]	<u>-0.440***</u> [0.134]	<u>-0.011*</u> [0.006]	-0.101 [0.062]
Lag Δ in c's import share (2012-2017)	0.768 [0.529]	-0.118 [0.220]	0.001 [0.069]	0.106 [0.161]	0.188 [0.126]	0.073 [0.053]	-0.453*** [0.087]
Observations	1,149	1,149	1,149	1,149	1,149	1,149	1,149
R-squared	0.529	0.296	0.220	0.301	0.561	0.136	0.458
HS2 fixed effects?	Y	Y	Y	Y	Y	Y	Y



Product-level decreases in China’s import share:

- **Increase in import market share from “friends”**

# Import Market Share from “Friends”

## Heterogeneous Responses

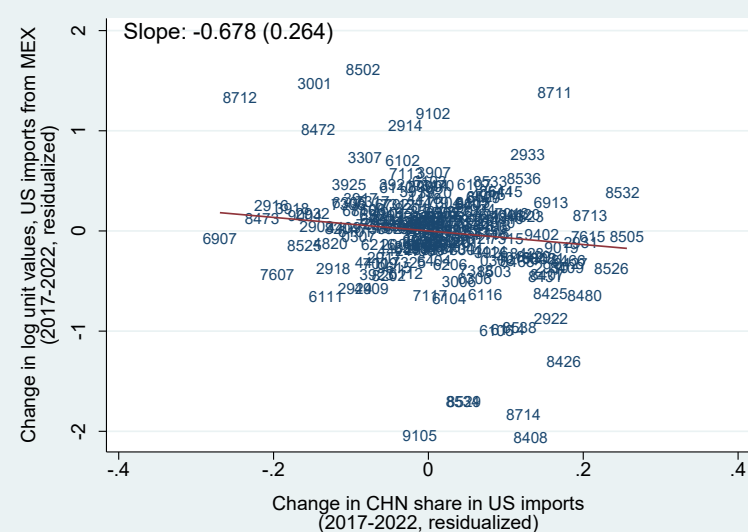
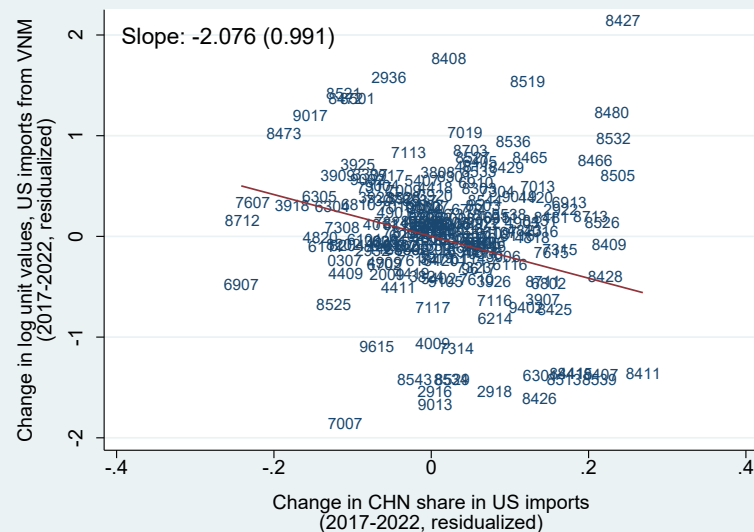
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- Vietnam: Gains particularly in electrical and electronic equipment (e.g., microphones, electric generating sets, telephone sets). Also: plastic floor coverings and apparel.
    - Broadly speaking: In more upstream, or lower labor share products.
  - Mexico: Also gained import share in electrical and electronic equipment (e.g., discs, tapes and storage devices, calculating machines). Also: autos and auto parts, glass iron and steel products.
    - Broadly speaking: Less upstream (proximity to the US), or higher labor share products.
- ✓ **Policy Driven Reallocation.** Both Vietnam and Mexico: Greater response for products with higher US tariffs on China.

# Caution I

## Higher Unit Values from “Friends”

Dependent variable: Import sources, c:	Δ Log US product-level <b>import unit value</b> from c (2017-2022)						
	VNM	MEX	CAN	IND, THA, MYS, IDN	KOR, TWN, SGP	IRL, CHE	ROW
ΔCHN import share (2017-2022)	<u>-1.960*</u> [1.001]	<u>-0.630**</u> [0.282]	0.062 [0.367]	-0.905 [0.905]	<u>-0.460*</u> [0.245]	-0.331 [0.622]	-0.700 [1.110]
Lag Δ log import unit value from c (2012-2017)	-0.334*** [0.086]	-0.198*** [0.027]	0.045 [0.086]	-0.416*** [0.090]	-0.234*** [0.056]	-0.297*** [0.077]	-0.788*** [0.151]
Observations	634	926	982	1,025	954	847	286
R-squared	0.342	0.355	0.424	0.350	0.404	0.325	0.306
HS2 fixed effects?	Y	Y	Y	Y	Y	Y	Y



Product-level decreases in China’s import share:

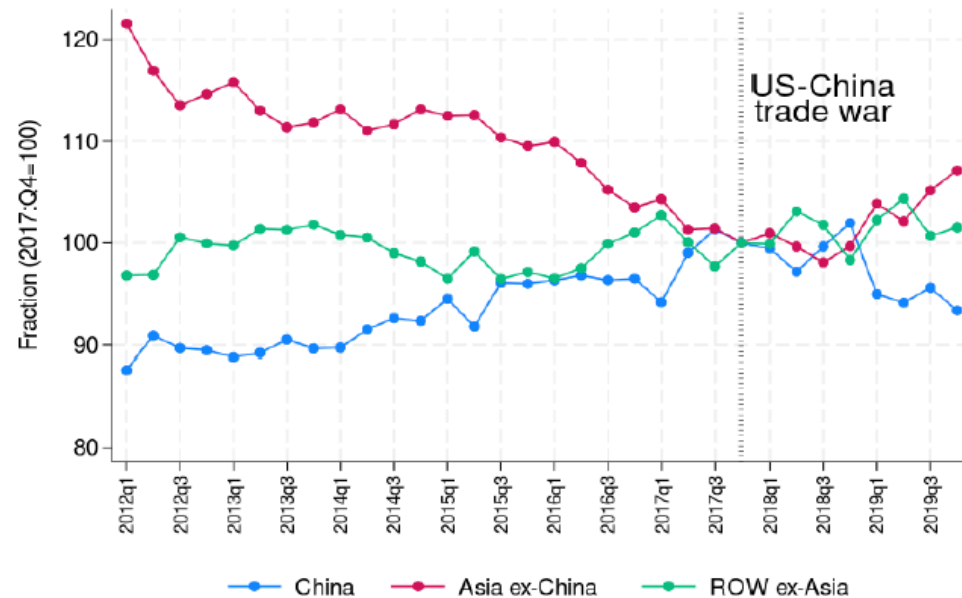
➤ **Increases in the unit values** of goods purchased by the US from **Vietnam (10%), Mexico (3%)**

- A combination of cost-push or demand-pull forces

# The Great Reallocation: Firm-Supplier Evidence

Importing Firms Suppliers (Alfaro, Brussevich, Minoiu, Presbitero, 2024)

Reallocation Post Tariffs: **U.S. Firms that were importing at least one product from a Chinese Supplier reduced their relationship**



Source: S&P Panjiva Supply Chain Intelligence. Share of Imports by U.S. importers by region (2012:Q1-2019:Q4; 2017:Q4=100)

Trade War Effect on Supply Chains:

Dependent variables:	(1) # exiting suppliers	(2) # entering suppliers	(3) Total # suppliers	(4) Import share
<b>(A) China</b>				
Tariff-hit×Post	0.5645*** (0.1724)	-2.0853*** (0.4404)	-1.9194*** (0.3655)	-1.8096*** (0.2422)
Observations	210,924	207,956	227,742	219,523
<b>(B) Asia (excl. China)</b>				
Tariff-hit×Post	-0.5986*** (0.0360)	0.5334*** (0.0358)	0.2795*** (0.0239)	0.3685*** (0.0191)
Observations	184,266	179,899	203,074	183,565
<b>(C) ROW (excl. Asia)</b>				
Tariff-hit×Post	-0.5257*** (0.0518)	0.3897*** (0.0475)	0.2029*** (0.0348)	0.3893*** (0.0243)
Observations	137,088	134,524	150,141	117,597
Firm controls×Post	Y	Y	Y	Y
Firm FE	Y	Y	Y	Y
State×Year FE	Y	Y	Y	Y
Industry×Year FE	Y	Y	Y	Y
Product×Year FE	Y	Y	Y	Y
Product×Firm FE	Y	Y	Y	Y

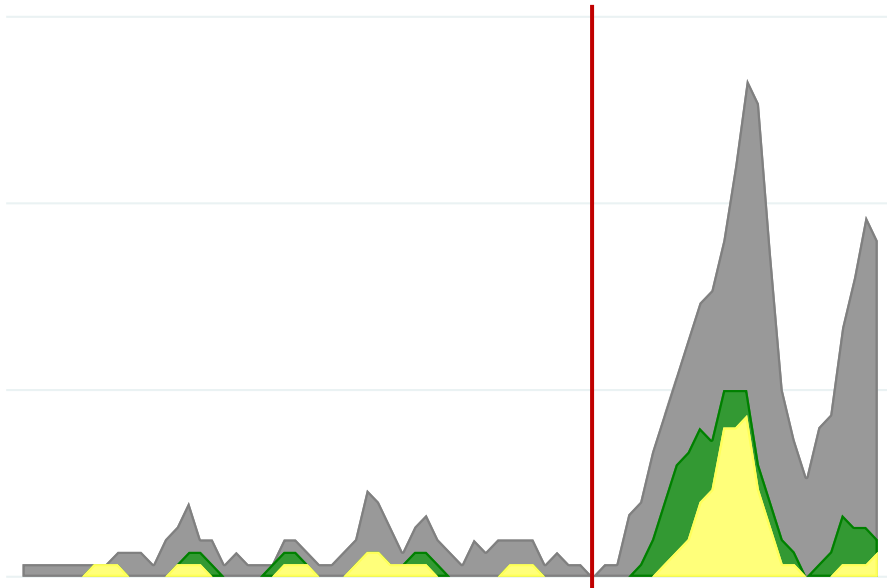
PPML Estimates. 6 HS Code, 2011A1- 2019: Q4. The data are at the firm-product-year level during 2016–2019. The sample includes all the Panjiva-Y14 matched U.S. importing firms.



# The Great Reallocation: Firms' Strategies

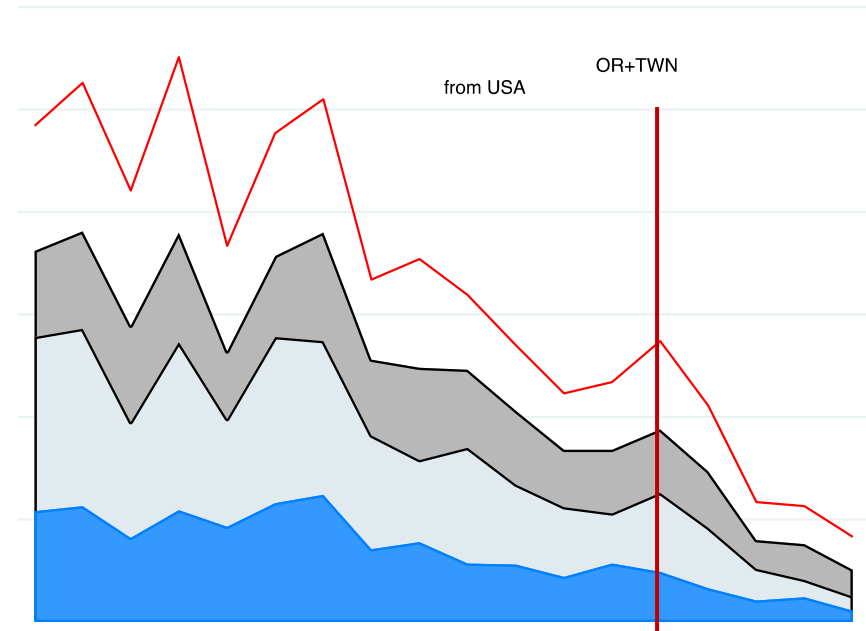
## Offshoring and Greenfield FDI

- **Intent/Attention:** In companies' earnings call transcripts, increased mentions of “friend/near/reshoring” + potential moves away from China, toward Vietnam or Mexico



Friend/Near/Reshoring in Earnings Calls  
(2005-2023Q3) Refinitiv & NL Analytic

- **Modes:** China dropped off as a preferred destination for greenfield FDI originating from the US + other source countries



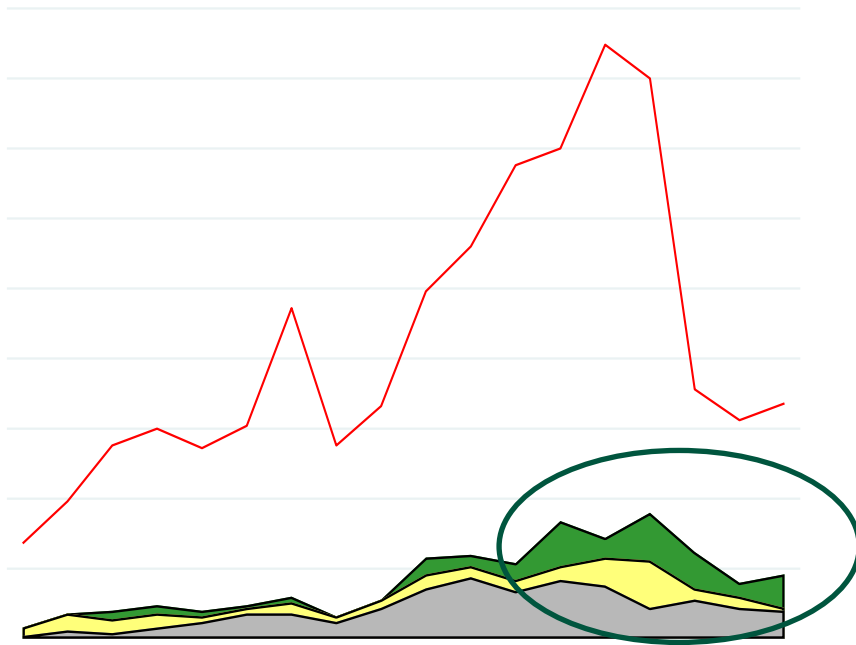
China's Inward Greenfield FDI (2005-2022)  
FT fDi Markets

## Caution II

# The Back Door: Does Friendshoring Reduce Dependence?

- **Rising greenfield FDI** by China in Vietnam and Mexico (in line with FDI trends reported by VNM/MEX statistical agencies)

China's Inward Greenfield FDI, 2005-2022  
(FT fDi Markets)



- **Rising share of imports** from China in third-countries, including US “friends”

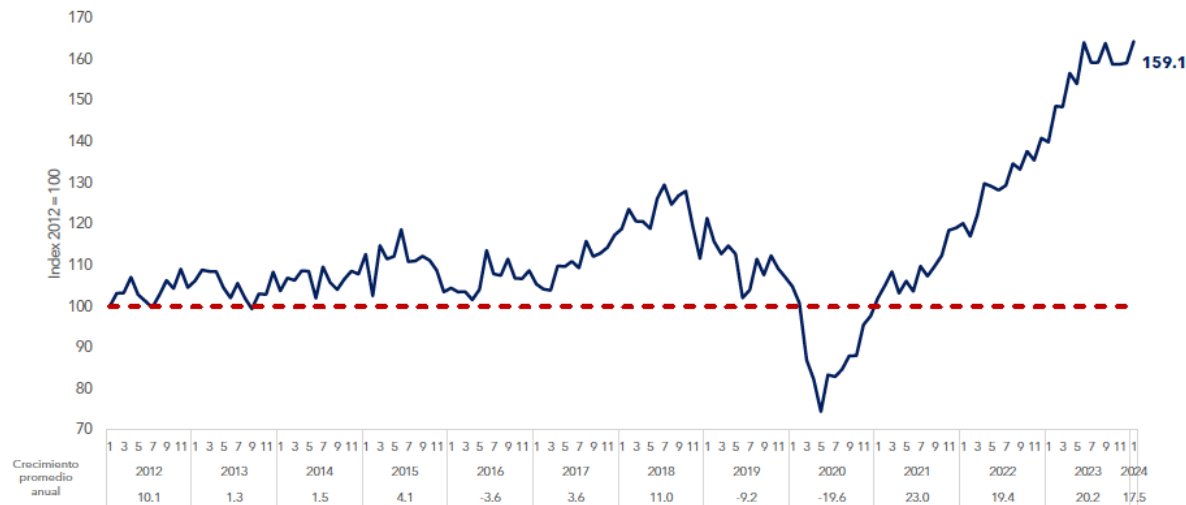
China's Market Share- Top US Trading Partners  
(Comtrade, Eurostat)

	2017		2022	
<b>MEX</b>				
#				
1	USA	46.4%	USA	43.9%
2	<b>CHN</b>	<b>17.6%</b>	<b>CHN</b>	<b>19.6%</b>
<b>CAN</b>				
1	USA	51.4%	USA	48.6%
2	<b>CHN</b>	<b>12.6%</b>	<b>CHN</b>	<b>14.0%</b>
<b>JPN</b>				
1	<b>CHN</b>	<b>24.5%</b>	<b>CHN</b>	<b>21.0%</b>
2	USA	11.0%	USA	10.1%
<b>DEU</b>				
1	<b>CHN</b>	<b>10.2%</b>	<b>CHN</b>	<b>12.0%</b>
3	USA	6.3%	USA	6.1%
<b>VNM</b>				
1	<b>CHN</b>	<b>27.5%</b>	<b>CHN</b>	<b>33.2%</b>
6	USA	4.4%	THA	3.8%
<b>EU</b>				
1	<b>CHN</b>	<b>18.2</b>	<b>CHN</b>	<b>20.9</b>
2	USA	11.5	USA	11.9

# Mexico: Imports of Capital Goods and Investment

## Importaciones de bienes de capital

Índice 2012=100

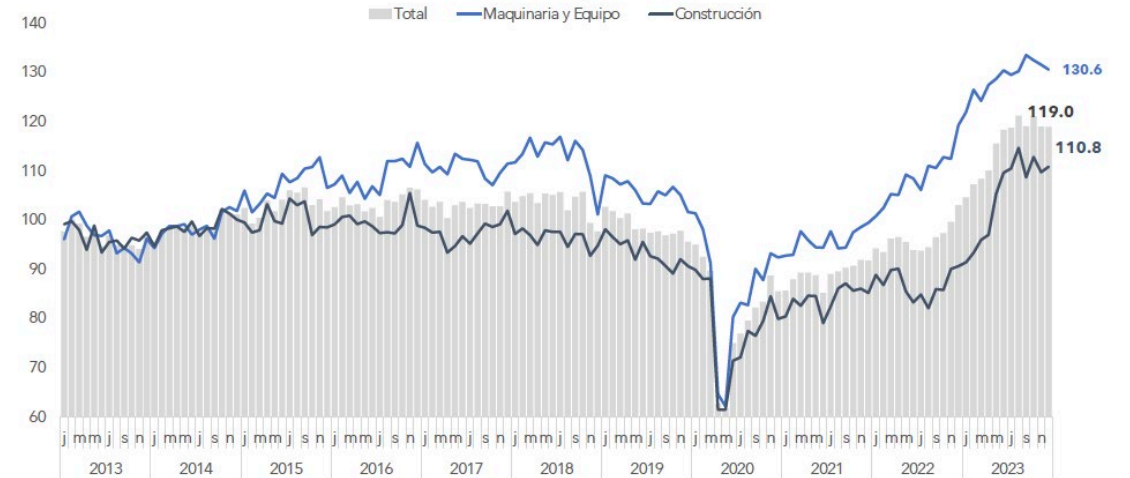


Fuente: Banco de México

Enero 2024

## Inversión Fija Bruta

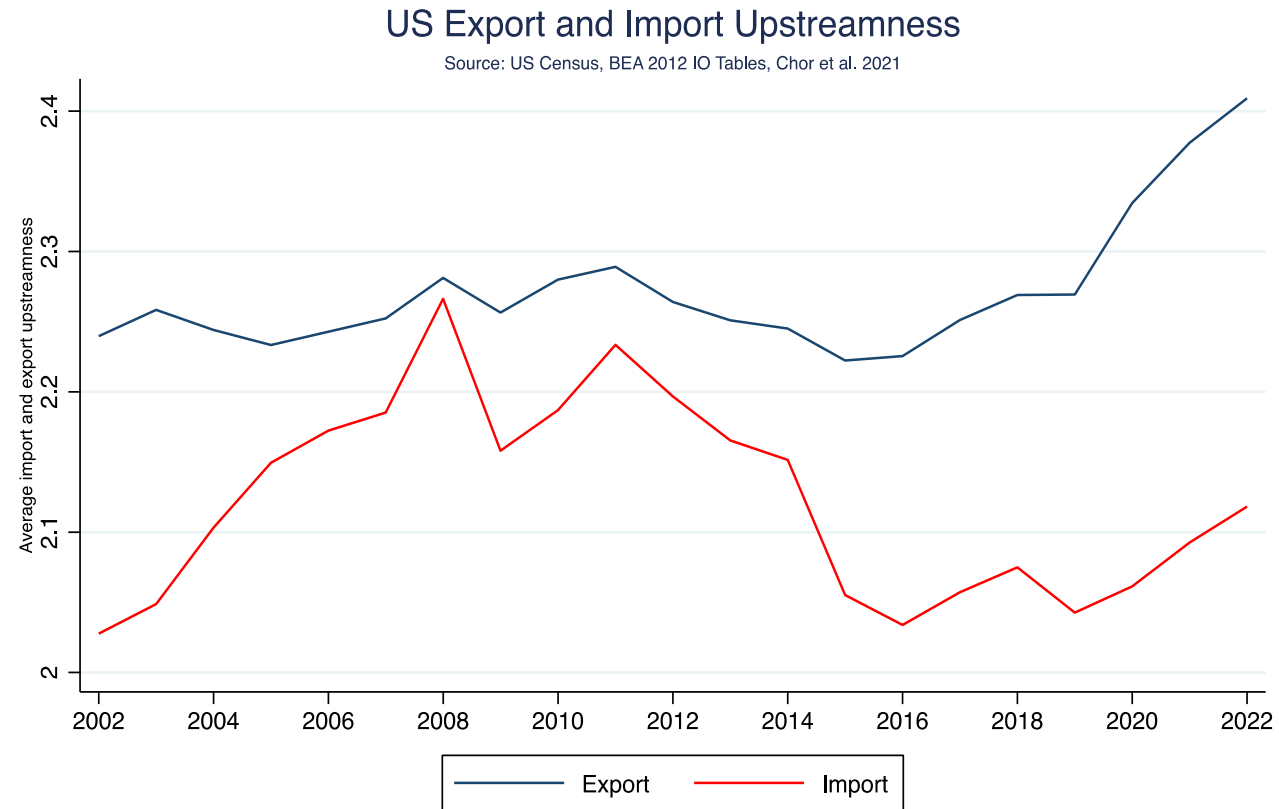
Serie indexada, 100=promedio 2012



Fuente: INEGI

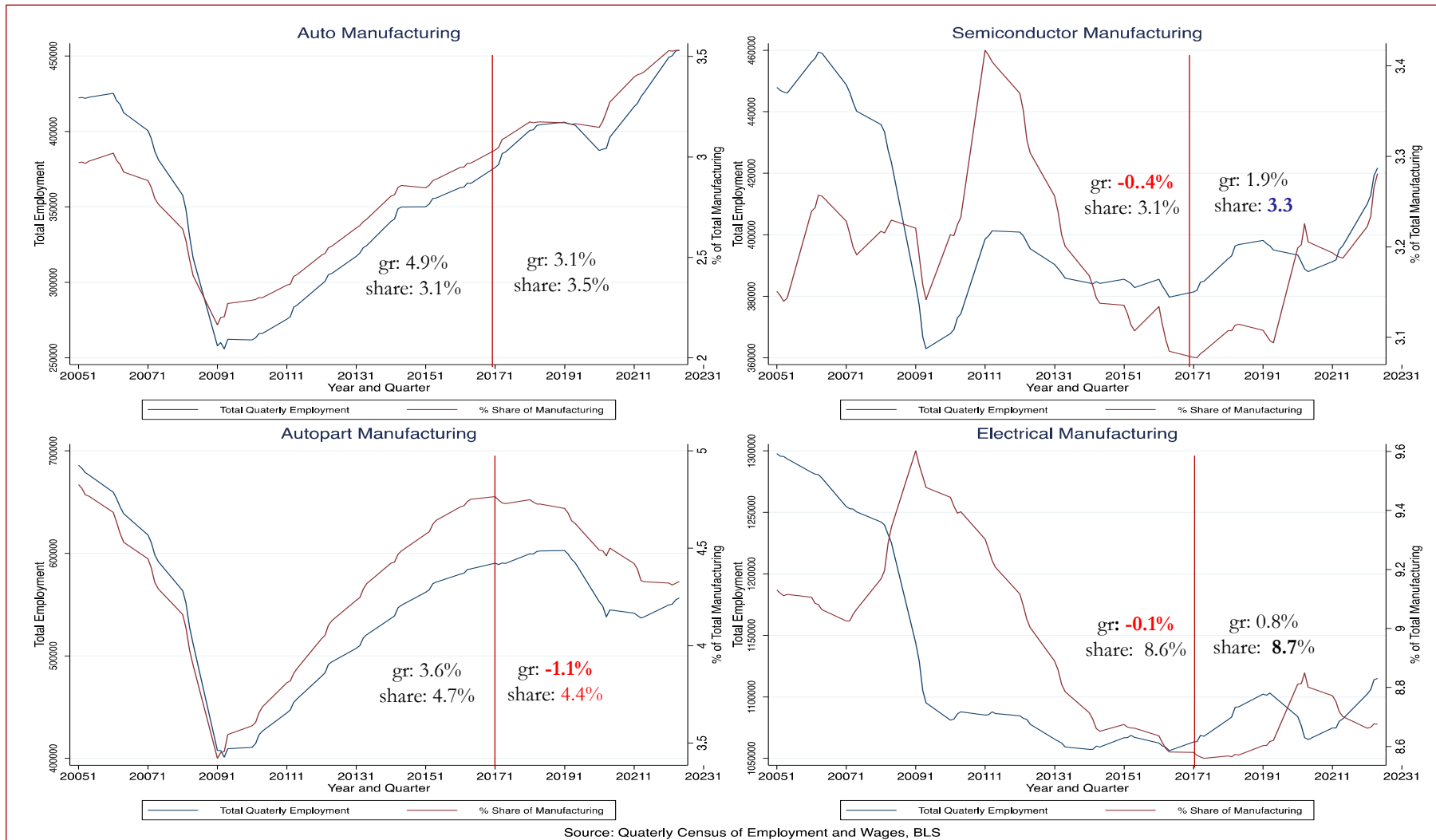
# Preliminary Evidence: Reshoring Upstreamness

- **Rise in US import upstreamness**
- suggests more finishing stages being performed within the US



# Preliminary Evidence: Reshoring, Cont.

## US Employment in Key Manufacturing Sectors (Levels and Shares), 2005-2022



- **Rise in US import upstreamness** suggests more finishing stages being performed within the US (Slide 2, right figure).

- Data up to 2022 (BLS): In some manufacturing subsectors, **long-run decline in employment (and establishments) bottomed out.**

**BUT... not a uniform story:** in some (e.g., autos), prior to 2017; in others (e.g., semiconductors), post-2017.

# The Looming “Great Reallocation” of Supply Chains

## Implications and Conclusions

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- ✓ **Reallocation:** Direct US sourcing from China has decreased; “Friends” have gained
  - Gaining market share: low-wage locations (e.g., Vietnam) + nearshoring (e.g., Mexico)
  - US imports have become more upstream (reshoring of production stages)
- But ... **caution** (beyond preliminary data):
  - a. True **extent** of decoupling **remains to be seen:** different modes of globalization
    - Trade: China gaining market share with “friends” (Mexico, Vietnam, EU...)
    - FDI: China increasing presence in “friends”
    - Not total independence from China
  - b. Reallocation will come at a **cost:** tariffs on China have been passed on to consumers (Amiti et al., 2019; Cavallo et al., 2021)
    - + **Rising unit import prices from alternative source countries**, including Vietnam and Mexico
    - + Costs of reinvigorating manufacturing hubs (reliable supply chains, transport networks, adaptable skilled labor, specialized factories...)
    - Impact on profits and productivity remains to be assessed
- **Crucial debate:** weigh static losses against dynamic gains (Mill-Bastable test)
  - Dynamic gains: spillovers, agglomeration effects (Alfaro and Chen, 2014; Alfaro et al., 2019); national security (Goldberg and Reed, 2023).
    - Recent policies eliminated “exhibitions of indecision” (Kennan, 47): political backing + sentiment (Alfaro, Chen, Chor, 2023)
      - Important, nevertheless, to develop frameworks to subject policies to evaluation