

A world map with a dark blue background. The map shows major countries with their three-letter codes: USA, CAN, MEX, BRA, ZAF, IND, CHN, and RUS. There are also several curved lines representing flight paths or trade routes connecting different parts of the world.

# Geoeconomics

May 2026

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Masterclass at ABFER Annual Conference



THE GLOBAL CAPITAL  
ALLOCATION PROJECT

STANFORD  
BUSINESS

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SCHOOL OF

## What is Geoeconomics?

- ▶ **Geoeconomics:** Hegemonic countries use their economic strength from existing financial and trade relationships to achieve geopolitical and economic goals
- ▶ Fundamental questions:
  - ▶ Is geoeconomic power effective? In which dimensions?
  - ▶ What are the origins of this power and how is it wielded?
  - ▶ Is it zero-sum or positive sum globally?
  - ▶ Which sectors are strategic? What is a national security externality?
  - ▶ How should countries protect themselves from hegemonic influence?
  - ▶ Trade off between economic security and gains from trade?
  - ▶ How do we measure all this and inform policy?



## Concepts of Power in Economics and Political Science

- ▶ In modern economics power is too often reduced to only mean “market power.” But a sovereign or large firm is powerful in a broader sense
- ▶ Some important concepts of power in Political Science:
  - ▶ *“A has power over B to the extent that he can get B to do something that B would not otherwise do”* (Dahl 1957)
  - ▶ **Relational Power:** an actor, like a government, influences another actor to take a desired action
  - ▶ **Structural Power:** an actor influences an entire economic environment, e.g. setting the rules of the game or coordinating (Strange 1988)
  - ▶ Topic is “one of the most troublesome in the field of international relations.” Only point of agreement is “unsatisfactory state of knowledge” (Gilpin 81, Baldwin 13)

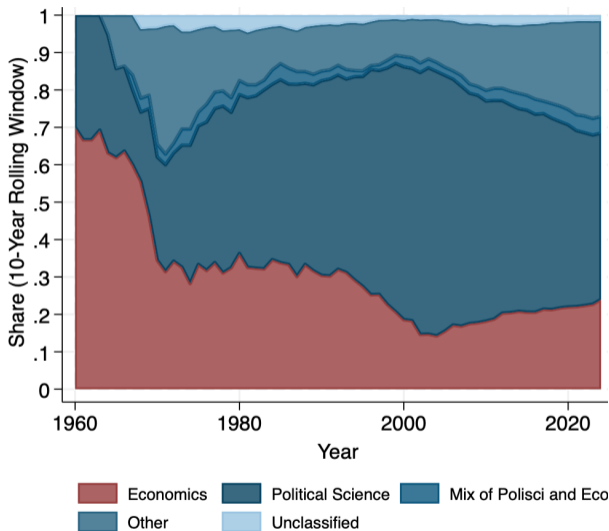
## Hirschman: National Power and the Structure of Foreign Trade

Largely and unjustly forgotten history of this topic in economics

**Hirschman (1945):** *National Power and the Structure of Foreign Trade*

- ▶ Distaste for mercantilism: exertion of power in zero-sum game over fixed resources
- ▶ In the debate of “plenty vs power” (Viner 1948) does not support the laissez faire view that plenty is always best achieved by ignoring power
- ▶ Theory of power imbalances and how they arise from different trade patterns
- ▶ Measurement of power imbalances: the Hirschman-Herfindahl concentration index

## Hirschman: National Power and the Structure of Foreign Trade



- ▶ Limited impact among economists
- ▶ By 1970s, foundational text of International Political Economy
- ▶ In economics, HH-index widely used to measure firms' market power; lost its connection to the power of countries

## Preview of Core Modeling Blocks of the Framework

1. Participation Constraint: hegemon's power as the gap between inside and outside options of targeted entities
2. Wedges in FOCs: power wielding as demands for costly actions
3. Externalities and price vectors to capture hegemon manipulation of the equilibrium in its favor



# Our Research Agenda on Geoeconomics

[www.globalcapitalallocation.com](http://www.globalcapitalallocation.com)

Clayton Maggiori Schreger, A Framework for Geoeconomics, Econometrica 2026

Clayton Maggiori Schreger, A Theory of Economic Coercion and Fragmentation, RR JPE 2024

Clayton Maggiori Schreger, Putting Economics Back Into Geoeconomics, MacroAnnual 2025

Clayton Coppola Maggiori Schreger, Geoeconomic Pressure, 2025

Clayton Maggiori Schreger, The Great Game: A Model of Geoeconomic Competition, 2026

▶ Reading List

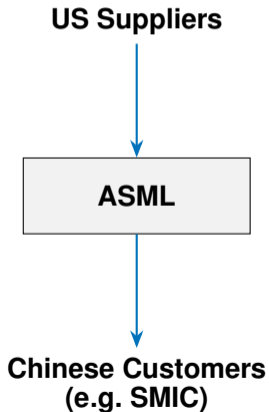


## Power as Slack in a Participation Constraint

$$V(x^*, z, \cdot, \cdot)$$

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- ▶ Entity's privately optimal actions:  $x^* = x(z, \cdot, \cdot)$
- ▶ Takes as given a set of aggregate variables  $z$



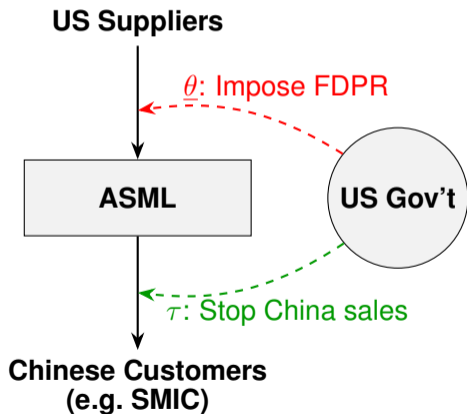
## Power as Slack in a Participation Constraint

$$V(x^*, z, \underline{\theta}, 0)$$

$$V(x^*, z, 0, \tau)$$

$$V(x^*, z, 0, 0)$$

- ▶ Entity's privately optimal actions:  
 $x^* = x(z, \theta, \tau)$
- ▶ Takes as given a set of aggregate variables  $z$
- ▶ Hegemon threatens  $\underline{\theta}$  if demands not accepted
- ▶ Demands that entity undertake costly actions  $\tau$



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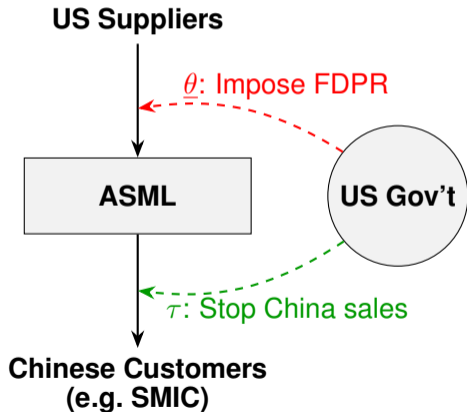
$$V(x^*, z, 0, 0)$$

- ▶ Entity's privately optimal actions:

$$x^* = x(z, \theta, \tau)$$

- ▶ Takes as given a set of aggregate variables  $z$
- ▶ Hegemon threatens  $\underline{\theta}$  if demands not accepted
- ▶ Demands that entity undertake costly actions  $\tau$
- ▶ **Participation constraint:**

$$V(x^*, z, 0, \tau) \geq V(x^*, z, \underline{\theta}, 0)$$



## Micro and Macro Power: Strategic Sectors

- ▶ **Micro Power:**  $V(x^*, Z, 0, 0) - V(x^*, z, \underline{\theta}, 0)$ 
  - ▶ The maximal value of costly actions that the hegemon can demand out of the target before contract is rejected
  - ▶ Sector is **strategic** if it lets the hegemon form valuable threats on other sectors
- ▶ **Macro-Power:** Hegemon exploits difference between private cost of actions to targeted entities and the social benefit to itself via manipulating the equilibrium
  - ▶ Sector is **strategic** if it lets the hegemon manipulate aggregate quantities and prices
  - ▶ Some strategic sectors have high indirect influence in the Leontief inverse sense, summarized as Lagrange multiplier on PC constraint

## A Simple Model

- ▶  $N$  countries, a set  $\mathcal{I}$  of productive sectors, a set  $\mathcal{F}$  of local factors
- ▶ Each sector and factor are located in one country:
  - ▶  $\mathcal{I}_n$  is the set of sectors in country  $n$
  - ▶  $\mathcal{F}_n$  is the set of local factors of country  $n$
- ▶ Unit mass of firms in sector  $i$  produces a differentiated good  $y_i$  using:
  - ▶ Intermediate goods  $x_{ij}$ , where  $j$  is the source sector
  - ▶ Local factors of production  $\ell_{if}$ , where  $f$  indexes factor
  - ▶ Production function  $f_i(x_i, \ell_i, z)$
- ▶ Vector  $z$  of aggregate quantities, e.g. external economies of scale
- ▶ Each country  $n$  has a representative consumer and government

## Representative Consumer of Country $n$

- ▶ Utility function:  $U(C_n) + u_n(z)$ , where  $C_n$  vector over each good  $C_{ni}$   
Simplifying assumption:  $U$  is identical across countries, homothetic
- ▶ Consumer owns domestic sectors and factor endowments  $\bar{l}_f$  in their country
- ▶ Budget constraint:

$$\sum_{i \in \mathcal{I}} p_i C_{ni} \leq \sum_{i \in \mathcal{I}_n} \Pi_i + \sum_{f \in \mathcal{F}_n} p_f^\ell \bar{l}_f$$

Sector  $i$  profits  $\Pi_i$ , good price  $p_i$ , factor price  $p_f^\ell$

- ▶ Marshallian demand  $C(p, w_n)$ ; Indirect utility  $W(p, w_n) = U(C(p, w_n))$
- ▶ Market clearing:  $\sum_{n=1}^N C_{nj} + \sum_{i \in \mathcal{I}} x_{ij} = y_j$ ;  $\sum_{i \in \mathcal{I}_n} l_{if} = \bar{l}_f$



## Firm Participation Constraint

- ▶ **Participation constraint:**  $V_i(\tau_{m,i}, \mathcal{J}_i) - T_i \geq V_i^o(\mathcal{J}_i^o)$ 
  - ▶  $\mathcal{J}_i$ : all inputs;  $\mathcal{J}_i^o$ : inputs excluding those from the hegemon

- ▶ Firm  $i$  value if accept contract (excluding transfer):

$$V_i(\tau_{m,i}, \mathcal{J}_i)$$

- ▶ Firm  $i$  value if reject contract:

$$V_i^o(\mathcal{J}_i^o)$$

- ▶ **Hegemonic Power:** power to demand costly actions to foreign entities by threatening suspension of economic relationship with the hegemon

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- ▶ Firm  $i$  value if accept contract (excluding transfer):

$$V_i(\tau_{m,i}, \mathcal{J}_i) = \max_{x_i, \ell_i} \Pi_i(x_i, \ell_i, \mathcal{J}_i) - \sum_{j \in \mathcal{J}_i} (\tau_{m,ij} + \tau_{n,ij})(x_{ij} - x_{ij}^*) - \sum_{f \in \mathcal{F}_n} (\tau_{m,if}^{\ell} + \tau_{n,if}^{\ell})(\ell_{if} - \ell_{if}^*)$$

- ▶ Firm  $i$  value if reject contract:

$$V_i^o(\mathcal{J}_i^o) = \max_{x_i^o, \ell_i^o} \Pi_i(x_i^o, \ell_i^o, \mathcal{J}_i^o) - \sum_{j \in \mathcal{J}_i} \tau_{n,ij}(x_{ij}^o - x_{ij}^{o*}) - \sum_{f \in \mathcal{F}_n} \tau_{n,if}^{\ell}(\ell_{if}^o - \ell_{if}^{o*})$$

- ▶ **Hegemonic Power:** power to demand costly actions to foreign entities by threatening suspension of economic relationship with the hegemon

## Hegemon and Country $n$ Maximization

**Hegemon:** offers feasible contract  $\Gamma_i = \{\tau_{m,i}, T_i, \mathcal{J}_i^o\}$  to maximize consumer welfare,

$$U_m = W(p, w_m) + u_m(z), \quad w_m = \sum_{i \in \mathcal{I}_m} \Pi_i + \sum_{f \in \mathcal{F}_m} p_f^{\ell} \bar{\ell}_f + \sum_{i \in \mathcal{C}_m} T_i$$

subject to firms' participation constraints

**Country  $n$ :** Sets wedges  $\tau_n$  to maximize consumer welfare,

$$U_n = W(p, w_n) + u_n(z), \quad w_n = \sum_{i \in \mathcal{I}_n \setminus \mathcal{C}_m} \Pi_i + \sum_{i \in \mathcal{I}_n \cap \mathcal{C}_m} \left[ V_i(\tau_m, \mathcal{J}_i) - T_i \right] + \sum_{f \in \mathcal{F}_m} p_f^{\ell} \bar{\ell}_f,$$

internalizing how hegemon's contract is affected by wedges chosen

# Simplified Environment

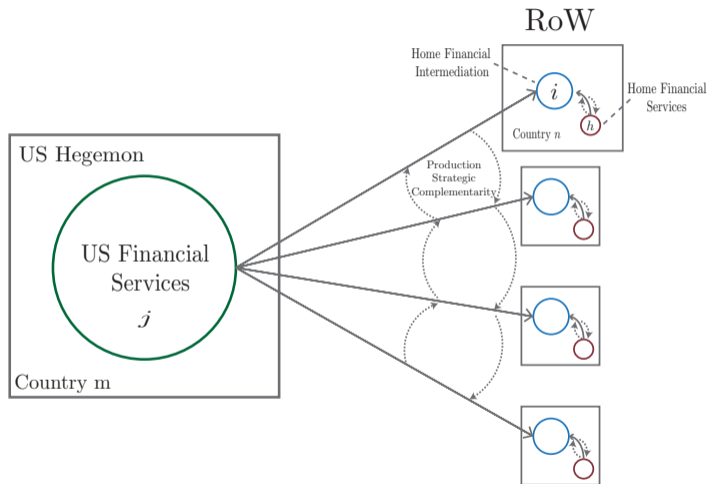
In slides today:

- ▶ Constant prices (consumers have linear utility)
- ▶ No direct geopolitical preferences in government objective function ( $u_n(z) = 0$ )

More in the paper:

- ▶ Endogenous Prices  $\Rightarrow$  ToT manipulation incentive
- ▶ Direct geopolitical preferences in government objective function ( $u_n(z)$ )

# Application: Financial System as a Tool of Coercion



Intermediary Production and Externalities

$$y_i = \left( A_j(z) x_{inj}^\sigma + A_{inh}(z) x_{inh}^\sigma \right)^{\beta/\sigma}$$

$$A_j(z) = \frac{1}{N} \sum_{n=1}^N \bar{A}_j z_{inj}^{\xi_j \sigma}$$

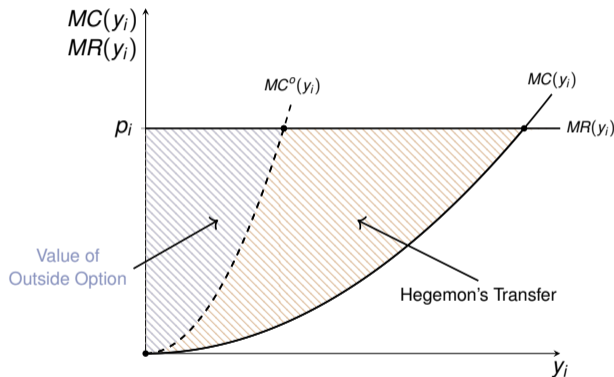
$$A_{inh}(z) = \bar{A}_h z_{inh}^{\xi_h \sigma}$$

## Comparing Different Global Structures

	<b>Hegemon Finance</b>	<b>Home Alternative</b>
	$\tau_{inj}$	$\tau_{inh}$
Global Planner	$-\frac{\xi_j}{1 + \xi_j} p_j$	$-\frac{\xi_h}{1 + \xi_h} p_h$
Nash	0	$-\frac{\xi_h}{1 + \xi_h} p_h$
Anti-Coercion		

## Hegemon's Power-Building Motives

$$\text{Participation Constraint : } V_i(\tau_{m,i}, \mathcal{J}_i) - T_i \geq V_i^o(\mathcal{J}_i^o)$$



- ▶ Hegemon cares about difference in value between inside and outside option
- ▶ Hegemon builds power by manipulating the equilibrium

## Hegemon's Optimal Use of Power

- ▶ Hegemon subsidizes use of Hegemon System to make inside option better:

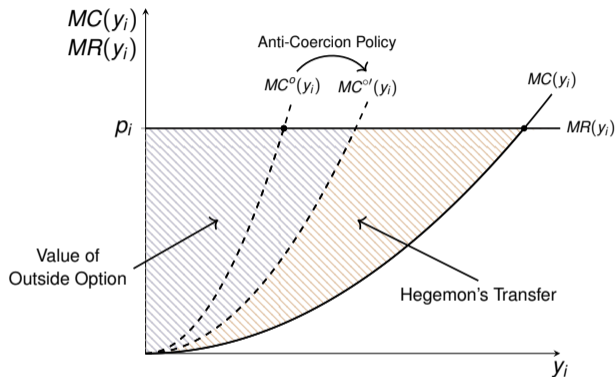
$$\tau_{m,ijn} = -\frac{\xi_j}{1 + \xi_j} \left( p_j + \tau_{n,ijn} \right)$$

- ▶ Hegemon taxes Home Alternative to make outside option worse

$$\tau_{m,inh} = \frac{\xi_h}{1 + \xi_h} \left( \frac{x_{inh}^o}{x_{inh}^*} - 1 \right) \left( p_h + \tau_{n,inh} \right)$$

- ▶ Hegemon attempts to over-globalize world economy to induce dependency

## Countries' Anti-Coercion Motives



- ▶ Targeted entity cares about level of outside option
- ▶ Anti-coercion: maximize outside option, manipulate hegemon's demands

# Uncoordinated Anti-Coercion and Fragmentation

- ▶ Optimal anti-coercion policy of country  $n$

$$\tau_{n,ijn} \rightarrow \infty$$

$$\tau_{n,inh} = -\frac{\xi_h}{1 + \xi_h} p_h$$

- ▶ Country  $n$  maximizes its outside option. Here: full fragmentation
- ▶ In general: reduce reliance on sectors the hegemon controls and that are difficult to substitute away from ex-post

## Comparing Different Global Structures

	<b>Hegemon Finance</b>	<b>Home Alternative</b>
Global Planner	$\tau_{inj}$ $-\frac{\xi_j}{1 + \xi_j} p_j$	$\tau_{inh}$ $-\frac{\xi_h}{1 + \xi_h} p_h$
Nash	0	$-\frac{\xi_h}{1 + \xi_h} p_h$
Anti-Coercion	$\infty$	$-\frac{\xi_h}{1 + \xi_h} p_h$

## Four Lessons from Geoeconomic Theory

1. **Trade off between Gain from Trade and Economic Security:** Increasing returns to scale and specialization are source of *both* gains from trade and hegemonic power by making other technologies poor substitutes for dominant ones
2. **Krugman Meets Geoeconomics:** facing coercive global hegemon countries decide to specialize less and unwind some globalization
3. **Fragmentation doom loop:** each country fragmenting increases incentives for others to do so, kick globalization loop in reverse
4. **Hegemonic View of International Organizations:** these organizations are an expression of the hegemon that optimally commits to limit coercion to attract participation from other countries

## More General Theory: The “Other” Terms

Under an optimal contract, the hegemon imposes on a foreign firm  $i \in \mathcal{C}_m$ , a wedge on input  $j$  given by

$$\tau_{m,ij} = - \frac{1}{1 + \frac{\partial W_m}{\partial w_m} \eta_i} \overbrace{\sum_{k \in \mathcal{C}_m} \left( 1 + \frac{1}{\frac{\partial W_m}{\partial w_m} \eta_k} \right) \left[ \left( \frac{\partial \Pi_k}{\partial z} - \frac{\partial \Pi_k^o}{\partial z} \right) \frac{dz}{dx_{ij}} + \left( \frac{\partial \Pi_k}{\partial P} - \frac{\partial \Pi_k^o}{\partial P} \right) \frac{dP}{dx_{ij}} \right]}^{\text{Building Power}} +$$

$$- \frac{1}{1 + \frac{1}{\frac{\partial W_m}{\partial w_m} \eta_i}} \left[ \underbrace{X_m \frac{dP}{dx_{ij}}}_{\text{Terms-of-Trade}} + \underbrace{\left[ \sum_{k \in \mathcal{I}_m} \frac{\partial \Pi_k}{\partial z} + \frac{1}{\frac{\partial W_m}{\partial w_m}} \frac{\partial U_m}{\partial z} \right] \frac{dz}{dx_{ij}}}_{\text{Domestic z-Externalities}} + \underbrace{\sum_{k \in \mathcal{I}_m} \tau_{m,k} \frac{d\mathbf{x}_k}{dx_{ij}}}_{\text{Private Distortion}} \right]$$

where  $\mathbf{x}_i = (x_i, \ell_i)$ ,  $\frac{d\mathbf{x}_k}{dx_{ij}} = \frac{\partial \mathbf{x}_k}{\partial z} \frac{dz}{dx_{ij}} + \frac{\partial \mathbf{x}_k}{\partial P} \frac{dP}{dx_{ij}}$ , and where  $X_m$  is the vector of exports by the hegemon's country.

# Measurement: A Sufficient Statistics Approach

# Quantifying Geoeconomic Power: Representative CES Firm

## 1. Finance and Manufacturing

$$f_n(x_n) = A_n \left( \sum_{G \in \{M, F\}} \alpha_{nG} x_{nG}^{\frac{\rho-1}{\rho}} \right)^{\frac{\beta \rho}{\rho-1}}$$

## 2. Industries within Finance and Manufacturing

$$x_{nG} = \left( \sum_{J \in \mathcal{J}_G} \alpha_{nJ} x_{nJ}^{\frac{\rho_G-1}{\rho_G}} \right)^{\frac{\rho_G}{\rho_G-1}}$$

## 3. Within an industry Domestic and Foreign variety

$$x_{nJ} = \left( \alpha_{nJn} x_{nJn}^{\frac{\varsigma_J-1}{\varsigma_J}} + \alpha_{nJR} x_{nJR}^{\frac{\varsigma_J-1}{\varsigma_J}} \right)^{\frac{\varsigma_J}{\varsigma_J-1}}$$

## 4. Within Foreign varieties

$$x_{nJR} = \left( \sum_{k \neq n} \alpha_{nJk} x_{nJk}^{\frac{\sigma_J-1}{\sigma_J}} \right)^{\frac{\sigma_J}{\sigma_J-1}}$$

## Quantifying Geoeconomic Power

Percentage loss from losing access to Hegemon's inputs  $\Delta \log V_i (\mathcal{J}_i)$ :

$$\frac{\beta}{1-\beta} \frac{1}{1-\varrho} \log \left( \sum_{G \in \{M, F\}} \Omega_{nG} \left( \sum_{J \in \mathcal{J}_G} \Omega_{nGJ} \left( 1 - \Omega_{nJR} + \Omega_{nJR} (1 - \omega_{nJR_m})^{\frac{s_J-1}{\sigma_J-1}} \right)^{\frac{\rho_G-1}{s_J-1}} \right)^{\frac{\varrho-1}{\rho_G-1}} \right)$$

- ▶ Expenditures shares measured using OECD Input Output Tables, BACI, BaTIS:
  - ▶  $\Omega_{nG}$ : share on sector (Financial services (F), All other goods and services (M))
  - ▶  $\Omega_{nGJ}$ : share of sectoral spending on sub-sector  $J$
  - ▶  $\Omega_{nJR}$ : share of sub-sector  $J$  spending on foreign inputs
  - ▶  $\omega_{nJR_m}$ : share of foreign inputs coming from Hegemon

## Quantifying Geoeconomic Power

Percentage loss from losing access to Hegemon's inputs  $\Delta \log V_i(\mathcal{J}_i)$ :

$$\frac{\beta}{1-\beta} \sum_{G \in \{M, F\}} \Omega_{nG} \frac{1}{1-\zeta_G} \log \left( 1 - \Omega_{nGR} + \Omega_{nGR} (1 - \omega_{nGR_m})^{\frac{\zeta_G-1}{\sigma_G-1}} \right)$$

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  - ▶  $\Omega_{nGR}$ : share of sectoral spending on foreign inputs
  - ▶  $\omega_{nGR_m}$ : share of foreign inputs within sector controlled by Hegemon
- ▶ **Baseline Calibration**: Cobb-Douglas outer nest ( $\varrho = 1$ ), single sub-sector within Finance and goods + other services

## Quantifying Geoeconomic Power

Percentage loss from losing access to Hegemon's inputs  $\Delta \log V_i(\mathcal{J}_i)$ :

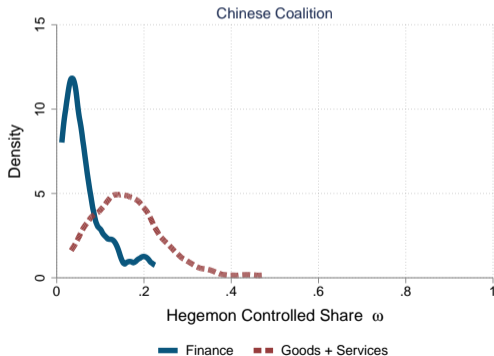
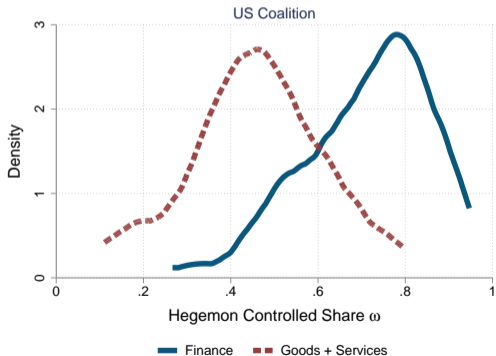
$$\frac{\beta}{1-\beta} \sum_{G \in \{M, F\}} \Omega_{nG} \frac{1}{1-\zeta_G} \log \left( 1 - \Omega_{nGR} + \Omega_{nGR} (1 - \omega_{nGR_m})^{\frac{\zeta_G-1}{\sigma_G-1}} \right)$$

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- ▶ **Baseline Calibration**: Cobb-Douglas outer nest ( $\varrho = 1$ ), single sub-sector within Finance and goods + other services
- ▶ **Elasticities**  $\sigma_J$ : Costinot and Rodriguez-Clare (2014) for  $\sigma_M = 6$ , OECD (2017) for financial services (1.6) and insurance (2.2),  $\zeta_G = \sigma_G/2$  (Feenstra et al 2018)

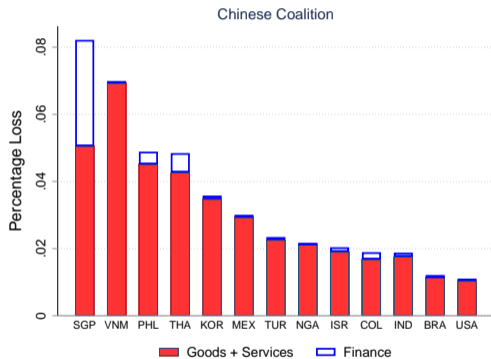
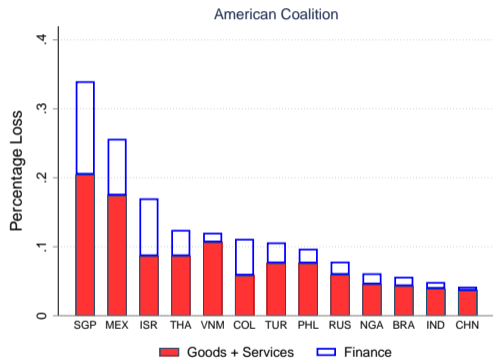
# Sectoral Dominance by the American and Chinese Coalitions

Power is non-linear: strong increase when almost fully control an input

$$\left( \frac{1}{1 - \omega_{nGR_m}} \right)^{\frac{1}{\sigma_G - 1}}$$



# The Sources of American and Chinese Power

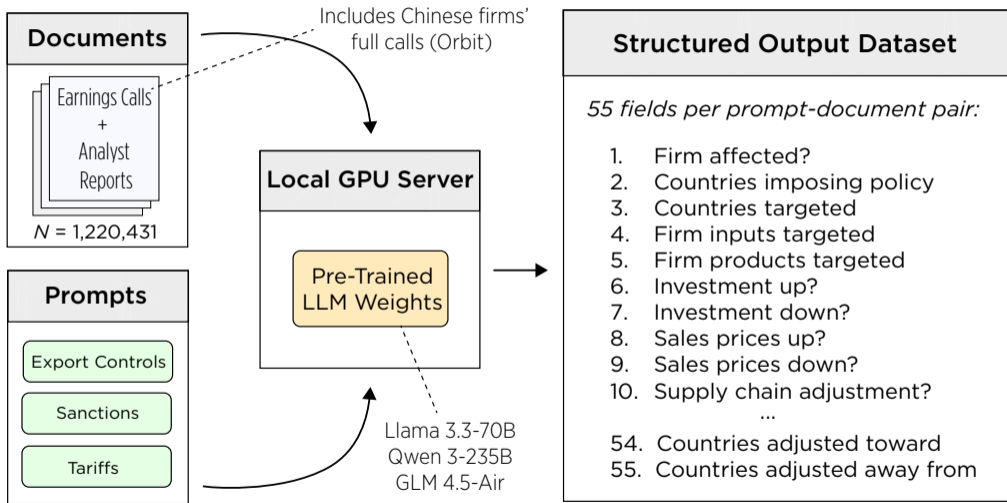


# Measurement: An Artificial Intelligence Approach

## Using AI to Measure Geoeconomic Pressure

- ▶ Firm-level corporate text combined with large-scale, replicable LLM inference
- ▶ Measure in near real-time which firms are affected by various types of pressure
  - ▶ Who applies pressure to whom? Which means are used and why?
- ▶ Characterize how firms respond to each type of pressure
  - ▶ Broad range of margins: input prices, pricing, investment, R&D, supply-chains
- ▶ Quantify measurement uncertainty via prompt and model perturbations

# Using LLMs to Extract Large-Scale Structured Data From Text



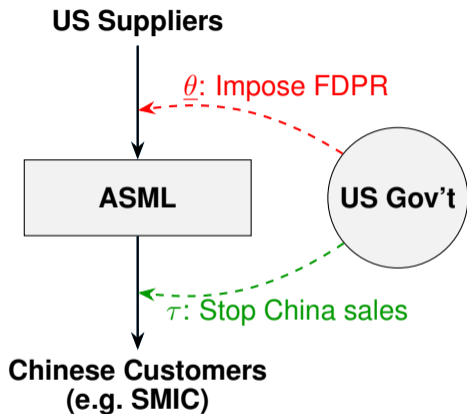
## Example of LLM Inference From Textual Data

▶ ASML flagged as affected by export controls in multiple earnings calls and reports (2021-25)

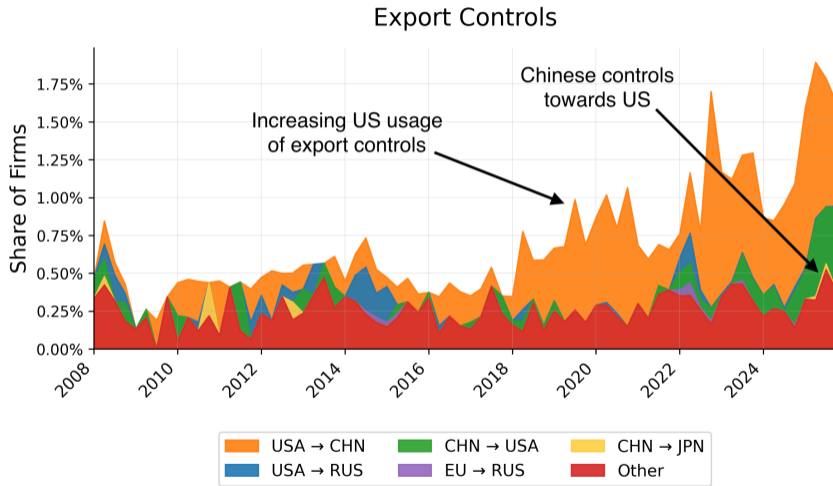
▶ Structured field **outputs** from LLM:

1. Countries imposing controls: **US, Netherlands**
2. Country receiving export controls: **China**
3. Firm's products targeted: **EUV and DUV systems, lithography tools**
4. Overall impact on firm: **negative**
5. Firm's responses: **lower sales**
6. Country of lower sales: **China**

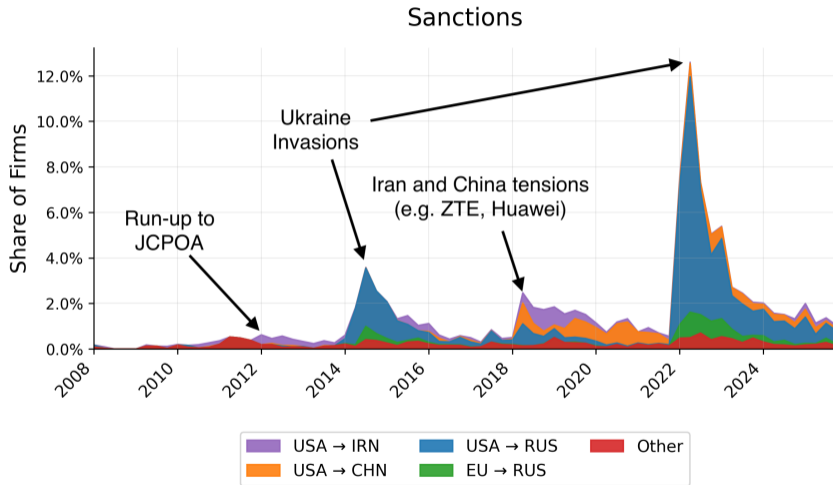
▶ Additionally, we also capture data from Chinese customers such as SMIC



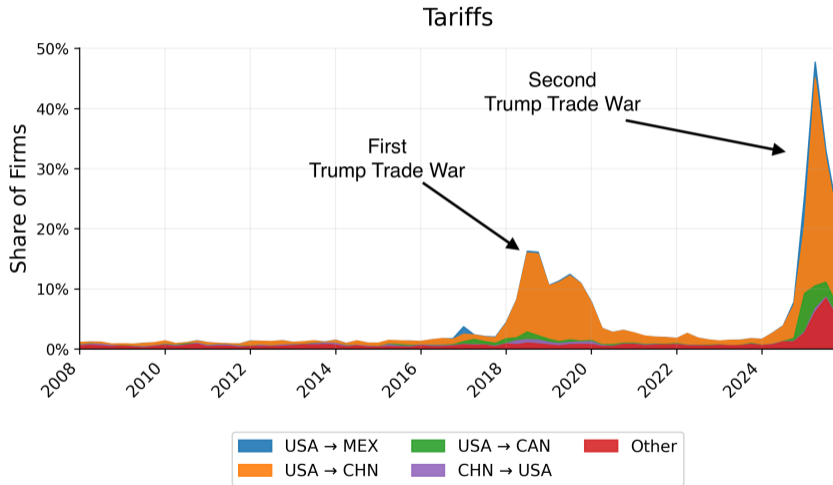
# Aggregate Patterns: Who Imposes Pressure and Who Is on Receiving End?



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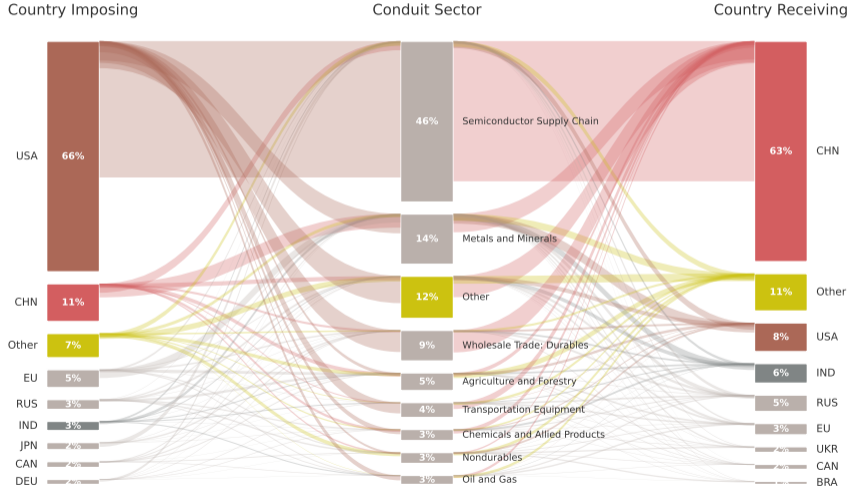


# Aggregate Patterns: Who Imposes Pressure and Who Is on Receiving End?



# Which Sectors Are Used as the Means of Pressure?

## Export Controls

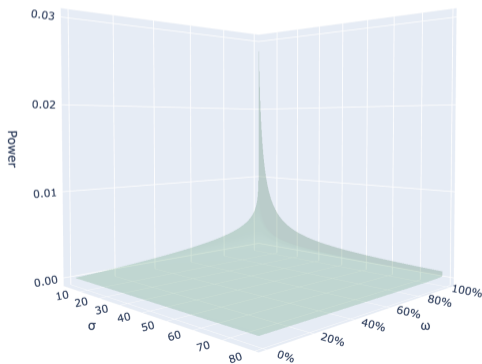


# Geoeconomic Pressure: Using “Chokepoints”?

- ▶ Percentage loss to target  $n$  from losing access to hegemon’s input in sector  $j$ :

$$\text{Power}_{nj} \propto \underbrace{\Omega_{nj}}_{\substack{\Omega_{nj}: \text{Expenditure} \\ \text{share on sector } j}} \times \underbrace{(\sigma_j - 1)^{-1}}_{\substack{\sigma_j: \text{Elasticity of} \\ \text{substitution in sector } j}} \times \underbrace{\log(1 - \omega_{nj})}_{\substack{\omega_{nj}: \text{Share of expenditures in} \\ \text{sector } j \text{ controlled by hegemon}}$$

- ▶ Simplified calibration, full formula in Clayton et al. (2024); analogy to Arkolakis et al. (2012) [▶ Gen.](#)

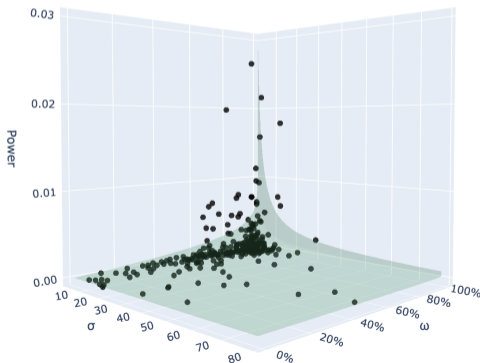


# Geoeconomic Pressure: Using “Chokepoints”?

- ▶ Percentage loss to target  $n$  from losing access to hegemon’s input in sector  $j$ :

$$\text{Power}_{nj} \propto \underbrace{\Omega_{nj}}_{\substack{\Omega_{nj}: \text{Expenditure} \\ \text{share on sector } j}} \times \underbrace{(\sigma_j - 1)^{-1}}_{\substack{\sigma_j: \text{Elasticity of} \\ \text{substitution in sector } j}} \times \underbrace{\log(1 - \omega_{nj})}_{\substack{\omega_{nj}: \text{Share of expenditures in} \\ \text{sector } j \text{ controlled by hegemon}}$$

- ▶ Simplified calibration, full formula in Clayton et al. (2024); analogy to Arkolakis et al. (2012) [▶ Gen.](#)
- ▶ Measure  $\text{Power}_{nj}$  at SIC4 sectoral level using hard data (BACI, Fontagne et al. 2022)

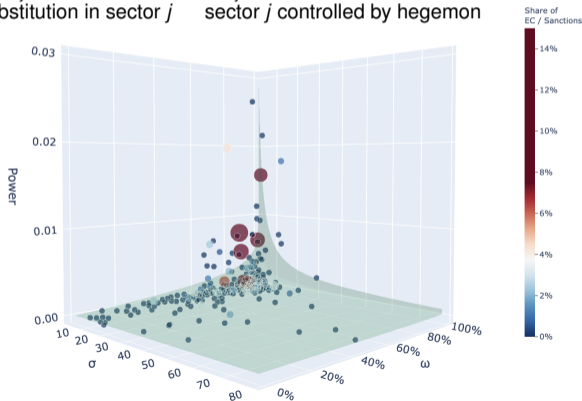


# Geoeconomic Pressure: Using “Chokepoints”?

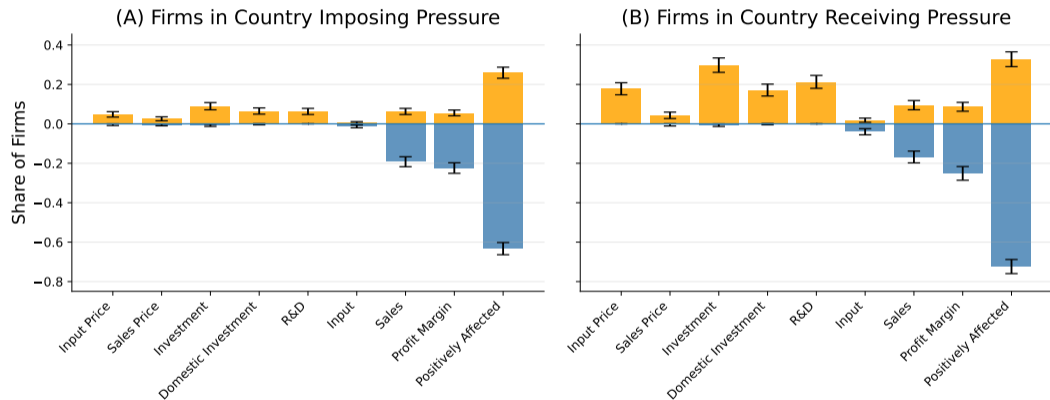
- ▶ Percentage loss to target  $n$  from losing access to hegemon’s input in sector  $j$ :

$$\text{Power}_{nj} \propto \underbrace{\Omega_{nj}}_{\substack{\Omega_{nj}: \text{Expenditure} \\ \text{share on sector } j}} \times \underbrace{(\sigma_j - 1)^{-1}}_{\substack{\sigma_j: \text{Elasticity of} \\ \text{substitution in sector } j}} \times \underbrace{\log(1 - \omega_{nj})}_{\substack{\omega_{nj}: \text{Share of expenditures in} \\ \text{sector } j \text{ controlled by hegemon}}$$

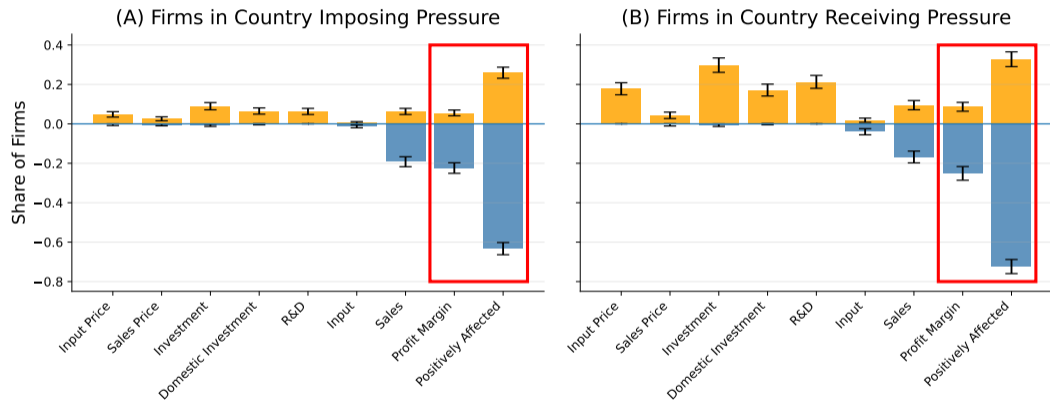
- ▶ Simplified calibration, full formula in Clayton et al. (2024); analogy to Arkolakis et al. (2012) [▶ Gen.](#)
- ▶ Measure  $\text{Power}_{nj}$  at SIC4 sectoral level using hard data (BACI, Fontagne et al. 2022)
- ▶ Measure using LLM the intensity of sector usage by the US in sanctions/export controls toward



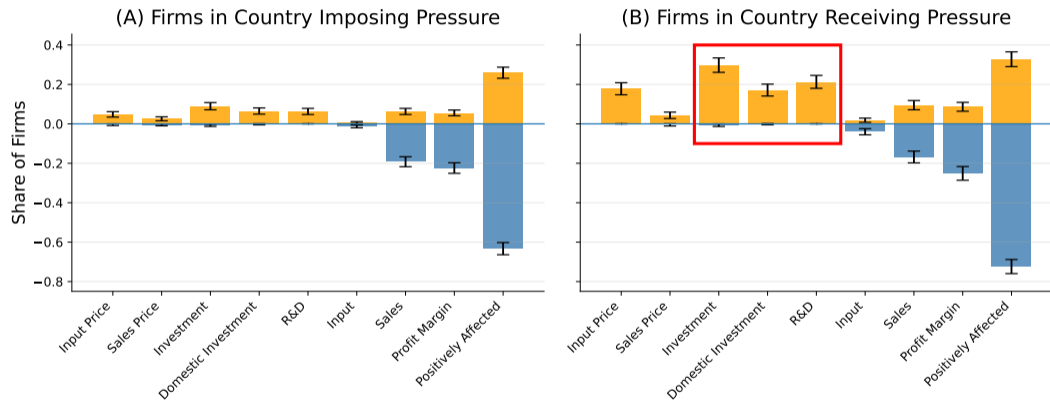
# The Response to Export Controls, By Source and Destination



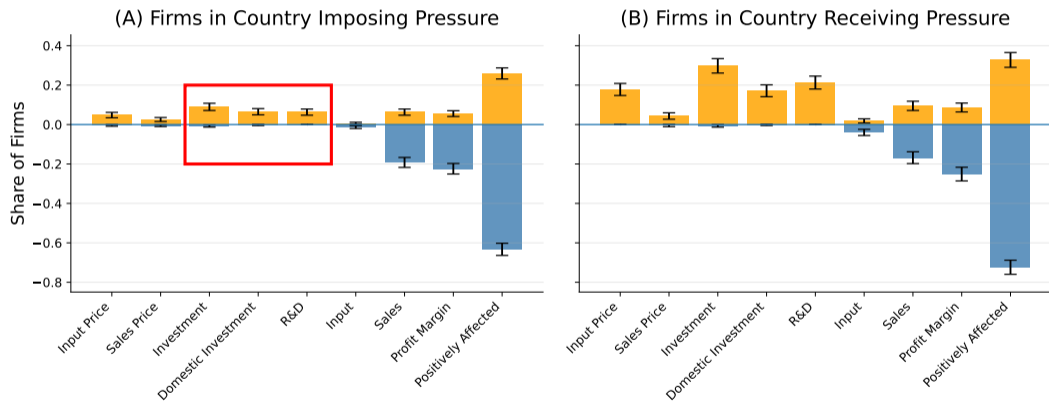
# The Response to Export Controls, By Source and Destination



# The Response to Export Controls, By Source and Destination

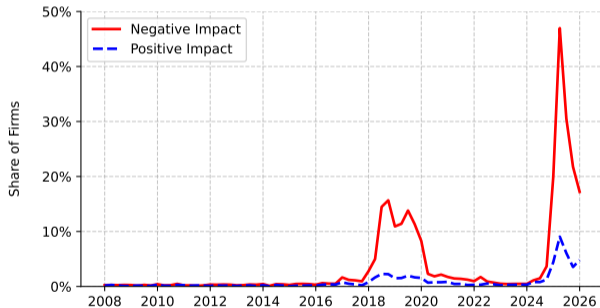


# The Response to Export Controls, By Source and Destination



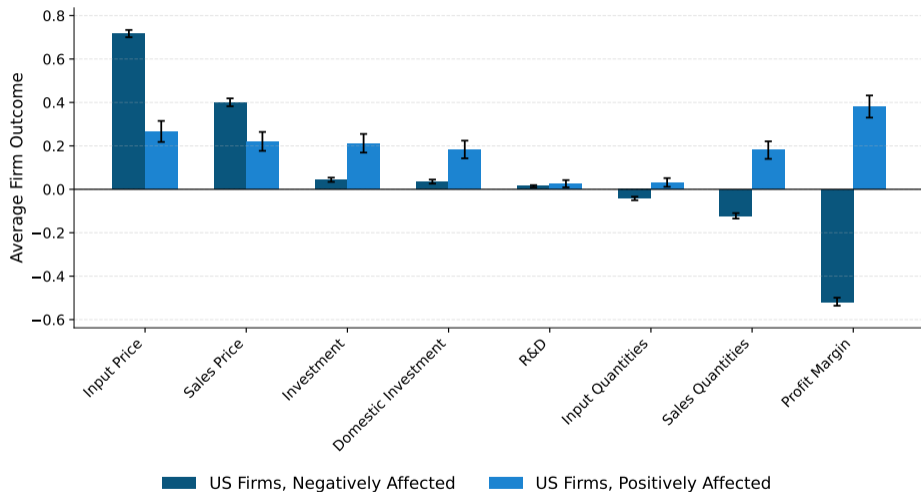
## An Ongoing Look at the Trade War of 2025

- ▶ An advantage of our approach is ability of examine events in near real-time
- ▶ We track US firms reporting positive or negative impact during current trade war:



- ▶ Positive effects from lower competition, domestic producer subsidy aspect of tariffs

# An Ongoing Look at the Trade War of 2025: US Firms' Adjustment



# GCAP Geoeconomic Monitor



[globalcapitalallocation.com/geoeconomic-monitor](https://globalcapitalallocation.com/geoeconomic-monitor)



# GCAP Geoeconomic Monitor

GCAP GEOECONOMIC MONITOR (BETA)

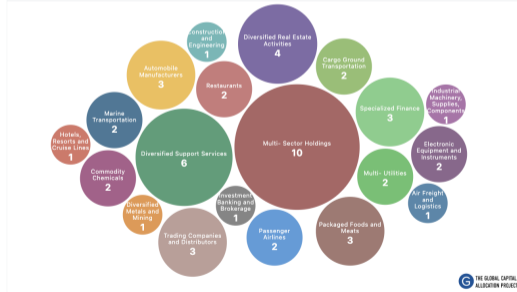
Previous Monitor Home

Download Report

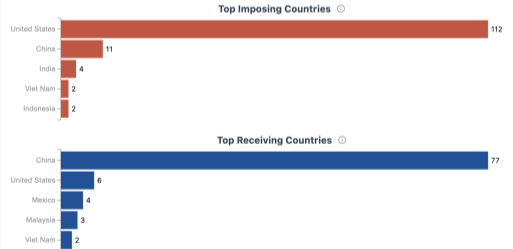
## Singapore

Country: Singapore Policy Instrument: Tariffs Year-Quarter Range: 2008 Q1 2026 Q1

### Sector Distribution



### Countries Imposing and Receiving Pressure



THE GLOBAL CAPITAL ALLOCATION PROJECT

THE GLOBAL CAPITAL ALLOCATION PROJECT



# GCAP Geoeconomic Monitor

GCAP GEOECONOMIC MONITOR (BETA)

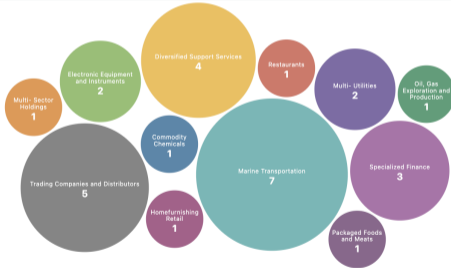
Previous Monitor Home

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## Singapore

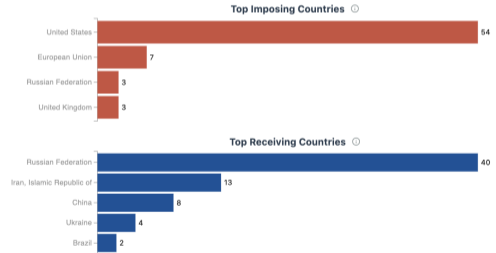
Country: Singapore Policy Instrument: Sanctions Year-Quarter Range: 2008 Q1 2026 Q1

### Sector Distribution



THE GLOBAL CAPITAL ALLOCATION PROJECT

### Countries Imposing and Receiving Pressure



THE GLOBAL CAPITAL ALLOCATION PROJECT



# GCAP Geoeconomic Monitor

Policy Instrument: Sanctions Year-Quarter Range: 2008 Q1 2026 Q1 Search by firm name or ticker...

## BOC Aviation Ltd.

Impact of Sanctions

Country: Singapore Sector: Diversified Support Services Coverage: 2016Q3 – 2025Q3 (16 quarters)

### 2024Q1

#### IMPACT

CURRENT EFFECT FUTURE EFFECT NEGATIVE IMPACT

#### DETAILS

IMPOSING COUNTRIES RECEIVING COUNTRIES PRODUCTS IMPACTED  
United States Russian Federation aircraft

#### RESPONSE

DELAY SUPPLY CHAIN ADJUSTMENT FINANCING ADJUSTMENT

The firm discusses the impact of sanctions on its business, specifically mentioning the effects of sanctions on its aircraft leasing operations. The firm mentions that it has made progress in recovering losses related to aircraft in Russia, which were affected by sanctions. The firm also discusses the potential for future sanctions and their potential impact on its business. The firm's decisions are being affected by sanctions, as it is adjusting its business operations and financing decisions in response to current and potential future sanctions. The firm mentions that it is pursuing all possible avenues for recovery of losses related to aircraft in Russia, which suggests that it is taking steps to mitigate the impact of sanctions on its business. The firm also mentions that it is adjusting its supply chain and financing decisions in response to sanctions, which indicates that it is taking proactive steps to manage the risks associated with sanctions. Overall, the firm's discussion of sanctions suggests that it is taking a proactive and adaptive approach to managing the risks associated with sanctions, and that its decisions are being affected by sanctions.

# GCAP Geoeconomic Monitor

## Hutchison Port Holdings Trust

Impact of Tariffs

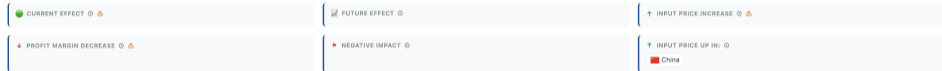
Country: Singapore

Sector: Marine Transportation

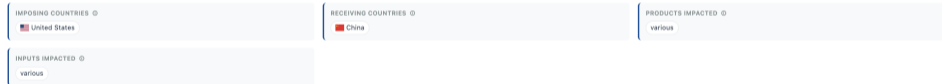
Coverage: 2013Q1 – 2025Q1 (35 quarters)

### 2025Q1

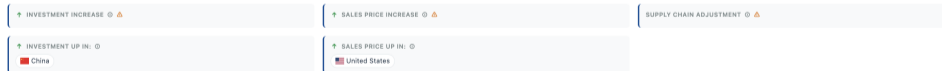
#### IMPACT



#### DETAILS



#### RESPONSE



The firm discusses tariffs and their impact on its business. Specifically, the CEO mentions that the company is concerned about the potential impact of tariffs on its exports to the US and is considering adjustments to its supply chain. The firm also mentions that it is experiencing increased costs due to tariffs and is passing some of these costs on to its customers. Additionally, the firm notes that it is investing in new equipment and technology to mitigate the effects of tariffs. The firm explicitly mentions that it is affected by tariffs imposed by the US government on goods imported from China. The firm also mentions that it is considering increasing prices for its products sold in the US due to the tariffs. The firm's decisions are being affected by tariff policies, specifically in terms of investment, pricing, and supply chain adjustments. The firm is also experiencing increased costs and is passing some of these costs on to its customers.

## Policy and Future Research

Cannot think of a more pressing global challenge that economists should be studying

Much more to do:

- ▶ More modeling: multiple hegemony, political economy, duality with military
- ▶ Large-scale data on economic interdependence and causal evidence on the effects of threats
- ▶ Quantitative models for policy counterfactuals

## Reading List

Adelman, J., 2014. *Worldly philosopher: the odyssey of Albert O. Hirschman*. Princeton University Press.

Alacevich, M., 2021. *Albert O. Hirschman: An Intellectual Biography*. Columbia University Press.

Alekseev, M. and Lin, X., 2024. Trade policy in the shadow of conflict: the case of dual-use goods.

Antràs, P. and Miquel, G.P.I., 2023. Exporting Ideology: The Right and Left of Foreign Influence (No. w31399). National Bureau of Economic Research.

Arkolakis, C., Costinot, A. and Rodríguez-Clare, A., 2012. New trade models, same old gains?. *American Economic Review*, 102(1), pp.94-130.

Bachmann, R., Baqaee, D., Bayer, C., Kuhn, M., Löschel, A., Moll, B., Peichl, A., Pittel, K. and Schularick, M., 2024. What if? The macroeconomic and distributional effects for Germany of a stop of energy imports from Russia. *Economica*, pp.1-44.



## Reading List

Bachrach, P. and Baratz, M.S., 1962. Two faces of power. *The American Political Science Review*, 56(4), pp.947-952.

Bagwell, K. and Staiger, R.W., 1999. An economic theory of GATT. *American Economic Review*, 89(1), pp.215-248.

Bagwell, K. and Staiger, R.W., 2001. Domestic policies, national sovereignty, and international economic institutions. *The Quarterly Journal of Economics*, 116(2), pp.519-562.

Bagwell, K. and Staiger, R.W., 2024. *The economics of the world trading system*. MIT Press.

Baldwin, D.A., 1985. *Economic statecraft*. Princeton University Press.

Baqaei, D.R. and Farhi, E., 2024. Networks, barriers, and trade. *Econometrica*, 92(2), pp.505-541.



## Reading List

- Bartelme, D.G., Costinot, A., Donaldson, D. and Rodríguez-Clare, A., 2025. The textbook case for industrial policy: Theory meets data, *Journal of Political Economy*.
- Becko, J.S. and OConnor, D.G., 2024. Strategic (Dis)Integration. working paper.
- Becko, John, Gene M. Grossman, and Elhanan Helpman. "Optimal Tariffs with Geopolitical Alignment." NBER Working Paper w34108 (2025).
- Berger, D., Easterly, W., Nunn, N. and Satyanath, S., 2013. Commercial imperialism? Political influence and trade during the Cold War. *American Economic Review*, 103(2), pp.863-896.
- Blackwill, R.D. and Harris, J.M., 2016. *War by other means: Geoeconomics and statecraft*. Harvard University Press.
- Bianchi, J. and Sosa-Padilla, C., 2024. On wars, sanctions, and sovereign default. *Journal of Monetary Economics*, 141, pp.62-70.
- Broner, F., Martin, A., Meyer, J. and Trebesch, C., 2024. *Hegemonic globalization*. National Bureau of Economic Research.



## Reading List

Broner, F., Martin, A., Meyer, J., Trebesch, C. and Wu, J.Z., 2025. Hegemony and International Alignment.

Caldara, D. and Iacoviello, M., 2022. Measuring geopolitical risk. *American Economic Review*, 112(4), pp.1194-1225.

Caldara, D., Iacoviello, M., Molligo, P., Prestipino, A. and Raffo, A., 2020. The economic effects of trade policy uncertainty. *Journal of Monetary Economics*, 109, pp.38-59.

Cipriani, M., Goldberg, L.S. and La Spada, G., 2023. Financial sanctions, SWIFT, and the architecture of the international payment system. *Journal of Economic Perspectives*, 37(1), pp.31-52.

Cohen, B.J., 2015. *Currency power: Understanding monetary rivalry*. Princeton University Press.

Crosignani, M., Han, L., Macchiavelli, M. and Silva, A.F., 2024. Geopolitical Risk and Decoupling: Evidence from US Export Controls. *FRB of New York Staff Report*, (1096).



## Reading List

Dahl, R.A., 1957. The concept of power. Behavioral science, 2(3), pp.201-215.

Dreher, A., Fuchs, A., Parks, B., Strange, A. and Tierney, M.J., 2022. Banking on Beijing: The aims and impacts of China's overseas development program. Cambridge University Press.

Drezner, D.W., 2003. The hidden hand of economic coercion. International Organization, 57(3), pp.643-659.

Drezner, D.W., 2024. Global economic sanctions. Annual Review of Political Science, 27.

Drezner, D.W., Farrell, H. and Newman, A.L., 2021. The uses and abuses of weaponized interdependence. Brookings Institution Press.

Eaton, J. and Engers, M., 1992. Sanctions. Journal of Political Economy, 100(5), pp.899-928.



## Reading List

Elliott, M., Golub, B. and Leduc, M.V., 2022. Supply Network Formation and Fragility. *American Economic Review*, 112(8), pp.2701-2747.

Farrell, H. and Newman, A.L., 2019. Weaponized interdependence: How global economic networks shape state coercion. *International security*, 44(1), pp.42-79.

Farrell, H. and Newman, A., 2023. *Underground Empire: How America Weaponized the World Economy*. Henry Holt and Co.

Fearon, J.D., 1995. Rationalist explanations for war. *International Organization*, 49(3), pp.379-414.

Fernández-Villaverde, J., Mineyama, T. and Song, D., 2024. Are We Fragmented Yet? Measuring Geopolitical Fragmentation and its Causal Effects.

Fernández-Villaverde, J., Yiliang, L., Xu, L. and Zanetti, F., 2025. Charting the uncharted: The (un)intended consequences of oil sanctions and dark shipping. working paper.



## Reading List

Findlay, R. and O'rourke, K.H., 2009. Power and plenty: Trade, war, and the world economy in the second millennium. In *Power and Plenty*. Princeton University Press.

Flynn, J.P., Levy, A., Moscona, J. and Wo, M., 2025. Foreign political risk and technological change. Available at SSRN 5112377.

Frieden, J.A., 1991. Invested interests: The politics of national economic policies in a world of global finance. *International Organization*, 45(4), pp.425-451.

Frieden, J.A., 2014. *Currency Politics: The Political Economy of Exchange Rate Policy*. Princeton University Press.

Gavin, F.J., 2004. *Gold, dollars, and power: the politics of international monetary relations, 1958-1971*. UNC Press Books.

Gilpin, R., 1981. *War and change in world politics*. Cambridge University Press.

Gopinath, G., Gourinchas, P.O., Presbitero, A.F. and Topalova, P., 2025. Changing global linkages: A new Cold War?. *Journal of International Economics*, 153, p.104042.



## Reading List

Grossman, Gene M and Elhanan Helpman, "Trade wars and trade talks," *Journal of political Economy*, 1995, 103 (4), 675–708.

Grossman, G.M., Helpman, E. and Lhuillier, H., 2023. Supply Chain Resilience: Should Policy Promote International Diversification or Reshoring?.

Hassan, T.A., Hollander, S., Van Lent, L. and Tahoun, A., 2019. Firm-level political risk: Measurement and effects. *The Quarterly Journal of Economics*, 134(4), pp.2135-2202.

Hausmann, R., Schetter, U. and Yildirim, M.A., 2024. On the design of effective sanctions: The case of bans on exports to Russia. *Economic Policy*, 39(117), pp.109-153.

Heckscher, E.F., 1935. *Mercantilism*. London.

Hirschman, A.O., 1945. National power and the structure of foreign trade. Univ of California Press. Vol. 105.

Hirschman, A.O., 1958. *The strategy of economic development*. Yale University Press.

Hirschman, A.O., 1964. The paternity of an index. *American economic review*, 54(5).



## Reading List

Horn, S., Reinhart, C.M. and Trebesch, C., 2021. China's overseas lending. *Journal of International Economics*, 133, p.103539.

Ikenberry, G.J., 2001. *After Victory: Institutions, Strategic Restraint, and the Rebuilding of Order after Major Wars* Princeton Studies in International History and Politics. Princeton University Press.

Kennedy, P., 1987. *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000*. Random House, New York, NY.

Keohane, R.O. and Nye Jr., J.S., 1977. *Power and Interdependence*. Little, Brown.

Keohane, R.O., 1984. *After hegemony: Cooperation and discord in the world political economy*. Princeton university press.

Kindleberger, C.P., 1973. *The world in depression, 1929-1939*. Univ of California Press.

Kindleberger, C.P., 1986. International public goods without international government. *The American Economic Review*, 76(1), pp.1-13.



## Reading List

Kinzer, S., 2013. *The brothers: John Foster Dulles, Allen Dulles, and their secret world war*. Macmillan.

Kirshner, J., 1997. *Currency and coercion: the political economy of international monetary power*. Princeton University Press.

Kleinman, B., Liu, E. and Redding, S., 2024. *International Friends and Enemies*. *American Economic Journal: Macroeconomics*.

Kooi, O., 2024. *Power and Resilience: An Economic Approach to National Security Policy*. working paper.

Krasner, S.D., 1976. *State power and the structure of international trade*. *World politics*, 28(3), pp.317-347.

Liu, Z.Z., 2023. *Sovereign funds: How the Communist party of China finances its global ambitions*. Harvard University Press.



## Reading List

Liu, E. and Yang, D.Y., 2024. International power. National Bureau of Economic Research.

Luttwak, E.N., 1990. From geopolitics to geo-economics: Logic of conflict, grammar of commerce. *The national interest*, (20), pp.17-23.

Luttwak, E.N., 2024. The logic of war in the grammar of commerce: Geoeconomics revisited. *Transactions of the Institute of British Geographers*, 49(1), p.e12650.

Mallin, F. and Sidaway, J.D., 2024. Critical geoeconomics: A genealogy of writing politics, economy and space. *Transactions of the Institute of British Geographers*, 49(1), p.e12600.

Martin, P., Mayer, T. and Thoenig, M., 2008. Make trade not war?. *The Review of Economic Studies*, 75(3), pp.865-900.

Martin, P., Mayer, T. and Thoenig, M., 2012. The geography of conflicts and regional trade agreements. *American Economic Journal: Macroeconomics*, 4(4), pp.1-35.



## Reading List

Mastanduno, M., 1992. Economic Containment: CoCom and the Politics of East-West Trade. Cornell Studies in Security Affairs. Cornell University Press.

Mattoo, A., Ruta, M. and Staiger, R.W., 2024. Geopolitics and the world trading system (No. w33293). National Bureau of Economic Research.

Mayer, T., Mejean, I. and Thoenig, M., 2025. The fragmentation paradox: De-risking trade and global safety. Technical Report, working paper.

McLaren, J., 1997. Size, Sunk Costs, and Judge Bowker's Objection to Free Trade. The American Economic Review, 87(3), pp.400-420.

Mearsheimer, J.J., 1994. The False Promise of International Institutions. International Security, 19(3), pp.5-49.

Mearsheimer, J.J., 2018. Great Delusion: Liberal Dreams and International Realities. Yale University Press.

Mohr, C. and Trebesch, C., 2024. Geoeconomics.



## Reading List

Mulder, N., 2022. *The economic weapon: The rise of sanctions as a tool of modern war*. Yale University Press.

Ndiaye, A., 2024. *A theory of international boycotts*. Technical report, CESifo working paper.

Nye, J.S., 2004. *Soft Power: The Means To Success In World Politics*. PublicAffairs.

Pflueger, C. and Yared, P., 2024. *Global Hegemony and Exorbitant Privilege*, working paper

Powell, R., 1993. Guns, butter, and anarchy. *The American Political Science Review*, 87(1), pp.115-132.

Powell, R., 1999. *In the Shadow of Power: States and Strategies in International Politics*. Princeton University Press.

Schelling, T.C., 1958. *International economics*, Allyn and Bacon.

Schelling, T.C., 1960. *The strategy of conflict*. Harvard University Press.



## Reading List

Schelling, T.C., 1966. *Arms and Influence*. Yale University Press.

Scott, S.V. and Zachariadis, M., 2014. *The Society for Worldwide Interbank Financial Telecommunication (SWIFT): Cooperative Governance for Network Innovation, Standards, and Community*. Taylor & Francis.

Steil, B., 2018. *The Marshall Plan: Dawn of the Cold War*. Oxford University Press.

Strange, S., 1988. *States and Markets*. Pinter Publishers, London.

Thoenig, M., 2023. *Trade policy in the shadow of war: A quantitative toolkit for geoeconomics*.

Viner, J., 1948. Power versus plenty as objectives of foreign policy in the seventeenth and eighteenth centuries. *World Politics*, 1(1), pp.1-29.

Waltz, K., 1979. *Theory of International Politics*. Addison-Wesley, Reading, MA.

