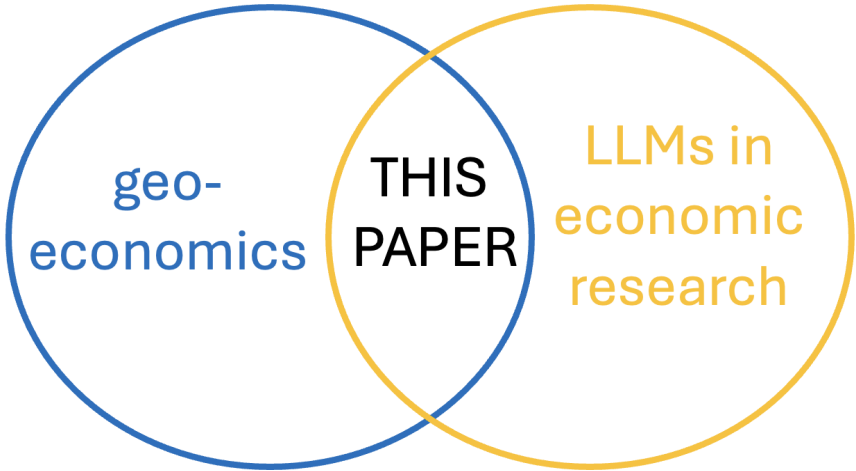
Geoeconomic Pressure

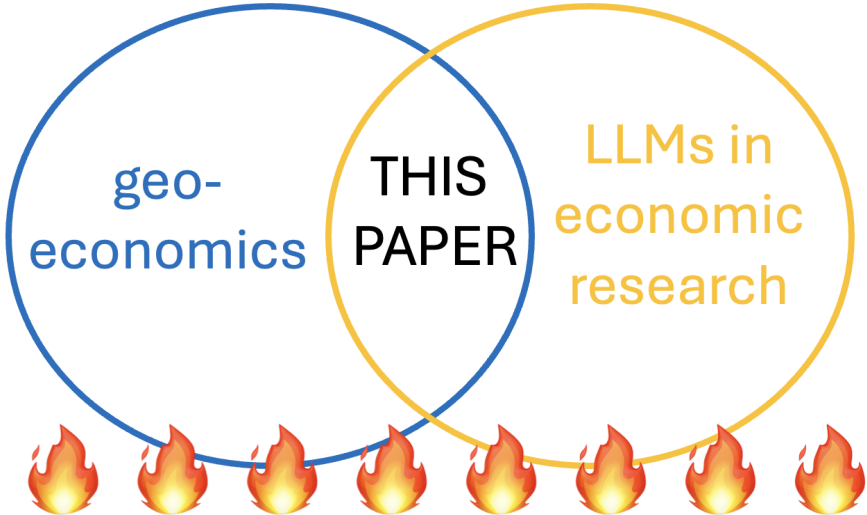
BY CLAYTON, COPPOLA, MAGGIORI, SCHREGER

Discussion by **Thomas Drechsel** (University of Maryland & NBER)

26th Jacques Polak Annual Research Conference, IMF

November 6, 2025


geo-
economics
THIS
PAPER
LLMs in
economic
research


geo-
economics
THIS
PAPER
LLMs in
economic
research

GEOECONOMICS - A NEW RESEARCH AGENDA

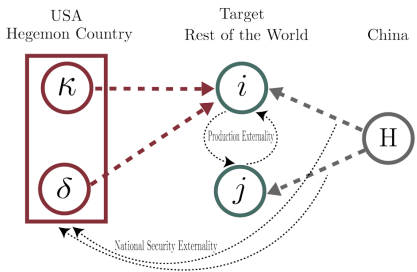
- Paper is part of a larger agenda
- Motivated by increasing frequency of wars, sanctions, trade conflicts, ...
- **Geoeconomics** = *hegemonic countries use their economic strength from existing financial and trade relationships to achieve geopolitical and economic goals*
- Has antecedents in Hirschman's (1945) "National Power and the Structure of Foreign Trade"

The Weekend Essay

The new age of geoeconomics

GEOECONOMICS - HOW THIS PAPER FITS INTO THE AGENDA

- Empirical motivation (✓)
- Theory (✓)



- Measurement, formal empirical analysis, identification, ...
  → progress made by this paper

SOURCES OF GEOECONOMIC DATA: A SALIENT EXAMPLE

Tony Hemmelgarn
CEO of Siemens
Industry Software

Public statement
on June 4, 2025

"On May 23rd, Siemens Industry Software Inc. was notified by the Bureau of Industry and Security, U.S. Department of Commerce, about **new controls on the export** *of Electronic Design Automation (EDA) software and technology to customers in* **China and Chinese military end users globally**. *As we navigate the complexities of these new export controls and evaluate the impact to our business and customers, we have restricted access to software and technology classified under Export Control Classification Numbers (ECCNs) 3D991 and 3E991.*

For more than 150 years, Siemens has supported customers in China and is working separately with stakeholders in the US and China to mitigate the impact of these new restrictions. Siemens continues to support our employees and customers around the world who are using our technology to transform the everyday."

WHY LLMS?

"On May 23rd, Siemens Industry Software Inc. was notified by the Bureau of Industry and Security, U.S. Department of Commerce, about new controls on the export of Electronic Design Automation (EDA) software and technology to customers in China and Chinese military end users globally. As we navigate the complexities of these new export controls and evaluate the impact to our business and customers, we have restricted access to software and technology classified under Export Control Classification Numbers (ECCNs) 3D991 and 3E991.

For more than 150 years, Siemens has supported customers in China and is working separately with stakeholders in the US and China to mitigate the impact of these new restrictions. Siemens continues to support our employees and customers around the world who are using our technology to transform the everyday."

Date	Company	Who pressures	Who is pressured	How	...
May 23rd	Siemens	USA	China	Export control	...

WHY LLMS? SCALE!

LLM

Date	Company	Who pressures	Who is pressured	How	...
May 23rd	Siemens	USA	China	Export control	...
xxx	xxx	xxx	xxx	xxx	...
xxx	xxx	xxx	xxx	xxx	...
xxx	xxx	xxx	xxx	xxx	...
xxx	xxx	xxx	xxx	xxx	...
xxx	xxx	xxx	xxx	xxx	...
xxx	xxx	xxx	xxx	xxx	...
xxx	xxx	xxx	xxx	xxx	...
xxx	xxx	xxx	xxx	xxx	...
xxx	xxx	xxx	xxx	xxx	...
xxx	xxx	xxx	xxx	xxx	...

MY COMMENTS

1. Adhere to best practice in the use of LLMs
2. Provide longer historical context
3. Explain which results should surprise us
4. Link to additional firm-level data

COMMENT 1: BEST PRACTICE IN THE USE OF LLMS

- Useful "manual" style paper: Ludwig, Mullainathan, and Rambachan (2025)
- Explains clearly what is important for
  - Prediction tasks
  - Estimation tasks
- Explains how to be transparent, what are common pitfalls, etc.

COMMENT 1: BEST PRACTICE IN THE USE OF LLMS

- Useful "manual" style paper: Ludwig, Mullainathan, and Rambachan (2025)
- Explains clearly what is important for
  - Prediction tasks
  - Estimation tasks
- Explains how to be transparent, what are common pitfalls, etc.
- *I asked ChatGPT to assess the paper critically based on their recommendations*

  ...

COMMENT 1: LLM BEST PRACTICE CHECKLIST

Task framing. Estimation (LLM-as-classifier to construct variables) — **Pass**

Prediction leakage. Open-weight, time-stamped local models; no closed APIs — **Pass**

Validation & measurement error.

- Prompt/model perturbation grid; reliability ratios — **Pass**
- Human-labeled benchmark for ground truth — **Partial** (add small "gold standard" set)

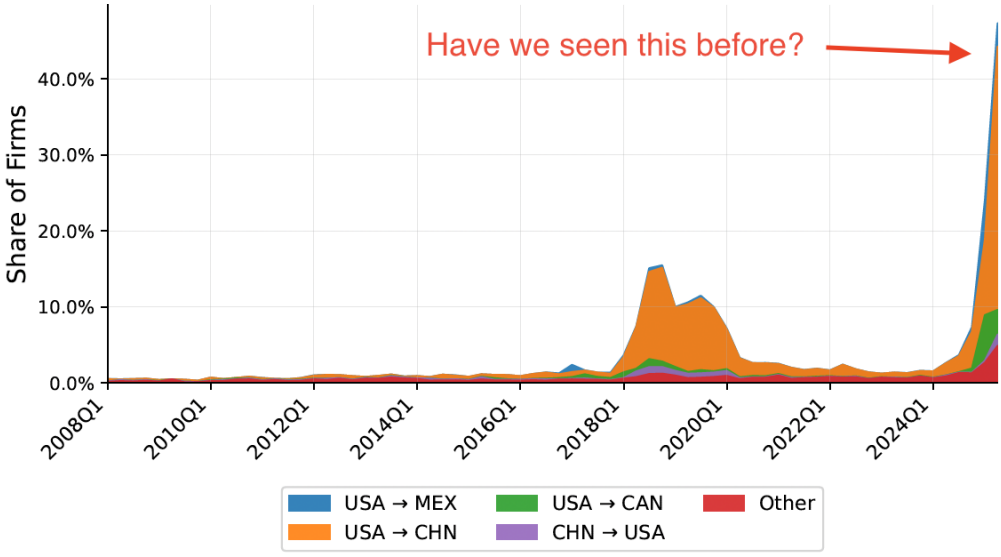
Robustness. Vary prompts/models; downstream sensitivity assessed — **Pass**

Transparency & reproducibility.

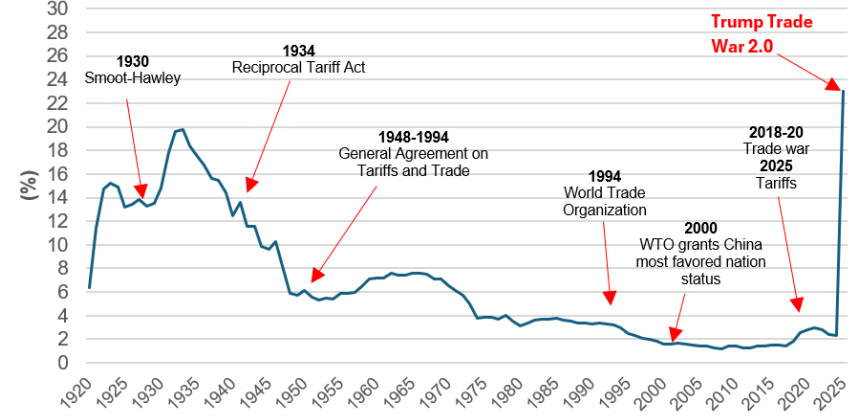
- Prompts, schema, temperature=0, hardware, quantization reported — **Pass**

→ **Conclusion: paper already does an excellent job at using LLMs effectively**

COMMENT 2: PROVIDE LONGER HISTORICAL CONTEXT



COMMENT 2: PROVIDE LONGER HISTORICAL CONTEXT



Source: Bloomberg; RSM US LLP

COMMENT 2: PROVIDE LONGER HISTORICAL CONTEXT

- It would be useful to contrast the results with the 1930s
- Of course, this is challenging and probably for another paper
- But: with LLMs, the authors are well equipped to venture into earlier history
- Bring in newspaper texts?
  - NYT, WSJ, WaPo all easily available for that period
- Could be both source of additional results and provide external validity

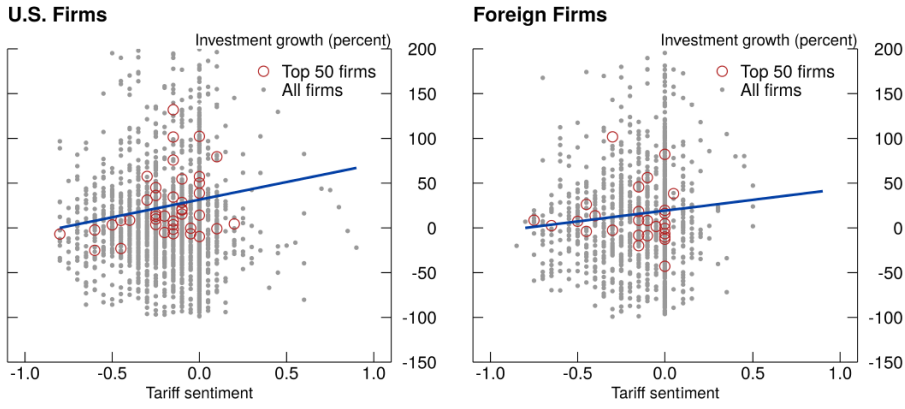
COMMENT 3: WHAT RESULT SHOULD SURPRISE US MOST?

- Many results confirm "casual observations" by commentators
  - E.g. export controls mostly applied by US and China, towards each other
  - E.g. sanctions mostly applied by the US, to Russia, Iran and China
- Can the paper debunk some misunderstandings by the public?
- Are there misunderstandings that might even lead to policy mistakes?

COMMENT 4: LINK TO ADDITIONAL FIRM-LEVEL DATA

- All data analyzed in the paper come from the textual corpora
- Obvious next step: merge with "hard" firm-level data
- See recent work by Caldara, Iacoviello, and Schott (2025)
  - Apply LLMs to earnings calls, to extract tariff sentiment
  - Merge this data with balance sheet information from Compustat

COMMENT 4: LINK TO ADDITIONAL FIRM-LEVEL DATA



(a) U.S. firms (b) Foreign firms

- From Caldara, Iacoviello, and Schott (2025)

CONCLUSION

- Impressive paper & research agenda
- Demonstrates how AI pushes the research frontier
- I am excited to see more work:
  - Go further back in time
  - Challenge our casual understanding
  - Link with additional data

BIBLIOGRAPHY

Caldara, D., M. Iacoviello, and I. Schott (2025): "Trade Policy Sentiment and Global Corporate Investment," *Working Paper*.

Ludwig, J., S. Mullainathan, and A. Rambachan (2025): "Large language models: An applied econometric framework," Tech. rep., National Bureau of Economic Research.