Discussion of: "Coming to the Rescue: the Role of Government Venture Capital in the U.S.-China Trade War"

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Disclaimer

Full disclosure: Your discussant is relatively uninitiated in the venture capital literature.

As a trade economist. . .

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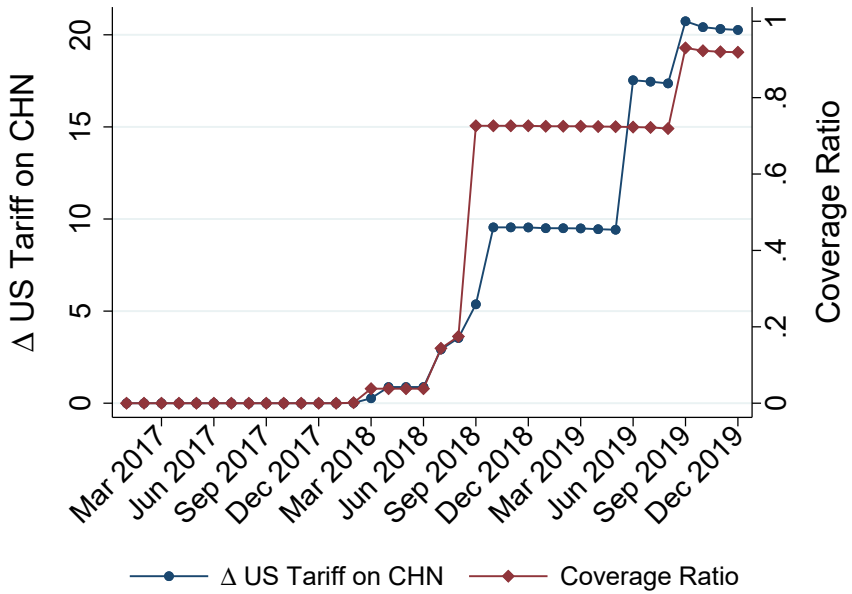
As a trade economist...

- the acronym *GVC* means something very different to me (*Global Value Chain* rather than *Government Venture Capital*).
- my approach when reading this paper: thinking about what it can teach us about the broader consequences of tariff shocks, specifically the US-China trade war.
- also: several comments from an applied empirical perspective.

What do we know about the impact of the US-China tariff war?

Figure: Δ US Tariff on CHN relative to Jan 2017 (unweighted)



Source: Chor and Li (2021)

By way of systematic empirical evidence:

- Well-documented impact on bilateral trade flows: Amiti, Redding and Weinstein (2019), Fajgelbaum et al. (2020), Bown (2021)
- On the US economy:

  Tariff pass-through, prices and consumption: Amiti, Redding and Weinstein (2019), Flaaen, Hortaçsu and Tintelnot (2020), Cavallo et al. (2021), Waugh (2019).

  Employment: Flaaen and Pierce (2019), Benguria and Saffie (2020), Goswami (2020).

  Investment: Amiti, Kong and Weinstein (2020).

  Supply chains: Handley, Kamal and Monarch (2020), Charoenwong, Han and Wu (2020).

What do we know about the impact of the US-China tariff war?

- By contrast, a shorter body of direct evidence on the effects on China:

  Tariff pass-through: Jiao et al. (2020), Tian, Yu and Zheng (2022), Chen, Hsieh and Song (2022).

  Labor markets (via online job postings): He et al. (2021).

  Firms (via business registrations, stock returns): Huang et al. (2020), Benguria et al. (2020), Cui and Li (2021).

  Economic activity (via night lights): Chor and Li (2021).

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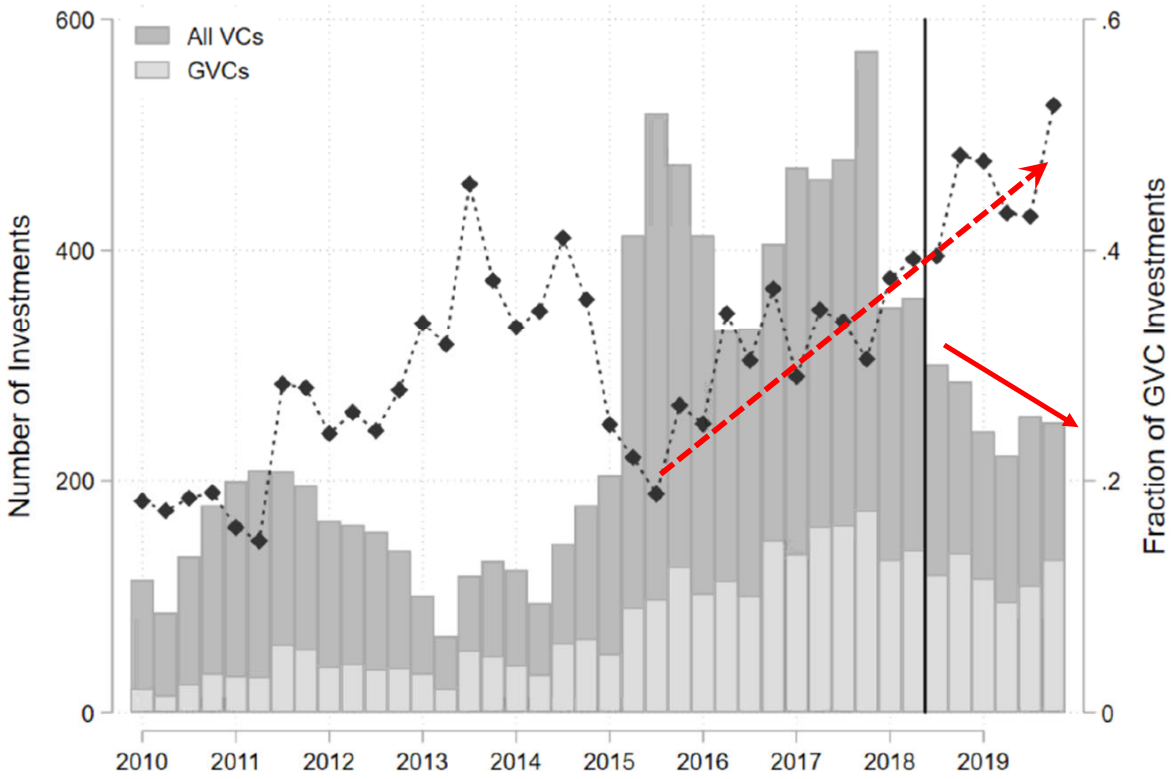
- **This paper:** Adds to this growing body of evidence on the effect of the US tariffs on China's economy, specifically on investment (the funding of startups through venture capital).

What Chen, Gong and Li (2022) find

Comparing pre- versus post-tariff war:

- VC funding in manufacturing is down, with a larger share coming from government VCs rather than independent VCs

Figure 2: Number of Deals in Manufacturing Industries



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Comparing pre- versus post-tariff war:

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- Double-diff: Decrease in likelihood of VC funding more severe for more tariff-exposed manufacturing industries (often associated with China's MIC2025 industrial policy program) . . .
- Triple-diff: But decrease less severe for govt VCs relative to indpt VCs.
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- Double-diff: Decrease in likelihood of VC funding more severe for more tariff-exposed manufacturing industries (often associated with China's MIC2025 industrial policy program) ...
- Triple-diff: But decrease less severe for govt VCs relative to indpt VCs.
- Double-diff result holds for exits into IPOs, but no further differential effect between govt and indpt VCs along this dimension.
- Sustained govt VC funding during the tariff war largely of a follow-on nature; more likely to companies that exhibit more patenting.
- "Competing into financing": Higher govt VC funding intensity seems to spur more patent applications even by indpt VC portfolio companies.

Broad Reactions

- Contributes a very nice dataset on VCs, VC funds, and VC-funded companies in China. (This uninitiated discussant learnt a lot.)
- Results look robust and sizeable.

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But. . . I need to do my job.

1. Comments and suggestions about the empirics.
2. How to interpret these findings?

1a. Empirics: Tariff Exposure measure

$$\text{Exposure}_{st}^{\text{trade}} = \sum_{j \in \Omega(s)} \tau_{jt} \times \frac{X_j^{US}}{\sum_{j \in \Omega(s)} X_j^{World}}$$

- Would urge: Use this continuous measure of industry treatment as the baseline (Table A.1), rather than an above-median treatment dummy.
- Analysis can then be run with fund-by-industry-by-time (ist) as the unit of observation, rather than fund-by-treatment-group-by-time (igt).
  (Accommodates a more thorough set of industry fixed effects.)
- Why not further exploit the time variation in τ_{jt} – the different rounds of Section 301 tariff increases in 2018 and 2019 – rather than view the tariff war as a single treatment?

1a. Empirics: Tariff Exposure measure

$$\text{Exposure}_{st}^{\text{trade}} = \sum_{j \in \Omega(s)} \tau_{jt} \times \frac{X_j^{US}}{\sum_{j \in \Omega(s)} X_j^{World}}$$

- Is it the tariffs, τ_{jt}, or the initial export shares, $X_j^{US} / \sum_{j \in \Omega(s)} X_j^{World}$, that is driving observed variation in the exposure measure?
- Underlying concern: Sectors s that were exporting a larger share to the US might be on different pre-trends with regard to VC funding.
- Solution: Control for the initial US export share, $\frac{\sum_{j \in \Omega(s)} X_j^{US}}{\sum_{j \in \Omega(s)} X_j^{World}}$, interacted with time fixed effects, to absorb any such pre-trends.

  (This is related to the "incomplete share" concern in Borusyak, Hull and Jaravel 2022.)

1b. Empirics: Specification

If one switches to a fund-by-industry-by-time analysis:

$$\mathbf{1}(Inv_{ist}) = \beta_1 \text{Exposure}_{st} \times \text{Post}_t + \lambda X_i + \mu_s + \mu_t + \epsilon_{ist}$$

- Would urge: Control for the initial industry-s share of govt VCs in total VCs, interacted with time fixed effects, to absorb pre-trends associated with a rising propensity for govt VCs to engage in startup funding in manufacturing.
- Since exposure is at the industry s level: Two-way clustering of standard errors by industry and VC fund would seem appropriate.
- Is there any information on the quantum of VC funding?
- Reporting of effect size: treatment reduces exposure by 2.08 to 2.24 "percentage points" rather than "percent".

2. Interpretation

Positive spin on the findings:

- Govt VCs stepped in to "pick up the slack", to sustain startup funding in strategically important industries.
- Moreover: Some spillovers to spur broader patenting activity.

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Playing devil's advocate:

Is this too benign?

2. Interpretation

What if...

- govt GVCs were channelling funding to manufacturing startups in a way that was propagating the misallocation of resources (*a la* Hsieh and Klenow 2009, Cong et al. 2019)
- such funding was going towards sustaining startups with the right "connections" to the local government or SOEs
- patent applications are a signalling device, to showcase a startup's ability to contribute to official targets for patents (without regard for quality)

Then, govt GVCs "stepping into the void" may not be that desirable after all.

2. Interpretation

What would help mitigate these concerns over interpretation?

- Systematic evidence (pre-dating the tariff war) on the performance of govt VCs vs indpt VCs in the manufacturing sector
- A closer examination of the companies that received substantial follow-on funding from govt VCs during the tariff war:

  Who are the founders? Ownership structure? Links to SOEs?
- A comparison of characteristics of companies that received govt VC versus indpt VC funding, pre- versus post-tariff war:

  Are companies that received govt VC funding in 2018 and 2019 measurably different from those that received govt VC or indpt VC funding prior to 2018, on metrics other than patenting?
- Perhaps... it is too early to tell

Conclusion

- Very nice project that adds to our understanding of the impact of the tariff war: on the financing of Chinese economic activity
- Hope that these comments from an "outsider" to the field will help, particularly to nudge the authors towards a more balanced assessment of the role of govt VCs in servicing industrial policy goals