# Discussion of "The Contribution of Foreign Master's Students to US Start-Ups"

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## This Paper: What is the contribution of foreign students to entrepreneurship?

- Nice data construction:
  - Crunchbase: Number of startups + education of founders.
  - IPEDS: Number of domestic/foreign students and tuition fees by university and year
- Two identification strategies:
  - Relative out- vs in-state tuition changes as a cost shifter.
  - Shift share instrument exploiting university-by-origin networks in pre-period
- Key results: Higher share of foreign-born students increases number of start-ups.
  - 10pp increase in foreign share increases founders by 0.7-0.9 (0.17-0.46 baseline).
  - Most new companies are funded above the median, 15% patent, 66% local.
  - Similar responses between STEM and non-STEM majors.
  - Large part of the effect (23-38%) comes through spillover to native founders.

## Contribution

- Understanding the impact of foreign students is crucial for current US immigration policy.
  - Visa sponsorship via employment (H-1B) from abroad became more costly.
  - Student visas also under scrutiny (e.g. proposals to cap overall foreign enrollment to 15%, limit stay as full time students to 4 years).

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- Growing literature on the economic impact of foreign students
  - Improve finances of public universities (Bound et. al 2020)
  - Immigrants who come as students are more innovative / positively selected (Hunt 2011)
  - Increase skilled local labor supply (Beine et al 2023, Jia et. al 2025).

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  - Azoulay et. al. 2022, Kerr and Kerr 2020, Mahajan 2024, Mahajan et. al. 2025.
- This paper studies the contribution to entrepreneurship from a key source of skilled immigrants.

## Threats to identification

- Unobserved shocks at the university or university-region level that affect both foreign enrollment and entrepreneurship.
  - School adds specific programs that generate more entrepreneurs and attract more immigrants.
  - School invests in quality which attracts more students and makes them more productive.
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  - Immigrants affect the local labor market where the university is located through other channels: consumption, housing etc..
- College-tuition IV calculated in two steps:
  1. Subtract in-state tuition from out-of-state tuition to remove university-specific shocks.
  2. Residualize difference by controlling for quality proxies such as: State appropriations, Lagged International Graduates, and "Quality Proxies".

# Less variation of in-state tuition across schools

- The difference between in-state and out-of-state likely still captures most of the university-specific quality.

Figure: Georgia

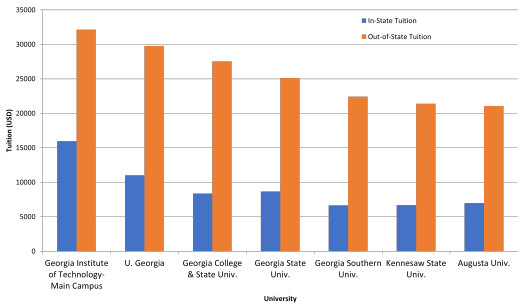
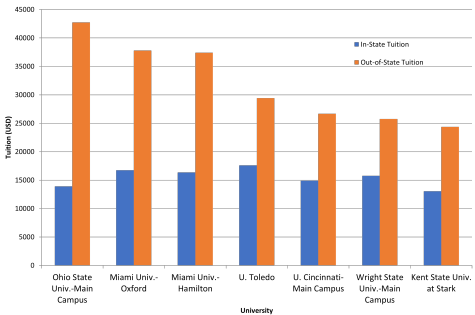



Figure: Ohio




Source: IPEDS 2024, In-state vs Out-of-state tuition + fees for full time graduates

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- "Quality proxies" somewhat broad: total revenues, revenues per student, total expenses per student, instruction-specific expenses per student
- Might be better to control more directly for quality variables that are unrelated to costs.
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  - E.g. faculty publications, avg SAT of incoming cohorts, avg wage of majors offered...
- Shift-share and college tuition IVs generally yield similar baseline results.
  - In some cases, results are different (e.g. effect on innovative companies , STEM vs non-STEM, role of co-founders)
  - Report shift-share version for public universities to distinguish if difference comes from sample vs instrument.

## Unpacking the mechanisms

- Overall effects are quite large: 10pp increase in foreign share increases founders at university by 0.7 entrepreneurs. Avg number of entrepreneurs is 0.17.
- A large part of the total effect is through native entrepreneurship. (23-38%)
- Important to nail down the mechanisms $\rightarrow$ results not driven by quality or demand shocks.

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**Table 12:** Effect of foreign-born share on number of co-founded startups.

| Dependent variable: | Number of cofounded companies | | | | |
|---|---|---|---|---|---|
| | All | from same univ. | from same univ-cohort | b/w US/foreign born founders | b/w US/foreign born founders from same univ. |
| | (1) | (2) | (3) | (4) | (5) |
| **Panel A. Residual tuition IV** | | | | | |
| Share of international master graduates | 0.0702*** | 0.0248** | 0.0114* | 0.0151* | 0.0095* |
| | (0.0194) | (0.0102) | (0.0059) | (0.0088) | (0.0057) |
| Observations | 6,019 | 6,019 | 6,019 | 6,019 | 6,019 |
| University fixed effects | Yes | Yes | Yes | Yes | Yes |
| Year fixed effects | Yes | Yes | Yes | Yes | Yes |
| First-stage F-statistic | 61.67 | 61.67 | 61.67 | 61.67 | 61.67 |

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## Unpacking the mechanisms - continued

- Co-founding between natives and immigrants not a big explanation.
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- Interesting hypothesis: *"As legal and procedural restrictions can make it harder for immigrants to be legal founders of a firm, they may contribute as initial employees in the firm's team rather than as founders."*
- New data on LinkedIn profiles (Revelio Labs) seems ideally suited to explore this. Are startup teams more likely to be created within university-cohorts.
- Perhaps for future work / beyond the scope of this project.
- Other channels through which immigrants affect entrepreneurship: local consumption/housing, human capital spillovers to classmates, variety of majors (Jia et al 2025)

## Some broader questions

- Is entrepreneurship better than employment at existing firms?
  - Workers might move to open their own companies if they cannot obtain a visa-sponsorship/job opportunity.
- Are there majors with higher complementarity between immigration and entrepreneurship?
  - Should immigration policy prioritize specific fields of study?
- Policy wise, is it any different to bring these entrepreneurs through school vs regular work-visa pathways? - higher selection through college immigration?

## Summary

- Very interesting and highly relevant results for the current immigration context.
- Identification is always tricky in these settings. I would add more details on what variation is underlying the instrument.
- Effects are quite large and not necessarily driven by immigrant founders. What are the channels through which immigrants encourage native entrepreneurship?