The Rise of American Ingenuity: Innovation and Inventors of the Golden Age

Akcigit, Grigsby, & Nicholas (NBER Working Paper 23047)

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Data collection: New insight into American innovation

- endogenous growth: long-run phenomenon, little long-run data
- **two questions:**
  - who becomes an inventor?
  - how does innovation correlate with growth, inequality?

- **this paper:**
  - assume patents $\approx$ innovation
  - who?: 6 facts on education, migration, productivity
  - how?: 3 facts on growth, inequality, social mobility at state level

main contribution: new US Census $\rightleftarrows$ USPTO patent records data

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Data construction

U.S. 1836–2004: > 6 mil. patents

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Who becomes an inventor? Human capital + Selection

Inventors . . .

- only 0.02% of population
- almost entirely white males ($> 96\%$)
- more educated
- have wealthy, well-educated father
- more likely to have migrated (head to dense, financially-developed spots)
- display survivorship bias over time

- Own education drives story:
  - **extensive margin**:

$$\mathbb{P}\{\text{invent}\} : \text{edu} \mapsto [0, 1]$$

    increasing, convex
  - **intensive margin**:

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- cf. father's wealth, education:
  - only **extensive**, **through child's education**

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How does innovation correlate with growth, inequality?

- **endogenous growth lit**: innovation $\Longrightarrow$ growth
- **state-level data**: more inventive states grew faster
  - is it causal?
  - IV: OSRD contracts (1941–47)
  - relevance: correlated with innovation
  - independence: uncorrelated with omitted determinants
  - exclusion: influence state growth **only** through innovation

- $90/10$ ratio, Gini coefficient decreasing in patent count
- top-1% share U-shaped in patent count
- **what mechanism at work?** inventors reaping large rewards at top, equality of opportunity below?
- **causality? in which direction?**

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