

Crisis Innovation: Evidence from the Great Depression

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Overview

Key results: harder-hit areas in Great Depression (more bank suspensions)

- Large and persistent (70+ years) decline in patenting by independent inventors
- More pronounced for young and inexperienced inventors, and lower quality patents
- Patenting by firms filled in the gap

Interpretation: Great Depression \Rightarrow permanent decline in innovation by tech entrepreneurs, and accelerated the process of shifting innovation into larger firms

Overview

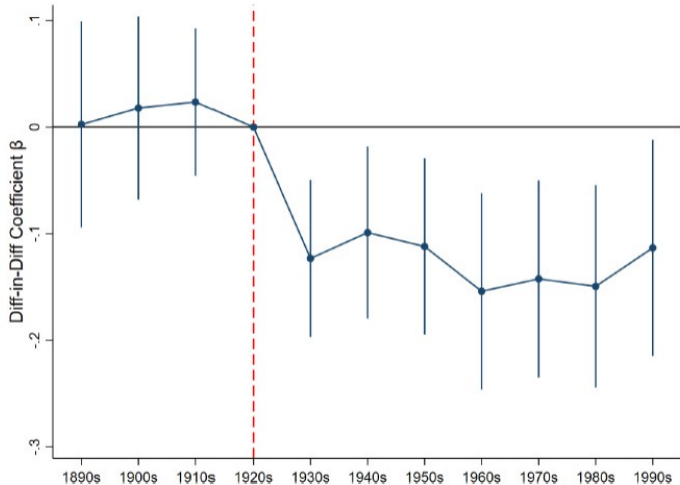
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Impressive data collection: patents, census, bank suspensions...

Overview



$$\ln(\text{NumberPatents} + 1)_{cst} = \alpha_c + \gamma_{st} + \sum \beta_t \text{Crisis}_{cs} + \epsilon_{cst}$$

- **Lasting effects of historical events**
 - ▶ Nunn (2008), Dell (2010, 2018), Xu (2021)
- **Economic/financial crises and innovation**
 - ▶ Chandler (1994), Field (2003), Gordon (2016)
- **The organization of innovation and the boundaries of firms**
 - ▶ Coase (1938), Acs and Audretsch (1988), Wuchty, Jones, and Uzzi (2007)

A. Persistence

- Great Depression and bank distress probably affected local economy in a variety of ways
- Did they have persistent effects on local economic performance in general?
 - ▶ GDP, financing availability/bank branches, business startup, education, etc.
 - ▶ Lee and Mezzanotti (2017) show that local bank distress affected manufacturing activities
- Is patenting special?

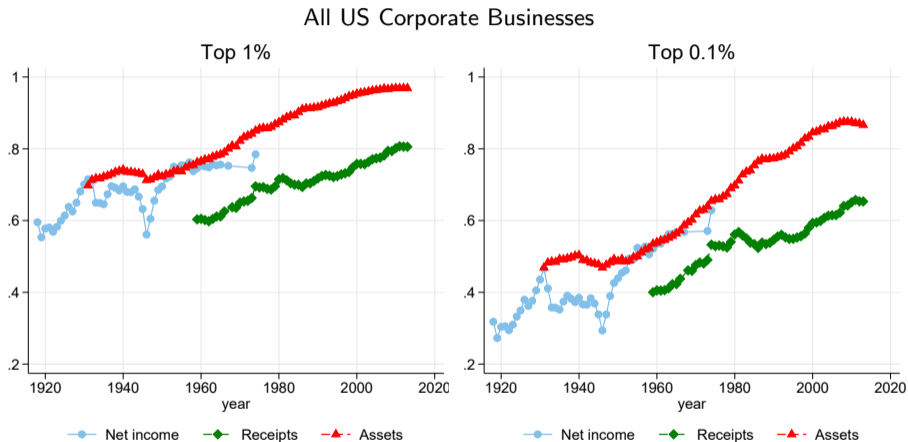
B. Are Banking Crises Special

- Literature debates whether bank distress is fundamental-driven or sunspot-driven
 - ▶ Is bank suspension a proxy for fundamental shocks or a shock of its own?
 - ▶ Alternative proxy seems to suggest fundamental shock at least plays some role
- Even if bank distress fundamental driven, banking crises can be special
 - ▶ E.g., asset fire sales leading to larger/more prolonged impact
- Do we need to worry about a shock like COVID the same way?

C. From Cross Section to Aggregate Effects

- “Great Depression accelerated the process of shifting innovation into larger firms”
 - ▶ Implicit counterfactual: if no crisis anywhere, more independent patenting would remain
- “A severe crisis can aid an ‘equilibrium switch’ and facilitate the transition of US innovation from entrepreneur-centric to more firm-centric”
 - ▶ Any evidence that aggregate share of independent patenting fell sharply and persistently?

Persistently Shifting Landscape of US Businesses



Kwon, Ma, and Zimmermann (2021) "100 Years of Rising Corporate Concentration"

Summary

Thought-provoking paper

Many important themes

- Persistent effects of historical events
- Finance and innovation
- The organization of innovation

Guidance for future: what will be the lasting effects of a crisis like COVID?