Geography of Economic Development: Evidence from History

Jinlin Wei

University of Warwick

Banking and Innovation: Evidence from the Industrial Revolution

Question

- How did the development of country banks in England and Wales increase patenting between 1750 and 1825?

Data and Empirical Strategies

- Construct panel data at the registration district level on patents and country banks between 1750 and 1825.
- Use a setting where banks generally provided short-term credit, to show the impacts of short-term credit on innovation.
- Use a two-way fixed effects model with fixed effects for districts and years.
- Use the sudden shocks in money supply (Palma, 2018) and the existence of historical post-towns (Heblich and Trew, 2019) to construct instrumental variables.

Banking and Innovation: Evidence from the Industrial Revolution

Estimation Results

- A one standard deviation increase in banking access predicts a 15.6% standard deviation increase in patenting.
- Country banks account for about 38% of the increase in patents between 1750 and 1825.

Mechanisms

- Banks alleviated liquidity constraints of industrialists and merchants.
  - Impacts observed mainly in patents related to the manufacturing sector.
  - Impacts larger in districts subject to tighter credit constraints, measured by lower agricultural suitability and higher bankruptcy rates before 1750.
- Banks and their London agents: Basis of a national financial market.
  - Connections to other country banks in other districts via London banks mattered.
  - Credit from agricultural areas to industrial areas.

Branching for Caution: Banks in England and Wales During the 1878 Financial Panic

Question

- How do financial crises affect bank branching?

Data and Empirical Strategies

- Use a setting when there was little regulation on banks.
- Construct panel data at the bank level on offices, capital, and balance sheets between 1874 and 1885.
- Use a two-way fixed effects model with fixed effects for banks and years.
- Construct an instrumental variable based on the existence of newspapers before the financial panic following Beach and Hanlon (2023).

Branching for Caution: Banks in England and Wales During the 1878 Financial Panic

Estimation Results

- Larger negative shocks during the financial panic led English joint-stock banks to open more new offices.

Mechanisms

- Banks opened new offices to increase public confidence.
- Bank offices served as a device to signal stability.
  - Impacts driven by banks with fewer offices that lost more cash.
  - Small banks also increased subscribed and paid-in capital.
- Bank offices served as a device to facilitate shareholders' monitoring. Substituted by emphasis on Englishness in towns with higher exposure to nationalism advertised by Conservative newspapers.

Railways and Cities in India

Question

- How did the spread of the railroad shape the size of cities in colonial India?

Data and Empirical Strategies

- Construct panel data on populations of 2,456 cities of at least 1,000 persons in colonial India between 1881 and 1931.
- Use a two-way fixed effects model with fixed effects for cities and years.
- Our baseline instrumental variables strategy is based on a least cost path that connects pre-existing cities based on market potential, following routes that minimize construction costs based on terrain slope (similar to Bogart et al. (2022) for the UK).
- To understand mechanisms, we compute market access measures of how cities are connected to all other locations (Donaldson and Hornbeck, 2016).

Branching for Caution: Banks in England and Wales During the 1878 Financial Panic

Estimation Results

- Distance to Railways: Elasticities range from -0.017 and -0.019, corresponding to standardized effects of -4.47% to -5.06%.
- Market Access: OLS elasticities range from 0.385 to 0.628, standardized effects from 22.2% to 36.2%.

Mechanisms

- The construction of railways increased the market access of cities.
- Impacts driven by initially smaller cities and cities farther away from railways in 1881.
- Driven by within-district migration, not by fertility or incomes.