The Long-Run Effects of Public Spending and Investment on Regional Economies: Multi-Century Evidence from the US Civil War

Lovepreet Singh
University of Illinois, Urbana-Champaign

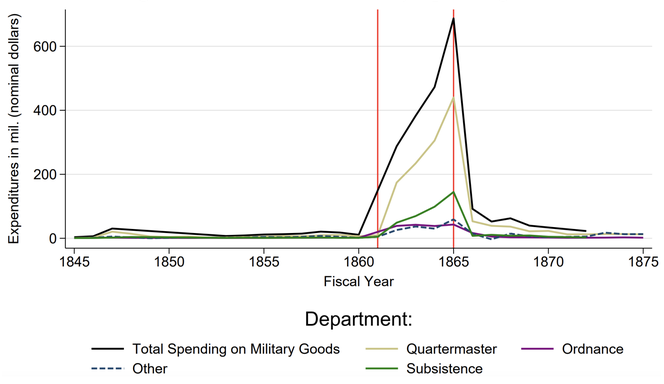
Introduction

- In macro growth models, firm entry drives innovation and productivity, the same force can shape spatial development.
- In early-stage developing economies, induced firm entry can create strong local multiplier effects, leading to significant long-run spatial divergence (Myrdal 1957).
- This study: industrial mobilization in the U.S. North during the Civil War.
  - Compares counties with wartime government procurement and manufacturing facilities to counties with similar 1860 characteristics.
  - Key question: what are the long-run effects of this short-lived intervention?
- Results: persistent effects in treated counties:
  - Higher population growth, manufacturing employment, and income per capita.
  - Greater upward mobility: men born 1850–1860 experience sizable occupational upgrading, especially those from low-status households.
  - Increased post-war innovation in treated counties.

Setting

- Union government spent 25% of 1860 U.S. GDP on military supplies such as clothing, wagons, tent equipment, etc. (excluding ordnance and food)
- The Quartermaster (QM) Department procured and manufactured these goods at 58 sites across the Union states.
- Treatment Definition: Counties hosting a QM site constitute the treatment group, excluding major metropolitan counties from the sample
- Selection: QM department was primarily responsible for location selection, cited existing manufacturing capacity level and connectivity as key factors (Meigs, 1862 Wilson, 2003)

Figure 1. Government Military Spending



Empirical Method

- **Identification Assumption:** Let county c's potential outcome change if treated be $\Delta Y_{1c,t}$ and $\Delta Y_{0c,t}$ if untreated, then

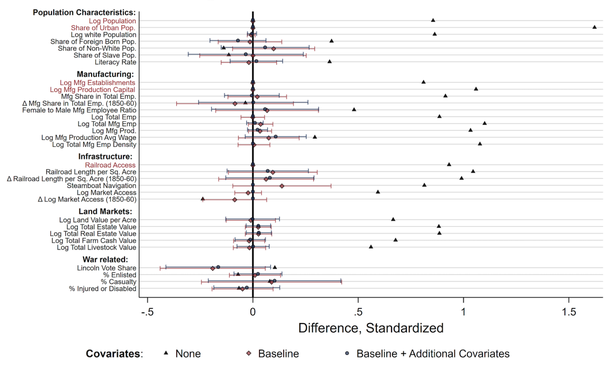
$$\Delta Y_{0c,t}, \Delta Y_{1c,t} \perp d_c | X_c^{1860}$$

- **Regression specification:**

$$Y_{ct} - Y_{c1860} = \alpha_t + \tau_t . d_c + \lambda_t' . X_c^{1860} + \epsilon_{it}$$

- Baseline 1860 county-level covariates to account for existing manufacturing capacity:
  - Labor availability: Log population, urban share and its square
  - Transport access: Railroad connection
  - Industrial base: Log manufacturing establishment count, log manufacturing capital

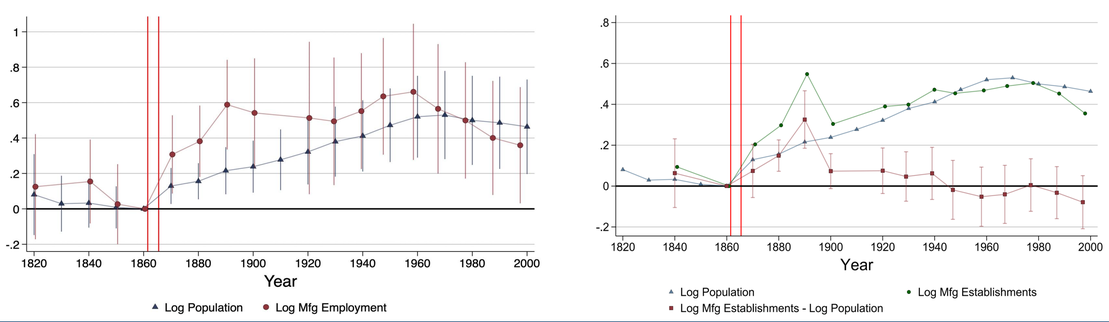
Figure 2. Covariate Balance



Results

- Short-run government spending during the Civil War had permanent effects on regional development
- Persistent effects without persistent spending ⇒ path dependence

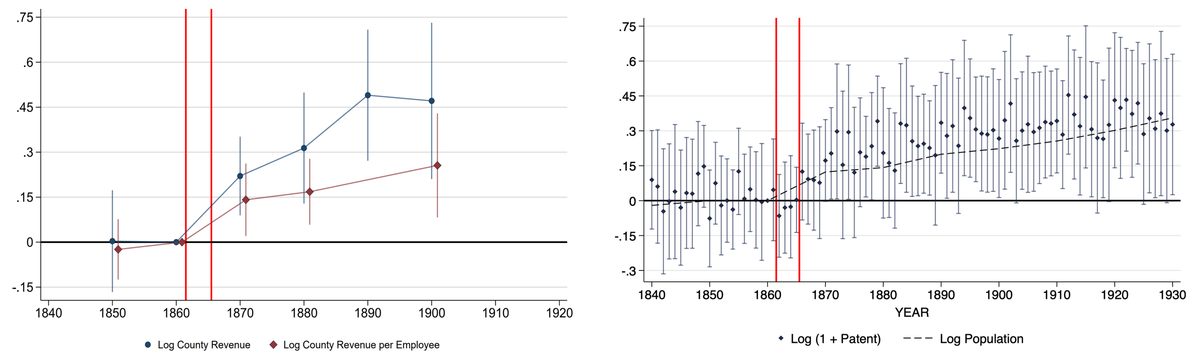
Figure 3. County-Level Dynamics



Results – Contd.

- Establishment entry, triggered by wartime procurement ⇒ drives long-run development
- Multiplier effect: New establishments ⇒ local labor demand and spending (↑) ⇒ attract new workers ⇒ demand for new establishments (↑) (Myrdal, 1957; Walsh, 2025)

Figure 4. Income and Innovation

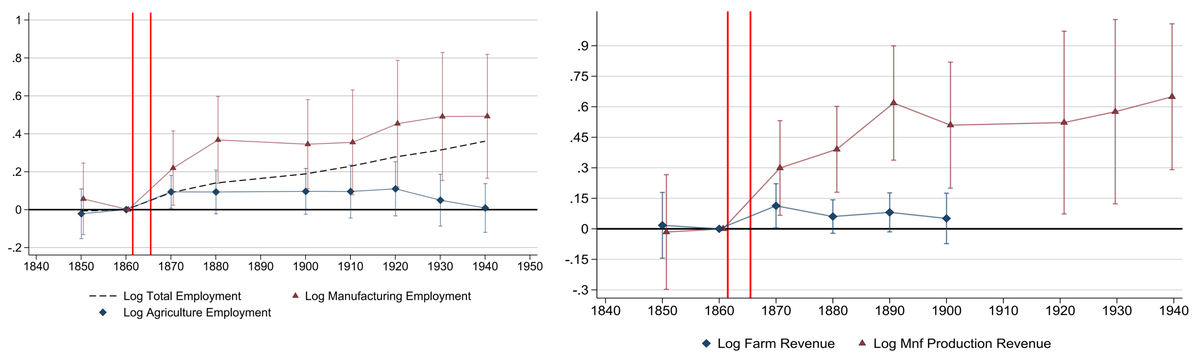


- Uptick in Innovation: New firms introduce new ideas and new products a la. Romer, 1990.

Regional Structural Change:

- Sector wise employment: based on county of residence, estimated using full-count census
- Manufacturing bias: manufacturing employment and output expands disproportionally more in the short and long run, agriculture just levels off
- Income gains stem from workers shifting into manufacturing

Figure 5. Effect by Sector



- More establishments, greater variety, establishment size unchanged
- Manufacturing sector's contribution to local output and employment increased

Table 1. Regional Structural Change (1890)

			Log Average Establishment Size		Mfg. Share of County		
	Log Number of Industries (1880)	Log Number of Establishments	Revenue per Establishment	Workers per Establishment	Revenue	Value Added	Employment (1880)
QM	0.251***	0.502***	0.081	0.076	0.073***	0.059**	0.019**
	(0.078)	(0.099)	(0.088)	(0.121)	(0.024)	(0.027)	(0.008)
Observations	986	992	992	992	992	992	822

Standard errors clustered at state level in parentheses

Occupational Mobility: who benefits?

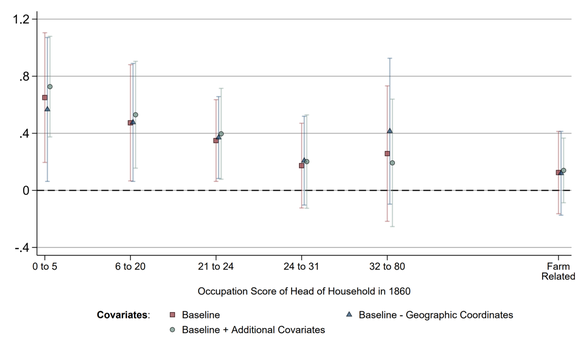
Regression specification:

$$\text{OccScore}_i - \textit{OccScore}_{h(i)}{}^{1860} = \tau . \textit{Treat}_{c(i)} + \alpha_i{}^{age} + \mu_i{}^{pob} + \lambda X_{c(i)}{}^{1860} + \epsilon_i$$

where c represents the county of residence as recorded in the 1860 census,

- $\mu_i{}^{pob}$: State/Country of Birth Fixed effect
- $X_{c(i)}{}^{1860}$: Vector of county-level characteristics,
- $\textit{OccScore}_i$ is occupation score.
- $\textit{OccScore}_{h(i)}{}^{1860}$ is occupation score of head of household h to which i belongs.

Figure 6. Occupation Mobility (1880)



- Individuals belonging to lower ranked occupation households gain more

Conclusions

- Short-run government spending during the Civil War had permanent effects on regional development
  - Improved income, innovation and social mobility
- Would such spending have similar effects in developing economies today? Automation?
  - Entry of large service sector firms? Multiplier is weaker + skill matching issues for initial entry

Contact

Email: LS12@ILLINOIS.EDU

References

1. Myrdal, G. (1957). Economic Theory and Underdeveloped Regions. London: Gerald Duckworth
2. Walsh, C. (2015) The Entry Multiplier
3. Wilson, M (2003) The Business of Civil War: Military Mobilization and the State, 1861–1865
4. Meigs, M. (1962) Meigs to McClellan, Meigs to various state governors, Meigs to Stanton Meigs to Stanton
5. Romer P. (1990) Endogenous Technological Change