How the Dawn of Public Higher Education (1900-1940) Shaped Access and Work

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Higher education in the US experienced its first major transformation in the early 1900s

- Many more students enrolled
- Public universities began to dominate in terms of enrollment

Questions

- **How did the founding of public colleges change access to college?**
- How did the founding of public colleges change the labor force of local economies?

Preview of identification approach

- **Identifying variation**: quasi-random founding date of a university
- Some people are lucky as they are born just late enough to access a new university
- Some people are unlucky as they are born too early to access a new university

Literature

- **History of US higher education (1900-1940)**: Goldin (1998), Goldin and Katz (1998), Goldin (2001)
  - → *My contribution:* Quantify the causal effect of university expansion on education access
- **Effects of university building in non-US countries**: Duflo (2001), Nimier-David (2023)
  - → *My contribution:* US university foundings and variation in public vs private control
- **How proximity to college affects attainment and earnings**: Card (1993), Acton et al. (2025)
  - → *My contribution:* Examine extensive margin of college access via new university foundings

BA Completion: 1900 vs 1936 Birth Cohorts

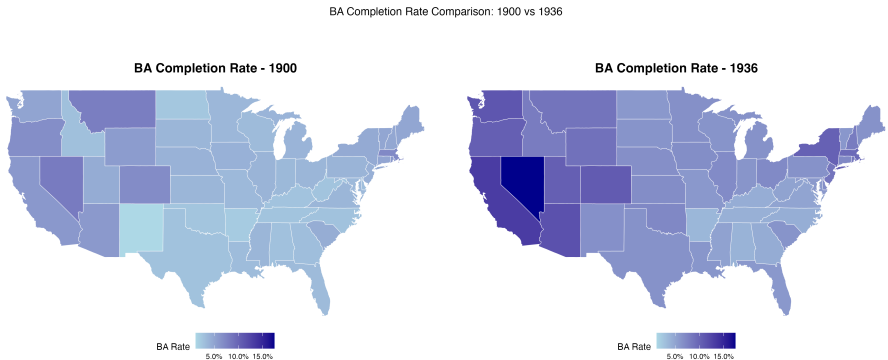

Figure: BA Completion: 1900 vs 1936 Birth Cohorts

College Founding Years by Region

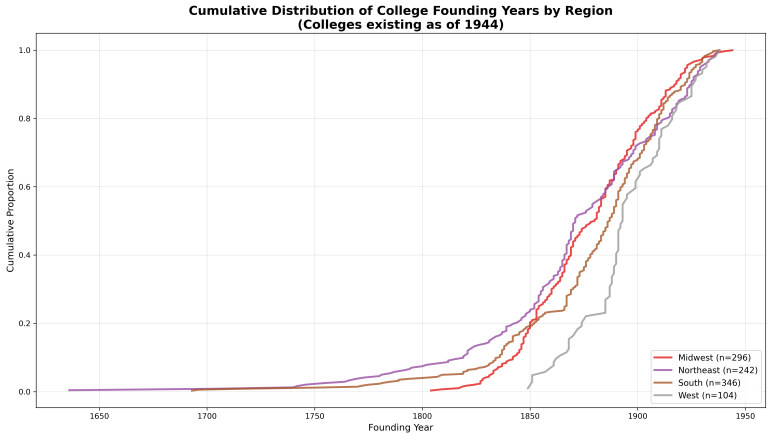

Figure: Regional Distribution of College Founding Years

College Founding Years by Control

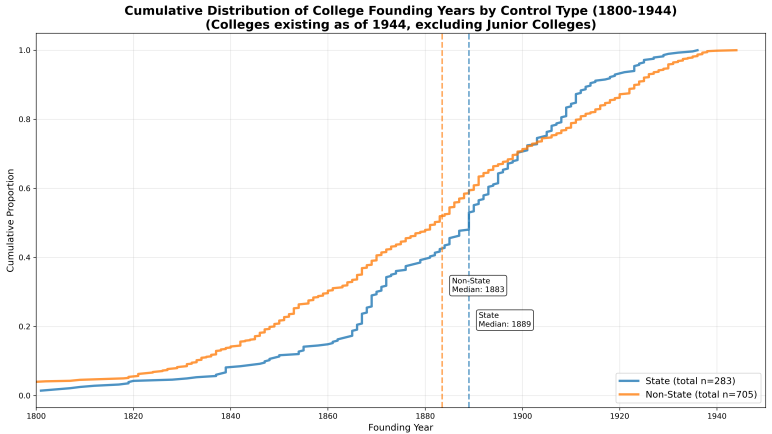

Figure: Regional Distribution of College Founding Years (1800+)

Estimating the effect of a university founding on college attainment

Cross sectional regression, identifying variation is at the cohort-by-county level.

$$y_{ick} = \alpha_c + \lambda_k + \beta \text{New college}_{ck} \times \lambda_k + \xi \boldsymbol{X}_{ick} + \epsilon_{ick} \tag{1}$$

- c: county, k: age cohort, i: person
- $\text{New college}_{ck} = \mathbb{1}\{\text{There is a college founded in } c \text{ that is available to } k\}$

The identification assumption

- Compare the gap in attainment between older cohorts and younger cohorts in counties that have a new college versus those that do not

- **Identifying assumption**: Conditional on controls, counties that gained a college and those that didn't would have experienced parallel trends in attainment across cohorts, absent the new college.

Picking a control group

Table: County Classification for College Analysis (1900-1940)

County Group	Count	Role in Analysis
Had college before 1900	320	–
Did not gain college 1900-1940	239	Potential Control
Gained college(s) 1900-1940	81	–
No college before 1900	2788	–
Gained exactly 1 college 1900-1940	72	**Treated**
Gained 2+ colleges 1900-1940	4	–
Never gained college by 1940	2712	Potential Control

Notes: Analysis excludes junior colleges, normal schools, teachers colleges, and colleges with capacity ≤ 100. Treated group consists of counties that had no college before 1900 and gained exactly one college 1900-1940. Potential control groups consist of (1) counties that had a college before 1900 but did not gain additional colleges 1900-1940, and (2) counties that never had a college by 1940.

Testing parallel trends: Event study specification

To test for pre-trends and trace out dynamic effects, estimate:

$$y_{ick} = \alpha_c + \lambda_k + \sum_{j \neq -1} \beta_j \mathbb{1}\{\text{Cohort } k \text{ born } j \text{ years relative to college founding in } c\} + \xi \boldsymbol{X}_{ick} + \epsilon_{ick} \quad (2)$$

- $j < 0$: Cohorts born *before* college founding (test for pre-trends)
- $j \geq 0$: Cohorts born *after* college founding (treatment effects)
- Omit $j = -1$ as reference category
- Null hypothesis: $\beta_j = 0$ for all $j < 0$ (no pre-trends)

Regional Control of Colleges

Table: Colleges Founded 1900-1940 by Region and Control Type (Excluding Junior Colleges)

Region	State Controlled	Non-State Controlled	Total
Northeast	11	57	68
South	45	67	112
Midwest	18	52	70
West	10	30	40
Total	**84**	**206**	**290**

What next?

- Still cleaning my historical tables on enrollments
- Will have better data on program enrollments and associated analysis

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