

2nd Industrial Revolution (1870-1917)

- Rise of electricity
- Improvements in transportation

1913: The US is producing 26% (?) of the world's industrial output

Rise of modern corporation.

Chandler (HBS) dominates the 2nd Industrial Revolution literature.

- Scale and Scope, The Visible Hand

- mass production and mass distribution were important
- economies of scale, economies of scope, reduced transaction costs
- scope - producing multiple goods with same processes and capital.

Changes in mass distribution first: improvements in telegraph, shipping, postal service, railroad

allows rerouting of shipments

first modern corporations

- Telegraph - centralized markets (Chicago Board of Trade)
- Development of department stores

Once you have mass distribution, this facilitates mass production.

- production becomes more continuous (reduced inventories.)
- more emphasis on speed
- need more energy.

Tobacco: 1884 - James Buchanan Duke installed some machines that turned out 120,000 cigarettes per time period. Not enough demand.

- set up sales and marketing departments.

Chandler identifies certain key industries

1] Branded, packaged products (e.g. flour)

2] Mass produced light machinery

3] Electrical equipment

4] Industrial chemicals

5] Metals

How to test these hypotheses?

- Need info. on size of factories

1870/1880

Small firms

1900/1910

Larger firms

This is what we would expect.

- In the industries Chandler identifies, we get increased plant size.

To keep track of things, need the rise of the clerical sector.

Returning to male-female wage differentials:

$$\psi_t \equiv \frac{\text{earnings}_{\text{female}}^t}{\text{earnings}_{\text{male}}^t}$$

t=1820

t=1914

t=1969

ψ_t

0.371-0.303

0.568

0.544

Goldin - wage discrimination

• look at $\log w_F = \alpha_F + \sum \beta_F X_F$

$\log w_m = \alpha_m + \sum \beta_m X_m$ wage discrimination

$$\Rightarrow \log w_m - \log w_F = \underbrace{[\alpha_m - \alpha_F] + \sum X_F (\beta_m - \beta_F)}_{\text{wage discrimination}} + \sum \beta_m (X_m - X_F)$$

Wage discrimination accounts for 55% of these differences. 1993 study finds a smaller number of around 25%

Taste discrimination vs. statistical discrimination.

1888-1907: wage discrimination low: 20% of gap vs. 55% in more recent data

• Goldin argues that this increase occurs due to the rise of the white collar sector.

• Now, we have longer-term contracts

• more training required - firm specific skills.

• reduce quit rates

- offer benefits to those who stayed.
- offers of promotions for males.
- women were put in dead-end jobs.

Why the U.S.?

- Lots of new land, untapped resources and large population, integrated market.

Monopolization: Granitz-Klein

Standard Oil - relationship with antitrust laws

Sherman Act of 1890.

1904 Northern Securities Decision

1911 Standard Oil Case

- court emphasizes improper practices
 - secret rebates
 - predatory pricing.

1940 Madison Oil Case

- attempts to charge monopoly price were made illegal

1881-1906 - Tobacco Trust

- charged just the sales tax. (Introductory offer) Then bought out the competition

Buffalo - NYC (Vanderbilt vs Gould and Fisk)

- normal rate 125, Vanderbilt charges 100. Gould and Fisk go down to 50, GF → 25. Vanderbilt drops to 1, GF ship everything they can on Vanderbilt.