

Econ 113: February 26, 2015

- Distribution Networks
 - Franchises, Department Stores, and Chain Store Movement
- Industry & Labor, a few facts I couldn't resist sharing
- Education
 - Background Data
 - High School Graduation Rates
 - Public Funding of Higher Education

Note: I switched 2/26 & 3/3 topics

Distribution Networks

- Dealers
 - Assemble, repair, inform, sell
 - Work for 1 company only
- Franchised Dealers
 - Begins late 1800s
 - Small businessman
 - Pays manufacturer for franchise license
 - “Not big business” but “locally owned”

Distribution, continued

- Department Stores
 - With catalogs for rural customers
- Chain Store Movement
 - Grocery chains, beginning 1859 with A&P
 - Growth, especially 1920s & 1930s
 - Fewer services
 - Lower prices

Postbellum Industry & Labor

- Key industry: machine tools

Table 1. Top 5 Industries

1790 & 1860	1910
Cotton goods	Machinery
Lumber	Lumber
Boots & shoes	Printing & Publishing
Flour & meal	Iron & steel
Men's clothing	Malt Liquors

Source: Walton & Rockoff, p. 375; Hughes & Cain, *American Economic History*, Figure 8.2.

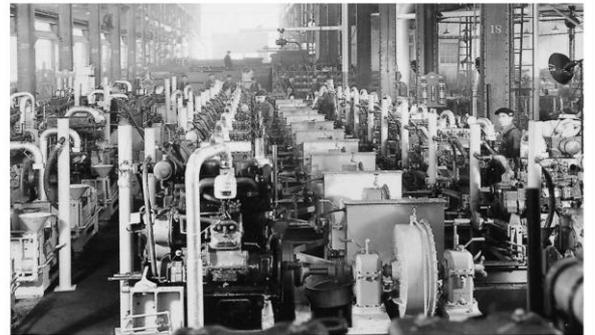
Postbellum Industry

Table 2. Distribution of Total Output

	Agric	Manuf	Transp & Utilities	Trade Finance & Services
1869	22	15	11	41
1879	19	13	13	43
1889	14	19	11	42
1899-1903	18	19	10	40
1910-1913	19	20	11	37
2010	1	12	5	62

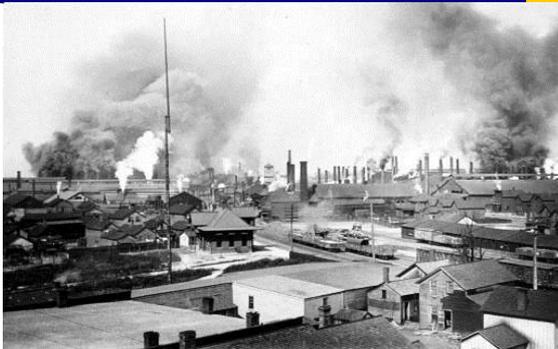
Table 3. Distribution of Labor Force

	Agric	Manuf	Transp & Utilities	Trade Finance & Services
1870	53	19	— 24 —	
1890	43	19	6	21
1910	31	22	9	25
1920	27	26	10	25
2010	1	9	4	64



Mass production helped change the face of industry in the early part of the twentieth century. This plant tested engines prior to their assembly into machines.
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Steel Mill, 1900



But huge factories weren't the norm

Table 4. Average # employees per establishment

	1869	1889	1909
Food products	6	9	8
Printing	17	14	12
Lumber	6	18	17
Furniture	9	37	40
Machinery	14	35	56
Textiles	51	99	153
Primary Metals	85	203	317

Source: Atack & Passell, Table 17.5.

19th century Labor Markets

Table 5. Annual Earnings of Industrial Workers

	1982 dollars	Annual rate of change
1875-79	\$ 4,000	
1885-89	5,000	2.2 %
1895-99	5,300	0.6
1901-05	6,100	2.4
1911-15	6,900	1.2
2010	26,600	0.8

Source: Scheiber, Vatter, Faulkner, *American Economic History*, p. 247.
 2010 data: \$60,018 is wages & salaries per full-time equivalent employee in manufacturing (US BEA, NIPA Table 6.50), deflated to 1982 dollars using www.measuringworth.com. Annual rate of change for 2010 is measured over 30 years, 1980-2010.

- Wages usually "per day"
- 10 - 11 hours/day through 1800s
 - 13-14 hours/day in Southern textile mills
 - 12 hours/day and 7 days/week in steel mills

Most Industries Almost All Male

Table 6. Male & Female Intensive Industries, 1890

	% Male		% Female
Blacksmith	100	Millinery, custom	98
Carpentry	100	Dressmaking	97
Painting, Wallpaper	100	Corsets	81
Shipbuilding	100	Shirts	79
Carriages & wagons	99	Men's accessories	74
Flour milling	99	Millinery & lace	73
Foundry, machine shops	99	Hosiery & knit goods	67
Agric implements	98	Boxes	65
Boots & Shoes, custom	98	Clothing, women's	63
Leather	98	Silk	57

Source: Claudia Goldin, *Understanding the Gender Gap*, Table 3.4.

Women in the Labor Market

Table 7. Women's Labor Force Participation Rates (percent of population)

	white		non-white	
	single	married	single	married
1890	38	2	60	22
1900	42	3	60	26
1920	45	6	59	32
2010	56	61	57	66

Source: Claudia Goldin, *Understanding the Gender Gap*, Table 2.1, p. 17. 2010 data from U.S. BLS, *Women in the Labor Force: A Databook* (2011 edition), Table 6. "Single" includes never-married, divorced, separated, and widowed. LFR calculated for population age 16+. Race category for 2010 is "black or African American"; race category in earlier censuses was "Non-White."

- Participation rates varied by race and by marital status
- Women's wages about 60 % of men's wages in 1920s

Protecting – or limiting? – labor

- Protective Labor Legislation
 - safety
 - hours
- Protecting – or limiting? – children
 - 1880-1920, most non-Southern states made school attendance compulsory
- Protecting – or limiting? – women
 - By 1897, in 15 states women's hours & occupations limited

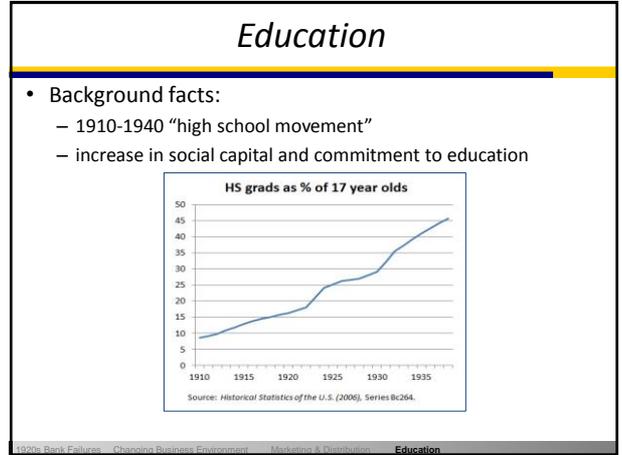
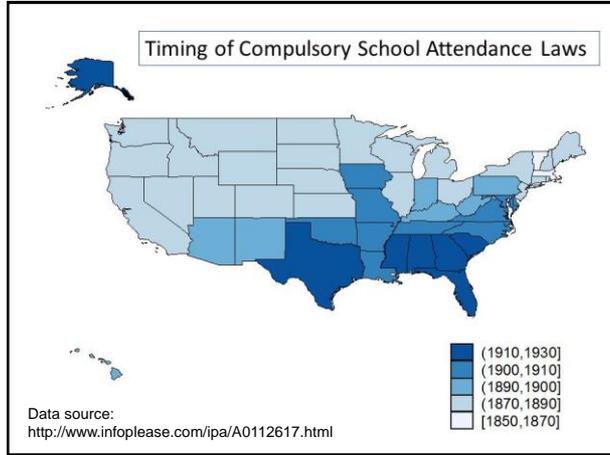


Table 8. Enrollment and Graduation Rates, 1900-1935, 1970, 2000, 2010

	Secondary Enrollment as % of 14-17 year olds	High school graduate as % of 17 yr old population	BA degrees, as % of high school graduates 4 years earlier
1900	10.6	6.4	36
1905	12.4		32
1910	17.8	8.8	30
1915	24.5		25
1920	35.0	16.8	
1925	45.9		27
1930	54.9	32.1	
1935	65.9	42.7	17
1970	92.0	75.9	31
2000	95.7	69.8	49
2010	97.1	77.0	53

Table 9. Educational Attainment of Population 25 yrs and older, 1910 - 2010

	< 5 years school	High school graduate	College graduate
1910	23.8	13.5	2.7
1920	22.0	16.4	3.3
1930	17.5	19.1	3.9
1940	13.5	24.1	4.6
1950	10.8	33.3	6.0
1960	8.3	41.0	7.7
1970	5.3	55.2	11.0
1980	3.4	68.6	17.0
1990	2.4	77.6	21.3
2000	---	84.1	25.6
2010	---	87.1	29.9

College enrollment up, 1890-1940

Students in Two- and Four-Year Institutions in the United States as a Fraction of 18 to 21 Year-Olds: 1890 to 1970



1890s Rank Failures, Changing Business Environment, Markets & Distribution, Education

Why college enrollment up?

- increased specialization by field
- increased number of subjects taught
- increased number of colleges
 - 1862 and 1890 Morrill Acts
 - Land grant colleges
 - 1890 Act adds historically Black colleges and universities in the Southeast

Table 10. Number of New Colleges and Universities Established, 1638 - 1934

	Public	Private
1638-1819	9	40
1820-1859	15	225
1860-1879	35	151
1880-1899	49	197
1900-1934	35	165

1890s Rank Failures, Changing Business Environment, Markets & Distribution, Education

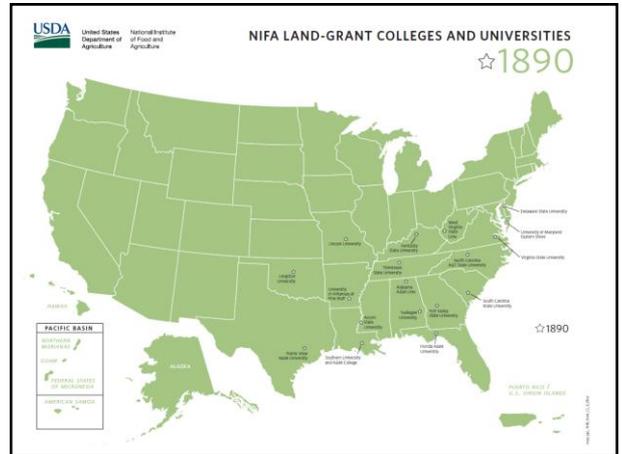
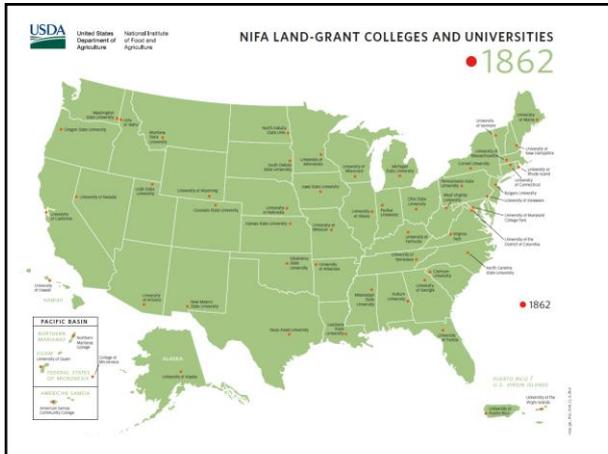
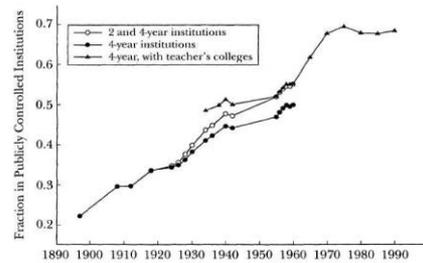


Table 11. More & Bigger Public Universities and Colleges, 1897-1934

	private	public	ratio: public / private
MEDIAN NUMBER OF STUDENTS			
1897	128	242	1.89
1924	359	1225	3.41
1934	382	1561	4.09
% INSTITUTIONS WITH >1,000 STUDENTS			
1897	4.9	9.9	2.02
1924	15.1	59.6	3.95
1934	14.2	71.1	5.03
% STUDENTS WHO WERE IN SCHOOLS WITH >1,000 STUDENTS			
1897	34.9	41.1	1.18
1924	60.1	90.3	1.50
1934	62.6	94.3	1.51

More Students in Public Universities

Fraction of Students in the Publicly-Controlled Higher Education Sector: 1897 to 1990



1920s Bank Failures Changing Business Environment Marketing & Distribution Education

Economic issues

- Private return to education
 - Should I go to school?
- Social return (externalities)
 - Who should pay for school?
- Explaining educational attainment
 - Do economic factors matter?

1920s Bank Failures Changing Business Environment Marketing & Distribution Education

Why attend school?

1920s Bank Failures Changing Business Environment Marketing & Distribution Education

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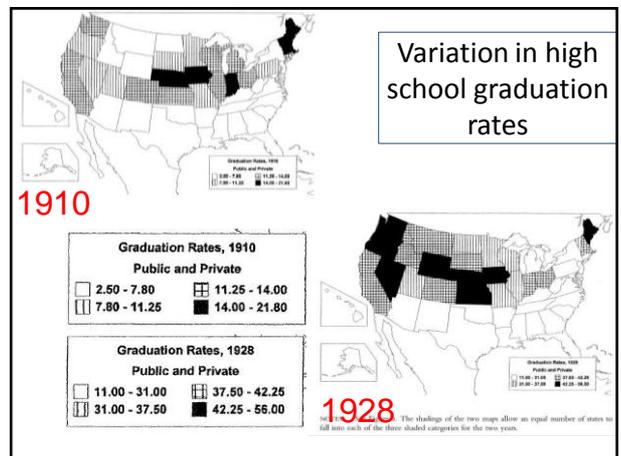
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Analysis: Why Finish High School?

- Assume two-period framework
- Goal: max income
 - Decide by comparing discounted benefit with cost of education

Social returns?

- Community cohesion
- Inter-generational “transfers”



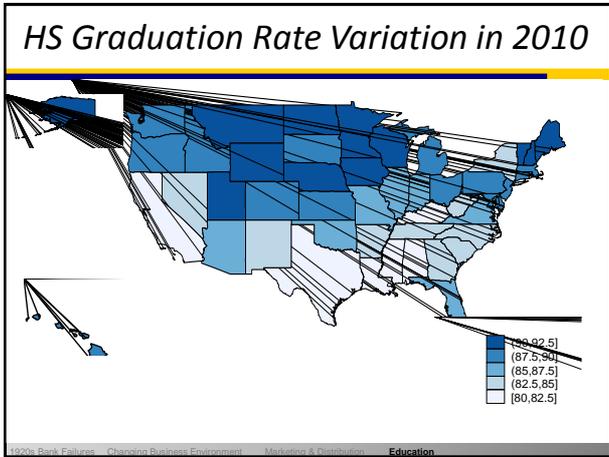


Table 12. Determinants of High School Graduation Rates 1910, 1928 and change 1910-to-1928

	1910	1928	change from 1910 to 1928
log per capita wealth	0.236 (0.09)	0.852 (0.37)	0.617 (0.260)
% population ≥ 65 yrs old	2.13 (0.26)	1.423 (0.79)	-1.745 (0.737)
% labor force in manufacturing	-0.067 (0.034)	-1.144 (0.097)	-0.9495 (0.095)
% population Catholic	-0.0913 (0.031)	-0.377 (0.09)	-0.265 (0.090)
Auto registrations per capita, 1930		0.0568 (0.02)	
% 17-year-old males in public college, 1910			1.090 (0.384)
South (0/1 dummy variable)	-0.0449 (0.01)	-0.0935 (0.03)	-0.0735 (0.027)
New England (0/1 dummy variable)	0.0444 (0.01)	0.100 (0.03)	0.0811 (0.033)
Constant	-0.136 (0.07)	-0.468 (0.27)	-0.324 (0.199)
R ²	0.895	0.874	0.758
n	48	48	48
avg of dependent var.	0.0882	0.091	0.212

Notes: standard errors in parentheses

What's the story?

- High school graduation rates higher in states with . . .
 - higher wealth
 - more car registrations
 - more elderly
 - less manufacturing
 - fewer Catholics
- But regional differences remain

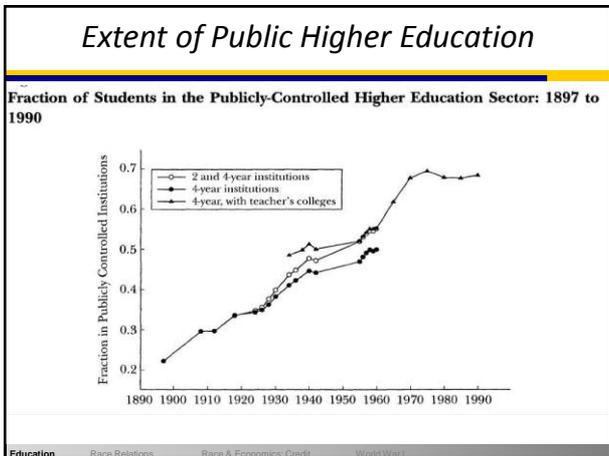


Table 13. Determinants of State Support for Higher Education, 1929

	Log of Gov't spending on higher education per capita	
% labor force in mining	4.14 (1.59)	2.38 (1.62)
% labor force in agriculture	1.73 (0.85)	1.45 (0.79)
% labor force in manufacturing	2.47 (1.57)	3.05 (1.47)
% population Catholic	-.631 (0.58)	-.628 (0.54)
Log (auto registrations per capita)	1.31 (0.28)	1.06 (0.27)
Private college enrollment per 1000 residents		-.258 (0.095)
West (0/1 dummy variable)	0.803 (0.26)	0.782 (0.24)
South (0/1 dummy variable)	0.753 (0.024)	0.667 (0.23)
East North Central (0/1 dummy variable)	0.493 (0.21)	0.386 (0.20)
Constant	-1.68 (1.79)	-0.115 (1.76)
R ²	0.759	0.798
n	48	48

Notes: standard errors in parentheses

What's the Story?

- State support of colleges higher with
 - more mining, agriculture, or manufacturing
 - fewer Catholics
 - more car registrations
 - lower private enrollment
- Strong regional differences remain

Analogical Reasoning

- Is 1929 funding of higher education a good & relevant historical analogy for today's public policy issue of public college & university funding?
- What variables are suggested by Goldin & Katz's work? What additional variables might we want to consider?