

Econ 113: March 12, 2015

- For fun: [WWI ads](#)
(also seen on the walls in Prof. Olney's office)
 - A Bit of Macro
 - The 1920s & 1930s quick overview
 - A Film!
 - Detail: The Macroeconomy in the 1920s and 1930s
- Problem Set #2 due next Thursday March 19*

Barro & Economics Credit Some Background The 1920s and the 1930s

The Interwar Years: 1919-1941

- Lack of Information
 - No aggregate statistics available then
 - Not even conceptualized until after World War II
 - No “unemployment rate”
 - No “gross domestic product”
- No cohesive agreed-upon economic model
 - Keynes, *The General Theory*, isn't published until 1936
- Presidential administrations (inauguration was March 4)
 - Woodrow Wilson – 1913 – 1921
 - Warren G Harding – 1921 – August 1923
 - Calvin **Coolidge** – August 1923 – 1929
 - Herbert **Hoover** – 1929 – 1933
 - Franklin Delano **Roosevelt** – 1933 – 1945

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A Bit of Macro

- **KEY: Businesses hire people if it's profitable**
 - Must reasonably expect to sell what you produce
- Unemployment depends on output
 - When less output is produced, fewer people have jobs
- Output per year = gross domestic product, GDP
- GDP depends on Aggregate Demand (AD)

$$AD = C + I + G + (EX - IM)$$

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$AD = C + I + G + (EX - IM)$

- C
- I
- G
- EX - IM

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Determinants of AD

- Consumption (C) depends upon
 - Disposable income (“take-home pay”)
 - Wealth
 - Maybe interest rates, maybe not
 - Confidence & expectations for future
- Investment (I) depends upon
 - Interest rates
 - Availability of funds
 - Expected profitability of project

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The 1920s

- “Roaring” Twenties
 - Output growing
 - Unemployment low
 - Capacity utilization rate peaks 1926
 - Prices mostly steady
 - Stock market booms
 - Business failure rate elevated
 - Housing construction peaks 1926
 - Income distribution becomes more uneven
 - Big surge in consumer installment debt

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The 1930s

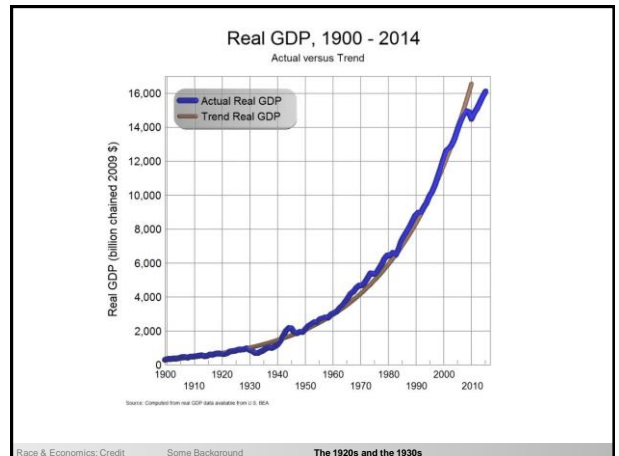
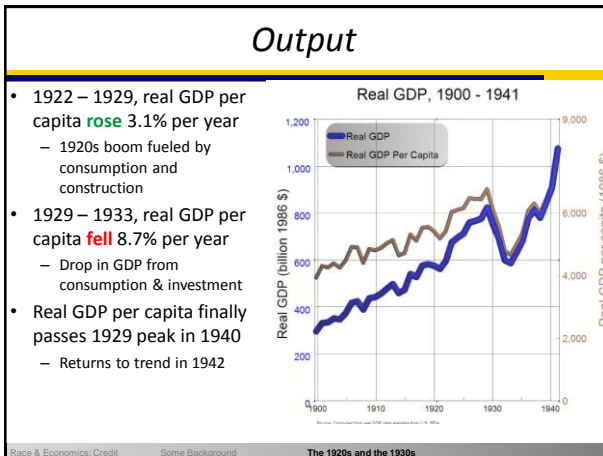
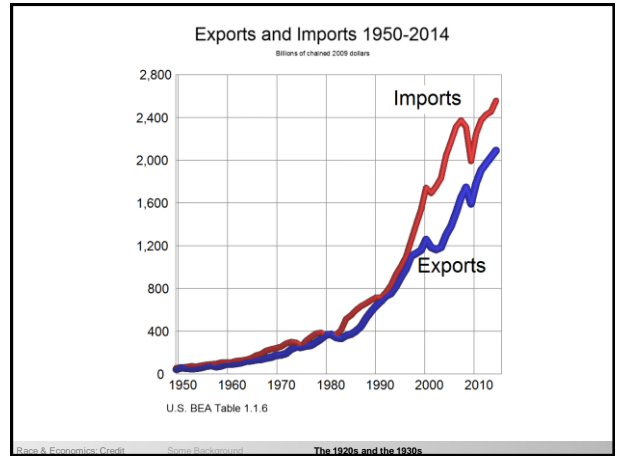
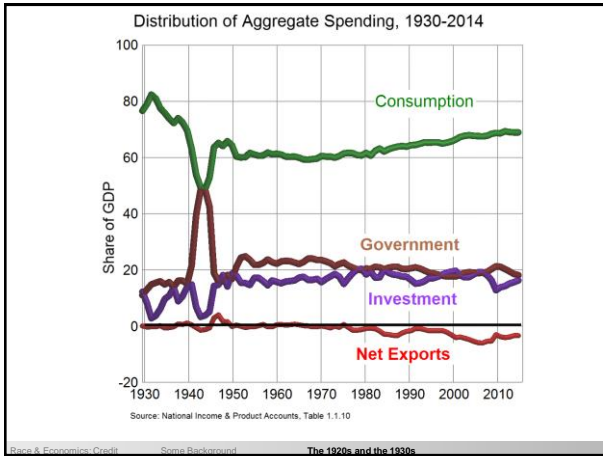
- The “Great Depression” refers to the entire decade
 - August 1929-March 1933: recession
 - March 1933-May 1937: recovery
 - May 1937-June 1938: recession
 - June 1938-Dec 1941: recovery
- From 1929 - 1933
 - Output fell *a lot*
 - Unemployment rose *a lot*
 - Capacity utilization fell *a lot*
 - Prices fell *a lot*
 - Banks failed *a lot*
 - The stock market fell *a lot*

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What were people saying then?

- A film: “Brother Can You Spare a Dime?”
 - Media Center VIDEO/C 2465 or DVD X8056
 - You can check it out and watch it there
- It’s a 1932 British documentary with archival footage

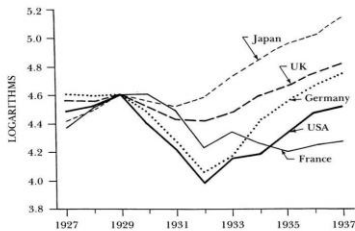
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International Comparison

- US depression earlier & more severe

Annual Industrial Production in Five Countries, 1927-1937

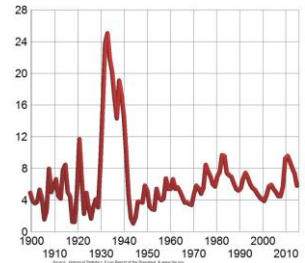


Sources: The data on industrial production for 24 countries are from the League of Nations (1936, Appendix II, Table 2, p. 142 and 1938, Table 1, p. 44).
Source: Romer, JEP Spring 1993, Figure 1

Unemployment Rate

- (All data are "backcast" – estimated based on available information)
- Generally low in 1920s
- Peaks at over 25% in 1933
- Stays above 10% entire 1930s
- Falls to pre-1929 level in 1942

Unemployment Rate, 1900 - 2014

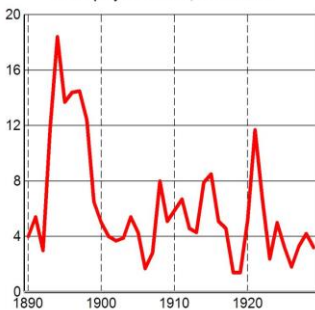


Unemployment Rate

Table 1. Unemployment Rate

1920	5.2	1931	16.3
1921	11.7	1932	24.1
1922	6.7	1933	25.2
1923	2.4	1934	22.0
1924	5.0	1935	20.3
1925	3.2	1936	17.0
1926	1.8	1937	14.3
1927	3.3	1938	19.1
1928	4.2	1939	17.2
1929	3.2	1940	14.6
1930	8.9	1941	9.9

Unemployment Rate, 1890-1929



Source: Historical Statistics, Series D8.

Capacity Utilization Rate

- A measure of how much the capital stock is being used
 - 100 minus capacity utilization rate is sort of "unemployment rate of capital"
- Peaks mid-1920s
- Hits shockingly low level of 42 in 1932

Table 2. Capacity Utilization Rate

1920	94	1930	66
1921	65	1931	53
1922	80	1932	42
1923	94	1933	52
1924	84	1934	58
1925	91	1935	68
1926	89	1936	80
1927	83	1937	83
1928	82	1938	60
1929	83	1939	72

Prices

- 1920s, prices mostly stable, down slightly
- 1929-1933
 - Consumer prices fall about 25 %
 - Wholesale prices fall about 30 %



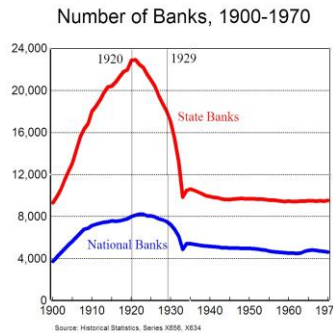
Business Failure Rate

- Business failure rate high throughout 1920s, despite expansion of economy
 - Possibly an indicator of structural change
- Peaks 1933



Banks

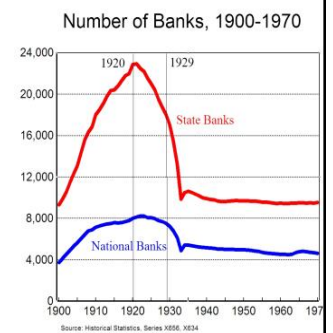
- Bank failures begin in 1920
- Major bank runs in
 - October 1930
 - Spring & Fall 1931
 - January 1933
- Nationwide bank “holiday” declared March 9, 1933
 - Closes all banks temporarily
 - Ends runs



Banks

Table 3. Banks Closed

	Bank Closings		total banks in operation
	state banks	national banks	
1920	160	7	30,291
1921	453	52	30,456
1922	317	49	30,120
1923	556	90	29,829
1924	653	122	28,988
1925	500	118	28,442
1926	853	123	27,742
1927	578	91	26,650
1928	441	57	25,798
1929	595	64	24,970
1930	1,189	161	23,679
1931	1,884	409	21,654
1932	1,177	276	18,734
1933	2,899	1,101	14,207



Financial Sector

- Stock Market
 - Peaks in September 1929
 - Crashes October 24 & October 29, 1929
 - Doesn't get back to 1929 peak until 1951

S&P Stock Prices (1941-43=10)

	Shares sold on NYSE (million shares per year)	Standard & Poor's Common Stock index (1941-43=100)
1921	173	69
1922	259	84
1923	236	86
1924	282	90
1925	454	111
1926	451	126
1927	577	153
1928	920	199
1929	1,125	260
1930	810	210
1931	577	137
1932	425	69
1933	655	90
1934	324	98
1935	382	106
1936	496	155
1937	409	154
1938	297	115
1939	262	121
1940	208	110

S&P Stock Prices & Sales, 1910-1943

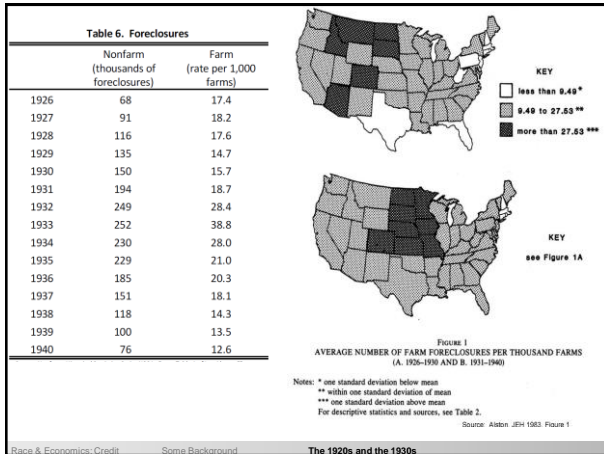
Households & Housing

- Immigration restrictions of 1921 and 1924 lower household formation rate
- Construction boom peaks 1925

Year	Starts	Year	Starts
1920	196	1927	643
1921	359	1928	594
1922	574	1929	400
1923	698	1930	236
1924	716	1931	174
1925	752	1932	64
1926	681	1933	45

Bad Mortgage Debt

- Non farm foreclosures up, peak in 1933
- Farm foreclosures up as well
 - high farm mortgage debt
 - low farm earnings
 - too much WWI expansion



Interest rates move every which way

- Nominal rates on government bonds: **STABLE**
 - Fed began tightening, January 1928
- Nominal rates on prime commercial paper: **DOWN**
 - From 5.8 to 1.7 percent
- Nominal Rates on BAA bonds (not in table): **UP**
 - From 6 to 11.5 percent

Interest Rates

- Nominal rates moved in both directions!

Table 7. Nominal Interest Rates and Yields

	FRB-NY Discount Rate	Banks' Business Loan Rate	Prime Commercial Paper Rate	Yield on Federal Government Bonds	Yield on Corporate Aaa Bonds
1928	3.5-5.0	5.2	4.8	3.3	4.6
1929	4.5-6.0	5.8	5.8	3.6	4.7
1930	2.0-4.5	4.9	3.6	3.3	4.6
1931	1.5-3.5	4.3	2.6	3.3	4.6
1932	2.5-3.5	4.7	2.7	3.7	5.0
1933	2.0-3.5	4.3	1.7	3.3	4.5

But real rates were rising

Quarterly Commercial Paper Rates in the United States, 1927-1937

Real rate = nominal rate - inflation rate

Wealth Distribution Worsens

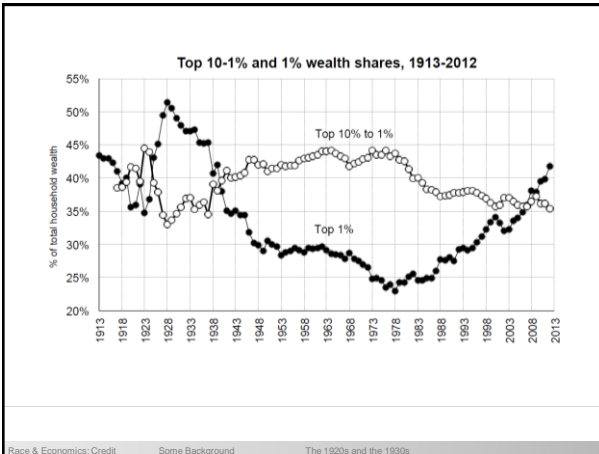
- Wealth distribution becomes more skewed in 1920s

- The next 3 slides are from a presentation by Saez & Zucman
- Source for next 3 slides, Prof. Saez's website
 - <http://eml.berkeley.edu/~saez/SaezZucman14slides.pdf>
 - Slides 23-25

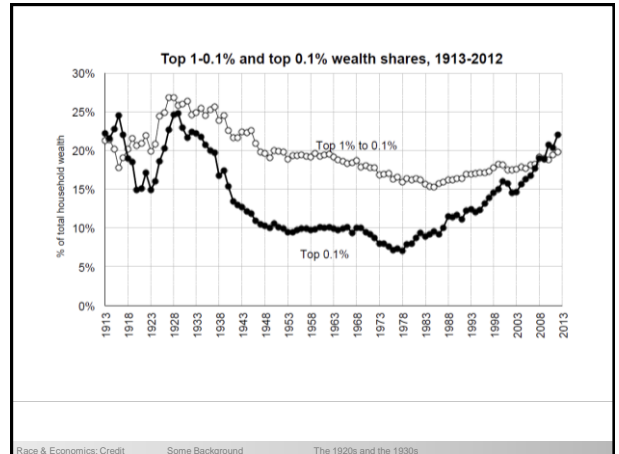
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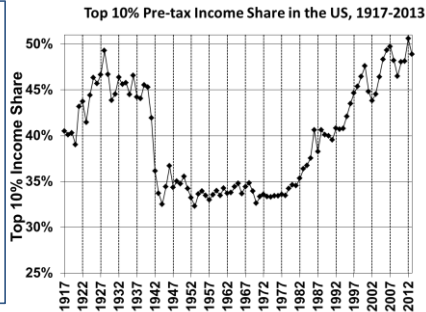


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Income Distribution Worsens

Share of income going to top 10%

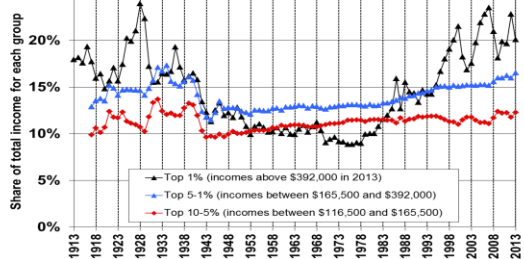
Source: Prof. Saez's website, <http://eml.berkeley.edu/~saez/#income>, specifically <http://eml.berkeley.edu/~saez/TabFig2013prel.xls>



Source: Piketty and Saez, 2003 updated to 2013. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.

Top 1, 5, and 10 % Income Groups

Decomposing Top 10% into 3 Groups, 1913-2013



Source: Piketty and Saez, 2003 updated to 2013. Series based on pre-tax cash market income including realized capital gains and excluding government transfers.

Source: Prof. Saez's website, <http://eml.berkeley.edu/~saez/TabFig2013prel.xls>

Components of GNP

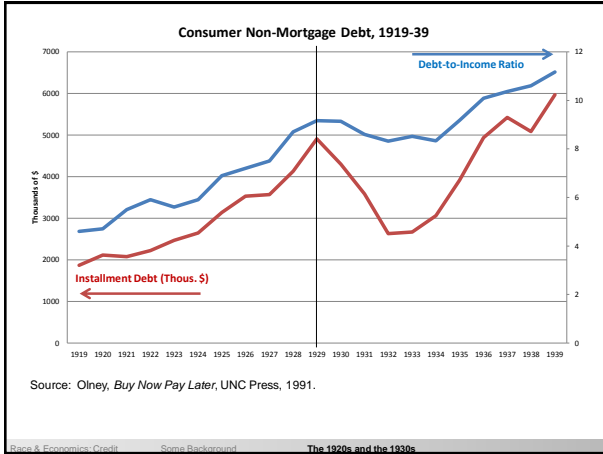
- $GNP = C + I + G + NX$
- C & I contribute the most to drop in real GNP

Table 8. Sources of Drop in Real GNP

	% Δ Real GNP	Share of Drop in GNP Due to:				
		Consumption	Inventory Investment	Fixed Investment	Net Exports	Government Purchases
1921	-2.4	-195	256	51	43	-56
1930	-9.3	46	24	38	2	-10
1931	-6.2	38	3	62	6	-9
1932	-15.8	50	20	26	1	4
1933	-3.0	66	4	19	9	3
1938	-5.5	22	94	38	-26	-28

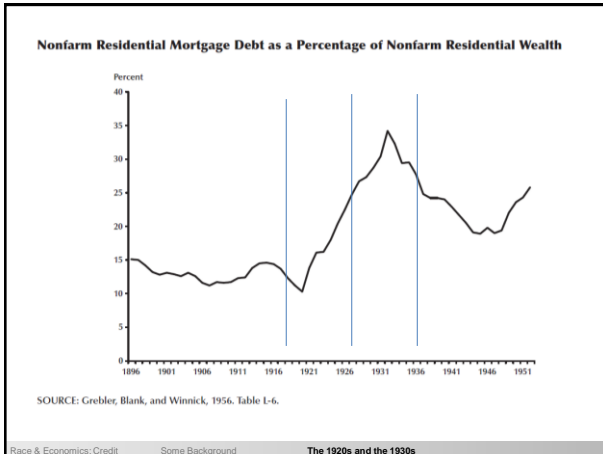
About Consumption

- Consumer Durables Revolution in the 1920s
 - Facilitated by rise of installment credit
 - 70 to 90 % of consumer durables bought on installments in 1920s
- Consumer debt-to-income ratio doubles in 1920s



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Consumption Spending

- Consumption collapses in 1930
- Nearly all categories of C decline

	% change	Contribution to change in total C
<i>Total C</i>	-6.2 %	100.0 %
Food & tobacco	-2.2	9.6
Clothing & shoes	-9.8	15.1
Personal care	-4.6	1.2
Housing	-1.2	1.7
Household operation	-7.1	15.7
Medical care	-0.9	0.9
Personal business	-15.3	33.0
Transportation	-14.5	23.5
Recreation	-3.9	3.2
Education & research	4.0	-0.9
Religion & welfare	5.9	-1.7

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Negative Net Investment

Table 10. Investment as a share of GNP

	Gross Investment / GNP	Net Investment / GNP
1929	15.7	8.7
1930	11.4	3.1
1931	7.4	-1.7
1932	1.7	-8.8
1933	2.5	-7.7
1934	5.1	-3.8
1935	8.9	0.8
1936	10.3	3.2
1937	13.1	5.9
1938	7.7	-0.1
1939	10.3	3.1

- Net investment = gross investment (I) – depreciation
 - Measures additions to capital stock
- Negative net investment means gross investment (I) is less than depreciation

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Government Spending

Table 11. Budget Surplus or Deficit (billions of \$)

	Federal	State & Local	TOTAL
1929	1.2	-0.2	1.0
1930	0.3	-0.6	-0.3
1931	-2.1	-0.8	-2.9
1932	-1.5	-0.3	-1.8
1933	-1.3	-0.1	-1.4
1934	-2.9	0.5	-2.4

- It's the change in deficit (not existence of deficit) that matters
- Expansionary fiscal policy in 1930 & 1931
 - deficit growing
- Contractionary fiscal policy 1932 & 1933
 - deficit shrinking

Source: Historical Statistics, Series F558-F560.

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Net Exports

- Net Exports decline in 1930s
 - maybe due to higher tariffs
- But unimportant
 - small share of GDP drop

Table 12. Tariff Rates

	Average Rate on all goods	Average Rate on dutiable goods only
1920	6	16
1921	11	29
1922	15	38
1928	13	39
1929	13	40
1930	15	45
1931	18	53
1932	20	59
1933	20	54

Source: Historical Statistics, Series U211 and U212. Tariff rates are lowered after World War II.

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Three Research Questions

1. Why did the downturn occur?
 2. Why was the depression so severe?
 3. Why was the depression so long?
- **Important:** Keynesian model not published until 1936

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