Econ 113: March 31, 2015

- Great Depression: Getting Back Into Gear
- Explaining the Recovery
  - Slow growth
  - Rapid growth

Response Paper #2 due Thursday April 2
Term Paper due Thursday April 16
Last Class is Thursday April 30

Great Depression: Getting Back into Gear

1. What are three most salient facts re Great Depression?
   a) Rank these: #1, #2, #3 (and 4, 5, etc if you must)
2. Why is it important to explain 1930 drop in Consumption?
   a) What's one explanation for the drop?
3. What is the difference between bank illiquidity and bank insolvency?
   a) Why does "lender of last resort" help with one problem (which one) but not the other?

Investment Decline

- Credit Intermediation (1980s)
  - Ben Bernanke (now chair of the Fed)
- Bank failures → loss of credit intermediation for small businesses
- Less borrowing means less investment

Investment decline, continued

- Gold standard rigidity (1990s)
  - Barry Eichengreen
  - Convertibility of paper currency into gold
- Fixed exchange rates require central bank intervention
- Key date: September 1931
  - England suspends convertibility
  - Worldwide fear the U.S. will do so also
  - Fed prevents gold outflow by increasing interest rates

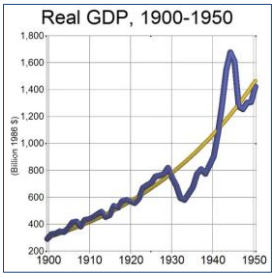
The Slow Recovery

- Unemployment above 10 % until 1942

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

- Real GDP doesn't return to trend until 1942



Was length due to fiscal policy?

- Three important points
  - [1] Fiscal stimulus essentially absent until WWII
    - AD ↑ only when budget deficit increases
  - [2] Federal *plus state & local* deficit spending is what matters
    - Looking only at federal deficit can be misleading
  - [3] on next slide

Table 3. Budget Surplus or Deficit
($ billions)

	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
1935	-2.6	0.6	-2.0
1936	-3.6	0.5	-3.1
1937	-0.4	0.7	0.3
1938	-2.1	0.4	-1.7
1939	-2.2	0.0	-2.2

Discretionary fiscal policy (mostly) untried

- [3] Automatic stabilizers less relevant than changes in discretionary spending
  - Evaluate change in deficit *relative to full-employment GDP*
  - 1931 & 1936: federal government paid veterans' bonuses

Table 4. Net Shift in Full-Employment Demand As a Percent of Full-Employment GNP

	Federal	State & Local	Total
1929	-0.4	1.8	1.4
1930	0.0	2.0	1.9
1931	1.7	1.8	3.6
1932	1.0	0.9	1.8
1933	0.5	0.1	0.5
1934	2.0	-0.4	1.5
1935	1.9	-0.3	1.6
1936	2.5	0.2	2.7
1937	0.1	0.1	0.2
1938	1.2	0.0	1.2
1939	1.4	0.5	2.0

Source: E. Cary Brown, "Fiscal Policy in the 'Thirties: A Reappraisal," *American Economic Review* (Dec. 1956): 864-865.

When used, discretionary policy mattered

- Josh Hausman (2013 Econ Ph.D.)
  - What was effect of 1936 payment of veterans' bonuses?
    - Data source: 1935-36 consumer purchases survey
  - Typical payment about $500 per veteran
    - Could buy a car with that!
    - Equivalent of nearly one year's income
  - Households with veterans spent more money than others

Was length due to structural change?

- Work by Michael Bernstein (Tulane)
- Investment Falling
  - Textiles
  - Iron & Steel
  - Lumber
- Investment Rising
  - Appliances
  - Chemicals
  - Processed Food
  - Petroleum
  - Tobacco

Why Recovery Was So <u>Fast</u>

- Christina Romer (UCB)
- Rapid money supply growth

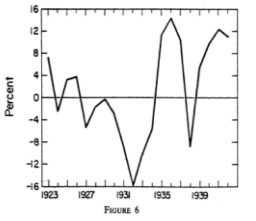


FIGURE 6
DEVIATIONS OF MONEY GROWTH RATE FROM NORMAL, 1923–1942

Table 5. Fast Recovery

	real GNP *($ Billions)*	%Δ of real GNP	M2 *(Billions)*	%Δ in M2
1929	203.6	6.7	46.60	0.4
1930	183.5	-9.9	45.73	-1.9
1931	169.3	-7.7	42.69	-6.6
1932	144.2	-14.8	36.05	-15.6
1933	141.5	-1.9	32.22	-10.6
1934	154.3	9.0	34.36	6.6
1935	169.5	9.9	39.07	13.7
1936	193.0	13.9	43.48	11.3
1937	203.2	5.3	45.68	5.1
1938	192.9	-5.1	45.51	-0.4
1939	209.4	8.6	49.27	8.3

Source: Real GNP: *Historical Statistics*, Series F3 and X415.

Estimating policy effect

$$\text{output change}_t = \beta_m(\text{monetary change})_{t-1} + \beta_f(\text{fiscal change})_{t-1} + \epsilon_t \quad (1)$$

TABLE 1
CALCULATION OF THE POLICY MULTIPLIERS

Substituting data into equation 1 and setting ϵ_t equal to zero yields:

1921: $-0.0554 = \beta_m(-0.0424) + \beta_f(0.0878)$
1938: $-0.0772 = \beta_m(-0.0877) + \beta_f(0.0218)$

Solving two equations for two unknowns yields:

$$\beta_m = \frac{(-0.0554)(0.0218) - (0.0878)(-0.0772)}{(-0.0424)(0.0218) - (-0.0877)(0.0878)} = 0.823$$

$$\beta_f = \frac{-0.0772 - \beta_m(-0.0877)}{0.0218} = -0.233$$

Comparing Fiscal & Monetary Policy

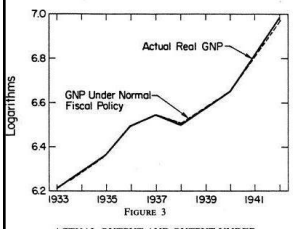


FIGURE 3
ACTUAL OUTPUT AND OUTPUT UNDER NORMAL FISCAL POLICY, 1933–1942

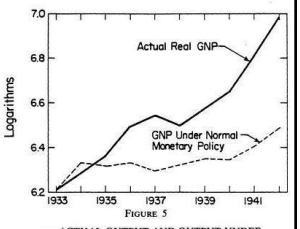


FIGURE 5
ACTUAL OUTPUT AND OUTPUT UNDER NORMAL MONETARY POLICY, 1933–1942

Real interest rates

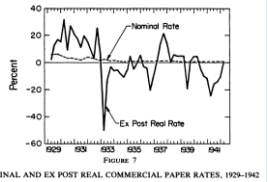


FIGURE 7

NOMINAL AND EX POST REAL COMMERCIAL PAPER RATES, 1929–1942

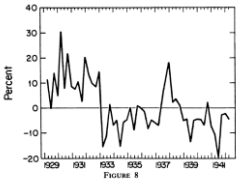
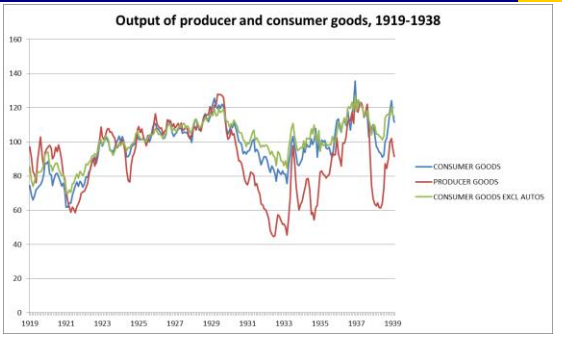


FIGURE 8

EX ANTE REAL COMMERCIAL PAPER RATES, 1929–1942

Production



Rates of growth of output (PS 2)

Rates of Growth of Output, 1933-1938				
		producer goods output	consumer goods output	consumer goods output excl autos
Annual Rates of Change	1933-34	60.0%	24.1%	13.3%
	1934-35	11.4%	6.6%	2.0%
	1935-36	6.0%	5.8%	8.5%
	1936-37	42.2%	16.4%	16.2%
	1937-38	-47.3%	-21.8%	-15.2%
Average Annual Rates of Change (Geometric average)	1933-34	60.0%	24.1%	13.3%
	1933-35	33.5%	15.0%	7.5%
	1933-36	23.6%	11.9%	7.8%
	1933-37	28.0%	13.0%	9.9%
	1933-38	7.2%	5.0%	4.3%

Regression Analysis from PS 2

Producer Goods Output regressed on Money Supply, 1919:1 - 1938:12

Regression Statistics	
Multiple R	0.578
R Square	0.334
Adjusted R Square	0.331
Standard Error	16.749
Observations	240

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	33511.63	33511.63	119.4519	0.0000
Residual	238	66769.7	280.545		
Total	239	100281.3			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-2.633	8.597	-0.306	0.760	-19.569	14.302	-19.569	14.302
X variable (money supply)	0.004	0.000	10.929	0.000	0.003	0.004	0.003	0.004