

Econ 113: March 19, 2015

- 1920s & 1930s data: C I G NX
- Explaining the Downturn
- Explaining the Severity
 - Consumption Decline
 - Money & Banking

Problem Set #2 due Thursday March 19
Response Paper #2 due Thursday April 2
Term Paper due Thursday April 16
Last Class is Thursday April 30

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline Severity: Money & Banking

Consumption Spending

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

Table 9. Real Consumption Spending, 1929-1930

	% change	Contribution to change in total C
Total C	-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

Source: Historical Statistics, Series F558-F560.

- 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

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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

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline Severity: Money

Explaining the Downturn

- Not a puzzle
- Due to Drop in Investment
 - Fed increased interest rates beginning January 1928
 - Fixed investment lower due to higher interest rates and to accelerator effect
 - ↓ *rate of growth* of sales leads to ↓ Investment
 - Residential investment lower due to higher interest rates and to 1920s overbuilding

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline Severity: Money

Explaining the Severity

- Lots of Old Ideas
 - Classical labor market analysis
 - Labor Supply > Labor Demand . . . So drop wages
 - Business cycle theories
 - Natural boom & bust cycle . . . So wait it out
 - Insufficient aggregate demand
 - Investment fell, triggering consumption multiplier; fiscal policy not tried
 - Money hypothesis
 - Fed could have prevented drop in Money Supply
- But we really need to focus on consumption (see Table 8) and, to a lesser extent, investment spending

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline Severity: Money

Repeat: Components of GNP

- C & I contribute the most to drop in real GNP

Table 8. Sources of Drop in Real GNP

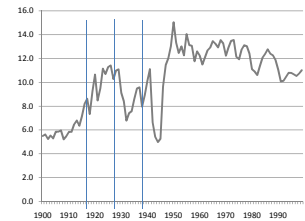
	% Δ Real GNP	Share of Drop in GNP Due to:				
		Consumption	Inventory Investment	Fixed Investment	Net Exports	Government Purchases
1921	-2.4	-195	256	51	43	-56
1930	-9.3	46	24	38	2	-10
1931	-6.2	38	3	62	6	-9
1932	-15.8	50	20	26	1	4
1933	-3.0	66	4	19	9	3
1938	-5.5	22	94	38	-26	-28

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About Consumption

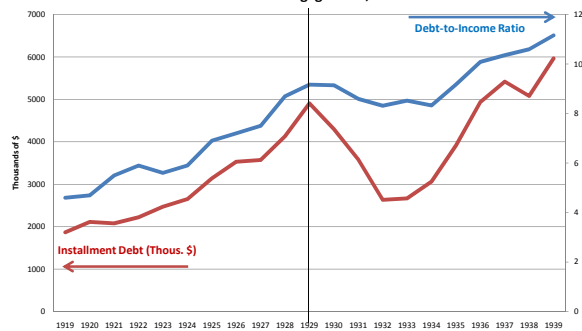
- Consumer Durables Revolution in the 1920s
 - Increase in purchases of durables
 - Income elasticity doubles after WWI, stays same through post-WWII period
 - Key feature: rise of installment credit
 - 70 to 90 % of consumer durables bought on installments in 1920s
- Consumer debt-to-income ratio doubles in 1920s

Durable Goods as a Share of Total Consumption, 1900-1999



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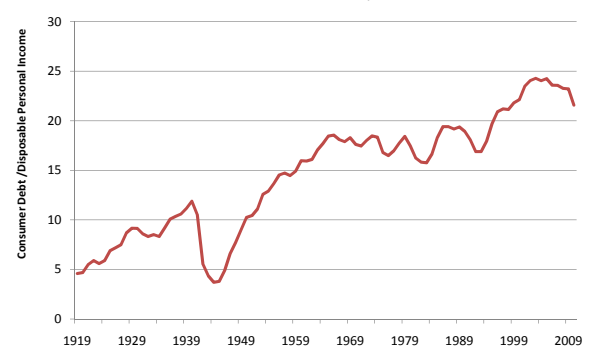
Consumer Non-Mortgage Debt, 1919-39



Source: Olney, *Buy Now Pay Later*, UNC Press, 1991.

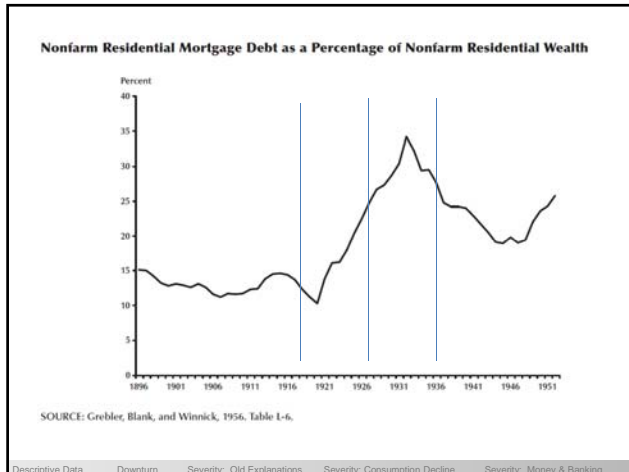
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Consumer Debt-to-Income Ratio, 1919-2010



Sources: 1919-1929, Olney *Buy Now Pay Later*, 1991, Table 4.1; 1929-1942, Debt data from Goldsmith, *Study of Saving*, Vol I, Table D-1 and income data from *Historical Statistics* (2006), Series Ca68; 1943-2011, consumer credit outstanding downloaded from FRED, disposable personal income from BEA website.

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Consumption Decline

- Avoid “distress sale” of durable goods
 - Frederic Mishkin (1980s)
- Loss of wealth if quickly sell durables
- Real debt up or wealth down?
 - Avoid buying durables
 - In order to avoid distress sale
- Implication?
 - Consumer durables bought for asset value

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline

Consumption decline, cont’d

- Postpone irreversible durable & semi-durable good purchases
 - Christina Romer
- Wealth tied up (“distress sale” impossible)
- Increased uncertainty?
 - Postpone postpone-able purchases
 - Shift toward services, nondurables
- Implication?
 - Stock market crash affected almost everyone

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline

Consumption decline, cont’d

- Avoid default on installment contracts
 - Martha Olney
- Durables purchased on installments
 - New auto contracts at GMAC: \$1.1bn in 1929, \$0.7bn in 1931, \$0.4bn in 1932, \$1.4bn in 1937
 - Default? Result is loss of wealth
 - Repo rate: 5.4% in 1930, 10.4% in 1932, 15.1% in 1938
- Loss of income (actual or expected)?
 - Cut back wherever possible so able to make payments
- Implication?
 - Financial institutions matter!

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline

Table 1.
Analysis of Consumption Spending, 1919-1941

	Nondurable goods (real expenditure)	
Constant	-31.021 (19.549)	43.589* (10.274)
Real disposable income	0.426* (0.062)	0.181* (0.030)
Real wealth	0.029* (0.010)	0.043* (0.007)
Lagged debt variables included?	No	Yes
Observations (n)	23	23
Residuals (actual - fitted expenditure)		
1921	-0.434	-3.185
1930	-17.994	-5.704
1938	25.498	-1.712

Source: Olney, "Avoiding Default," Table V.
Notes: *Coefficient is statistically significant at 99 percent level

Descriptive Data Downturn Severity: Old Explanations **Severity: Consumption Decline** Severity: Money & Banking

Anticipated wage cut → decrease C

Table 2.
Percentage Decrease in Consumption When a 10 Percent Decrease in Income is Anticipated
(Initial Income=\$100; Saving=3 percent of income; Installment Payment=\$30; Initial Consumption=\$67)

Number of Remaining Payments	Income Drop Anticipated in Two Months				Income Drop Anticipated in One Month			
	2	6	10	14	2	6	10	14
Revised Total Income to End of Contract	\$200.00	\$60.00	\$20.00	\$1280.00	190.00	\$50.00	\$10.00	\$1270.00
Revised Monthly Consumption	\$67.00	60.53	59.24	58.69	62.15	58.92	58.27	57.99
Percentage Decrease in Consumption	0%	9.7	11.6	12.4	7.2	12.1	13.0	13.4

Source: Olney, "Avoiding Default," Table VI.

Descriptive Data Downturn Severity: Old Explanations **Severity: Consumption Decline** Severity: Money & Banking

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

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Money Hypothesis (1960s)

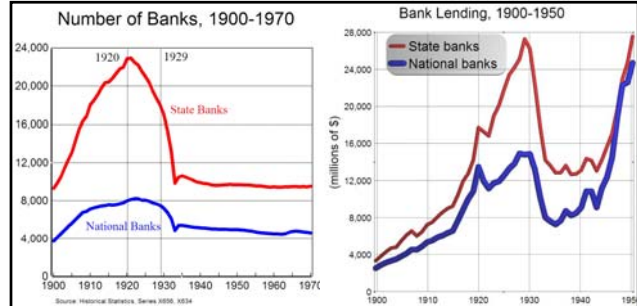
- Milton Friedman & Anna Schwartz
- Based on Quantity Theory
 - $MV = PQ$
- Money demand & Money supply determine M

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline **Severity: Money & Banking**

Money hypothesis, continued

- Subtle argument
 - M fell because M supply fell
 - Fed *could* have prevented drop in M supply
 - Fed could have forced increased M by increasing reserves
- Policy implication?
 - Expansionary monetary policy vital
- Critiques
 - Theoretical point: Fed can't force banks to lend
 - Historical point: Fed policy goal was stability of *banking system*
 - Not stability of the *economy*

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline Severity: Money & Banking



Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline Severity: Money & Banking

Illiquidity or insolvency?

Illiquidity: assets are not liquid (i.e., transactions costs of quickly converting assets to cash prohibitively high)

Insolvent: Liabilities > Assets, so net worth < 0. "Bankrupt"

Assets (things bank owns)	Liabilities (things bank owes to others)

Assets (things bank owns)	Liabilities (things bank owes to others)

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline Severity: Money & Banking

Illiquidity or insolvency?

- Why did banks fail?
- Possibility: Illiquid
 - Panicked depositors demanding cash
 - Insufficient reserves against big demands for withdrawals
 - In this case: bank failure as a cause of further economic decline
- Possibility: Insolvent
 - Borrowers unable to repay loans and default
 - Assets (loans) decrease in value, perhaps until $A < Liabilities$
 - In this case: bank failure as an effect of economic decline

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline Severity: Money & Banking

Could monetary policy have helped?

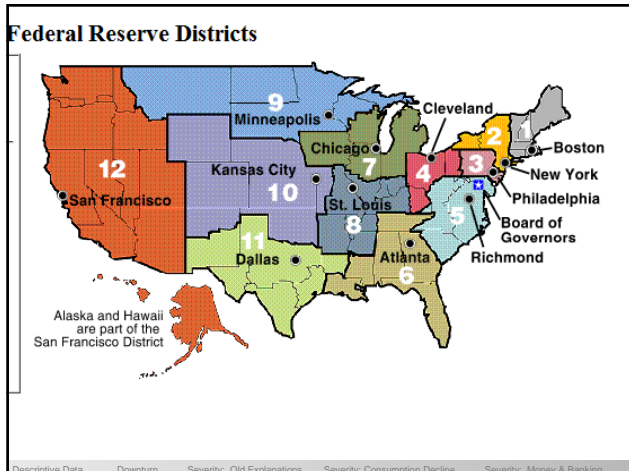
- Bank failures due to illiquidity (insufficient reserves) can be averted if some agency acts as “lender of last resort”
 - Usually, a central bank
- Between 1836 & 1914, no central bank in the U.S.
- Fed policy
 - No over-arching policy board
 - Policy differed by Fed district

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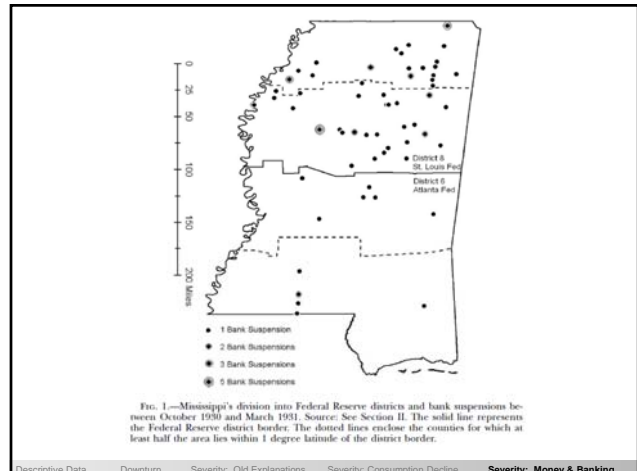
Assessing Fed Policy

- Econometric challenge
 - If 2 Fed districts have different policies, but the areas in those 2 districts have different economies, then is it the policies or the economies that matter?
 - What about areas that have the same economies but are in two different districts?
- Mississippi !
 - Paper by Gary Richardson & William Troost (not assigned)
 - Southern half is in 6th district (Atlanta Fed)
 - Atlanta Fed lent reserves to ailing banks
 - Northern half is in 8th district (St Louis Fed)
 - St Louis Fed did not lend to banks on the brink of failure

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline Severity: Money & Banking



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Richardson & Troost Findings

- Reminder: Atlanta: lent to failing banks
St Louis: didn't lend to failing banks
- Mississippi banks in the Atlanta Fed district survived at much higher rates than did Mississippi banks in the St Louis Fed district
 - Especially in the Fall 1930 panic
 - Less so in the Fall 1931 & Winter 1933 panics
- So what?
 - Commercial activity strongly affected by decline in lending, especially during the panics

Descriptive Data Downturn Severity: Old Explanations Severity: Consumption Decline Severity: Money & Banking

Table 3. Effect of Mississippi bank failures on transactions
(Dep. variable: DECLINE in net wholesale transactions, 1929-1933)

	1.21*		
Decline in loans, 1929-33	(0.60)		
Decline in loans due to bank liquidations during 1930-31 panic	3.98* (0.96)	5.37* (0.68)	
Decline in loans due to bank liquidations <u>outside of panic period</u>	0.90 (0.67)	-0.88 (1.05)	
Decline in loans at surviving banks	-0.30 (0.42)	-0.45 (0.40)	
Loans at banks suspending temporarily during 1930-31 panic	0.155 (0.51)	-0.96** (0.53)	
Including only counties near border	no	no	yes
Observations (n)	82	82	39

Source: Richardson & Troost, "Monetary Intervention Mitigated Banking Panics during the Great Depression" *J. of Political Economy* 117 (Dec 2009): Table 9, Columns 2, 5, and 6.
Note: * Significant at the 5 percent level; ** Significant at the 10 percent level

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Jalil article: Atlanta & 4 other districts

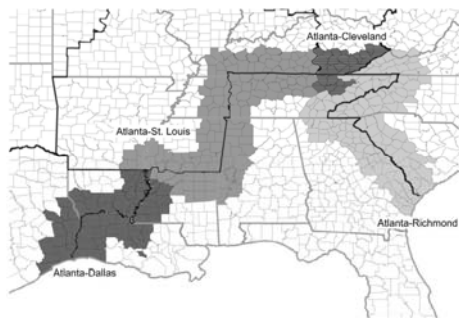


FIGURE 1
COUNTIES WITHIN FIFTY MILES OF ATLANTA FED DISTRICT BORDER

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Table 4. Effect of Atlanta Fed on Bank Suspension Rate
(Dependent variable: county bank suspension rate)

Monetary Regime Fixed Effect	Regression 1	Regression 2
Atlanta 1927	-0.011 (0.006)	-0.003 (0.006)
Atlanta 1928	0.005 (0.010)	0.013 (0.010)
Atlanta 1929	-0.078** (0.024)	-0.071** (0.023)
Atlanta 1930	-0.016** (0.017)	-0.037* (0.017)
Atlanta 1931	-0.033 (0.019)	-0.024 (0.019)
Atlanta 1932	-0.018 (0.030)	-0.010 (0.029)
Atlanta 1933	0.000 (0.007)	0.008 (0.006)
County-Level Controls	yes	no
Observations (county-years)	2,492	2,492

Source: Jalil, "Banking Panics," Table 3.
** Significant at 1%. * Significant at 5%.

Result: Banks in Atlanta district failed (suspended operations) **less** often in 1929 & 1930

But no difference in 1931-33

Suggests: **Illiquidity** was the problem, 1929-30 – Fed could have helped banks

Insolvency was the problem, 1931-33

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