Reading

• This material
  – Friedman and Schwartz, The Great Contraction

• Next time on bitcoin
  – Dwyer and Michel, Bits and Pieces: The World of Digital Currency
  – More technical and wide ranging: Dwyer, The Economics of Bitcoin and Similar Private Digital Currencies
Bernanke

• “Regarding the Great Depression. You’re right, we did it. We’re very sorry. But thanks to you, we won’t do it again.” (Bernanke at Friedman’s 90th birthday celebration, F&S 2008, p. 247.)
  – Said in 2002
What Did the Fed Do?

• The Federal Reserve played a very important role in causing
  – The “Great Contraction” from 1929 to 1933
  – And to a lesser extent, the “Great Depression” from 1929 to 1938, 1939 or 1941
Time Magazine cover, October 2008
Great Contraction of 1929-1933

• Probably the most severe contraction in economic activity in U.S. history
• Real Gross Domestic Product fell by a third
• Prices fell by a quarter or more
• Stock prices fell by 75 to 90 percent
Industrial Production in the U.S.

January 1929 to December 1941
Unemployment Rate
1929 to 1943, United States

Year

1930 1934 1938 1942

Percent of labor force

Unemployment Rate 1929 to 1943, United States

official rate
'corrected' rate

Percent of labor force

Year

1930 1934 1938 1942
Consumer Price Index
January 1929 to December 1941
Stock Prices, CRSP
Dividends Reinvested
U.S. Unemployment Rate
January 1948 to September 2014

Sources: BLS, NBER, Haver Analytics
Consumer Price Index in the United States
Stock Prices, CRSP
Dividends Reinvested
Did They Do “It” in 2007 and 2008?

• Data say “no”

• What did they do in Great Contraction?
Money, Prices and Economic Activity

• Friedman and Schwartz’s achievement in *A Monetary History* was to show that the money stock is a causal factor in
  – Inflation
  – Economic activity

• You are reading one chapter in the book
Money, Prices and Economic Activity

- $MV = Py$
- $V$, the velocity of money, reflects the demand for money by firms and households
- Changes in $M$ and changes in $V$ can lead to changes in $P$ and $y$
- Real income affected initially and price level affected later
FIGURE 2
Money Stock, Currency, and Commercial Bank Deposits, Monthly, 1929–March 1933

Source: Table A-1.
The Stock of Money and Its Proximate Determinants, Monthly, 1929–March 1933

**FIGURE 6**

Money stock

High-powered money

Deposit-reserve ratio

Deposit-currency ratio

Source: Tables A-1 (col. 8) and B-3.
Why Decrease in M2?

- \[ M = mB \]
- \[ M = C + D \]
- \[ B = C + R \]

- Decrease in \( M \) must be due to
  - Decrease in \( m \)
  - Decrease in \( B \)
FIGURE 6

The Stock of Money and Its Proximate Determinants, Monthly, 1929–March 1933

Money stock
High-powered money
Deposit-reserve ratio
Deposit-currency ratio

Source: Tables A-1 (col. 8) and B-3.
Why Decrease in M2?

• $M$ decreased
• $B$ (high-powered money) increased
• By arithmetic, $m$ decreased
• Why did $m$ decrease?

$$m = \frac{1 + c}{c + r}$$

• Friedman and Schwartz use
  – Deposit-reserve ratio $r^{-1}$
  – Deposit-currency ratio $c^{-1}$
Multiplier Decrease and $r$

- $m = \frac{1 + c}{c + r}$

- $\frac{\partial m}{\partial r} = (1 + c) \frac{\partial (c + r)^{-1}}{\partial (c + r)} \frac{\partial (c + r)}{\partial r}$
Multiplier Decrease and $r$

- $m = \frac{1+c}{c+r}$

- $\frac{\partial m}{\partial r} = (1+c) \frac{\partial (c+r)^{-1}}{\partial (c+r)} \frac{\partial (c+r)}{\partial r}$

- $\frac{\partial m}{\partial r} = (1+c) \left[ -(c+r)^{-2} \right] < 0$

- Increase in reserve ratio and it decreased multiplier
Multiplier Decrease and $c$

- \( m = \frac{1+c}{c+r} \)

- \( \frac{\partial m}{\partial c} = \frac{1}{c+r} \frac{\partial (1+c)}{\partial c} + (1+c) \frac{\partial (c+r)^{-1}}{\partial (c+r)} \frac{\partial (c+r)}{\partial c} \)
Multiplier Decrease and \( c \)

- \[ m = \frac{1+c}{c+r} \]

- \[ \frac{\partial m}{\partial c} = \frac{1}{c+r} \frac{\partial (1+c)}{\partial c} + (1+c) \frac{\partial (c+r)^{-1}}{\partial (c+r)} \frac{\partial (c+r)}{\partial c} \]

- \[ \frac{\partial m}{\partial c} = \frac{1}{c+r} + (1+c) \left[ -(c+r)^{-2} \right] \]
Multiplier Decrease and $c$

- $m = \frac{1+c}{c+r}$

$$\frac{\partial m}{\partial c} = \frac{1}{c+r} \frac{\partial (1+c)}{\partial c} + (1+c) \frac{\partial (c+r)^{-1}}{\partial (c+r)} \frac{\partial (c+r)}{\partial c}$$

$$\frac{\partial m}{\partial c} = \frac{1}{c+r} + (1+c) \left[-(c+r)^{-2}\right]$$

$$\frac{\partial m}{\partial c} = \frac{1}{c+r} \left[1 - \frac{1+c}{c+r}\right] = \frac{1}{c+r} [1-m] < 0$$
FIGURE 6
The Stock of Money and Its Proximate Determinants, Monthly, 1929–March 1933

Source: Tables A-1 (col. 8) and B-3.
Multiplier Decrease

• Both reserve ratio and currency-deposit ratio increased
• Both are determined by behavior of private agents
  – Reserve ratio – banks
  – Currency-deposit ratio – households and firms
Fall in Money Stock

• Seems like Federal Reserve not responsible at all

• What was Bernanke thinking when he said
  – “Regarding the Great Depression. You’re right, we did it. We’re very sorry.”
Why the Increase in $c$ and $d$?

• There were repeated runs on the banking system from 1929 to 1933
  – Decrease in deposits and increase in currency and reserves
• Households were concerned that their banks would fail
  – And many did
• Banks were concerned that the Federal Reserve would not provide liquidity in the event of a run
  – And it didn’t
Summary

• The Federal Reserve was a major factor in the severity of the Great Contraction

• Fed let runs on banks go on and it stood on the sidelines
  – Claimed banks were unsound
  – And they did fail without liquidity
Summary

• What could the Federal Reserve have done differently?
  – It could have increased the monetary base more