What Friedman’s Monetary History Tells Us About Current Financial Turmoil
Milton Friedman, Monetary Theory, and the History of Chicago Economics

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Harris Public Policy

14 May 2020 (Draft May 14, 2020)
Financial crises are part of US (and world) history

- More common than we sometimes think

The memory of 2008 is fresh
But I think financial turmoil today is very different from 2008

- Today is an economic crisis, not (or not yet) a financial crisis

Three episodes, which teach us about money, banking, and liquidity crises:

- 1907-08: liquidity crisis, restricted convertibility, and depression
- 1930s: Fed failure, massive bank failures, and the Great Depression
- 2008: Quantitative Easing and how the Fed saved the financial system

Before turning to monetary history, let’s review Milton Friedman & his contributions
Outline

1. Introduction to Friedman’s Economics

2. Quick View: Permanent Income & Natural Rate

3. Monetary History and Three Financial Crises
   - Financial Crises are American as Apple Pie
   - Basics of Money and Banking
     - 1907: Liquidity Crisis, NY Banks Restrict Convertibility
     - 1913: Federal Reserve Founded
     - 1930s: Federal Reserve Fails
     - 1960s: Friedman & Schwartz Revise Monetary History, Educate the Fed
     - 2008: Federal Reserve (& Bernanke) Save the Financial System

4. The Current Financial Crisis – Not a Banking Liquidity Crisis

Find these notes (and Vignettes) at www.hilerun.org/econ
I will Focus on Milton Friedman’s Economics – Not Politics

Many “Histories of Chicago Economics” discuss people, politics, ideology

- Particularly Friedman, widely remembered for his popular TV shows and political advocacy

But I want to focus on Friedman’s economics: the Ideas and Concepts. Two Central Themes:

1. Taking economics seriously

2. Applying and testing economics empirically

In discussions of economic science, Chicago stands for an approach that takes seriously the use of economic theory as a tool for analyzing a startling wide range of concrete problems, ... that insists on the empirical testing of theoretical generalizations, and that rejects alike facts without theory and theory without facts. [1974 address to the University of Chicago Trustees. cf UofC Magazine Jan-Feb 2007, volume 99, issue 3]
Some of Friedman’s Contributions to Economics

• Statistics: “Friedman test”: non-parametric, repeated ranked treatments
  • Largely forgotten in recognizing Friedman’s contributions

• Consumption Function and Permanent Income
  • Motivated by puzzles from Keynes’s *General Theory* (Friedman 1957)
  • Concept of *Permanent Income* still used today
  • Central to question of fiscal stimulus – fiscal multiplier and marginal propensity to consume

• Methodology
  • How do we, as economists, make and test theories?
  • Fundamental and deep questions

• Phillips curve & Natural Rate of Unemployment
  • No inflation – unemployment trade-off
  • NAIRU or Non-Accelerating Inflation Rate of Unemployment
  • Basic microeconomics: people care about real wages, prices, etc.
  • I thought Friedman and Ned Phelps had killed the Phillips Curve in the 1960s
  • But still with us – like the Hydra it seems to always grow a new head

• Monetary History – maybe what Friedman is best remembered for
Friedman’s contributions are concentrated in *Macro*

- But everything he did was built on *Micro*
- Chicago *Price Theory* – The application of microeconomics to real problems

Chicago has a long tradition of using and teaching Price Theory

- Jacob Viner taught Econ 301 – “Price and Distribution Theory” – from the 1920s through 1946
- Friedman taught it for many years after Viner
- Econ 301, “Price Theory”, is still the core and central course for microeconomics for economics PhDs.
- Passed from one generation to the next: Viner taught Friedman; Friedman taught Becker; Becker taught Allen and myself. And we have taught some of you.
Jim Heckman (who you heard a week or two ago) lays out some “Ground Rules” – rules that Friedman would no doubt endorse.

1. Faculty know and understand the corpus of economic theory and economic empirical knowledge – not just their specialty within the field.

2. Students and faculty speak a common language – the language of basic price theory and the economics of incentives – and that we can communicate these ideas clearly.

3. Chicago views economics as a serious subject, tackling serious problems.

4. Chicago economics demands that scholars move beyond selective and self-serving appeals to “stylized facts” to “illustrate” theories and instead engages and promotes the serious scientific task of careful and creative analyses of data, linking theory and evidence. Chicago values the hard empirical work that produces convincing evidence and rigorous economic theorizing that produces lasting contributions to important problems.

Quoting from 2012 presentation at the Friedman Centenial Celebration.
Heckman’s “Three Ground Rules for Chicago Economics”

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1 Introduction to Friedman’s Economics

2 Quick View: Permanent Income & Natural Rate

3 Monetary History and Three Financial Crises
   Financial Crises are American as Apple Pie
   Basics of Money and Banking
   1907: Liquidity Crisis, NY Banks Restrict Convertibility
   1913: Federal Reserve Founded
   1930s: Federal Reserve Fails
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   2008: Federal Reserve (& Bernanke) Save the Financial System

4 The Current Financial Crisis – Not a Banking Liquidity Crisis
Permanent Income and *Theory of the Consumption Function*

Puzzle, related to Keynes’s *General Theory*, Marginal Propensity to Consume, and fiscal multiplier

- **MPC**: How much does Cons ↑ when Inc ↑? How much spent vs saved?
- Cross-section (point-in-time): MPC low, most saved (savings ↑)
- Time-series & cross-country: MPC near one, savings rate constant

Friedman has wonderful, and wonderfully simple, explanation:

- Permanent vs Transitory Income: \( \Delta Y = \Delta Y_{\text{perm}} + \Delta Y_{\text{trans}} \)
- \( \text{MPC}_{\text{perm}} \approx 1, \text{MPC}_{\text{trans}} \approx 0 \)
- We often mis-measure “income”:
  - Measure across people, much income difference \( Y_{\text{trans}} \)
  - For aggregate (measure across time) \( Y_{\text{trans}} \) averages out, see \( \Delta Y_{\text{perm}} \)
- Friedman’s 7-day week example: On Wed, 6 workers earn $0, 1 earns $100 and saves most (spends little, MPC low)

Hugely relevant for today’s questions about government tax and spending stimulus
Phillips Curve and Natural Rate of Unemployment

Phillips Curve: Prices (Inflation) $\uparrow$ Unemployment $\downarrow$ (or growth $\uparrow$)
- Appealing: high employment $\Rightarrow$ firms must pay workers more $\Rightarrow$ wages $\uparrow$

But this confuses *nominal* versus *real*
- Inflation is nominal, money wages are nominal
- Firms and workers care about *real* or relative wages

Friedman explains puzzle this way (best in his 1976 Nobel lecture; also Phelps)
- “Natural Rate” set by real variables: preferences, production function, relative wages, etc.
- *Unexpected* inflation obscures real changes for firms and workers
  - Firms: price increase assumed to be *relative* (real) price, pushes down real wages, induces firm to raise nominal wages somewhat & hire more
  - Workers: rise in nominal wage assumed to be *real* wage increase, willing to work more
- Result: inflation $\uparrow$ induces firms to hire, workers to work more
- But firms & workers soon realize mistake, and go back to natural rate

Can’t escape “Natural Rate” in long-run
Introduction to Friedman’s Economics

Quick View: Permanent Income & Natural Rate

Monetary History and Three Financial Crises

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The Current Financial Crisis – Not a Banking Liquidity Crisis
My “History of Financial Crises” in 40 minutes

This is all based on my PPHA 42521 “History of Financial Crises” (Spring)

We will examine financial and economic history, using episodes of crisis to learn about government debt, money, and banking. We will try to understand some of the mechanisms and processes that seem to generate financial crises. We will read some of the classics as well as some of the newer texts in this area

Better title “Money, Banking, and the History of Financial Crises”. Examine a variety of episodes:

- South Sea Bubble (England) and Mississippi Bubble (Paris) from 1719-20
- Alexander Hamilton and the 1790s US Financial Revolution
- US Banking Crises (1893, 1907, 1930s)
- 2008 Financial Crisis
Look at US from 1840 to present: 12 crises

- US: C&H say 12 crises. R&R count 9 (not all the same)
  - Multiple bank failures (9,000 during 1930s, 3,000 during 1980s)
  - Happened regularly during 1800s, into 1900s
  - By 2008, we had just forgotten

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US Always Has Been Subject to Banking Crises

Look at US from 1840 to present: 12 crises

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- Interesting quiz – how many in Canada?

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- Interesting quiz – how many in Canada?
  - C&H count 0: No severe crises since 1840

Why? Fundamental difference US vs Canada is banking structure: US fragmented unit banking – read Calomiris & Haber
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The Current Financial Crisis – Not a Banking Liquidity Crisis
We all use checking accounts (bank demand deposits)

- Convenient complement to cash
- Treat them like money – transfer money, pay bills by check, etc.

But deposits are really a loan we make to a bank

- Like any promise, may be broken
- Like any loan, may not be repaid

But deposits are loans with two special characteristics:

- Bank promises to pay us back whenever we want
- When a bank defaults, first-in-line depositors get their money

These characteristics provide big incentive for customers to run on the bank, if there is even a hint of default
Why Were (US) Banks so Fragile, Subject to Runs?

Bank deposits are inherently unstable

- Most people argue this makes banks inherently unstable, subject to runs
- Cannot be true – look at US (12 systemic crises 1840-present) vs Canada (0)

There has to be something additional to make US uniquely unstable

- In the 1800s and up until 1990s, it was Unit Banking

Hard to imagine now how crazy stupid US banking was until 1990s

- No cross-state banking – couldn’t open Chase account in Illinois
- Many states (Illinois included) had no branching

In 1914, US had 27,349 banks, 95% no branches (single building!)

- Population roughly 99mn ⇒ 3,600 people per bank (and fewer customers)
- Not nearly enough to reap economies of scale or diversification

Canada completely different – 38 banks in 1890, 126,000 people per bank

- Each bank had many branches
- Actually more branches per person than US
US banking system was inherently fragile

- Any modest economic shock (an earthquake in San Francisco, a severe economic recession, the bursting of a speculative bubble in copper, the failure of a local bank) could make customers nervous and want to withdraw their money
- A small local unit bank cannot call on headquarters to ship out more cash
- If too many customers want to withdraw, the small local bank has to shut its doors, making surrounding customers even more nervous

*In a unit banking system with some 20,000 independent banks, the impact was bound to be uneven, to force some banks into suspension, and to threaten a chain reaction involving a cumulative increase in the desire on the part of the public to convert deposits into currency.*

*Friedman & Schwartz p. 169*
How to Break the Viscous Cycle of a Bank Run?

Essentially 3 (4) ways to break the viscous cycle:

1. Make banks big enough to withstand economic shocks and scares (able to ship cash around the country, to a branch in trouble)
2. Restrict conversion: Tell customers they cannot convert deposits into cash
3. Have someone lend cash (short-term) to banks in trouble
4. Deposit Insurance

The US in the 1800s and most of 1900s said “No” to (1). In 1907 nobody to do (3) effectively. (4) didn’t exist (and anyway is more a subsidy for small inefficient banks than a solution – another story). So only choice was (2)
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The Current Financial Crisis – Not a Banking Liquidity Crisis
Set the Scene in 1907: Fragile Banks, Economic Shocks

Fragile Banks:
- 27,349 US banks in 1914, 95% no branches (single building)
- Small, fragile banks: roughly 3,600 people per bank
  - No economies of scale, no way to diversify

Economic Shocks
- April 1906, San Francisco earthquake – reduced GNP by 1.5-1.8 percentage points
- August 1907, severe recession started
- October 16, two speculators (F. Augustus Heinze and Charles W. Morse) lost big on copper company stock market speculation, had borrowed from banks
Bank Runs

- Starting Oct 16, banks associated with Heinz & Morse suffered runs
- Oct 18 Knickerbocker Trust run started, Oct 22 Knickerbocker failed

Bank Responses

- Strong banks and NY Clearing House: loans to “run banks” (trying to do (3) above)
- Oct 26 (Saturday) NY CH banks restricted convertibility of deposits to cash
  - Naturally, premium on cash and gold
  - Pulled gold in from overseas, increased cash & gold

Restriction on Convertibility

- Extraordinary – today: shutting all ATMs, not allowing credit cards
- Effective way to forestall a run
- Lifted restriction in January 1908
Friedman & Schwartz thought carefully about money

What was happening during a bank run (liquidity crisis)?

- Customers and banks both start to worry about liquidity
- Want more of the most liquid asset they can find – cash
- Demand for “cash” spikes up
  - Customers (public) worried about bank deposits, switch to cash
  - Banks need more cash (“reserves”) to reassure customers, to pay out when needed

Importantly Friedman & Schwartz collected and analyzed a mass of data

Three definitions:

1. “Cash” held by banks called “reserves”
2. High Powered Money = cash held by public + “cash” held by banks (reserves)
3. Money = public cash + deposits

I cover this in my Financial Crises class
Liquidity Crisis: Cash (Money) Demand ↑↑, Supply Flat

Results when cash demand spikes up and supply can’t keep up:

**Banks**
- Customers ask for cash,
- With small, fragile banks (US) some banks don’t have enough extra and fail
- Produces cascading failures – contagion, panic

**Prices**
- CPI (price level or inflation) is the “price” of money
- Prices have to adjust ↓

**Output & employment**
- Recession (depression) pushes prices ↓

Most important part of “supply”:
- HPM = cash held by public + “cash” held by banks (reserves)
Recessions Bad After 19th & 20th c Liquidity Crises

Post-crises recessions (1873-79, 1893-94, 1907-08, 1920-21)

- Financial crises produce recessions – “depressions”.

Average Recessions – Crisis vs. Non-Crisis Episodes, 1870-1928

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<thead>
<tr>
<th></th>
<th>Numb</th>
<th>Ch Prc</th>
<th>Ch Inc</th>
<th>Ch M</th>
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<tr>
<td>Average recessions following financial crisis</td>
<td>4</td>
<td>-6.3%</td>
<td>-6.0%</td>
<td>-1.5%</td>
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<tr>
<td>Average non-crisis recessions</td>
<td>11</td>
<td>0.2%</td>
<td>-0.9%</td>
<td>5.6%</td>
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Length and Depth of Recessions after Speculative Episodes

<table>
<thead>
<tr>
<th>Date</th>
<th>NBER peak/trough</th>
<th>Length</th>
<th>Ch Prc</th>
<th>Ch Inc</th>
<th>Ch Mon</th>
<th>Recovery Ch Inc</th>
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<tr>
<td>1873-79</td>
<td>Oct 1873 - Mar 1879</td>
<td>5.4yr</td>
<td>-3.8%</td>
<td>2.5%</td>
<td>0.4%</td>
<td>4.3%</td>
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<tr>
<td>1893-94</td>
<td>Jan 1893 - Jun 1894</td>
<td>1.4yr</td>
<td>-6.3%</td>
<td>-7.9%</td>
<td>0.5%</td>
<td>9.4%</td>
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<tr>
<td>1907-08</td>
<td>May 1907 - Jun 1908</td>
<td>1.1yr</td>
<td>-0.2%</td>
<td>-12.5%</td>
<td>-1.4%</td>
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<td>1920-21</td>
<td>Jan 1920 - Jul 1921</td>
<td>1.5yr</td>
<td>-14.8%</td>
<td>-6.1%</td>
<td>-5.6%</td>
<td>9.3%</td>
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<td>1929-33</td>
<td>Aug 1929 - Mar 1933</td>
<td>4.2yr</td>
<td>-7.5%</td>
<td>-11.1%</td>
<td>-8.8%</td>
<td>11.6%</td>
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data are from *Monetary History* and other Friedman & Schwartz books
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The Current Financial Crisis – Not a Banking Liquidity Crisis
Recognition that money (HPM) needed to be “elastic” in the sense of expanding during liquidity crisis.

- Dec 1913, Federal Reserve founded
- One explicit purpose: to issue notes by “discounting bank assets” (lending to a bank based on assets – collateral – provided by the bank)

Goes back to Bagehot’s rules for central banking (and developed earlier, 1790s, by Alexander Hamilton)

- First: lend freely and vigorously, but at a very high rate of interest (to discourage those who do not have liquidity problems)
- Second: lend on all good securities (securities used as collateral) to everyone who is solvent
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The Current Financial Crisis – Not a Banking Liquidity Crisis
October 1929, stock market crash
- Recession started earlier – August 1929
- Up through autumn 1930 bad but not horrendous

October 1930 – banks started failing
- 256 in November 1930 and 352 in December

* A contagion of fear spread among depositors, starting from the agricultural areas (F&S p 308)

Now, banks had neither the incentive nor the authority to restrict payments
- The Fed had been founded to solve this problem

But the Fed failed to act to increase HPM in response to spike in liquidity demand
- Bank failures cascaded – by 1933 1/3 of banks gone
### Examining F&S Data: Money, Prices, Output

<table>
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<th>Date</th>
<th>NBER Pk/Tr</th>
<th>%Ch Mon Stock</th>
<th>HPM</th>
<th>Due to BRes</th>
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<th>% Y</th>
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<td>-10.0%</td>
<td>-2.2%</td>
<td>-0.2%</td>
<td>-12.5%</td>
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<tr>
<td>1920-21</td>
<td>1/20 - 721</td>
<td>-5.3%</td>
<td>-6.6%</td>
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<td>-0.3%</td>
<td>-6.1%</td>
<td>-5.6%</td>
</tr>
<tr>
<td>1929-33</td>
<td>8/29 - 3/33</td>
<td>-43.4%</td>
<td>16.2%</td>
<td>-22.4%</td>
<td>-46.5%</td>
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<td>-11.1%</td>
</tr>
<tr>
<td>1929-31</td>
<td>8/29-1/31</td>
<td>-5.8%</td>
<td>0.0%</td>
<td>-4.2%</td>
<td>-1.7%</td>
<td>-8.3%</td>
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<td>1931-33</td>
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</tr>
<tr>
<td>2007-09</td>
<td>12/07 - 6/09</td>
<td>18.6%</td>
<td>69.9%</td>
<td>-51.1%</td>
<td>6.1%</td>
<td>1.1%</td>
<td>-2.1%</td>
</tr>
</tbody>
</table>

**1929-33**

- 1929-31 like 1893 & 1907: supply (HPM) flat, demand (BRes & PCurr) up
  - BRes↓ ($D/R \downarrow$) & PCurr↓ ($D/C \downarrow$) mean demand up. *HPM* flat, *P* & *Y* down
- 1931-33 things got *really* bad – prices & output down, economy in free-fall
  - Banks panic, want liquidity ($D/R \downarrow$); public panics, wants *C* ($D/C \downarrow$)
- 1893 & 1907 were short – 1929-33 was 4 years of falling prices & output
- Fed had power to create HPM in 1929-31 (before things got bad) *but did not*
- Banking system collapsed, economy down by 1/3, unemployment up to 25%
Why Did Fed Fail to Act?

Critical question, and no perfect answers

*The explanation ... is the shift of power within the System and the lack of understanding and experience of the individuals to whom the power shifted.* (F&S p. 411)

Benjamin Strong, president of NY Fed, died October 1928 (tuberculosis)

- He had the knowledge, experience, strength of character to lead the system
- With Strong gone, power vacuum led to shift of power to DC and Board of Governors
- At that time neither skilled nor knowledgeable leaders at the Board
- Possibly one of the most unfortunate deaths of the early 20th c

*It is also true that small events at times have large consequences, that there are such things as chain reactions and cumulative forces. It happens that a liquidity crisis in a unit fraction reserve banking system [and one like the US that is fragile to begin with] is precisely the kind of event that can trigger ... a chain reaction.* (F&S p. 419)
Introduction to Friedman’s Economics

Quick View: Permanent Income & Natural Rate

Monetary History and Three Financial Crises
Financial Crises are American as Apple Pie
Basics of Money and Banking
1907: Liquidity Crisis, NY Banks Restrict Convertibility
1913: Federal Reserve Founded
1930s: Federal Reserve Fails
1960s: Friedman & Schwartz Revise Monetary History, Educate the Fed
2008: Federal Reserve (& Bernanke) Save the Financial System

The Current Financial Crisis – Not a Banking Liquidity Crisis
Following the Great Depression, received wisdom was that monetary policy had been passive or ineffective

- Friedman & Schwartz re-wrote history
- Argued, persuasively, that money matters, and matters dramatically during a liquidity crisis

*Milton Friedman and Anna Schwartz’s* *A Monetary History of the United States 1867–1960* *is perhaps the most influential work in economic history of the 20th century. The book, a perfect combination of historical narrative, empirical work, and theoretical analysis, was the major force in refocusing the economics profession’s thinking about the importance of money in generating cyclical fluctuations. It also showed how the severity of the Great Depression was in large part due to the mistakes of the Federal Reserve.*
November 2002, conference in Ida Noyes to celebrate Friedman’s 90th birthday

- Friedman & Schwartz both attended, both strong and feisty
- Ben Bernanke gave one of the papers, discussing Friedman & Schwartz’s analysis of the Great Contraction (as they termed it)

The end was an electrifying moment (at least as far as academic conferences go)

- Remember that Bernanke was a member of the Board of Governors, later to become Chairman

> Let me end my talk by abusing slightly my status as an official representative of the Federal Reserve. I would like to say to Milton and Anna: Regarding the Great Depression. You’re right, we did it. We’re very sorry. But thanks to you, we won’t do it again.

> Best wishes for your next ninety years.
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The Current Financial Crisis – Not a Banking Liquidity Crisis
2008, Fed Injected Liquidity, Saved the World

<table>
<thead>
<tr>
<th>Date</th>
<th>NBER Pk/Tr</th>
<th>%Ch Mon Stock</th>
<th>HPM</th>
<th>Due to BRes</th>
<th>PCurr</th>
<th>% P</th>
<th>% Y</th>
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</thead>
<tbody>
<tr>
<td>1873-79</td>
<td>10/73 - 3/79</td>
<td>-3.1%</td>
<td>-6.3%</td>
<td>4.2%</td>
<td>-1.0%</td>
<td>-3.8%</td>
<td>2.5%</td>
</tr>
<tr>
<td>1893-94</td>
<td>1/93 - 6/94</td>
<td>-5.7%</td>
<td>2.6%</td>
<td>-8.0%</td>
<td>-0.3%</td>
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<td>-7.9%</td>
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<tr>
<td>1907-08</td>
<td>3/07 - 6/08</td>
<td>-3.8%</td>
<td>8.1%</td>
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</tr>
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</table>

2007-09

- Fed did learn, did the right thing
- Massively increased HPM – Quantitative Easing (QE1)
  - Mainly went to bank reserves
  - Banks were panicked, increased reserves ($D/R \downarrow$)

Can’t say for sure what would have happened, but 1907 and 1930s give us a pretty good idea

- If the Fed hadn’t done QE1, the financial system would probably have collapsed
- NB: prices for 2008:Q3 - 2009:Q1 fell by 4.1% (ann). Extraordinary
And the Fed did learn. They increased reserves in 2008. By just a little!

Monetary Base – Currency ($BOGMBASE/1000 – CURRSL$)

At the time, concern about inflation (from $MV=PY$). Reasons not:

- Increased demand for money
- Fed pays interest on reserves
I’ve ignored and glossed over some things:

- Since 1990s, US banking system has become national
  - Can now open Chase account in Illinois, not just NY
- Reasons for 2008 crisis not quite the same as 1907 & 1930s (fragile & fragmented banking system)
  - New story of political / banking coalition that led to mis-pricing and over-consumption of mortgage risk
- Fall 2008 Fed started paying interest on reserves – another big reason for “no inflation” with big increase in reserves
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The Current Financial Crisis – Not a Banking Liquidity Crisis
Markets have been roiled – S&P index up and down most in 30 or 40 years
But this is not 2008 – not a Banking Liquidity Crisis

- 2008 – due to mortgage debt and leverage in banking and household sectors

Now – a shock to US (and world) economy

- Everyone home, nobody working
- Stopping activity and destruction of output

Historically, the most damaging crises have been centered on money, banking, and the financial system

- Apart from wars – which also destroy output

See link at
http://www.hilerun.org/econ/papers/FinCrisesThoughts_20200313.html
or
http://www.hilerun.org/econ/papers/FinCrisesThoughts_20200313.pdf
Think of economy as a well-oiled machine, with many parts working together. Money and Banking are at the core – how and why the machine runs:

- We don’t recognize how important they are, because they usually work fine.
- They are necessary for everything we do – every transaction depends on money and banks.
- When money & banking breaks, it’s like sand in the gears – everything stops.
  - And it can take a long while to recover.

2008: banking system started to freeze – risk that everything grinds to a halt.

Today is different – problem with parts of the machine – gathering together.

- But the underlying money and banking system was not the original problem.

The money and banking system may get into trouble, but unlike 2008 it was not the source of the problem.
Examining history of crises highlights severe damage when banking and monetary system malfunctions.

- 1907-08: Banking Liquidity Crisis: NY banks restrict convertibility
- 1920-21: Crash precipitated by Federal Reserve raising rates (not pandemic)
- 1930s: Great Depression, 1/3 of all banks in US shut

Associated with these financial crises, bad recessions – called “depressions” at the time
Current Crisis Different – Due to Pandemic

Not at Banking Liquidity Crisis – at least for now
• Unemployment will be bad, recession really bad
But the causes are different than 2008 (or 1907 or 1930s)
• So we must be careful in looking back to those as guides
I suspect we may recover quickly after we figure out how to live with coronavirus
1918 Influenza pandemic may be comparable (mortality, not economic responses)

- Surprisingly, effect on economic growth (in US) was modest

### Growth Following 1918 Pandemic and During Selected Contemporaneous Recessions

<table>
<thead>
<tr>
<th>Years</th>
<th>Events and Description of Period</th>
<th>Recession begin/end (NBER)</th>
<th>Avg %GDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>1893-94</td>
<td>Severe Recession - Banking panic, restriction of convertibility by NY banks</td>
<td>Jan 1893 - Jun 1894</td>
<td>-5.7%</td>
</tr>
<tr>
<td>1907-08</td>
<td>Severe Recession - Banking panic, restriction of convertibility by NY banks</td>
<td>May 1907 - Jun 1908</td>
<td>-5.1%</td>
</tr>
<tr>
<td>1918-19</td>
<td>Period during and after influenza pandemic</td>
<td>Aug 1918 - Mar 1919</td>
<td>4.1%</td>
</tr>
<tr>
<td>1920-21</td>
<td>Severe recession - Engineered by Federal Reserve</td>
<td>Jan 1920 - Jul 1921</td>
<td>-3.2%</td>
</tr>
<tr>
<td>1914-1918</td>
<td>WWI, included for comparison with 1918-1919</td>
<td></td>
<td>1.6%</td>
</tr>
<tr>
<td>1891-1922</td>
<td>Long period before &amp; after 1918-1919, included for comparison</td>
<td></td>
<td>1.6%</td>
</tr>
</tbody>
</table>