MONETARY POLICY,
THE ZERO BOUND, FISCAL INTERACTION

A LOANABLE FUNDS MODEL EXPLORATION OF
EXTRAORDINARY MONETARY POLICY OPERATIONS
AND MONETARY FISCAL POLICY INTERACTIONS

November 15th, 2019

An example of how grading works for the class:

weights	0.1	0.2	0.3	0.4	final grade
numerical grade		65	56	66	
letter grade	A-	C+	B-	B	B
grade value	3.67	2.33	2.67	3.00	
weighted value	0.37	0.47	0.80	1.20	2.834

final letter grade		B-		B		B+		A-		A		A+
numerical midpoint		2.67		3.00		3.33		3.67		4.00		4.33
numerical range	2.5 to	2.82	2.83 to	3.16	3.17 to	3.49	3.50 to	3.82	3.83 to	4.16	4.17	4.33
final letter grade		D-		D		D+		C-		C		C+
numerical midpoint		0.77		1.00		1.33		1.67		2.00		2.33
numerical range	0 to	0.82	0.83	1.15	1.16	1.49	1.50	1.82	1.83	2.16	2.17	2.49

Revised Outline:
(Thanks for giving us time to review)

HW#7	Friday	15-Nov					
						11/18 & 11/19	HW#7 Review
L23	Wed.	20-Nov	Open Economy (I)		Ch. 18		
L24	Friday	22-Nov	Open Economy (II)		Ch. 19		
HW#8	Friday	22-Nov					
& last years final							
						12/2 & 12/3	Review: HW#8
L25	Wed.	4-Dec	Final Exam Review				& last year's final
L26	Friday	6-Dec	Summary Lecture				
FINAL EXAM	Wed. Eve.	18-Dec					
	6 to 9 pm						

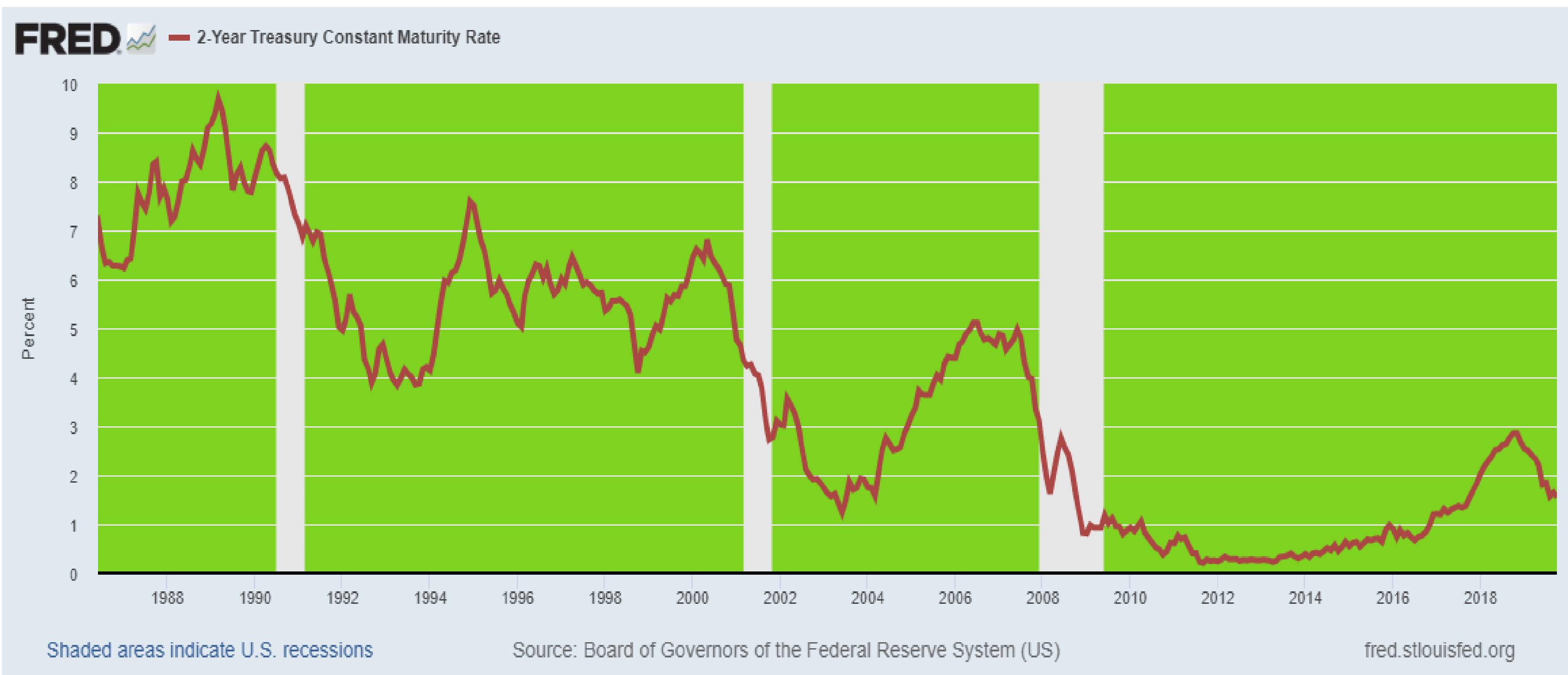
Monetary Policy and the Zero Bound

- When the fed funds rate hits ZERO, the standard Fed move to step on the gas pedal is missing.

- What can they do when they have lowered fed funds to zero?

Let's review interest rate moves for the last 3 U.S. business cycles

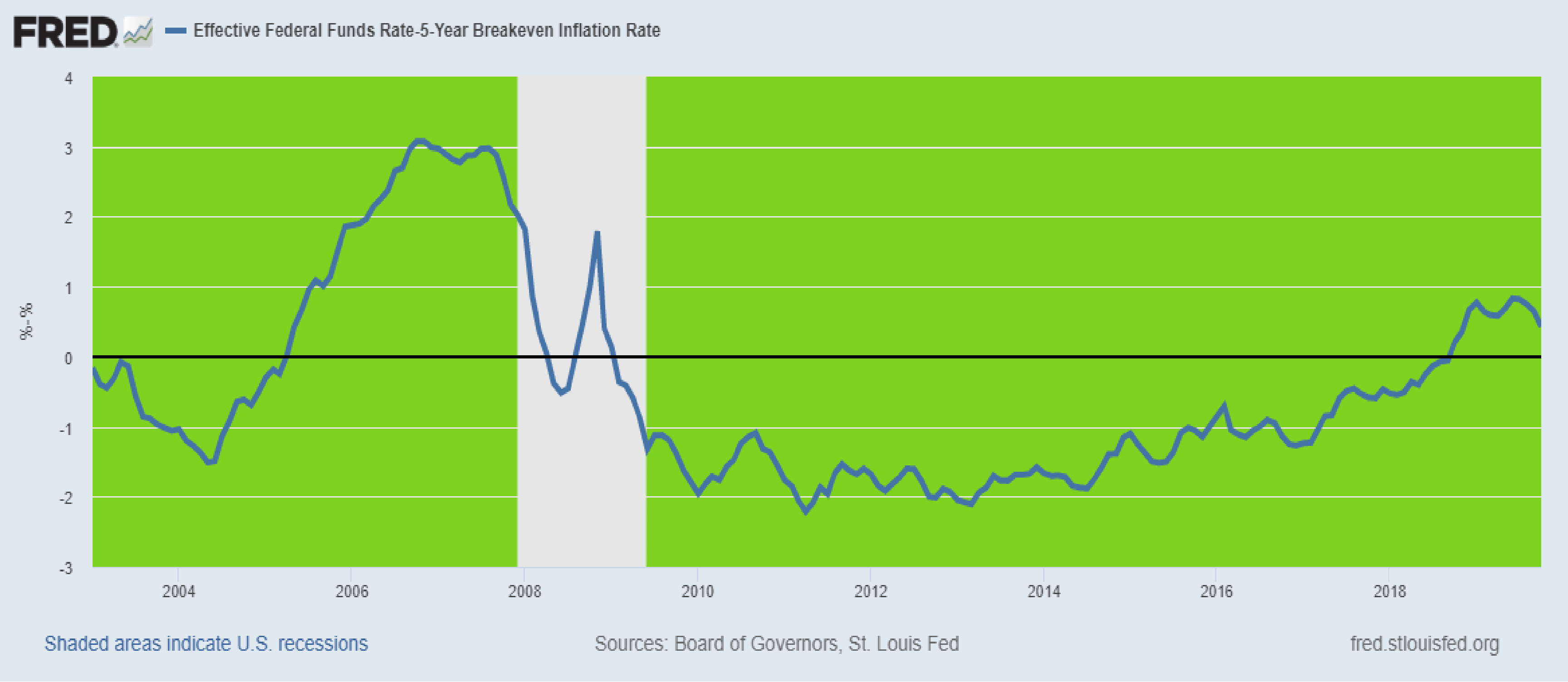
recession	1990	2001	2008	2020???
peak rate	9.5	6.8	5.1	1.8???
trough rate	3.8	1.2	0.2	0.0???
interest rate fall	5.7	5.6	4.9	1.8???



Little room for big ease? A global reality:

Two-year	gov't	yields
	2006	Today
USA	5%	1.8%
U.K	4%	0.5%
France	4%	-0.6%
Sweden	4%	-0.3%
Australia	6%	0.8%
Korea	5%	1.5%

Traditional Monetary policy power? Collapse the risk free **real** short rate:



With else might the Fed do? Some focus SOLELY ON THE FED FUNDS RATE?
They invoke the Fisher equation:

$$i = r + \pi$$

- This suggests the Fed should drive real rates down, by promising it will put inflation higher.

$$i - \pi = r$$

- Three issues
- 1. Central banks can promise higher inflation but fail to convince the private sector that they will succeed.

  2. CBs may lose hard fought credibility as vigilant against inflation.

  3. Conversely, if nominal rates rise, reflecting expectations of higher inflation, housing may suffer.

What happens, on Wall Street if we lift inflation expectations?

	r	π_e	i
fed funds(ex ante)	-2	2	0
fed funds (ex post)	-3	3	0
fixed rate mortgage (ex ante)	2	2	4
fixed rate mortgage (ex post)	1.5	3	4.5

Higher nominal mortgage rates fewer qualify for home buying

- Suppose expectations do change, and people now expect that prices and wages will climb 3% per year, up from 2% per year.
- Suppose, the fixed rate mortgage rises from 4% to 4.5%.
-

the homebuyer explains that her borrowing cost, in real terms has fallen from

- But the mortgage was 4%, it is now 4.5%
- Your income no longer lets you borrow
- Housing takes a hit.

But the fed funds rate is not the only interest rate!
Can the Fed engineer lower long term real rates, if it can't lower fed funds?

(AS OF 2012)	nominal	π_e	real
• Fed funds:	0%	2%	-2%
• 10-year t-bond:	3%	2%	1%
• Baa bond:	6%	2%	4%

The Fed invented methods to push long rates lower: FORWARD GUIDANCE

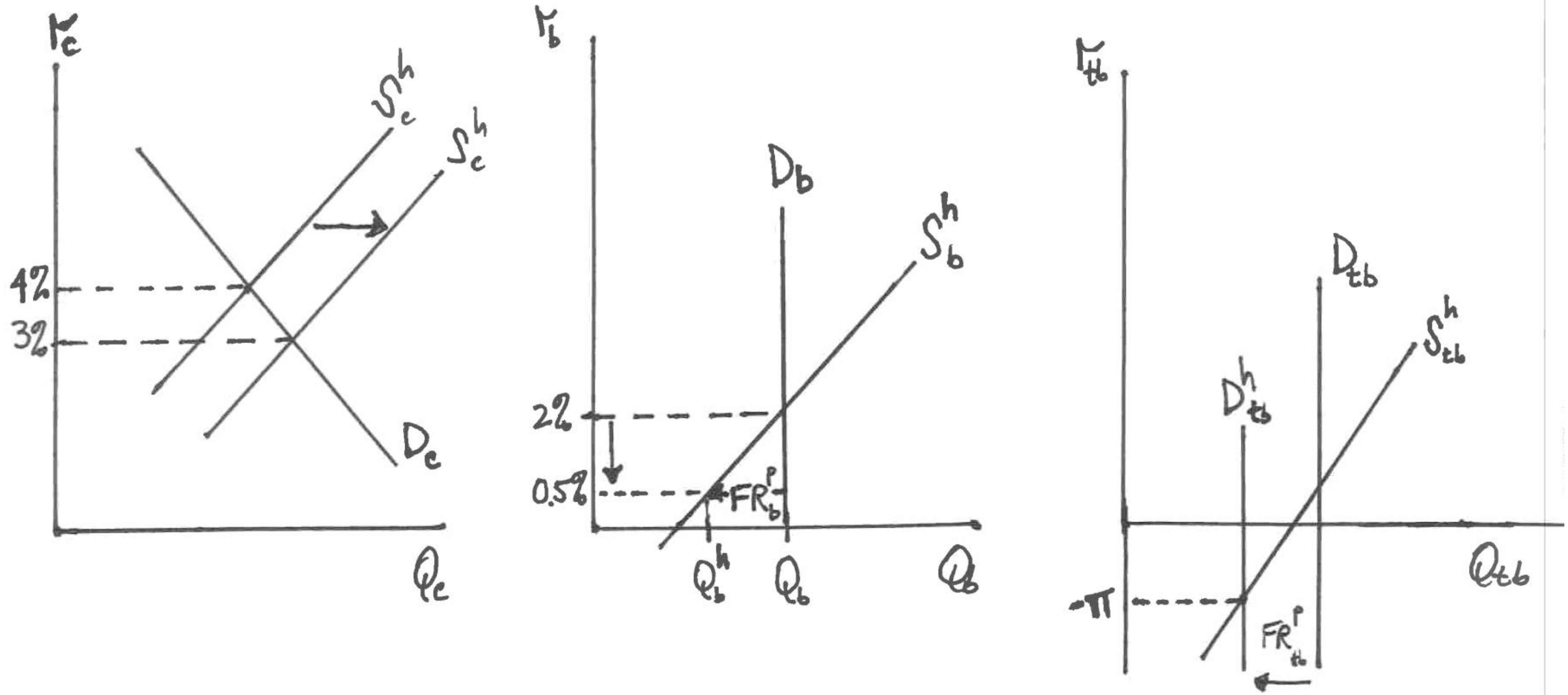
QUANTITATIVE EASING

Forward guidance
according to the Fed:

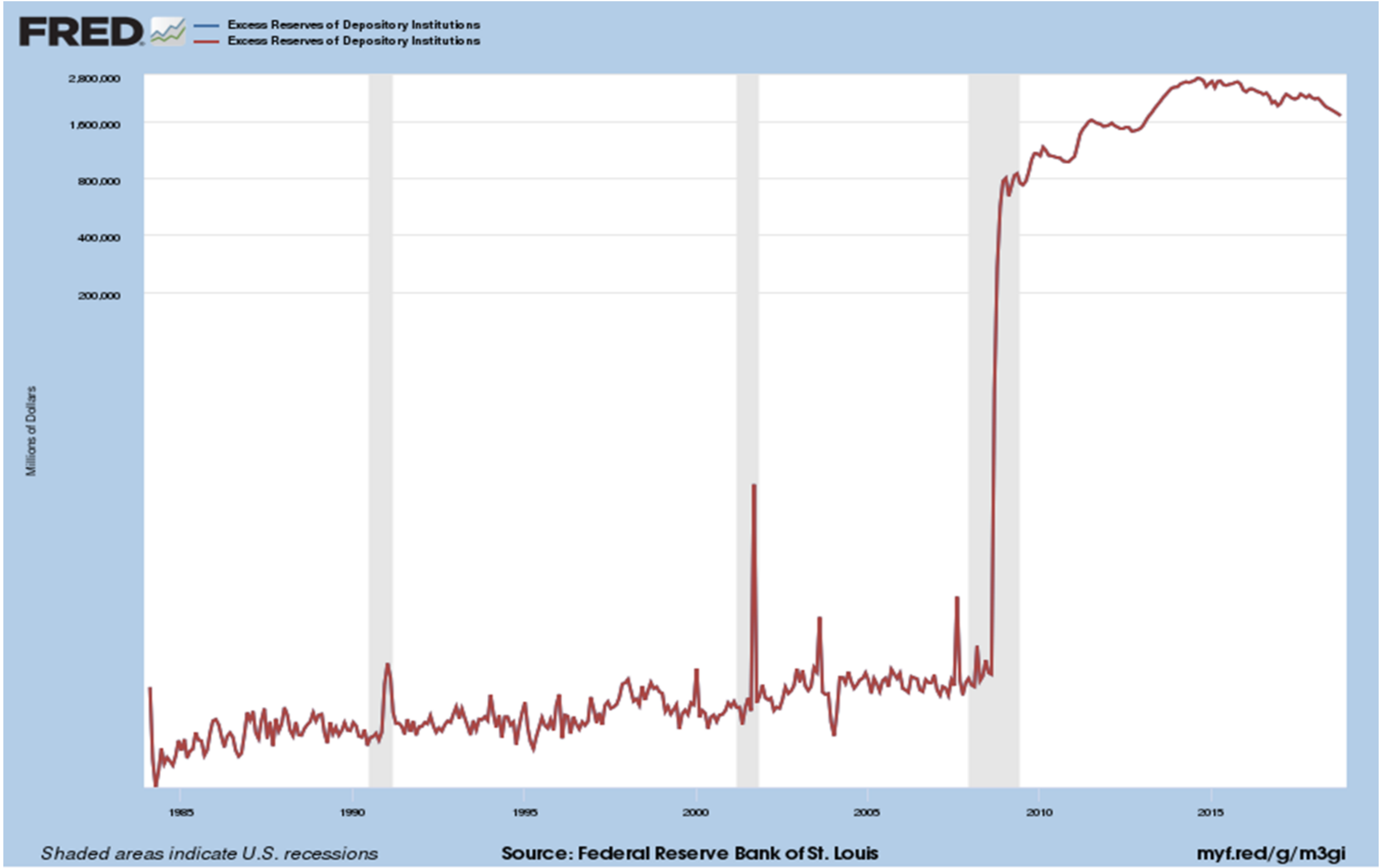
‘Through "forward guidance," the Federal Open Market Committee provides an indication to households, businesses, and investors about the stance of monetary policy expected to prevail in the future..’

“Forward Guidance?” tell the world that the low fed funds rate will stay low for a long time!

- THE FRB BUYS T-BONDS
- HOUSEHOLDS ACCEPT A LOWER REAL RATE AS THEY NEED TO BUY FEWER T-BONDS
- HOUSEHOLDS SHIFT OUT THEIR SUPPLY CURVE FOR RISKY BONDS



Fed's Bond buying binge generated a surge in Excess reserves at banks? After the Great Recession, major QE bond purchases led to an excess reserves surge, not a surge in bank lending.
So we see that the Fed can put reserves into the system, but that does not guarantee a jump in bank lending!



In normal times,
Fed buys T-bills, bank get reserves,
bank lending jumps, deposits jump, money jumps.
(the money multiplier drives this dynamic)

Commercial Bank		**2010**	
Assets		Liabilties + Equity	
Required Reserves	10.0	demand deposits	80
Excess Reserves	0.1	CDs	15
Treasury bills, notes, bonds	29.9	equity	5
Commercial Loans	60.0		
total	100	total	100

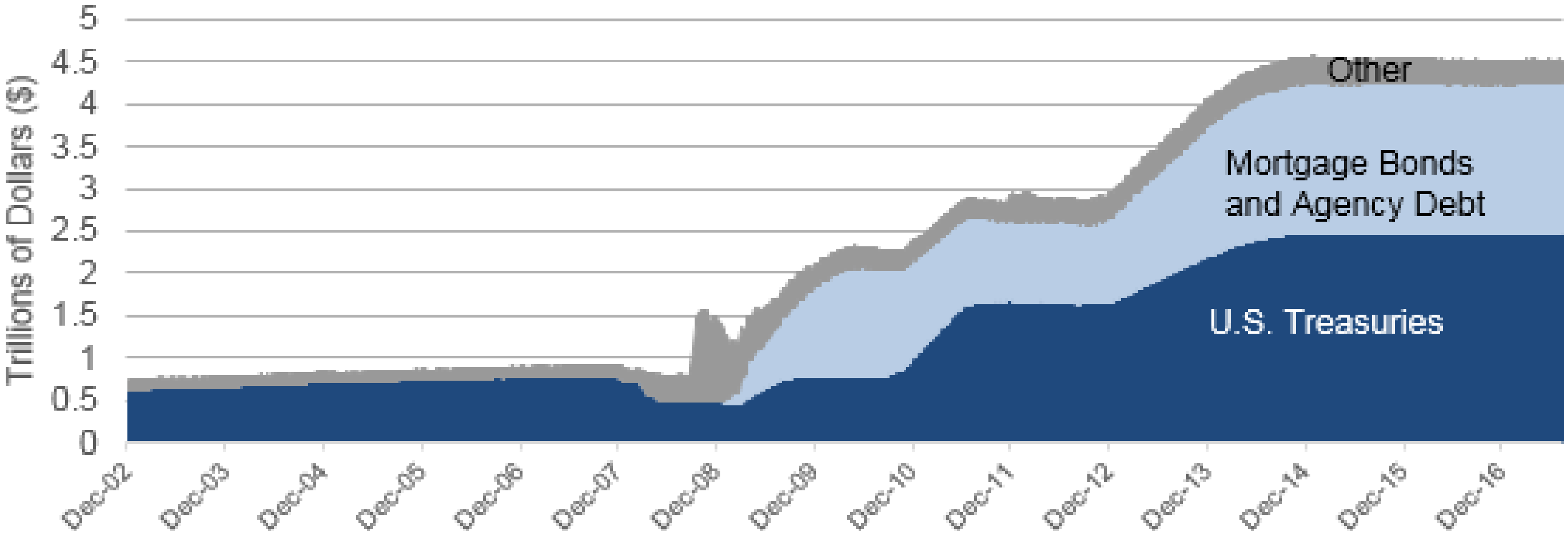
Commercial Bank		**2012 (Normal Times)**	
Assets		Liabilties + Equity	
Required Reserves	10.0	demand deposits	95
Excess Reserves	0.1	CDs	15
Treasury bills, notes, bonds	24.9	equity	5
Commercial Loans	80.0		
	115	total	115

After the 2008 financial crisis,
Fed buys T-bills, bank get reserves, bank keeps reserves,
reserves jump, treasury holdings fall, lending does little.

	Commercial Bank	2012 (Post-Crisis Reality)	
Assets		Liabilties + Equity	
Required Reserves	10.0	demand deposits	80
Excess Reserves	5.1	CDs	15
Treasury bills, notes, bonds	24.9	equity	5
Commercial Loans	60.0		
total	100	total	100

Quantitative Easing: the Fed bought $trillions of government debt

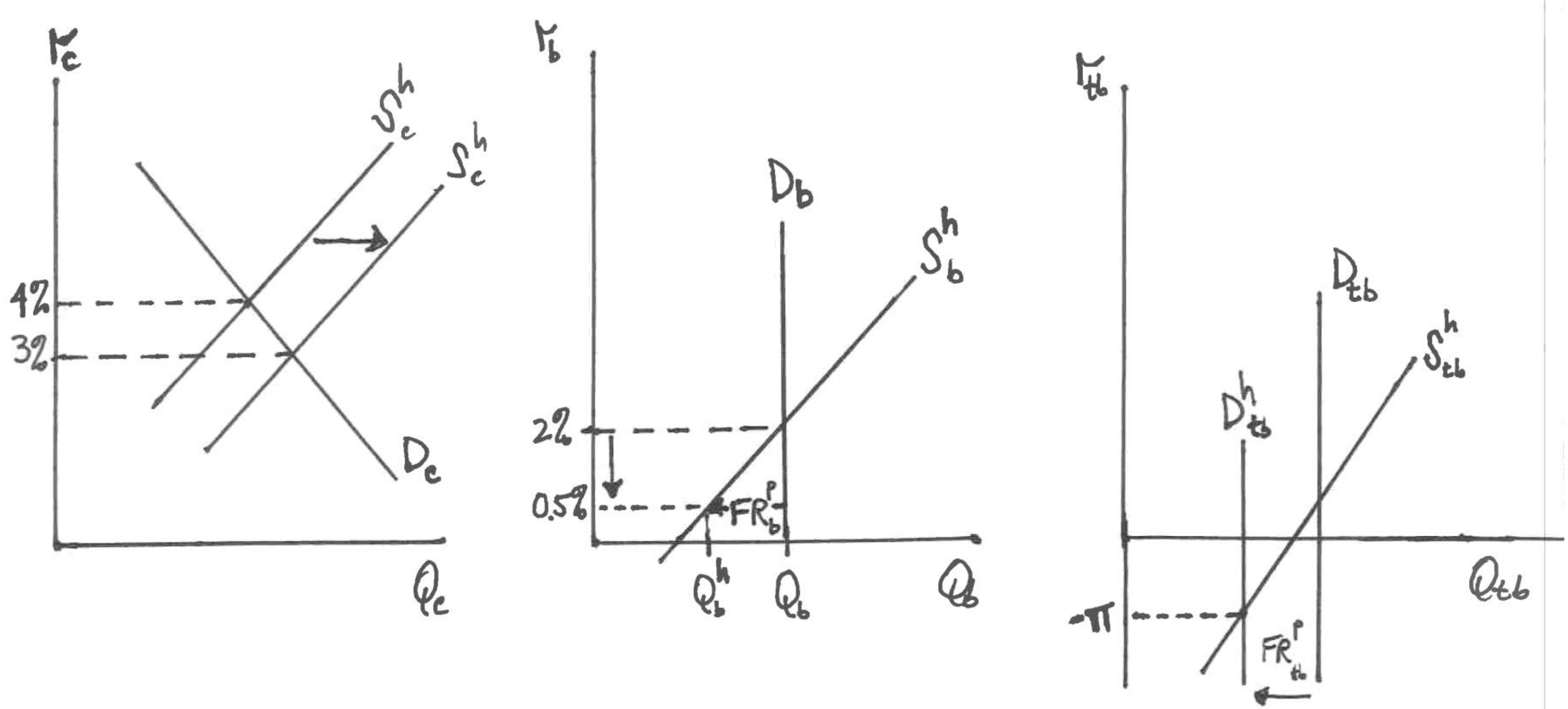
Federal Reserve's Assets



Source: Federal Reserve Board

BROOKINGS

- THE FRB BUYS T-BONDS
- HOUSEHOLDS ACCEPT A LOWER REAL RATE AS THEY NEED TO BUY FEWER T-BONDS
- HOUSEHOLDS SHIFT OUT THEIR SUPPLY CURVE FOR RISKY BONDS



But the Fed did not completely adopt the open market operations approach used in the t-bill market, when they chose to buy in the t-bond market.

- Traditional Fed monetary policy:
- ***In light of the implications of global developments for the economic outlook as well as muted inflation pressures, the Committee decided to lower the target range for the federal funds rate to 1-1/2 to 1-3/4 percent.***
- ***(FOMC statement, 10/30/2019)***

Note the Fed’s explicitly stated intention. Fed intervention in the t-bill market will occur, with the goal of keeping the fed funds rate within a certain band.

they don’t say they how many or few t-bill notes they will buy. Instead they let you know they will buy, or sell, as many as necessary, to deliver the interest rate they have determined to be ideal for the economic circumstances.

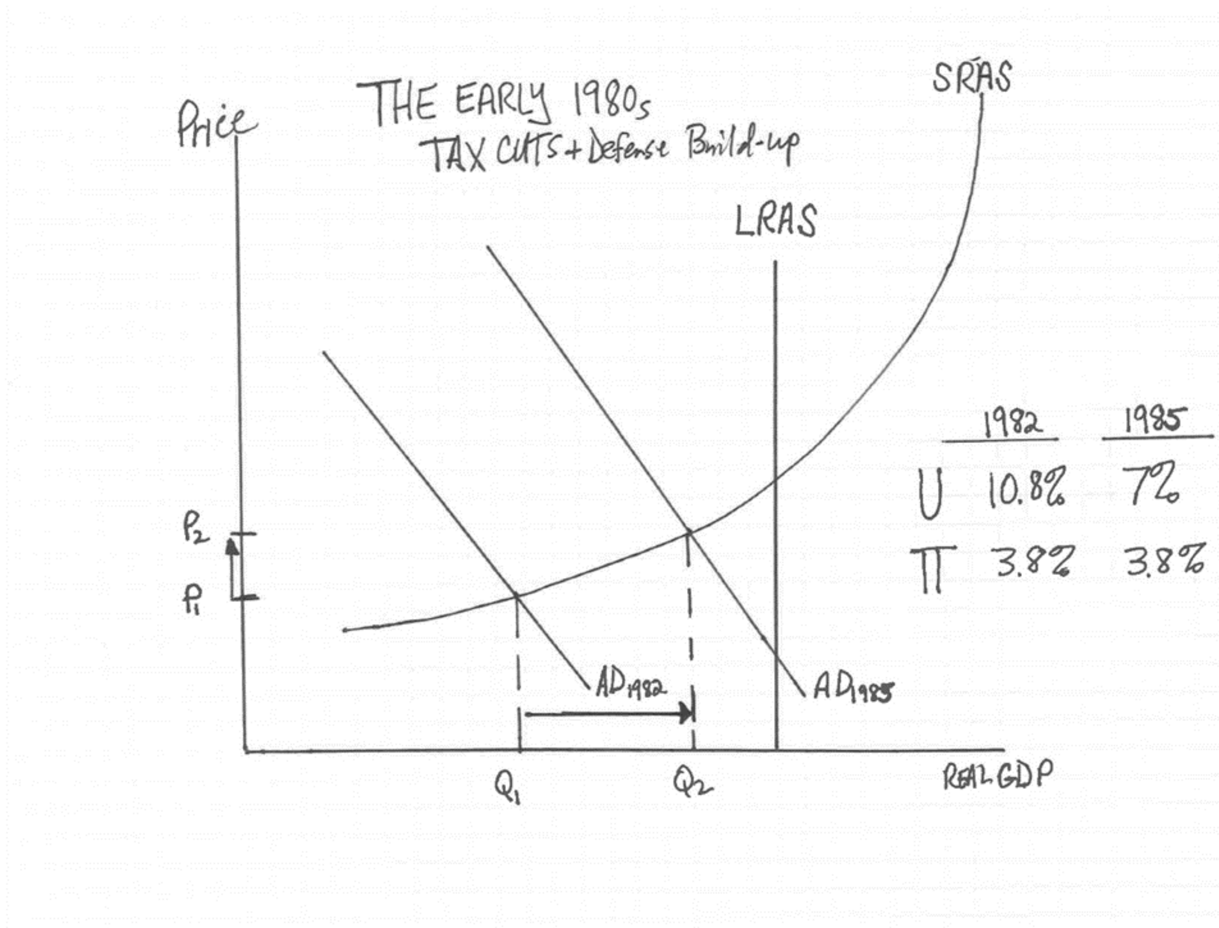
Quantitative easing?
Less bold than it could have been

- ***A third round of quantitative easing, "QE3", was announced on 13 September 2012. In an 11–1 vote, the Federal Reserve decided to launch a new $40 billion per month, open-ended bond purchasing program.***

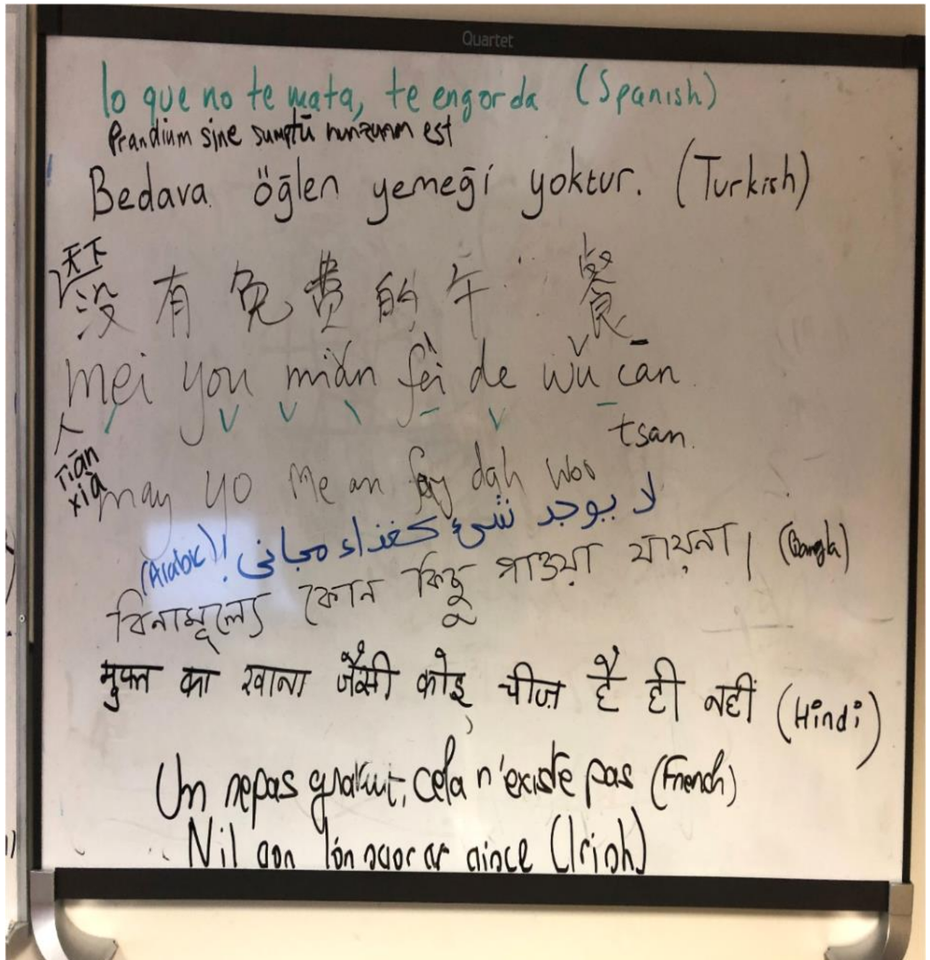
- Note the key difference. The FOMC promised to buy $40 billion worth of bonds each month.

- THEY DID NOT PROMISE TO BUY AS MANY AS NECESSARY, TO LOWER BOND YIELDS BY 25 BASIS POINTS.

Fiscal Policy. Clearly a possible lever to pull, amid super low rates and recession.



A free lunch is a sometime thing



Modern monetary theory MMT

- FED ALWAYS KEEP FED FUNDS AT ZERO
- FED ALWAYS BUYS WHATEVER DEBT IT MUST TO KEEP THE RATES AT ZERO
- THE FEDERAL GOVERNMENT IGNORES DEFICITS
- THE FEDERAL GOVERNMENT INVESTS AND SPENDS, AND ONLY CUTS SPENDING OR INCREASES TAXES, IF WE HAVE AN INFLATION PROBLEM.

MMT: WHAT IS TRUE IS NOT NEW
WHAT IS NEW IS NOT TRUE.