

# THE FED BALANCE SHEET UNWIND: STRATEGIC CONSIDERATIONS

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(based largely on previous joint work with Sam  
Hanson and Jeremy Stein)

# THE FED BALANCE SHEET TODAY

Assets (\$B)		Liabilities (\$B)	
Treasuries	2,464	Reserves	2,152
MBS and related	1,783	Currency	1,588
Other	282	Reverse repo and related	600
		Other	189

Q1 2017

*Financial Accounts of the United States*

## ○ Key Strategic Questions

- Should Fed go back to “normal” or should it permanently keep balance sheet as tool?
- Speed of transition
- Mix on asset side vs mix on liability side

## ○ My comments today:

- Financial stability benefits of a large balance sheet
  - Focus on mix of liabilities vs. mix of assets
- Spreads to watch

# “CONVENTIONAL” LOGIC OF QE

- **By reducing net supply of risky assets held by the public, reduces risk premia**
  - **Credit Risk**
  - **Duration Risk**
  - **Mortgage spreads**
- **Flow through of QE to the real economy depends on how much these financial market spreads impact real activity**
  - **Primary channel: lending**
  - **Secondary channels: Improvements in balance sheets, asset prices**

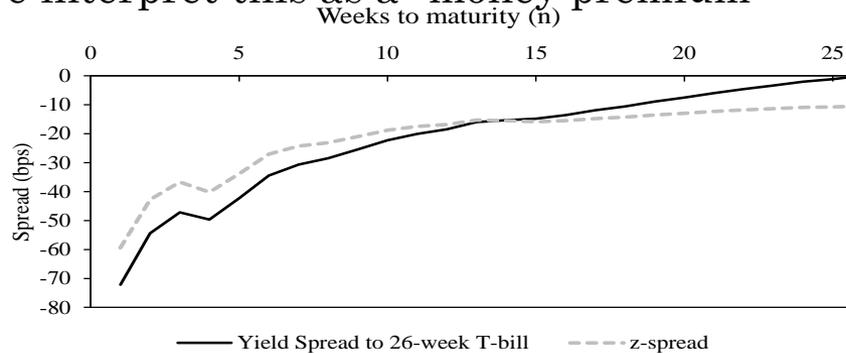
# BENEFITS OF A LARGE BALANCE SHEET

- In previous work with Hanson and Stein, I have argued that the **Fed should use its large balance sheet to lean against private sector maturity transformation. The Fed could (and should) keep a large balance sheet, replacing the current focus on the asset side and monetary accommodation with an emphasis on the liability side and safe asset provision**
  - Government-provided short-term safe claims crowd out private-sector-created short-term claims. When the Fed provides more short-term safe assets (reserves, RRP) to the financial system, this reduces the overall scarcity of such assets and reduces the incentive for financial intermediaries to fund on a short-term basis.
  - Using the Fed's balance sheet this way complements regulatory efforts to curb maturity transformation such as the LCR and NSFR. Since regulation is imperfect, we shouldn't ask it to carry all the weight. A large Fed balance sheet "gets into all the cracks" where regulation can't: because it impacts market-determined interest-rate spreads, it crowds out maturity transformation by regulated banks and unregulated shadow banks alike.
  - However, since the Fed's balance sheet size is an additional tool, there is no tension with using the policy rate to pursue its traditional dual-mandate objectives.

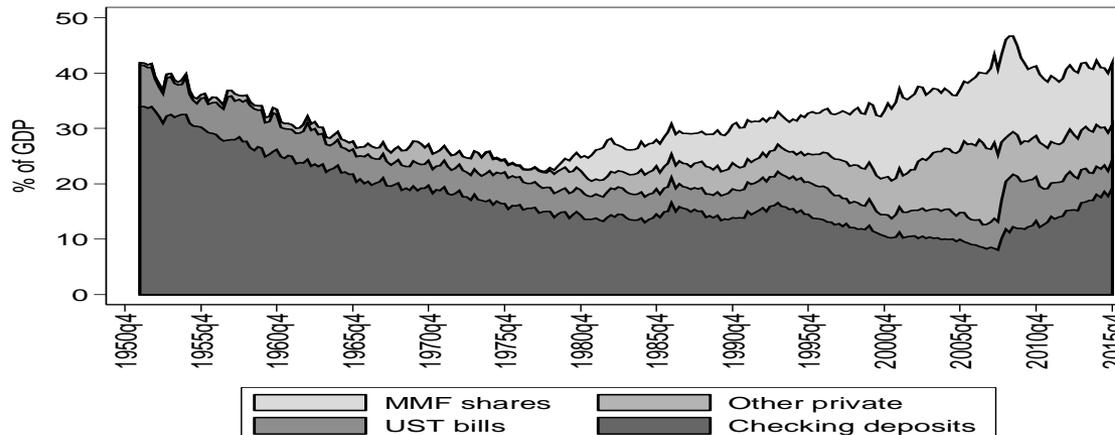
# BENEFITS OF A LARGE BALANCE SHEET

## ○ The logic of crowding out

- The very front of the yield curve tends to be steeply upward-sloping: from 1983-2009, the yield on one-week T-bills averaged 72 basis points less than yield on six month bills. We interpret this as a “money premium”

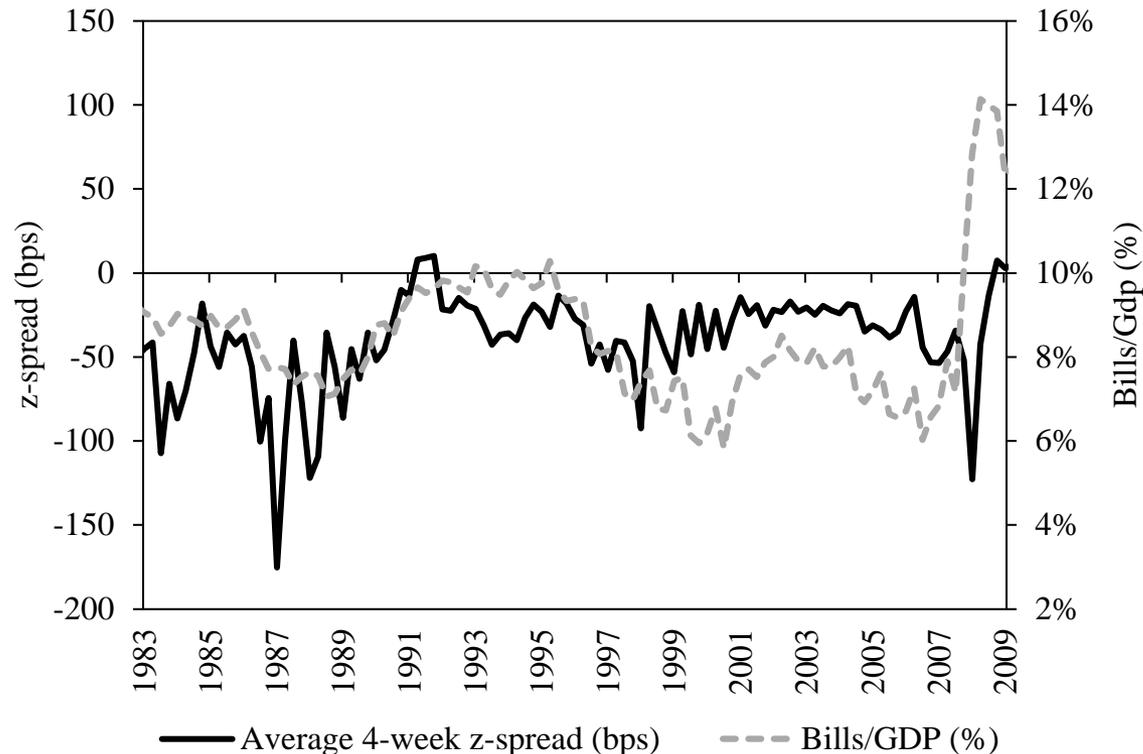


- Financial intermediaries have responded by issuing short-term claims such as repo and commercial paper, which have expanded in recent decades.



# BENEFITS OF A LARGE BALANCE SHEET

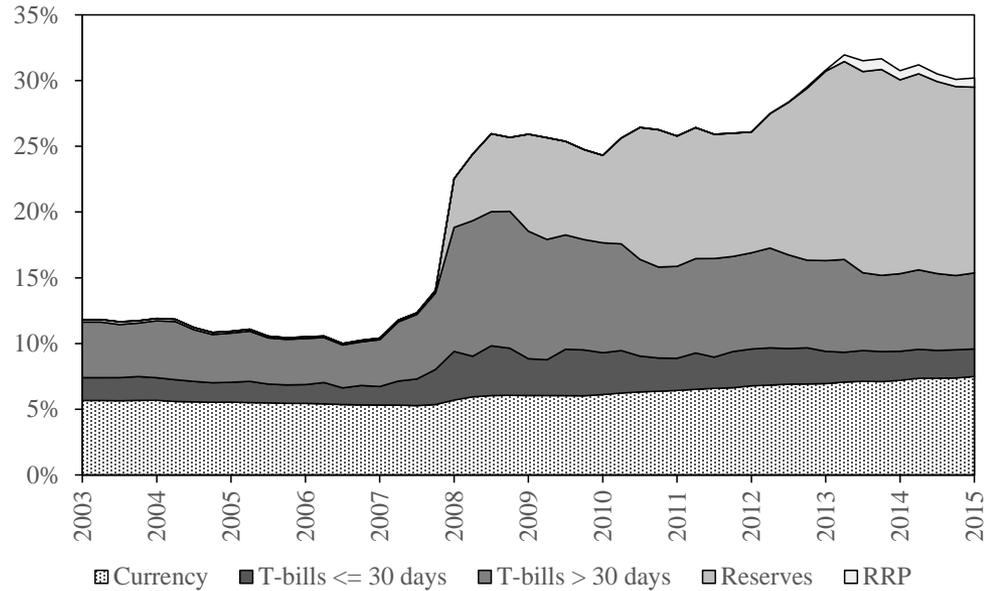
- **The logic of crowding out**
- The government can influence private-sector incentives to issue short-term in two ways: through regulation such as the liquidity coverage ratio (LCR), or by issuing additional short-term government securities itself so as to crowd out private issuance.



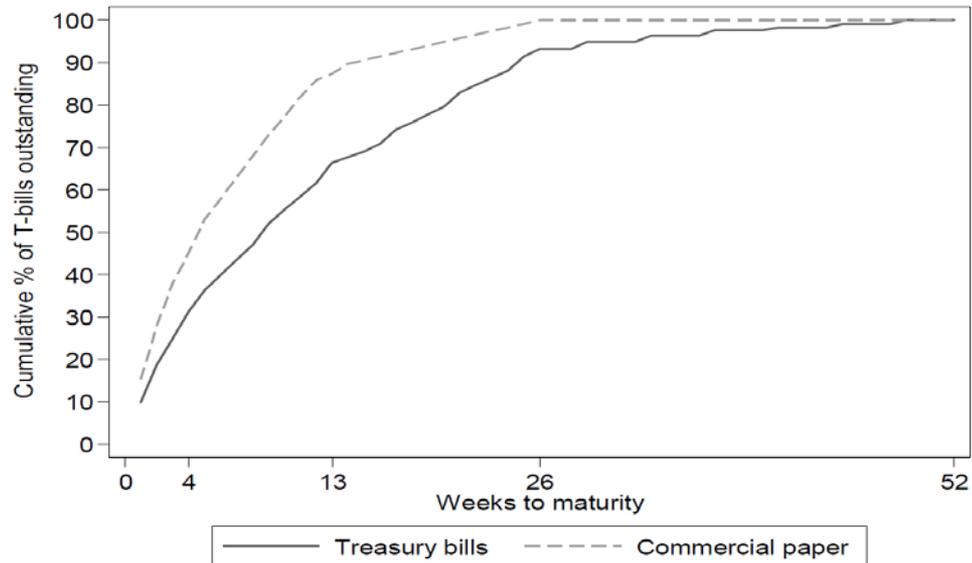
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## ○ Fed vs. Treasury

Treasury:

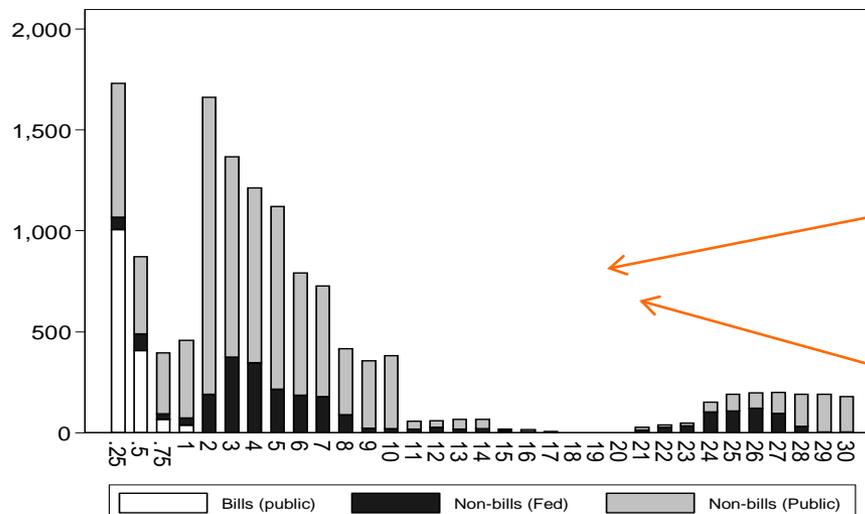


Private Sector  
Short-term:



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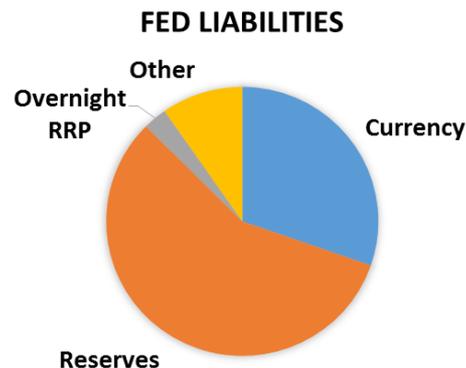
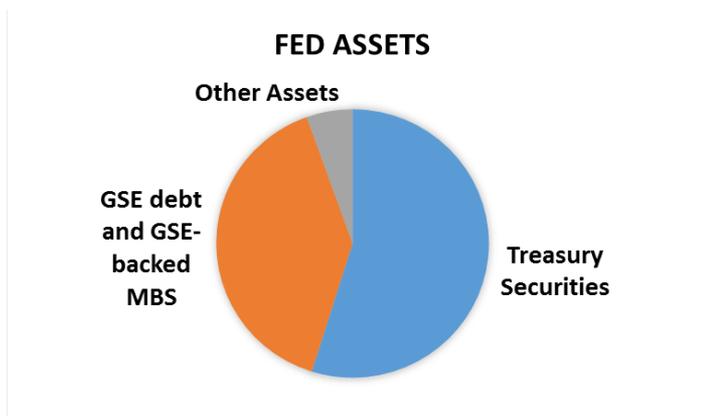
- **Fed vs. Treasury**
- However, as the Fed expands its balance sheet, it takes on more fiscal (interest-rate) risk: effectively, Fed intrudes on Treasury's job of managing government debt maturity.
- On political-economy grounds, one might argue that Fed should do as little of this as possible, subject to fulfilling its dual mandate. This would suggest we return to a small balance sheet, all else equal.
  - Under QE, some fiscal risk-taking was arguably necessary to return economy to full employment and to fulfill the mandate.
- Figure below shows breakdown of Treasury holdings (through 2016)



WAM ~9  
years >  
WAM UST

Fed owns  
no  
T-bills

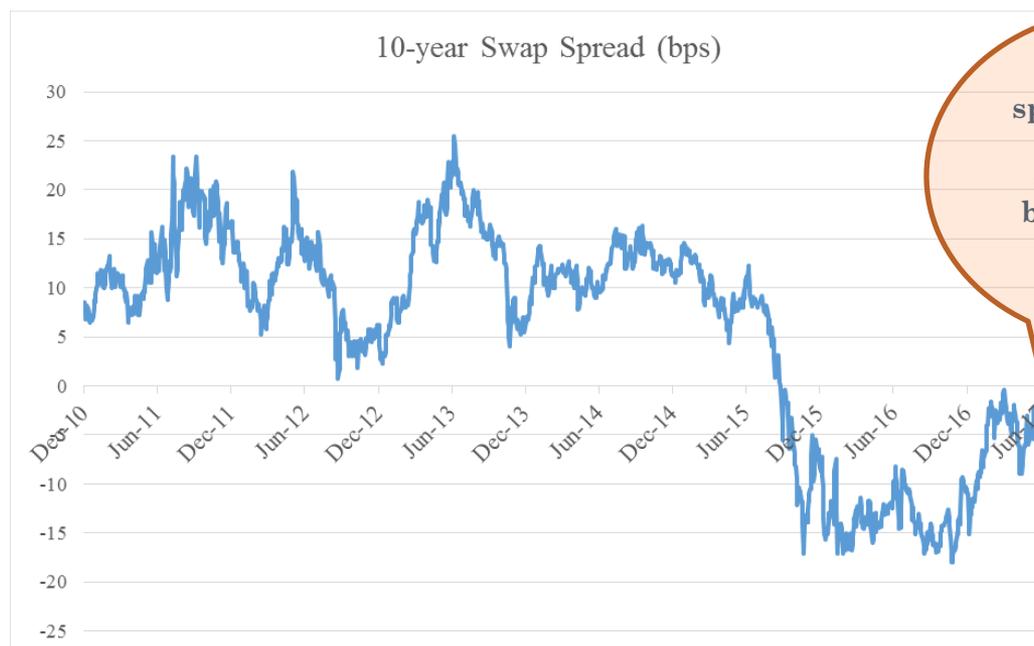
# BENEFITS OF A LARGE BALANCE SHEET



- To date, the Fed has been reluctant to use the RRP facility in large size. This is reflected in a sizeable spread between the IOR rate (currently 125 basis points) and the RRP rate (100 basis points). A similar spread prevailed before the Fed started to raise rates.
- The Fed has also stated that it plans to phase out the RRP facility as soon as it is no longer needed for the purposes of monetary control.
- In our view, this is a mistake.
  - Banks are glutted with reserves and thus have to be paid significant rents in order to absorb them. A large fraction of these rents go to foreign banks.
  - Because only banks can earn interest on reserves, reserves are less effective than RRP from a crowding-out perspective. RRP can be held by money funds, which makes it much closer to T-bills, and more potent at crowding out.
- Fed can both save taxpayers money and better serve the interests of financial stability by targeting a significantly lower spread between IOR and the RRP rates.
  - Would cause equilibrium RRP volume to increase substantially.
  - In the spirit of Milton Friedman (1969): place Fed liabilities with those who value them the most.

# OTHER CONSIDERATIONS: LCR

- By taxing matched-book repo lending by dealer banks, the SLR has made it more expensive for levered investors to finance their holdings of long-term Treasuries.
  - Strengthens the case for Fed to step up and perform the same function by holding long-term Treasuries and financing with RRP: *somebody* needs to do this intermediation.
  - The LCR may at some point create shortages of assets deemed Level 1 HQLA (e.g. Treasuries, reserves). If reserves were given preferential treatment relative to Treasuries in HQLA computation—i.e., a lower haircut—Fed would be able to mitigate such shortages with conventional open-market operations.

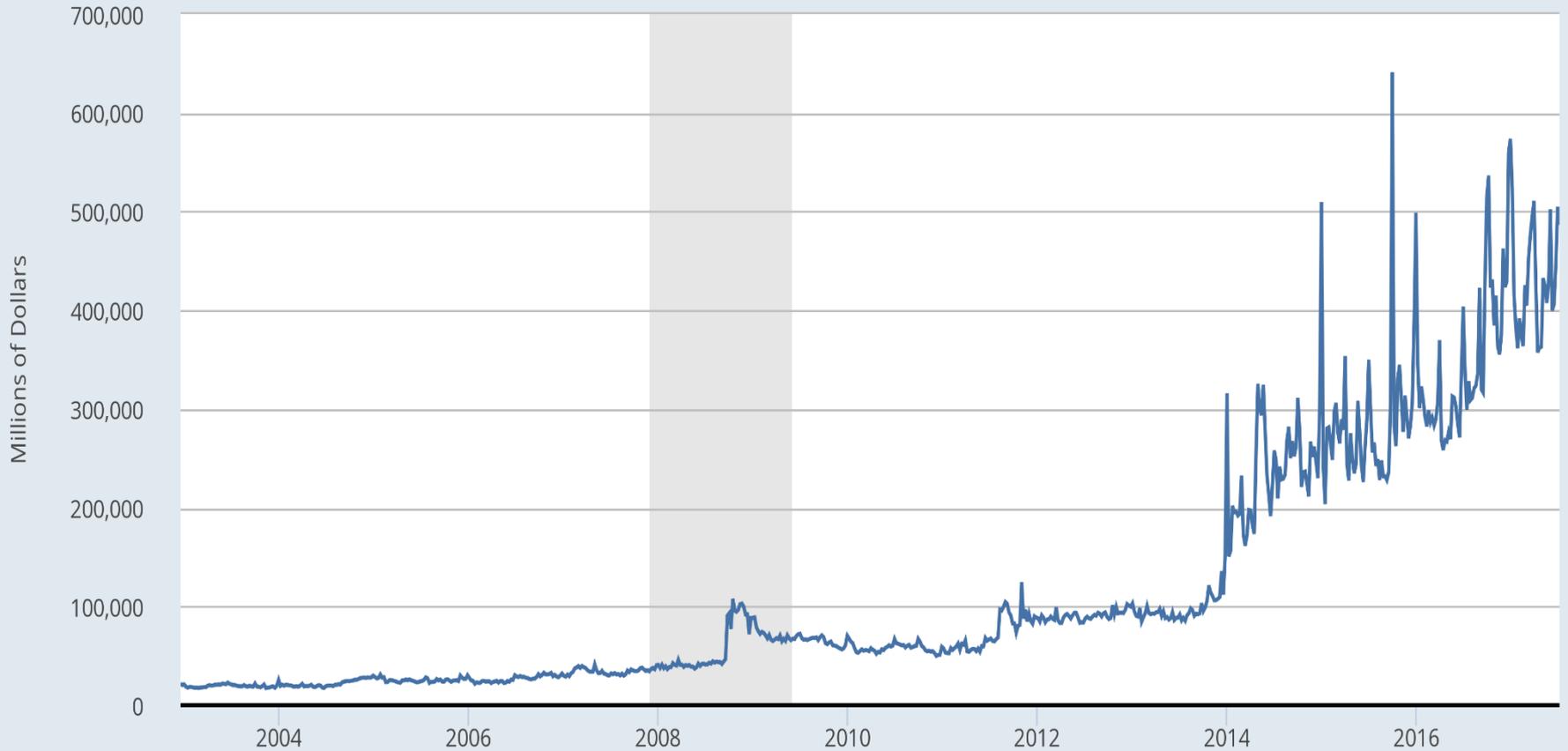


Low swap spreads reflect diminished capacity for balance sheet from dealer banks

# REVERSE REPO



Reverse repurchase agreements held by the Federal Reserve: All Maturities



Source: Board of Governors of the Federal Reserve System (US)

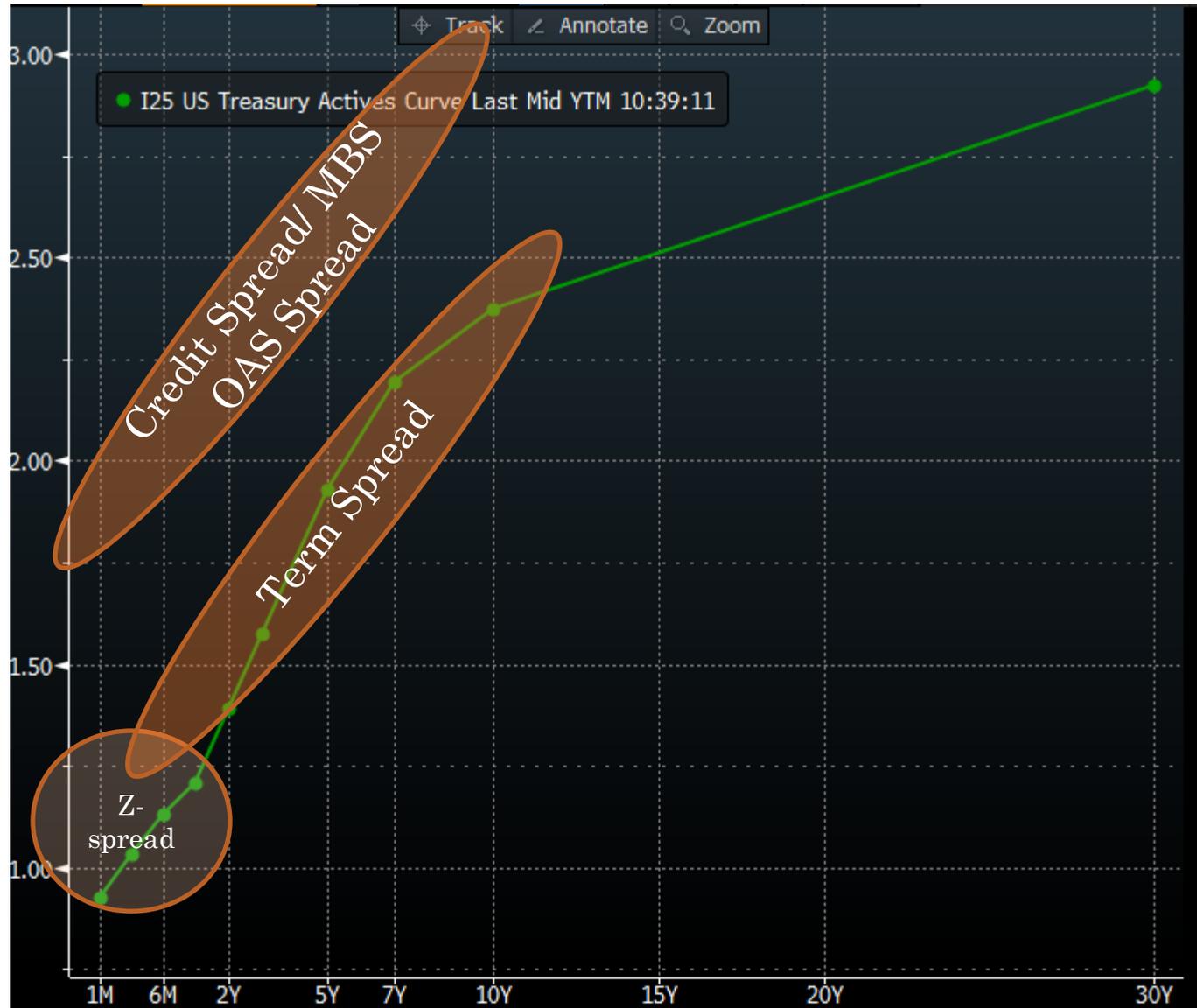
[fred.stlouisfed.org](http://fred.stlouisfed.org)

[myf.red/g/ekUf](http://myf.red/g/ekUf)

# WHAT DOES THIS MEAN FOR UNWIND?

- Suppose you wanted the Fed to maintain its role in short-term money markets
- But were concerned about the overall size of the Fed balance sheet
  - Perhaps because of fiscal risk
  - Or simply “optics”
- **Two options:**
- Fed would sell off its long-term bonds and MBS (ie, under operation twist) but replace with shorter term (say <5 years) bonds, keeping its balance sheet large in dollar terms but reducing its “duration footprint”
- Treasury could be persuaded to increase the supply of T-bills

# SPREADS TO WATCH



UST

# QE1, 2, 3

- Estimating impact of QE on market prices done through extensive set of event studies
- QE1 studies:
  - 60-90 bp change in Treasury yields
  - 123 bp MBS yields
  - 74 bp Baa yields
  - Some impact in foreign markets as well
- Offsets in the unwind
  - Price impact during QE1 may have been exaggerated due to market function (Krishnamurthy and Vissing-Jorgensen 2011)
  - Event studies tend to exaggerate the impact as capital flows to accommodate the shocks (Greenwood, Hanson, Liao 2017). Overall, assessments of QE have relied far too much on event-study methodology
  - Unwind is slow
  - Market has grown
  - Event studies surely less useful for assessing impact of the unwind

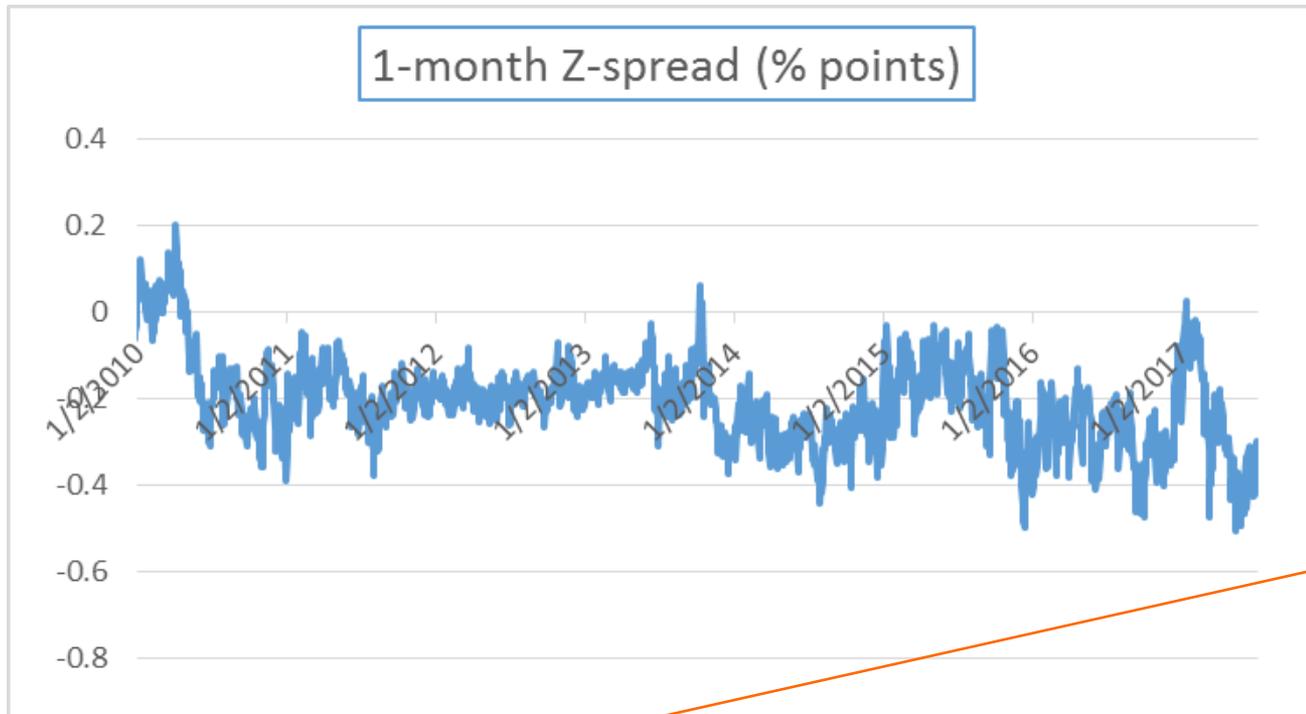
**Table 1 Estimates of effects of QE bond purchases on 10-year yields** (purchases normalized to 10 percent of GDP)

<b>Study</b>	<b>Sample</b>	<b>Method</b>	<b>Yield reduction (basis points)</b>
<b>United States</b>			
Greenwood and Vayanos (2008) <sup>a</sup>	1952–2005	Time series	82
Gagnon, Raskin, Remache, and Sack (2011)	2008–09	Event study	78
	1985–2007	Time series TP only	44
Krishnamurthy and Vissing-Jorgensen (2011)	2008–09	Event study	91
	2010–11	Event study	47
Hamilton and Wu (2012)	1990–2007	Affine model	47
Swanson (2011)	1961	Event study	88
D’Amico and King (2013)	2009–10	Micro event study	240
D’Amico, English, López-Salido, and Nelson (2012)	2002–08	Weekly time series	165
Li and Wei (2012)	1994–2007	Affine model of TP	57
Rosa (2012)	2008–10	Event study	42
Neely (2012)	2008–09	Event study	84
Bauer and Neely (2012)	2008–09	Event study	80
Bauer and Rudebusch (2011) <sup>b</sup>	2008–09	Event study TP only	44
Christensen and Rudebusch (2012) <sup>b</sup>	2008–09	Event study TP only	26
Chadha, Turner, and Zampolli (2013)	1990–2008	Time series TP only	117*
Swanson (2015) <sup>b</sup>	2009–15	Yield curve TP only	40
Christensen and Rudebusch (2016) <sup>b</sup>	2008–09	Event study TP only	15
<b>United Kingdom</b>			
Joyce, Lasasosa, Stevens, and Tong (2011)	2009	Event study	78
	1991–2007	Time series	51
Christensen and Rudebusch (2012) <sup>b</sup>	2009–11	Event study TP only	34
Churm, Joyce, Kapetanios, and Theodoris (2015)	2011–12	International comparison	42

Source: Gagnon 2016

# SPREADS TO WATCH

- Z-spread



**Expect this to continue to widen as (a) fed funds rises, and (b) fed reduces size of balance sheet**

Z-spread measures incentives for maturity transformation at the very short end. Fed balance sheet may be a way to control Z-spread while maintaining control of the short rate

Z-spread can be approximated as 6 month minus 1 month T-bill spread

First \$trillion may not move much due to current lack of scarcity value...but watch out for impact after that