

Exiting Well

Peter Stella


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Challenges to Monetary Policy in the Future

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Contact information pstellaconsult@gmail.com

Revised version of the paper at centralbankarchaeology.com



The degree of commercial bank balance sheet displacement caused by Large Scale Asset Purchases (LSAP) is truly astonishing

- Bank balances held at Federal Reserve Banks (FRBs) have increased from USD 20 billion to USD 2.7 trillion (+13,000 percent).
- Increased deposits at FRBs account for *57 percent* of the total growth of US bank assets since the onset of the Great Recession.
- In 2006, JP Morgan Chase (JPM) held USD **2.2 billion** at FRBs.
At end-March 2015, JPM held USD **447 billion** (+ 20,000 percent).
- More than 21 percent of JPM total assets are now claims on FRBs.
- In 2006, State Street held USD **103 million** at FRBs.
At end-March 2015, State Street held USD **56 billion** (+ 53,000 percent)
- More than 20 percent of State Street total assets are now claims on FRBs.



Banks must obtain financing from nonbanks (including equity) to finance their additional deposits held at FRBs—or reduce other assets

Table 5: Change in Simplified Aggregate Balance Sheet of US Commercial Banks

From 12/5/2007 to 8/26/2015

(in US\$ billions)

Assets		Liabilities	
Loans and Leases	+1584	Nonbank Deposits	+4088
Treasury and Agency securities	+993	Borrowings	-227
Other Securities	-75	Other Liabilities	+245
Deposits at FRBs	+2666	Total Liabilities	+4106
Other Assets	-508	Equity and Residual	+554
Total Assets	+4660	Total Liabilities and Equity	+4660

Source: Federal Reserve Board Release H.8, H.4.1 and Author's calculations



The bulk of the change in US bank balance sheets has been in deposit growth at FRBs and associated financing

Table 6: Reclassified Change in Aggregate Balance Sheet of US Commercial Banks

From 12/5/2007 to 8/26/2015

(in US\$ billions)

Assets		Liabilities	
Deposits at FRBs	+2666	Nonbank Deposits to Finance Reserves	+2666
Loans and Leases	+1584	Other Nonbank Deposits	+1422
Treasury and Agency securities	+993	Equity and Residual	+554
Net Other Assets	-601		
Total Assets	+4642	Total Liabilities and Equity	+4642

Source: Federal Reserve Board Release H.8, H.4.1 and Author's calculations



The micro view...JPM balance sheet


Reclassified Change in Simplified JP Morgan Chase Balance Sheet

From 6/30/2008 to 3/31/2015

(in US\$ billions)

Assets		Liabilities	
Balances due from FRBs	+444	Liabilities to Finance FRB Balances	+444
Other Assets	+274	Other Liabilities	+192
		Equity Capital	+82
Total Assets	+718	Total Liabilities and Equity Capital	+718

Source: FFIEC Reports # 031 "Consolidated Reports of Condition and Income" and Author's calculations



Expanded bank balance sheets combined with post-crisis legislation aimed at reducing leverage and reliance on short-term financing are problematic

- Strengthened US regulations require US chartered banks to pay FDIC insurance charges on all non-equity financing (2011) and to hold capital under eSLR for all assets—including deposits held at central banks (2018).
- US G-SIBs could be subject to a maximum 20x simple leverage ratio with zero carve-out for deposits held at the central bank.



Are these regulations impacting behavior? It seems so...

- “JPMorgan Chase & Co. plans to cut as much as \$100 billion of some clients’ excess deposits in its efforts to limit capital required under a new U.S. proposal. The largest U.S. bank will do ‘whatever it takes’ to stay below a 5 percent capital buffer requirement...The new rules would almost double the capital surcharge that international regulators recommended for JPMorgan, requiring the bank to add more than \$20 billion.”

Bloomberg.com news 24 February 2015

- “J.P. Morgan Gets Smaller: Assets decline \$160 billion as bank moves to simplify in face of new capital rules...The bank has slashed...’nonoperating’ deposits by \$150 billion, exceeding its target for the year by \$50 billion.”
- “The bank is trying to become smaller because the Federal Reserve is preparing to apply new capital surcharges that will be more costly to a bank the larger and more complex it is...J.P. Morgan executives said they think they have made enough moves to reduce its surcharge to 4% from 4.5%”

The Wall Street Journal 14 October 2015 (page C1)



Where are JPM's depositors headed?...regulatory arbitrage by US branches and agencies of foreign banks

Table 7: US Bank Reserves and Assets (USD billions & percent)	End June 2008			End March 2015		
	Reserves	Total Assets	R/TA	Reserves	Total Assets	R/TA
US Chartered Banks	12.8	9725	0.13	1783	12913	13.8
US Branches and Agencies of Foreign Banks	0.6	2081	0.03	884	2532	34.9

Sources: FR Bulletin Table 4.3, FRB Releases H.8 and H.4.1, November 2008 & March 2015; and author's calculations. See also McCauley and McGuire (2014) *BIS Quarterly Review*, March.



The point of LSAP was not to increase bank reserves....

- “The huge quantity of bank reserves...created has been seen largely as a *byproduct* of the purchases [LSAP] that would be unlikely to have a significant independent effect on financial markets and the economy.”
[emphasis added]

The Federal Reserve's Policy Actions during the Financial Crisis and Lessons for the Future, Speech by Federal Reserve Board Vice Chairman Donald L. Kohn at Carleton University, Ottawa, Canada May 13, 2010.



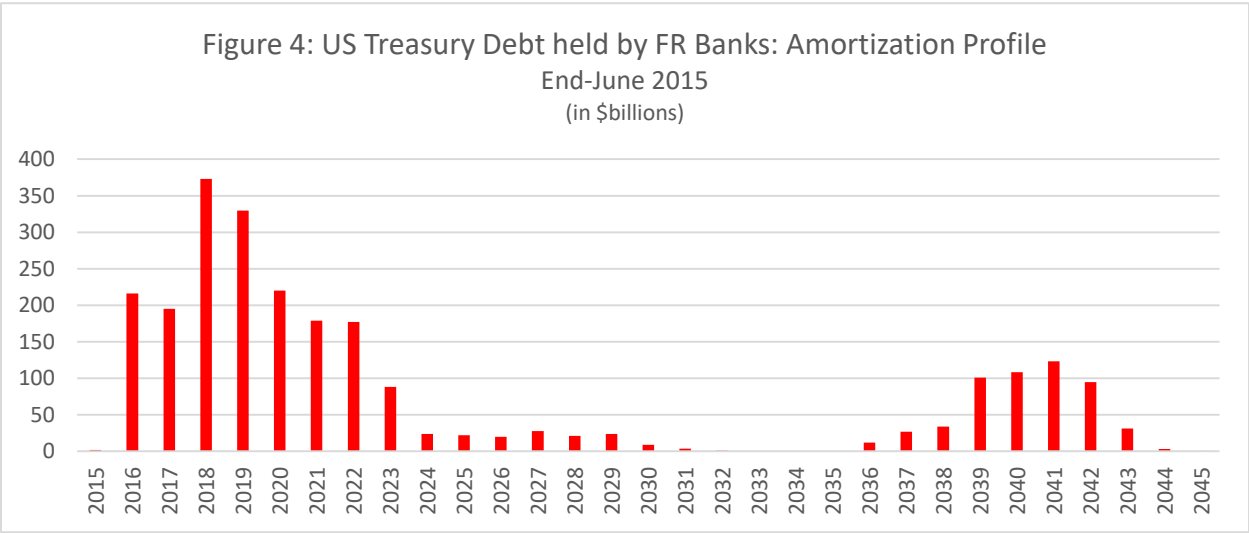
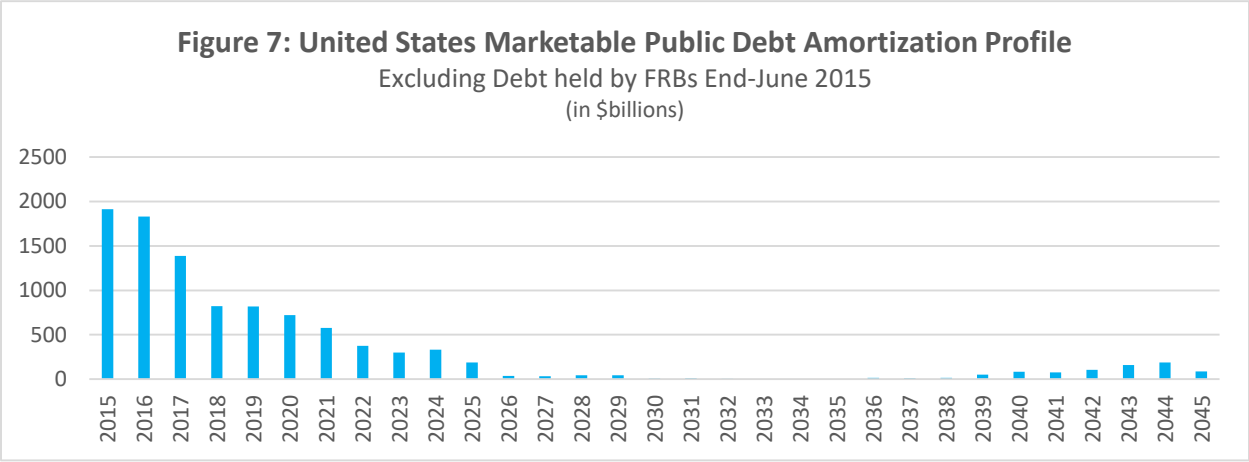
What then was the point of LSAP?

- Having exhausted their ability to lower policy rates, central banks employed balance sheet policies to reduce both credit risk and term premium components of yields on government and corporate bonds, asset-backed securities and equities.
- Enhanced the credibility of “lower for longer” by making it more difficult to unwind the (enlarged) balance sheet.



LSAPs with Treasuries aimed to take duration (interest rate risk) out of the market

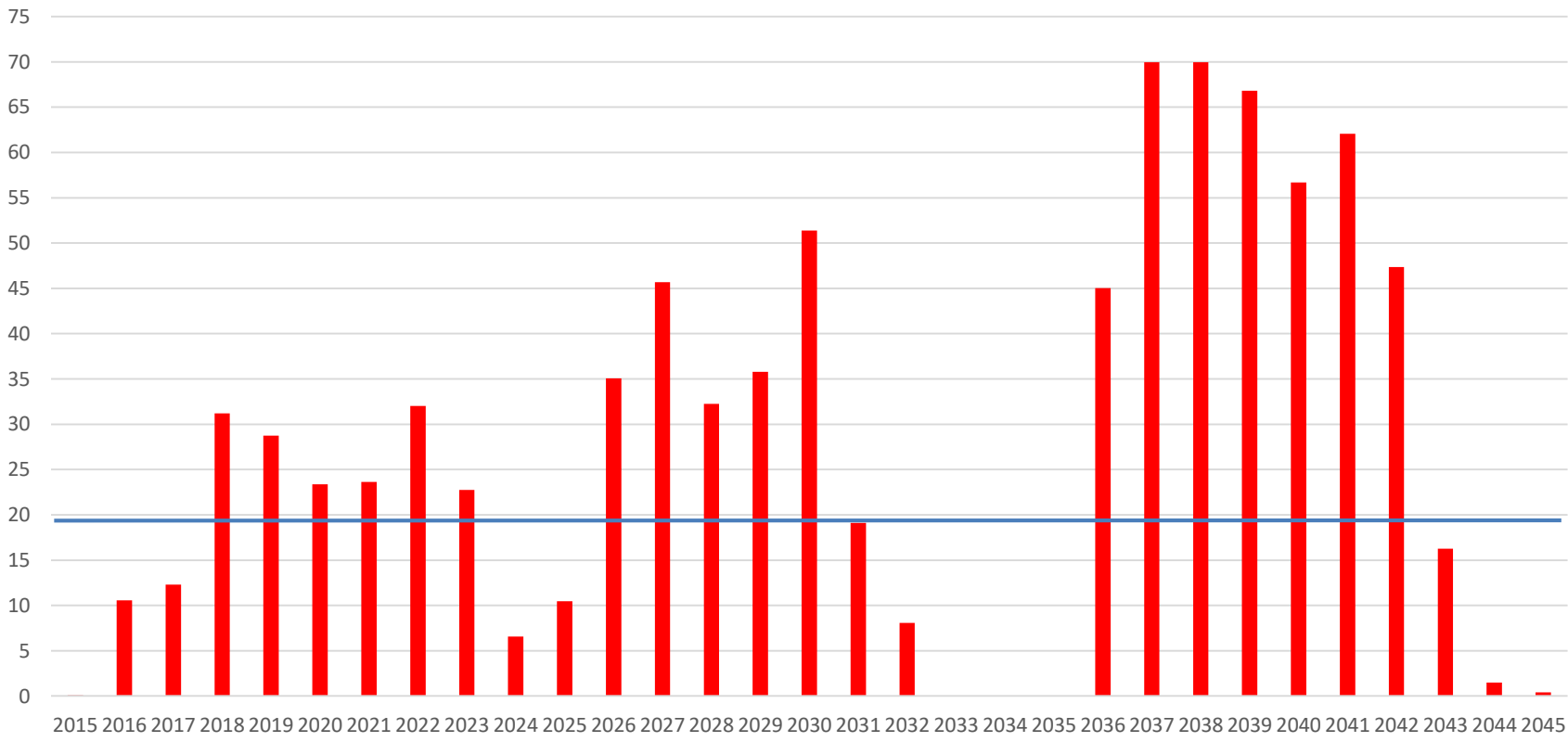
- Duration!





Duration subtracted from the market was added to Fed portfolio

Figure 6: Proportion of US Marketable Public Debt held by FRBs by amortization date
End-June 2015
(in \$billions)





How is the Fed going to “exit”? Raising rates, not shrinking the balance sheet

Table 3: Consolidated Balance Sheet of the Federal Reserve Banks

October 21, 2015

(in US\$ billions)

Assets		Liabilities	
US Treasuries	2564	FR Notes Outstanding	1347
MBS and Federal Agencies	1863	Bank Deposits (Overnight)	2676
Net Other Assets	42	Bank Deposits (Term)	0
		Reverse Repos	331
		US Treasury Deposits	57
		Equity	59
Total Assets	4470	Total Liabilities	4470

Source: Federal Reserve Board Release H.4.1 and Author's calculations



Exit Strategy and the Balance Sheet

- Curtail and terminate LSAPs (done)
- Increase Term Deposits (experimenting)
- Increase Reverse Repos and raise rate (experimenting)
- Increase Interest on Reserve rate and employ “Maglev”
- Cease rolling over maturing securities (....”maybe later”)



If the Fed were to go back to the pre-crisis operational framework

Table 3A: Consolidated Balance Sheet of the Federal Reserve Banks
 “July 15, 2016”

(in US\$ billions)


Assets		Liabilities	
US Treasuries	2500	FR Notes Outstanding	1400
Liquidity providing repos	250	Bank Deposits (Overnight)	200
MBS and Agencies	1900	“Other Stuff”	3000
Net Other Assets	50	US Treasury Deposits	50
		Equity	50
Total Assets	4700	Total Liabilities	4700

Source: Author's calculations



Disadvantages of Fed instruments


- Unpredictable issuance supply and market fragmentation
 - TD and RRP at fixed and variable rates, different maturities, IOR “artificial”
- IOR and TD only available to banks
 - Segmentation providing incentives to nonbank intermediation—banks trying to rid themselves of deposits—moving intermediation to the “shadow”, P2P lending
- New regulatory environment has increased the cost of bank intermediation of LSAPs—reducing capital to support trading arbitrage
 - Leverage ratio requires capital to cover “risk” of reserves held at FRBs while FDIC charges are imposed on short term financing of those same reserves—unintended consequence of LSAPs has been to compel *banks* to hold and finance an enormous quantity of unproductive assets
- At least US did not impose negative rate on bank reserves!
 - European banks are discouraging depositors with fees and negative rates
 - European interbank rate (EONIA) is negative...“hot potato” effect



The Fed used the instruments at its disposal to achieve its objective—but there has been collateral damage

- During the LSAP, the Fed bought \$3 trillion in securities from the **market** in exchange for \$3 trillion in bank reserves—interest-bearing FRB liabilities that may only be held by **banks**. (Market segmentation).
- LSAP have withdrawn USD 3 trillion in high quality liquid assets/collateral from the market at the same time global regulatory changes have stoked demand for riskless liquid assets....See, e.g.:

“Funds Clamor for Short Treasuries” (WSJ 20 October 2015)
- *Banks have been caught in the middle of deleveraging with unnecessarily bloated balance sheets owing to their “forced” intermediation of LSAP*



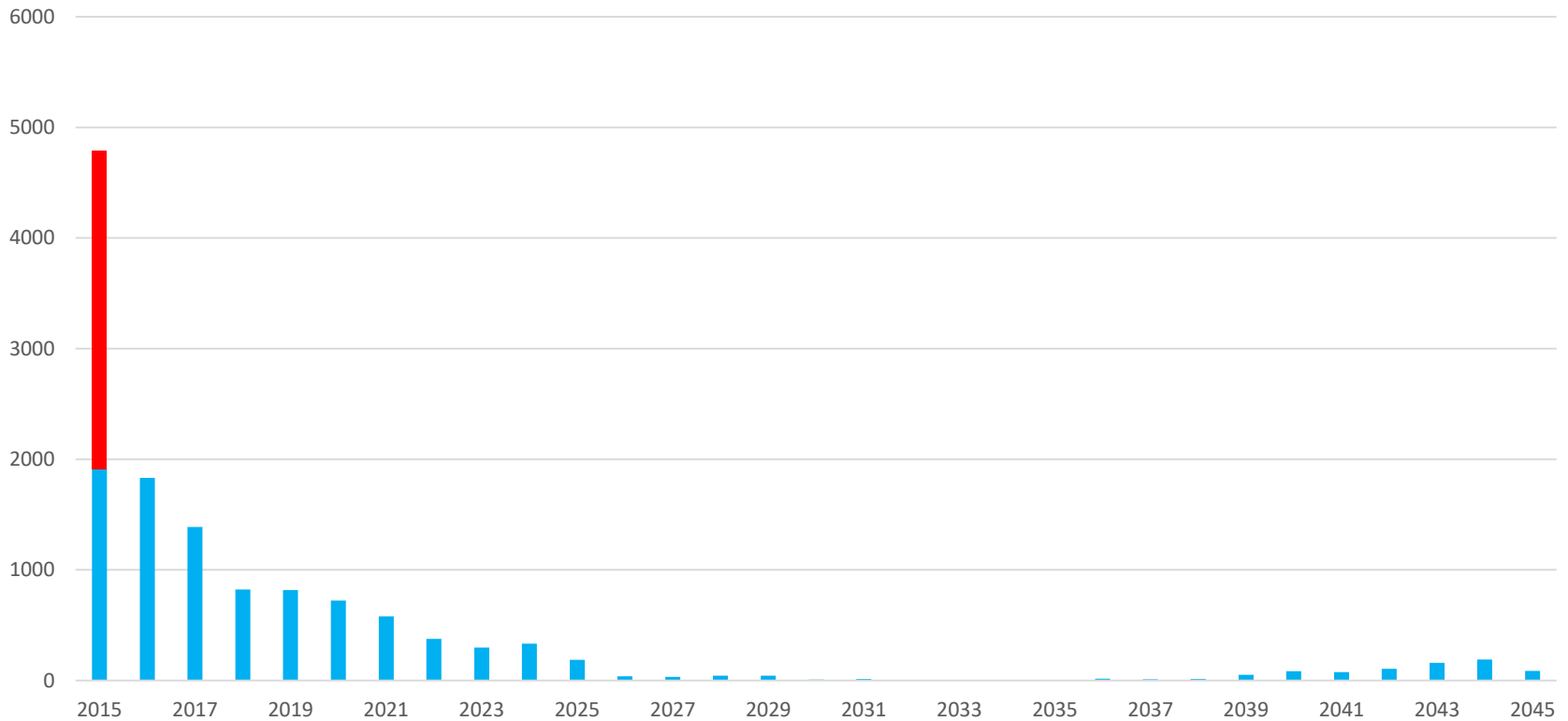
Fed instruments are expensive for the taxpayer owing to market segmentation and fragmentation

Auction/Issue Date	FRB Interest-Bearing Liabilities				US Treasury Instruments				
	IOR (o/n)	RRP (o/n)	Term RRP	7 Day TD	28 Day UST	90 Day UST	180 Day UST	7 Year	FRN
11/3/2014	25	3			3.5[36]	2[24]	6[30]		[15]
11/10/2014	25	3			4.5[40]	2.5[24]	6[28]		
11/17/2014	25	7			3.5[40]	2.5[24]	7[28]		
11/24/2014	25	7			6[40]	2[24]	7[28]		
11/26/2014	25	7		29[335]					[13]
12/1/2014	25	10			3[187/50]	2.5[112/24]	7.5[110/26]	196[76/29]	
12/4/2014	25	10		30[402]					
12/8/2014	25	10	8[102/50]		4[176/50]	2.5[108/24]	9[109/26]		
12/15/2014	25	5	7[75/50]		2[131/40]	3.5[96/24]	11[99/26]		
12/22/2014	25	5	10[50/100]		1	5.5	15.5		
12/29/2014	25	5	10[76/100]		1.5	4	13	212.5	[13]



Whether or not this debt structure is optimal, why have two sets of instruments and two issuers?

Figure 9: Consolidated United States Public Debt Amortization Profile
FRB Liabilities (excloding currency) shown separately in red
End-June 2015
(in \$billions)

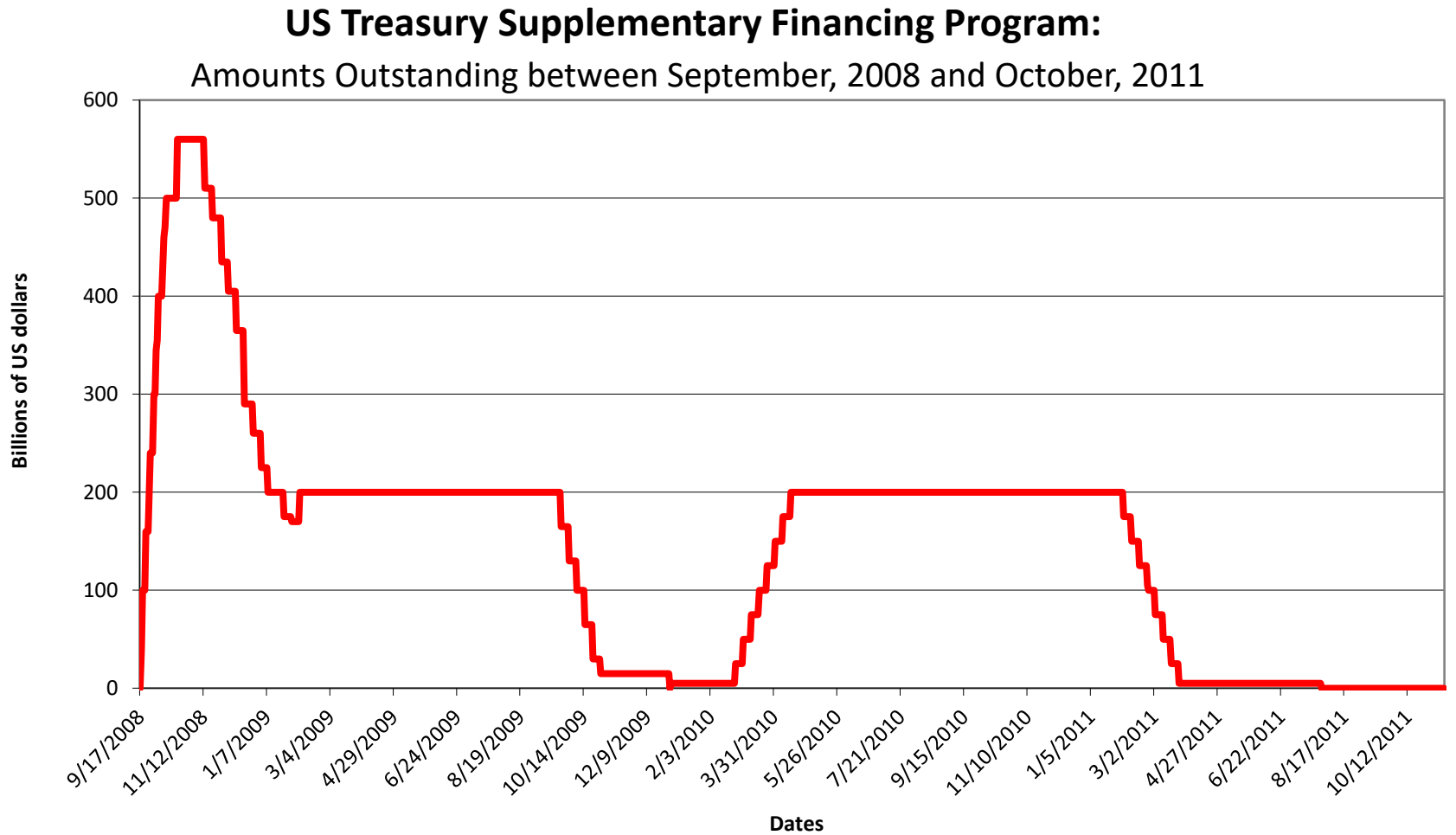




An option that eliminates distortions without shrinking Fed balance sheet

- *Resume Supplementary Financing Program (SFP) and maintain large excess Treasury deposits at the Federal Reserve Bank of New York*
 - *Pros*—Eliminate debt market fragmentation—by replacing new Fed instruments;
 - Eliminate segmentation—all debt instruments available to banks and nonbanks;
 - Reestablish Treasury as the single US debt manager;
 - Zero Treasury rollover risk if account balance maintained;
 - Is a tested instrument in US—as well as Mexico and Israel;
 - Satisfy increased demand for bills to meet liquidity requirements (MMF)
 - Decrease cost of financing consolidated US sovereign balance sheet
 - *Cons*—Increases gross debt “in the hands of the public” ...would Congress understand?;
 - Optics of large Treasury “idle balance” at FRBNY;
 - Might Treasury attempt to extend duration of the debt too quickly?
 - Treasury would control creation/destruction of bank reserves

US Treasury sterilization of Fed crisis liquidity provision





Using SFP during the exit is not a “new” idea

- “...other tools are available...to improve control of the federal funds rate during the exit stage. For example, the Treasury could resume its recent practice of issuing supplementary financing bills and placing the funds with the Federal Reserve; the issuance of these bills effectively drains reserves from the banking system,...”

Federal Reserve Policies to Ease Credit and Their Implications for the Fed’s Balance Sheet

Speech by Chairman Ben S. Bernanke at the National Press Club Luncheon

National Press Club, Washington, D.C., February 19, 2009



Alternatively: shrink the Fed balance sheet

- *Debt swap with FRBs—trade existing FRB long-duration portfolio for treasury bills or a portfolio representative of the current market portfolio*
 - *Pros—Allows Fed to shrink balance sheet at its own pace without major duration impact—“crisis is over”—eliminate market fragmentation and segmentation*
 - *No change in debt “subject to statutory limit”*
 - *Reduce Fed concern about equity impact of potential portfolio valuation losses*
 - *Allow Fed more political balance sheet “space” to use LSAPs again in future—LSAPs to be viewed as “temporary” not “permanent” tools*
 - *Remove any residual market concern that Fed might “dump” long duration securities*
 - *Decrease cost of financing consolidated US sovereign balance sheet*
- *Cons—FOMC might be in no hurry to shrink balance sheet, distortions remain;*
- *Treasury roll over risk increases (less so in reality as Fed can always “monetize debt”)*
- *Treasury might increase market duration “too fast” after Fed sells bills (use FRNs?)*



Conclusion

- *The FOMC appears to believe that a smooth exit requires it to be a debt manager for an extended period of time. Since an abrupt sale of its holdings of long term securities would lead to excessive turbulence it will finance its portfolio by issuing very short term interest-bearing liabilities*
- *These liabilities are both inefficient and costly. Fragmenting US public debt management among the novice Fed—with a small range of instruments at its disposal, and the experienced Treasury—with a complete range of available instruments, is obviously a mistake. A mistake avoided in 2008.*
- *Several countries have successfully transitioned post-crisis from central bank to treasury debt...several options are available to the US*
- *Whichever option is chosen, the US should aim to curtail the period of time during which it has two sovereign issuers and two sets of debt instruments.*