

Responses to the Financial Crisis, Treasury Debt, and the Impact on Short-Term Money Markets

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January 6, 2011

The views expressed do not necessarily represent those of the Federal Reserve Bank of New York or the Federal Reserve System.

Introduction

- Δ collateral \Rightarrow collateralized funding markets
 - During crisis, reduce term/flight to quality
 - Tsy collateral and O/N Tsy GC repo rates—one of most important money market rates
- More supply—higher rates—smaller spread to FF benchmark
- Settlement, not announcement matters for O/N

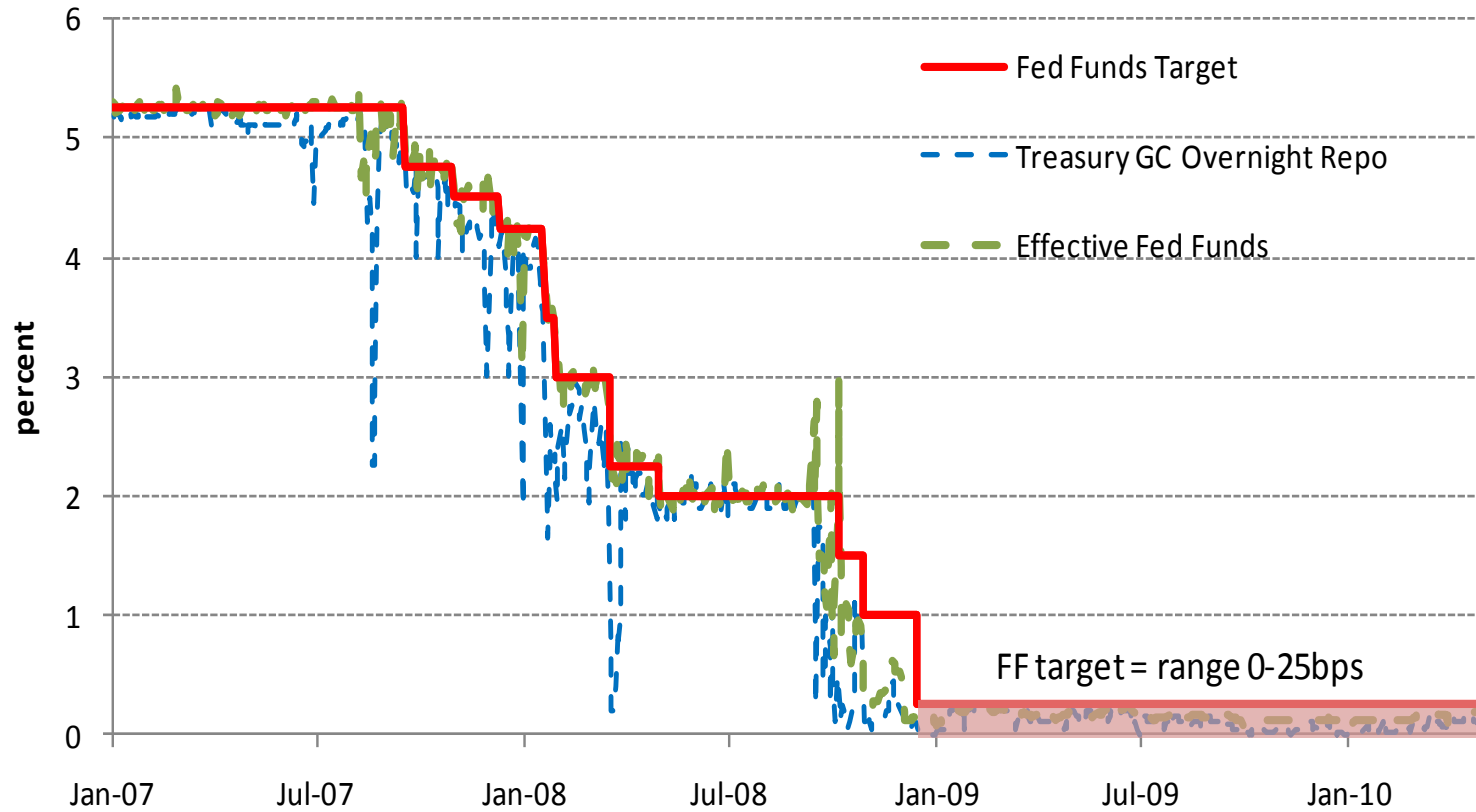
Introduction

- Interaction btw various policies
 - Only TSLF designed to directly impact stresses in money-markets via Δ Tsy collateral
 - Policies could run counter to each other

$$\begin{aligned}\Delta(\text{FF target-GC repo rate spread})_t \\ = \alpha + \beta * \Delta \text{Tsy Collateral}_t + \gamma * \Delta X_t + \varepsilon_t\end{aligned}$$

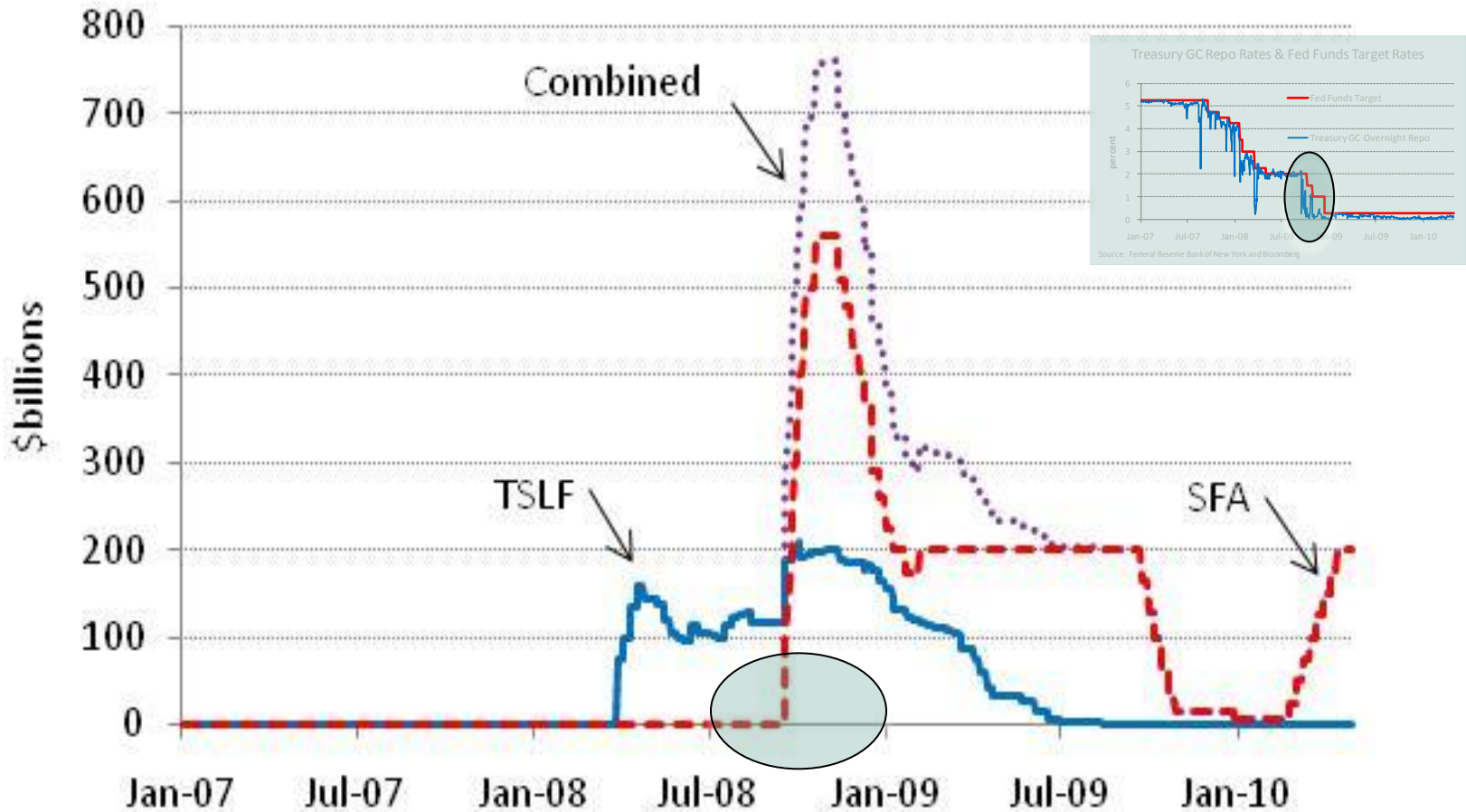
- Expect $\beta < 0$
- Are all Tsy the same?
 - e.g., Bills impact \neq Notes and Bonds?
 - Different holders of Tsy securities

Treasury GC Repo Rates & Fed Funds Target Rates



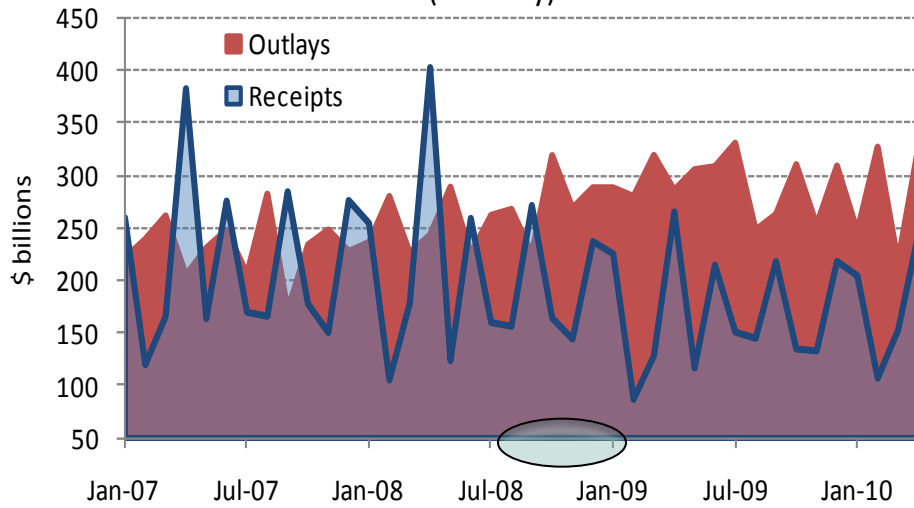
Source: Federal Reserve Bank of New York and Bloomberg

SFA balance relative to TSLF outstanding



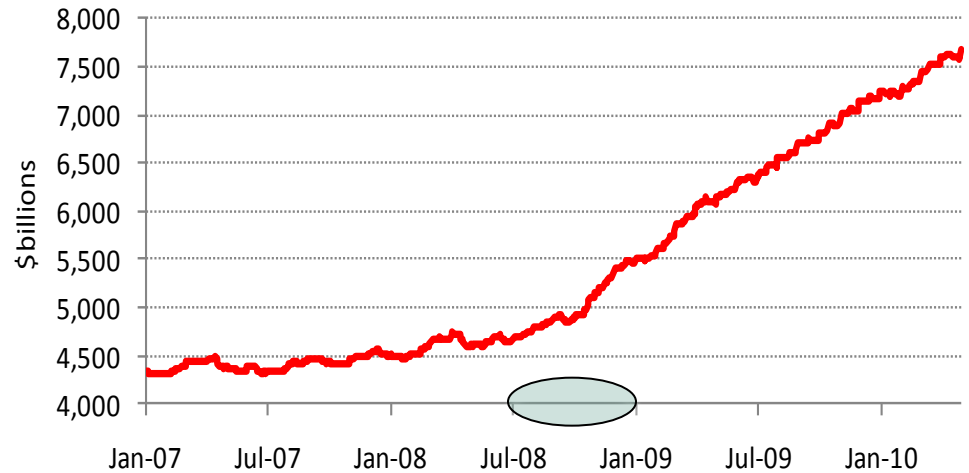
Source: Federal Reserve Bank of New York and Daily Treasury Statement

Federal Receipts and Outlays (monthly)



Source: Monthly Treasury Statement

Marketable Treasury Debt Outstanding (net of SFP)

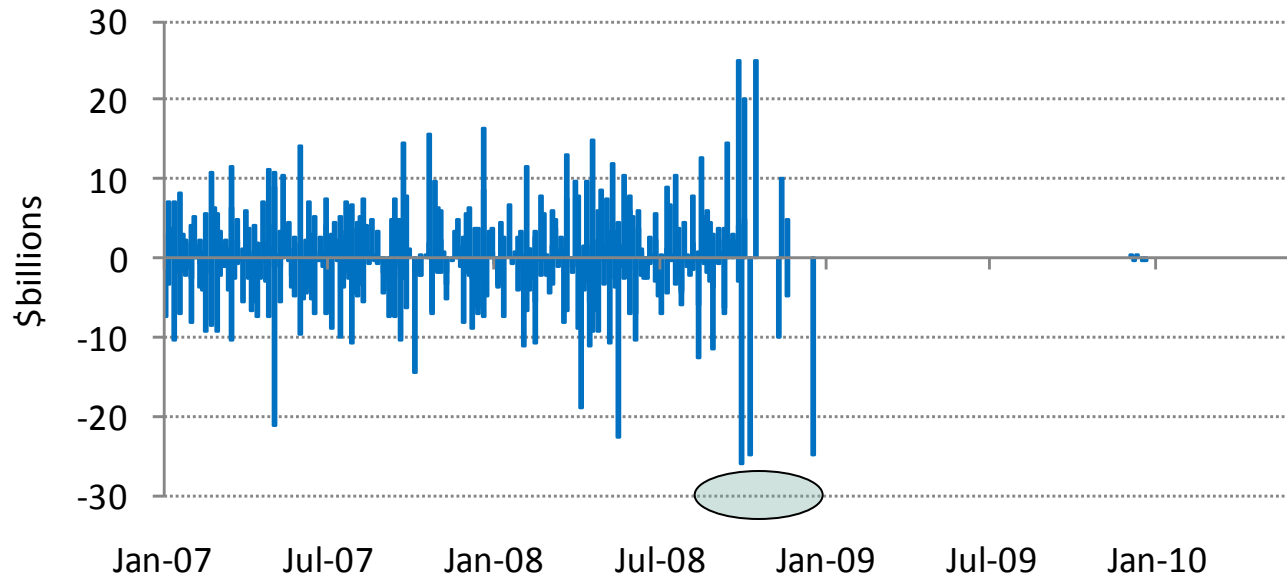


Source: Daily Treasury Statement

Marketable U.S. Treasury Securities

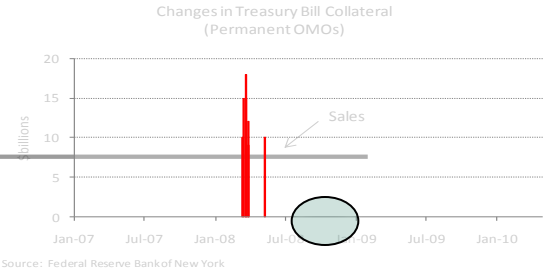
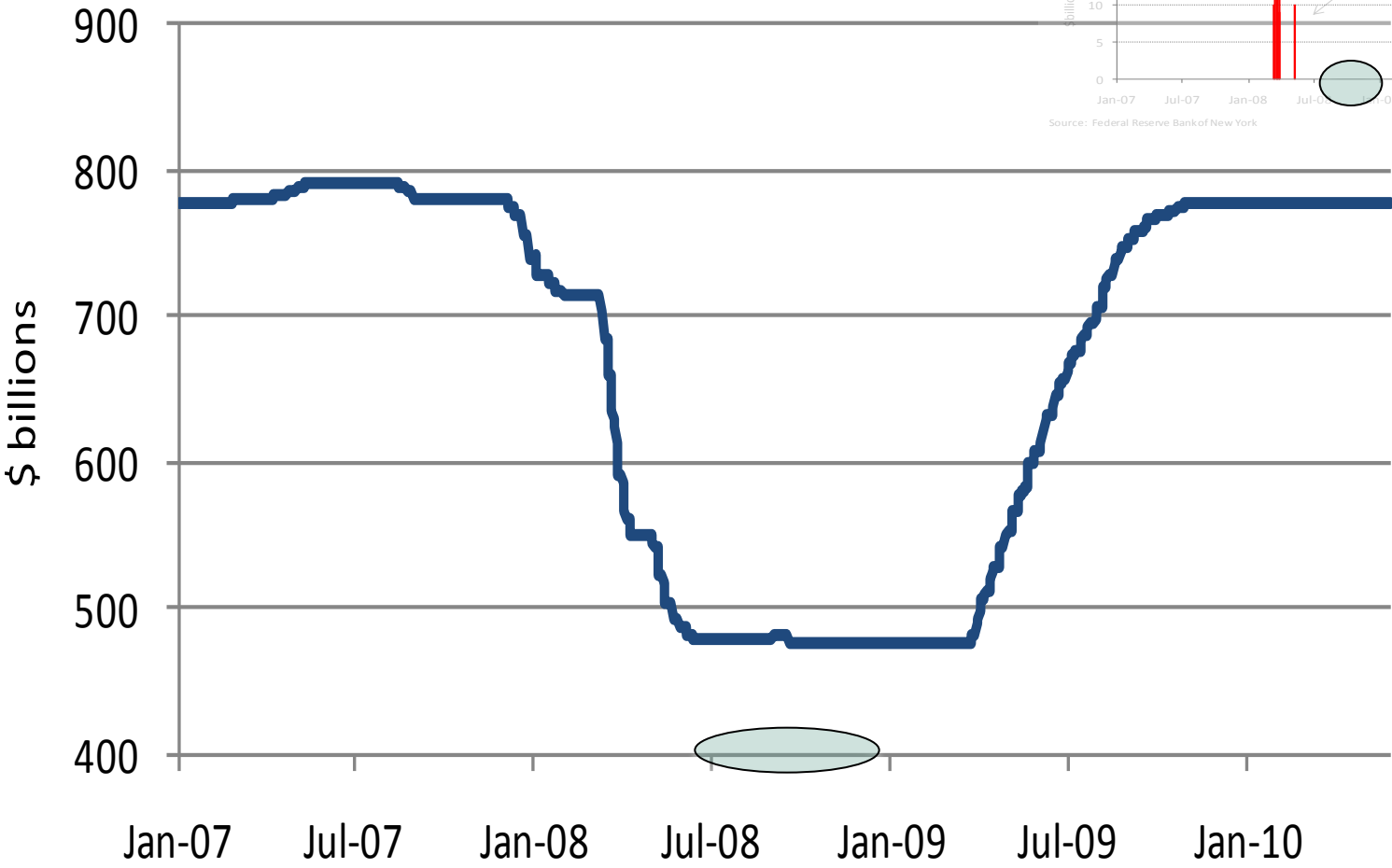
<u>Type</u>	<u>2006</u>		<u>2009</u>	
	<u>Maturities</u>	<u>Schedule</u>	<u>Maturities</u>	<u>Schedule</u>
<u>Bills:</u>	Cash-Management Bills	As Needed	Cash-Management Bills	As Needed
	4-week	Weekly	4-week	Weekly
	13-week	Weekly	13-week	Weekly
	26-week	Weekly	26-week	Weekly
			52-week	Every 4 weeks
<u>Notes:</u>	2-years	Monthly	2-years	Monthly
	3-years	Quarterly	3-years	Monthly
	5-years	Monthly	5-years	Monthly
	10-years	8 times a year	7-years	Monthly
			10-years	Monthly
<u>Bonds</u>	30-years	2 times a year	30-years	Monthly
<u>Inflation-Indexed:</u>	5-year Notes	2 times a year	5-year Notes	2 times a year
	10-year Notes	4 times a year	10-year Notes	4 times a year
	20-year Bonds	2 times a year	20-year Bonds	2 times a year

Changes in Treasury Collateral (Temporary OMOs)



Source: Federal Reserve Bank of New York

SOMA Treasury Holdings



Source: Federal Reserve Bank of New York

$$\Delta \text{FF target-GC repo rate spread}_t = \alpha + \beta * \Delta \text{Treasury Collateral}_t + \gamma * \Delta X_t + \varepsilon_t$$

First-Difference Regression

Dependent Variable: $\Delta(\text{FF target-GC rate})$ (bps)

	Coeff.	Coeff.	Coeff.
Constant	0.76	0.431	3.995***
Δ All Tsy Collateral	-0.212***		
Δ TSLF		-1.235***	-1.104***
Δ SFP		-0.167*	-0.0574
Δ Tsy Bills		-0.159**	-0.100
Δ Tsy Notes and Bonds		-0.140***	-0.125**
Δ Temporary OMOs		0.0536	0.102
Δ SOMA Bills		0.556	1.439**
Δ SOMA Notes and Bonds		-0.116	0.143
$(\text{FF Target-GC})_{t-1}$			-0.150***

Sample Period: 1/2/07-5/28/10

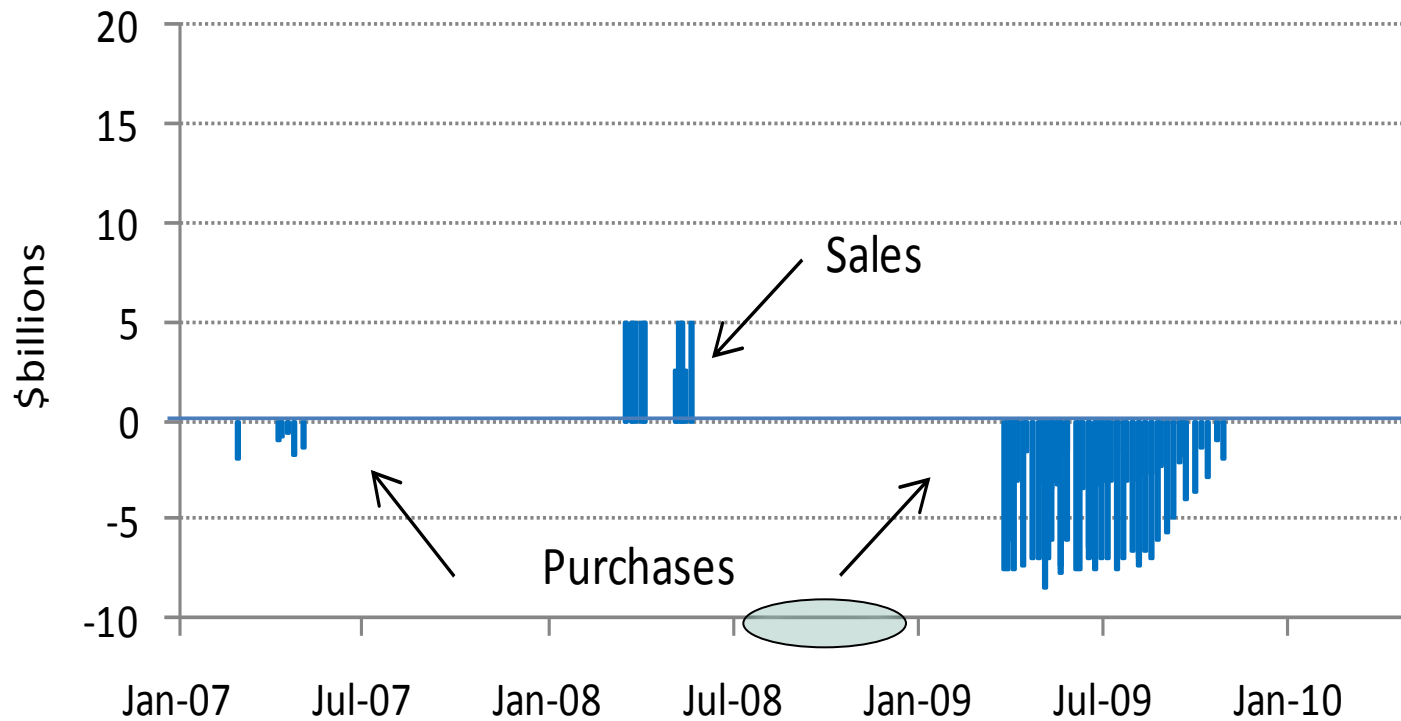
*** p<0.01, ** p<0.05, * p<0.1

Robustness: other sample periods, other dep vars,
various specs

Summary of Results

- TSLF had largest impact
 - Different types/sources/holders of collateral—different probability of hitting repo markets
- Evidence (in paper) that TSLF impact is stronger with greater stress in funding markets

Changes in Treasury Coupon Collateral (Permanent OMOs)



Source: Federal Reserve Bank of New York

Distribution of ownership of Treasury and agency securities
 \$ billions and percentage points, end of quarter, not seasonally adjusted

	Treasury securities			Agency debt and MBS		
	2010Q1		Change from 2008Q4	2010Q1		Change from 2008Q4
	Level	Percent	Level	Level	Percent	Level
All sectors	8069	100	1925	7775	100	-391
Households and nonprofit organizations	606	8	522	94	1	-611
Nonfarm nonfinancial corporate business	50	1	19	13	0	3
Nonfarm noncorporate business	57	1	-6			
State and local governments	535	7	43	366	5	-69
Federal government				226	3	171
Rest of the world	3936	49	725	1282	16	-163
Federal Reserve	777	10	301	1238	16	1218
Depository institutions	274	3	169	1605	21	179
Insurance companies	261	3	89	480	6	-1
Pension and retirement funds	644	8	200	559	7	-102
Investment funds	695	9	-101	1146	15	-203
Government-sponsored enterprises	60	1	43	417	5	-493
Issuers of asset-backed securities	45	1	-20	113	1	-226
Real estate investment trusts				110	1	19
Security brokers and dealers	131	2	-59	128	2	-115

Source: Flow of Funds accounts, tables L209 and L210

First-Difference Regression

Dependent Variable: $\Delta(\text{FF target-GC rate})$ (bps)

<u>WITH INTERACTIONS</u>	<u>Coeff.</u>
ΔTSLF	-0.0252
ΔSFP	-0.123
$\Delta\text{Tsy Bills}$	-0.0201
$\Delta\text{Tsy Notes and Bonds}$	-0.109*
$\Delta\text{Temporary OMOs}$	-0.194
$\Delta\text{SOMA Bills}$	-1.773
$\Delta\text{SOMA Notes and Bonds}$	-0.471**
$(\text{FF Target-GC})_{t-1}$	-0.286***

Sample Period: 1/2/07-5/28/10

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$
