



FEDERAL RESERVE BANK *of* NEW YORK

The Evolving Balance Sheet of the Federal Reserve: From LSAPs to Normalization

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The views expressed in this presentation reflect the author's and do not necessarily reflect that of the Federal Reserve Bank of New York or the Federal Reserve System.

Agenda

- LSAPs as monetary policy tool
- Implications of LSAPs for the balance sheet
- A closer look at the domestic securities portfolio
- Normalization policy and tools
- How could the SOMA portfolio evolve?
- Background information



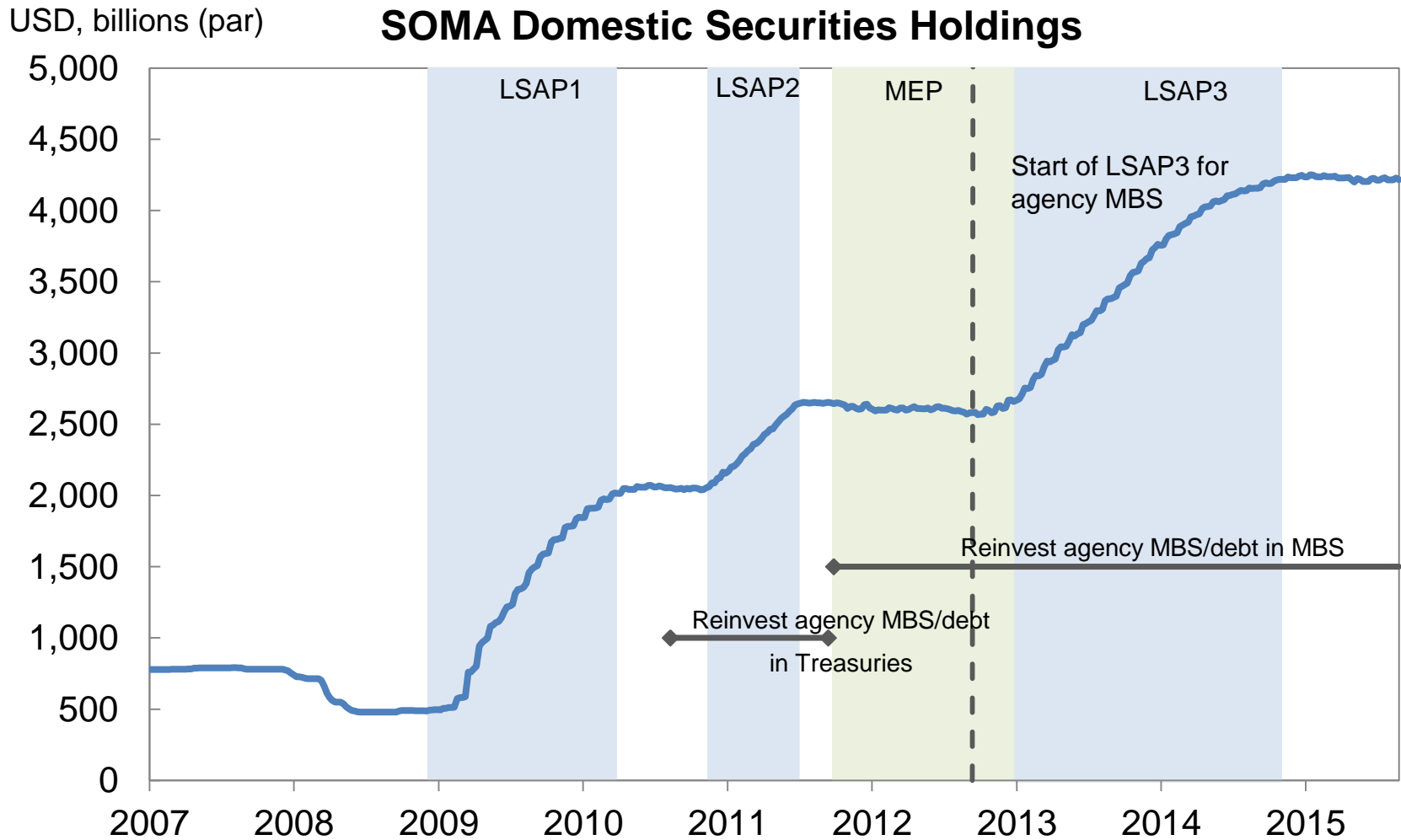
LSAPs as a Monetary Policy Tool

Large Scale Asset Purchases as a Policy Tool

- Conventional operating objective for OMOs: target federal funds rate (FFR)
 - Desk adjusted supply of reserve balances to achieve target
- Current operating objective: adjustments in size/composition of FR balance sheet
 - Large-scale purchases of Treasuries, agency MBS and debt
 - Maturity Extension Program
 - Reinvestment policies
- Interest on reserves keeps FFR in target range w/o OMOs
- FOMC has also used communications to influence policy



Timeline of Asset Purchase Programs



Source: Board of Governors of the Federal Reserve System



How do Large-scale Asset Purchases Work?

- Purchases put downward pressure on longer-term interest rates, ease financial conditions and stimulate economic activity
- Purchases are understood to work through several channels
 - Portfolio balance effect
 - Reduce stock of securities held by private sector
 - Remove duration risk and prepayment risk from market
 - Drive risk premiums lower than they would otherwise be
 - Market functioning/liquidity effect
 - Provide consistent and significant market presence
 - Signaling effect
 - May be perceived as signal of FOMC intentions for FFR path



Implications of LSAPs for the Balance Sheet

Federal Reserve Balance Sheet: Pre-Crisis

Selected Balance Sheet Items

August 01, 2007

USD, billions

Assets		Liabilities	
Securities held outright	791	Federal Reserve Notes	777
<i>U.S. Treasury securities</i>	791	Reserve Balances **	10
<i>Federal agency debt</i>	0	Deposits other than reserves	12
<i>Agency MBS</i>	0	<i>U.S. Treasury, General Account</i>	5
		<i>Bank Clearing Deposits</i>	6
Repurchase agreements	25	Reverse repurchase agreements	32
		<i>Foreign official/international accounts</i>	32
Loans	*		
		Other liabilities	9
Other assets	58	Total liabilities	840
Total assets	874		
		Capital	34
		Total liabilities and capital	874

* Less than \$1 billion

** (Reserve requirements less applied vault cash) = \$7.7 billion.



Balance Sheet Effects of Unconventional Operations

- Crisis-era liquidity facilities were temporary and self-liquidating
 - Priced at penalty rates that were attractive in stressed market conditions but uneconomic as markets recovered
 - Facilities closed to new activity by H1-2010*
 - All loans were repaid in full
 - The Fed experienced no losses from these programs
- LSAPs led to more enduring changes in the SOMA portfolio and balance sheet
 - Shifts in portfolio's composition and maturity structure
 - Higher levels of excess reserves

* Dollar liquidity swap lines with certain central banks were reestablished in May-10 and converted to standing arrangements in Oct-13.



Federal Reserve Balance Sheet: Current

Selected Balance Sheet Items

April 29, 2015

USD, billions

Assets		Liabilities	
Securities held outright	4,215	Reserve balances	2,581
<i>U.S. Treasury securities</i>	2,460	Federal Reserve notes	1,316
<i>Federal agency debt</i>	36	Deposits other than reserve balances	259
<i>Agency MBS</i>	1,719	<i>U.S. Treasury, General Account</i>	245
Unamortized premiums and discounts	183	<i>Term deposits of depository institutions</i>	0
Repurchase agreements	0	<i>Foreign official and other deposits</i>	13
Loans	*	Reverse repurchase agreements	250
<i>Primary Credit</i>	*	<i>Foreign official/international accounts</i>	158
Maiden Lane LLC	2	<i>Other</i>	92
Central bank liquidity swaps	0	Interest on FR notes due to U.S. Treasury	2
Other assets	71	Other liabilities	6
Total assets	4,471	Total liabilities	4,414
		Capital	58
		Total liabilities and capital	4,471

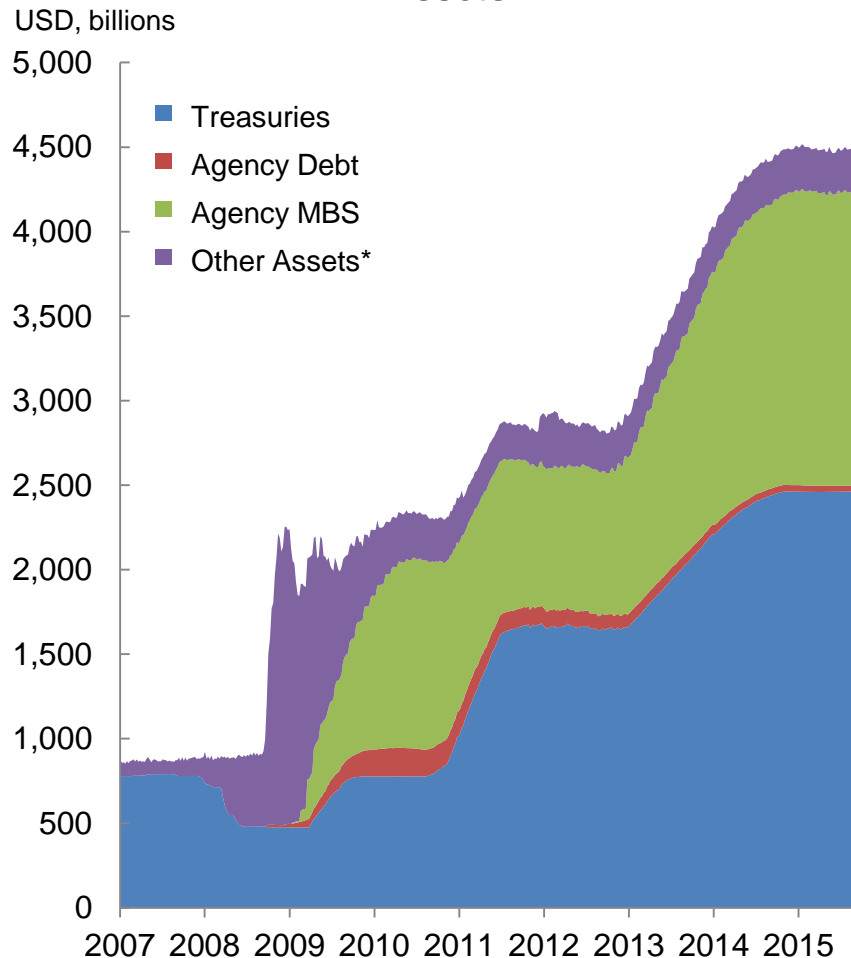
Source: H.4.1, Federal Reserve Statistical Release

* Less than \$1 billion

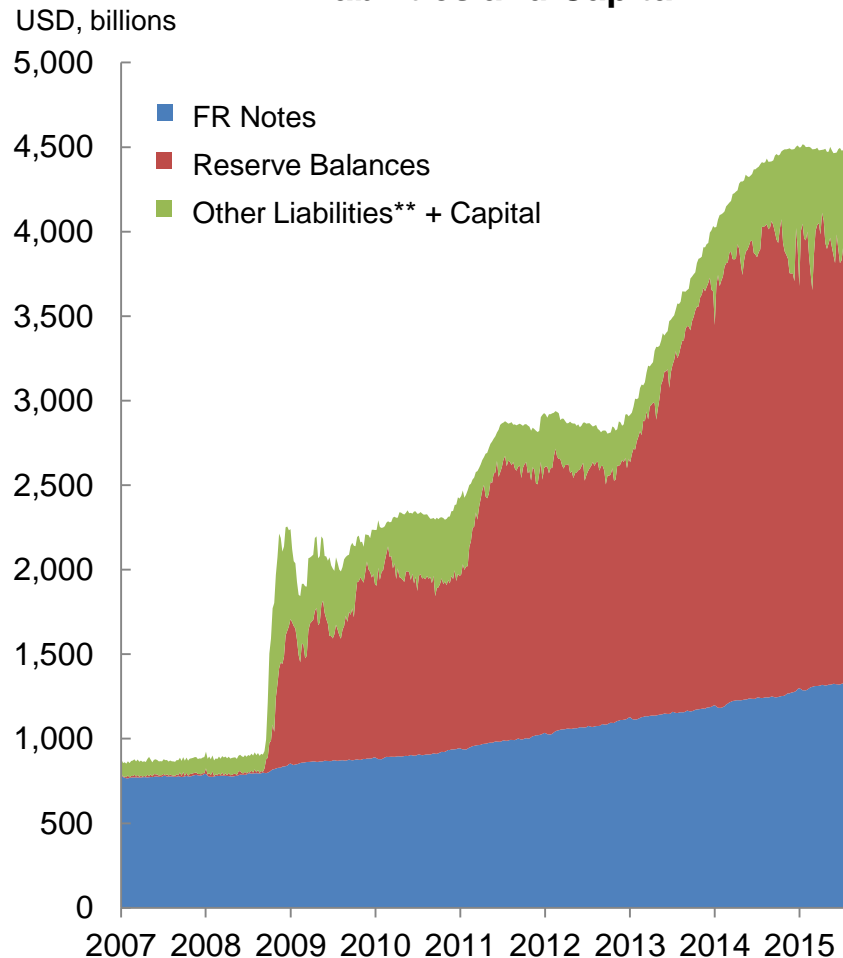
A Closer Look at the Domestic Portfolio

Evolution of the Federal Reserve's Balance Sheet

Assets



Liabilities and Capital



* Includes DW, crisis facilities, central bank liquidity swaps, foreign portfolio, and unamortized premiums and discounts.

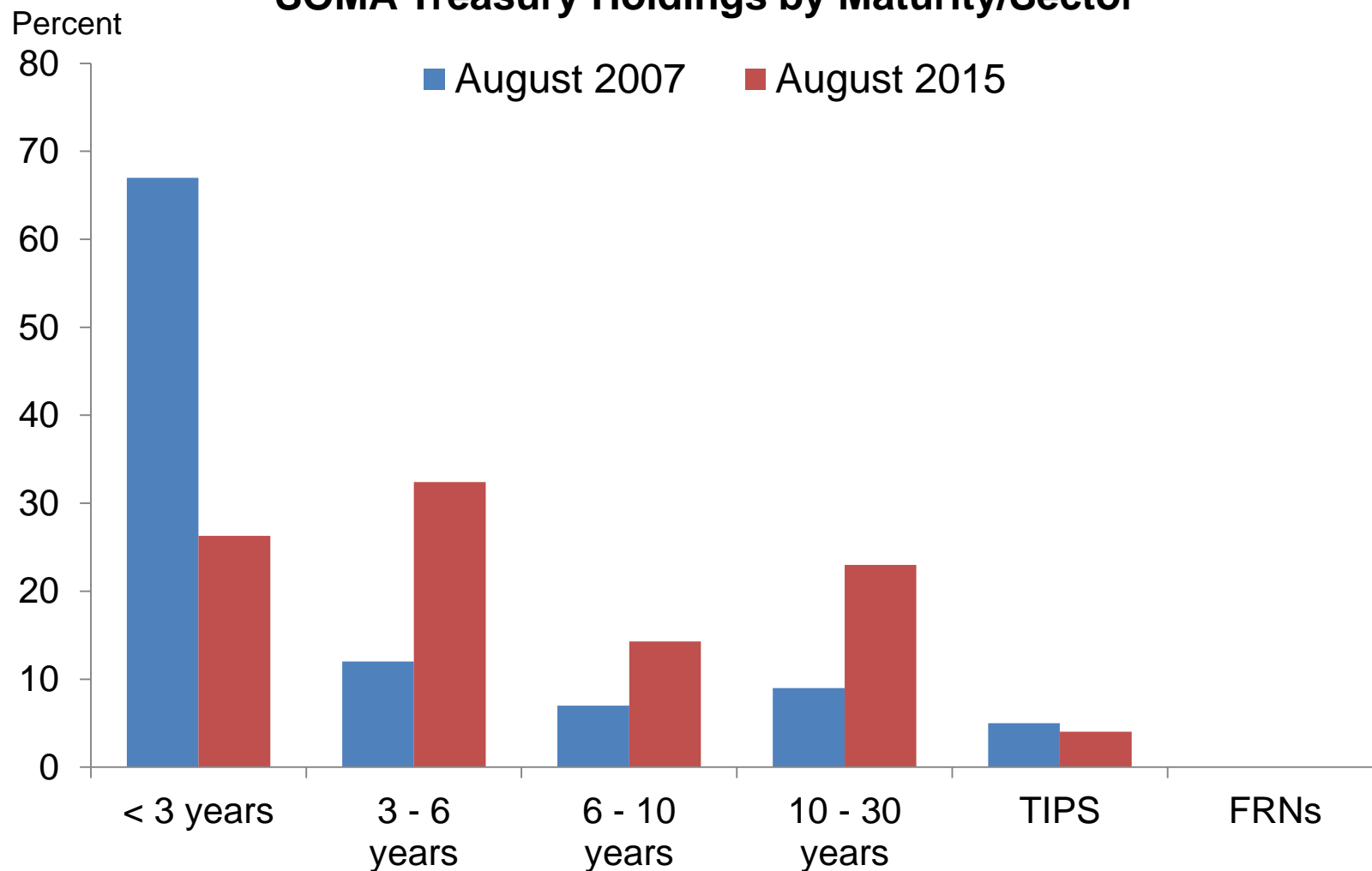
** Includes Treasury General Account and reverse repos.

Source: Board of Governors of the Federal Reserve System

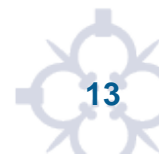


Distribution of SOMA Treasury Holdings

SOMA Treasury Holdings by Maturity/Sector

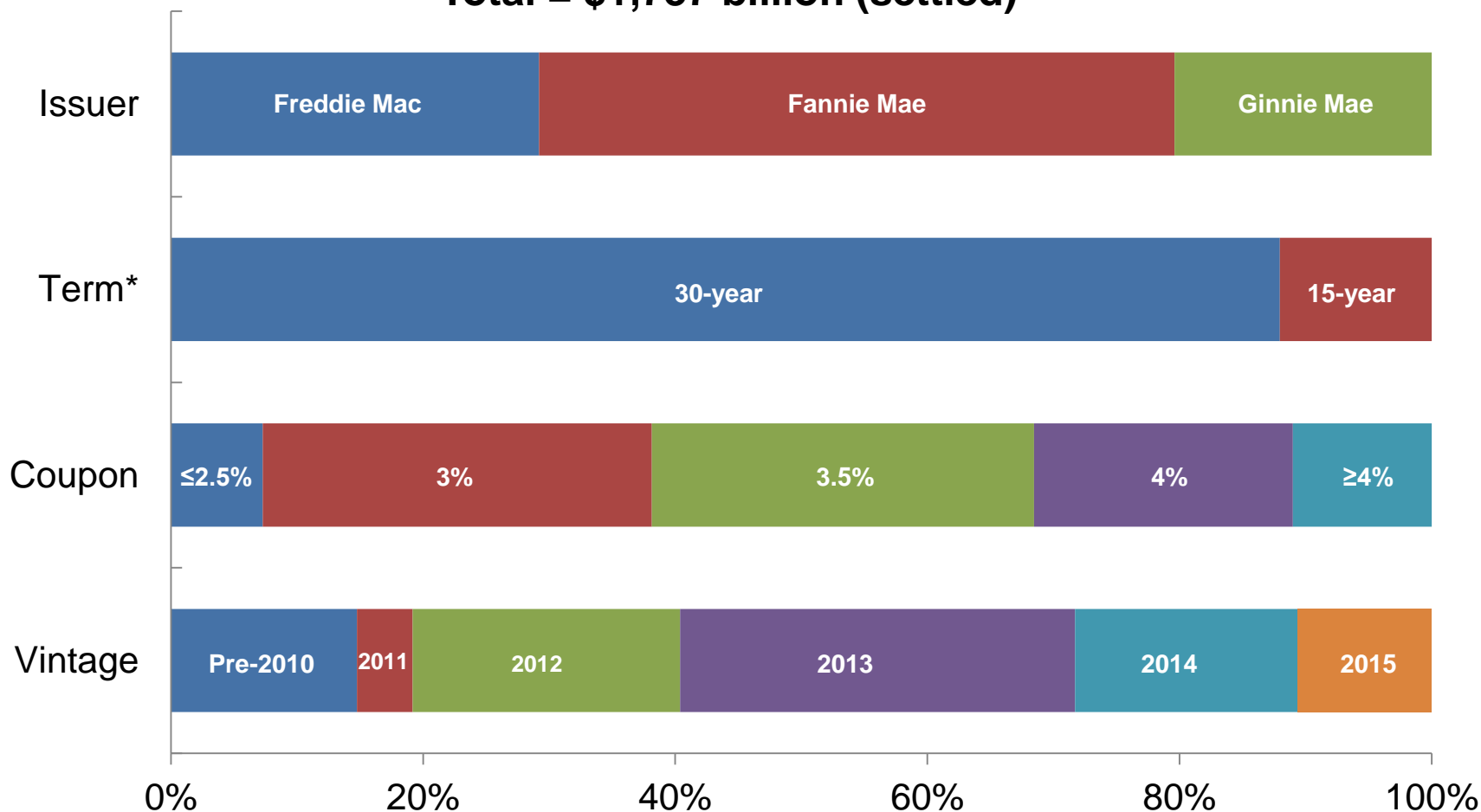


Source: FRBNY



Distribution of SOMA Agency MBS Holdings

August 26, 2015
 Total = \$1,737 billion (settled)

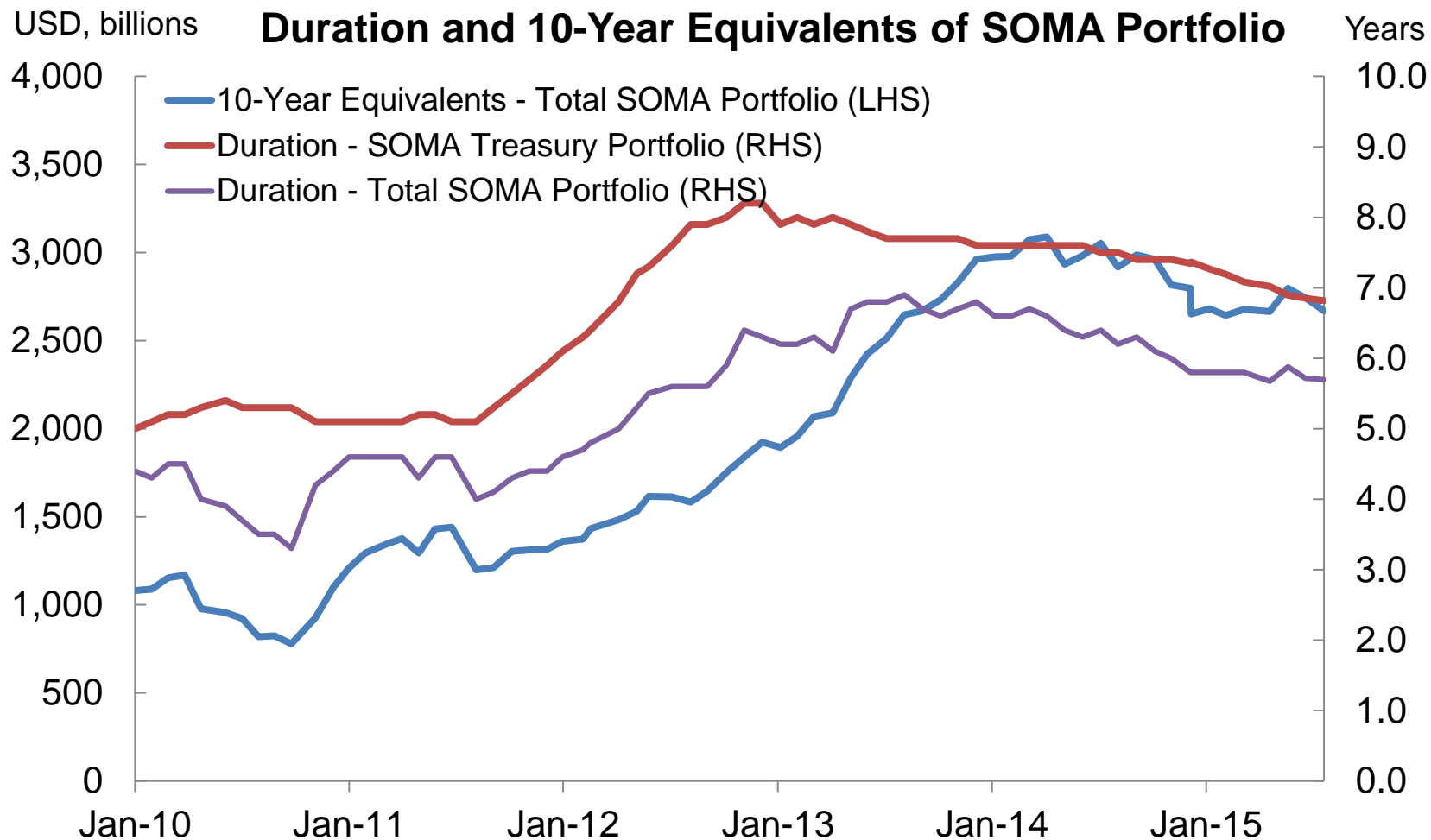


*Includes <1% in 10-year and 20-year agency MBS, which may be delivered into 15- and 30-year TBA contracts, respectively.

Source: FRBNY

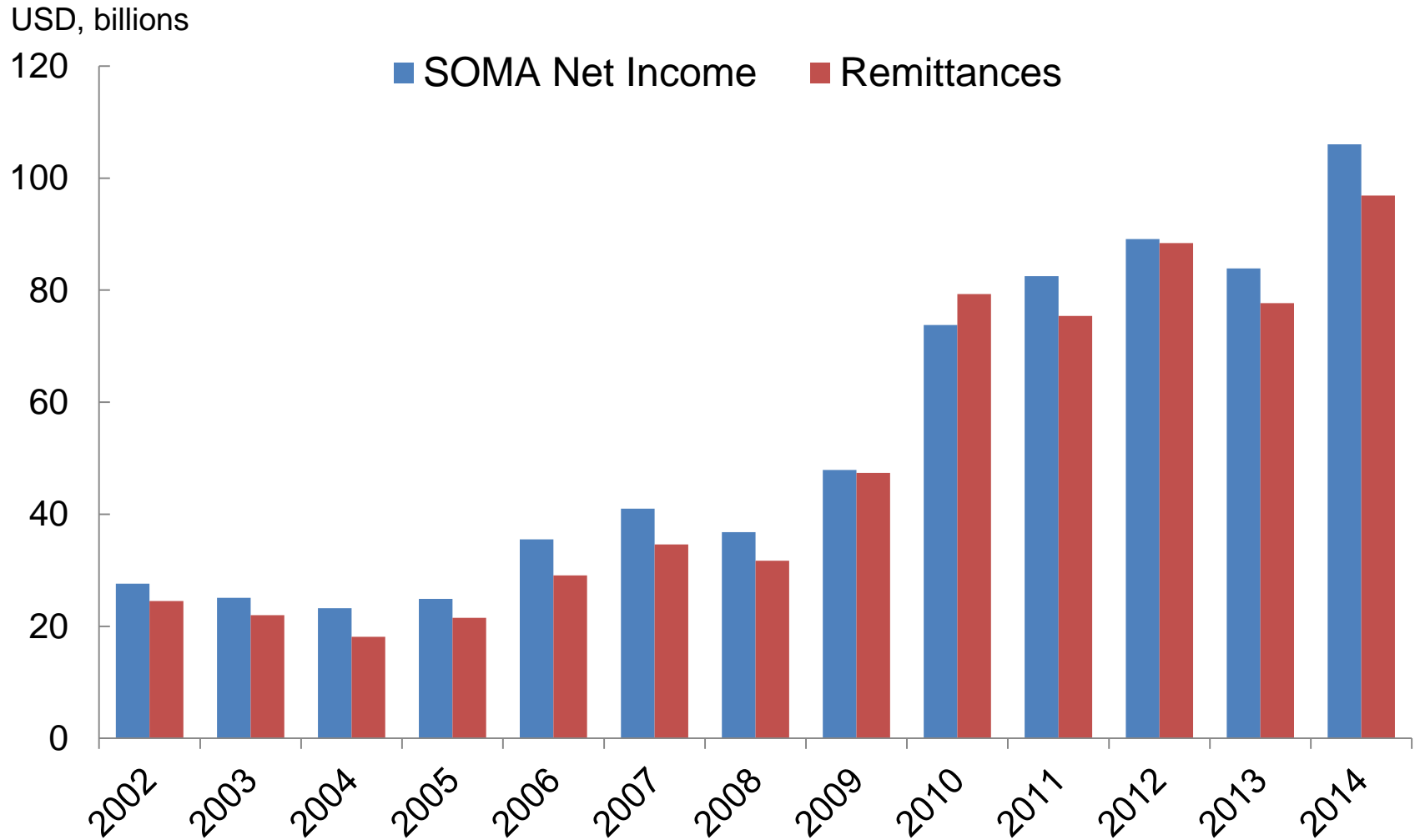


SOMA Portfolio Risk Measures



Source: FRBNY

SOMA Net Income and FR Remittances to Treasury



Source: FRBNY



Normalization Policy and Tools

Normalization Principles and Plans - September 2014

- Raise federal funds rate and other short term interest rates.
 - Operating objective is target range for federal funds rate. Target FFR range of 25 basis points.
 - IOER will be the primary method for moving rates. Set IOER at top and ON RRP rate at bottom of FFR range.
 - ON RRP and other supplementary tools will be used as necessary. Aggregate capacity of ON RRP facility will be raised temporarily.
- Timing and pace of policy normalization will be consistent with dual mandate.

(Additional details announced in March 2015 shown in blue.)



Normalization Principles and Plans (II)

- Reduce securities in a gradual and predictable manner
 - Reinvestments cease or are phased out after FFR target range is increased
 - No sales of MBS holdings to achieve normalization (but may sell in longer run to reduce residual holdings)
- In the longer run, hold no more securities than necessary to implement monetary policy, and holdings to primarily consist of Treasury securities



Normalization Tools

- The Fed has developed and tested various tools to support use of IOER
 - Overnight reverse repos (ON RRP)
 - Term Deposit Facility (TDF)
 - Term reverse repos (Term RRP)
- Tools may work through different channels and have different objectives
 - Control short-term rates with an elevated level of reserves
 - Drain reserve balances

Overview of select policy tools

Tool	Primary type	Primary channels through which they might work	Counterparty	Effect on FRS balance sheet
IOER	Administered rate	<ul style="list-style-type: none"> • Create arbitrage opportunities 	Banks	No impact on size or composition
O/N Reverse Repos with RCPs	Administered rate	<ul style="list-style-type: none"> • Increase competition/ reduce bank balance sheets • Temporary reserve drain 	MMMFs, GSEs, PDs, Banks	Changes composition of liabilities, no change to size
Term Deposit Facility	Liability tool	<ul style="list-style-type: none"> • Create arbitrage opportunities • Temporary reserve drain 	Banks	Changes composition of liabilities, no change to size
Term Reverse Repos with RCPs	Liability tool	<ul style="list-style-type: none"> • Increase competition/ reduce bank balance sheets • Temporary reserve drain 	MMMFs, GSEs, PDs, Banks	Changes composition of liabilities, no change to size

Balance Sheet and Income Effects

- Supplementary tools shift composition and cost of the Fed's liabilities... but don't alter overall contour of FR balance sheet or materially impact FR income
- Impact on FR balance sheet
 - Reduce reserve balances; increase RRP or term deposits
 - No effect on size or composition of securities holdings
 - No effect on time to normalize balance sheet size
- Impact on FR income
 - Some tools are more costly than others
 - Net differences are minor, but results will depend on actual quantities and prices associated with each tool
 - Non-financial costs may influence appetite to use various tools

Balance Sheet and Income Effects

Example 1

Securities	Currency	
Repos	Reserve balances	■
Other assets	Treasury General Account	
	Foreign official deposits	
	Term deposits	
	ON RRP	+
	Term RRP	

Balance Sheet and Income Effects

Example 2

Securities	Currency	
Repos	Reserve balances	■
Other assets	Treasury General Account	
	Foreign official deposits	
	Term deposits	+
	ON RRP	+
	Term RRP	

How could the SOMA portfolio evolve?

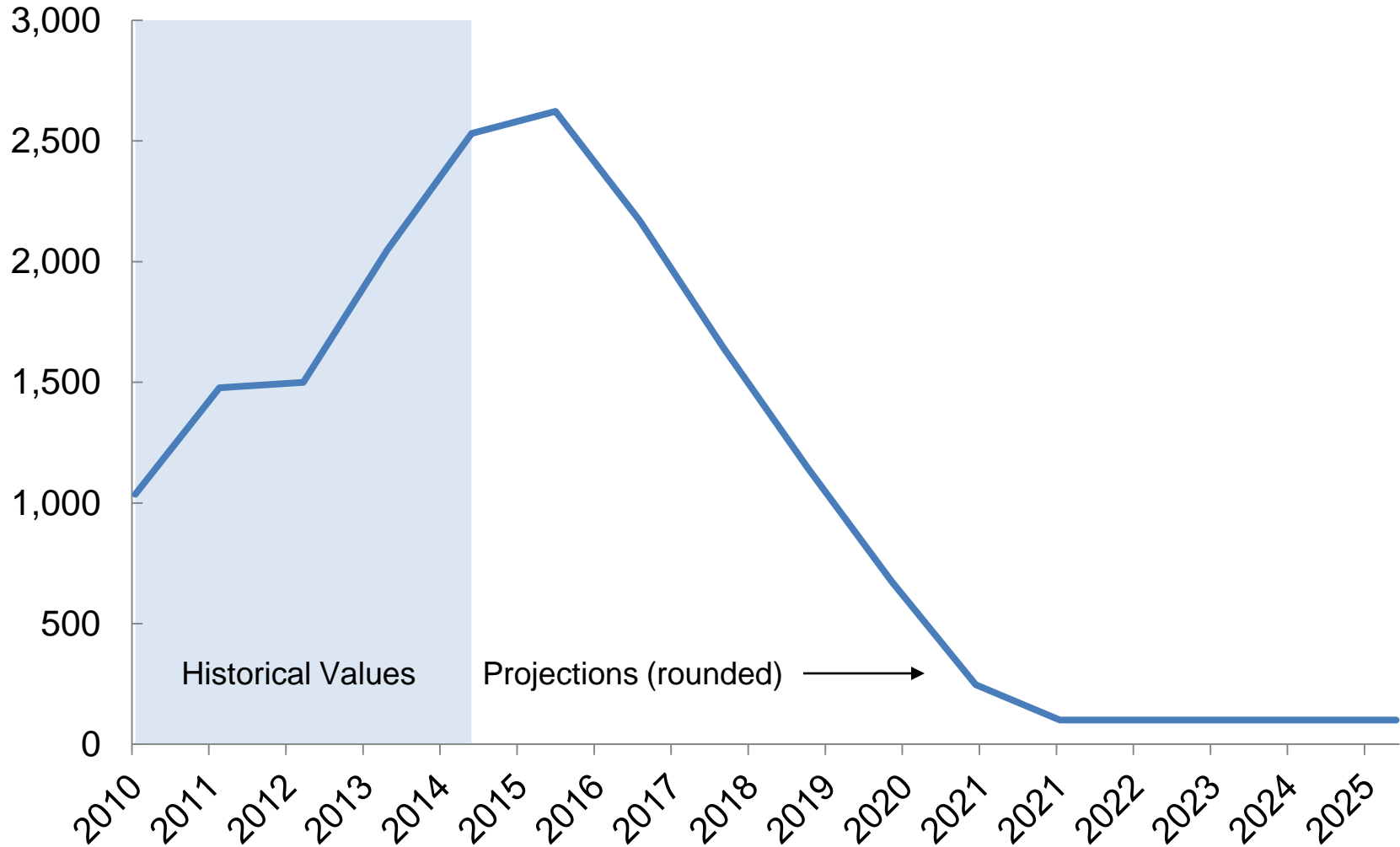
Portfolio Projection Exercise: Baseline Assumptions

- Drawn from December 2014 *Survey of Primary Dealers*
 - Interest rates
 - FFR target lifts off in Q2-2015, rises to 3.5% over long run
 - 10-year Treasury yield rises gradually to 4% by late 2018
 - Normalization framework
 - IOER and ON RRP rates
 - \$275 billion in ON RRP immediately after liftoff
 - Spread of 25 bps between IOER and ON RRP rates
 - Reinvestments end in Q4-2015
 - No MBS sales
- Currency and capital assumptions from Fed staff research*

* Carpenter et al, "The Federal Reserve's Balance Sheet: A Primer and Projections," Board of Governors of the Federal Reserve System FEDS no. 2013-01, January 2013.

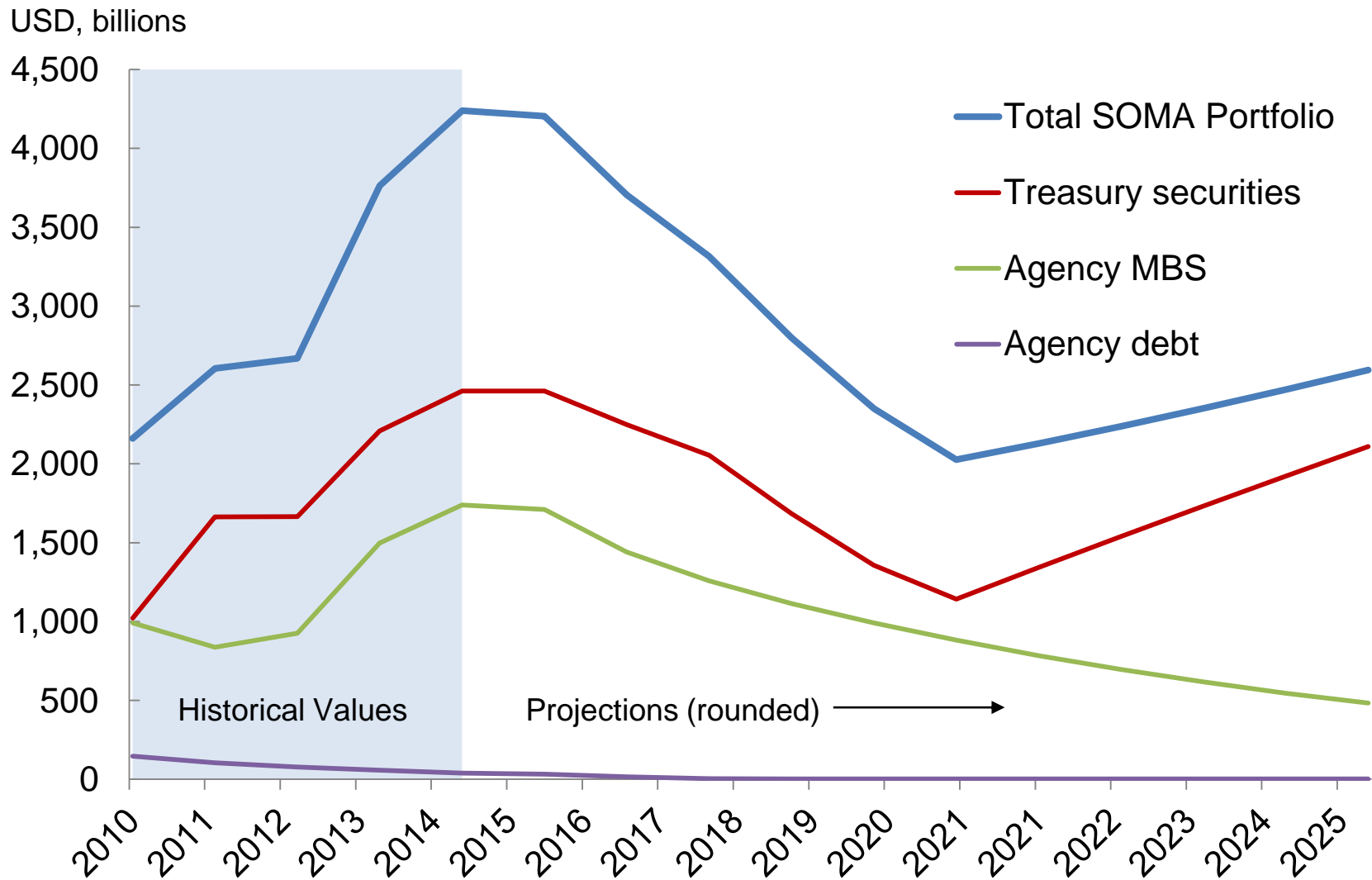
Projected Reserve Balances

USD, billions



Source: FRBNY staff projection (December 2014)

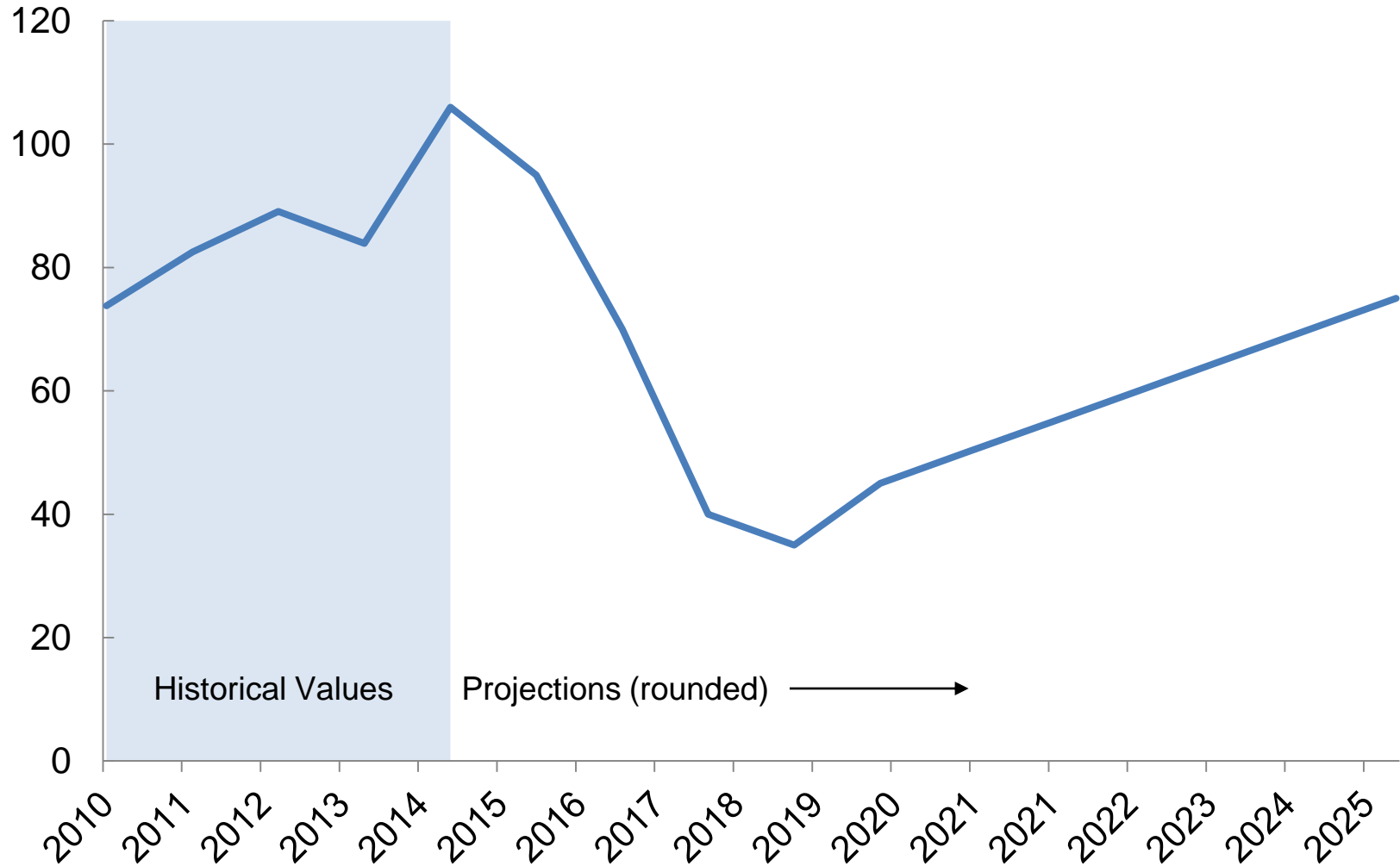
Projected Path of SOMA Domestic Securities Portfolio



Source: FRBNY staff projection (December 2014)

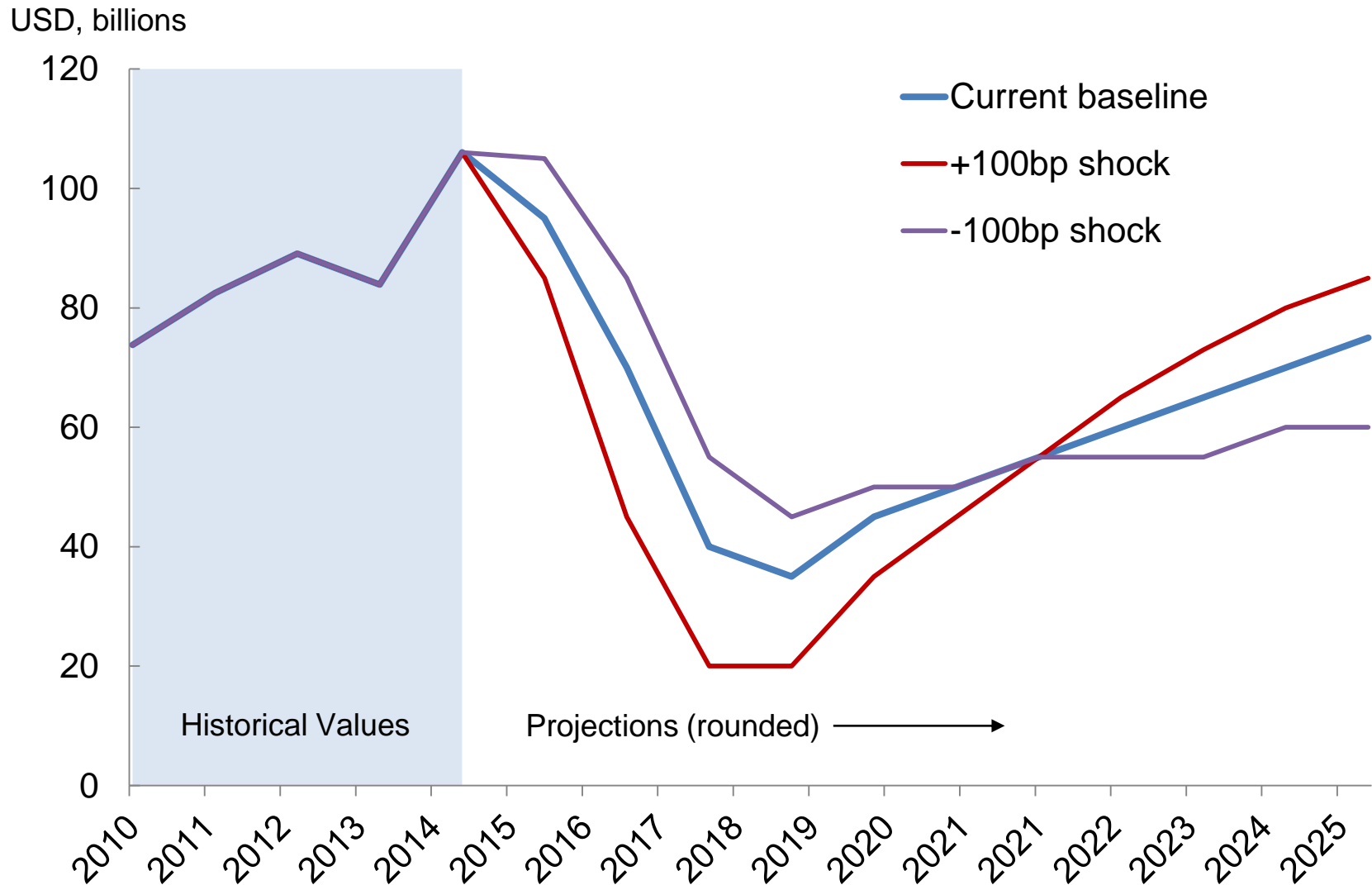
Projected SOMA Net Income

USD, billions



Source: FRBNY staff projection (December 2014)

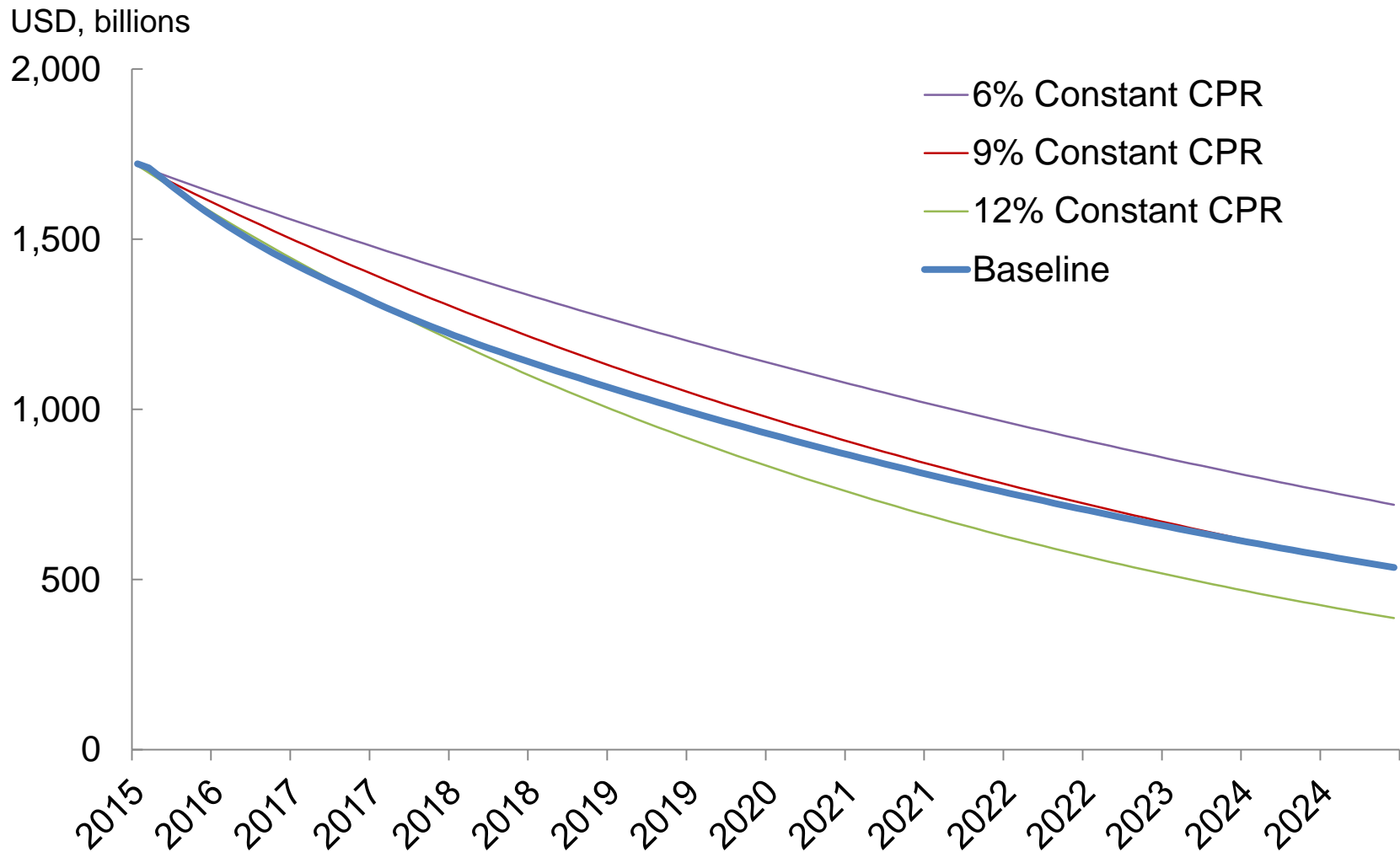
Projected SOMA Net Income: Alternate Rate Scenarios



Source: FRBNY staff projection (December 2014)

Note: Higher- and lower-rate scenarios use baseline interest rates plus or minus 100 basis points.

Projected MBS Holdings: Alternate CPR Assumptions



Source: FRBNY staff projection (August 2015)

Note: CPR is the conditional prepayment rate. Figures are monthly and are rounded.

The SOMA Portfolio in the Longer Run

- Size?
 - What's necessary to implement policy “efficiently and effectively” will depend, in part, on:
 - Long-run operating framework and tools
 - Regulatory and other financial system changes
 - U.S. Treasury cash management decisions
- Asset composition?
 - Should portfolio of “primarily Treasury securities” retain at least some agency MBS to retain institutional knowledge?
- Maturity profile?
 - What structure best supports policy objectives?
 - Traditionally, short-term portfolio allowed flexible wind-down if needed
 - Has crisis playbook changed?



Appendix

Useful References

- Domestic Open Market Operations During 2014
http://www.newyorkfed.org/markets/annual_reports.html
- FOMC Statement on Policy Normalization Principles and Plans
<http://federalreserve.gov/newsevents/press/monetary/20140917c.htm>
- The Federal Reserve's Balance Sheet and Earnings: A Primer and Projections
<http://www.federalreserve.gov/pubs/feds/2013/201301/201301pap.pdf>
- Liberty Street Economics: The SOMA in Perspective
http://www.newyorkfed.org/research/publication_annuals/research_topics20130906.html
<http://libertystreeteconomics.newyorkfed.org/2014/04/just-released-the-2013-soma-annual-report-in-a-historical-context.html>

Additional References: Data and Policies

- FRBNY Open Market Operations landing page
See for operating policies, FAQs, operations announcements, results
<http://www.newyorkfed.org/markets/openmarket.html>
- Factors Affecting Reserve Balances (H.4.1 release)
<http://www.federalreserve.gov/releases/h41/>
- SOMA holdings
http://www.newyorkfed.org/markets/soma/sysopen_accholdings.html