Treasury Presentation to TBAC

Office of Debt Management

Fiscal Year 2016 Q1 Report

Table of Contents

Section I:
Executive Summary

Highlights of Treasury's February 2016 Quarterly Refunding Presentations to the Treasury Borrowing Advisory Committee (TBAC)

Sources of Financing in Fiscal Year 2016

- Demand for Treasury bills remains strong and is expected to continue to grow through the end of FY 2016. As noted in the November Quarterly Refunding Statement, Treasury believes that it is prudent to increase the level of Treasury bills outstanding over the coming quarters.
- To accommodate this increase in bill issuance, Treasury may need to gradually reduce issuance sizes of nominal coupons and TIPS.
- If the Federal Reserve continues to reinvest its SOMA portfolio throughout FY 2016 and coupon sizes remain at current levels, OMB is forecasting that Treasury will be overfunded by $118 billion (Page 20).

Projected Net Marketable Borrowing

- Between FY 2016 and 2018, Treasury's borrowing from the public could rise notably if the Federal Reserve allows the Treasury securities held in the SOMA portfolio to mature.
- There are $675 billion of Treasury securities in the SOMA portfolio that will mature between FY 2016 and 2018.

Bid-to-Cover Ratios (BTC)

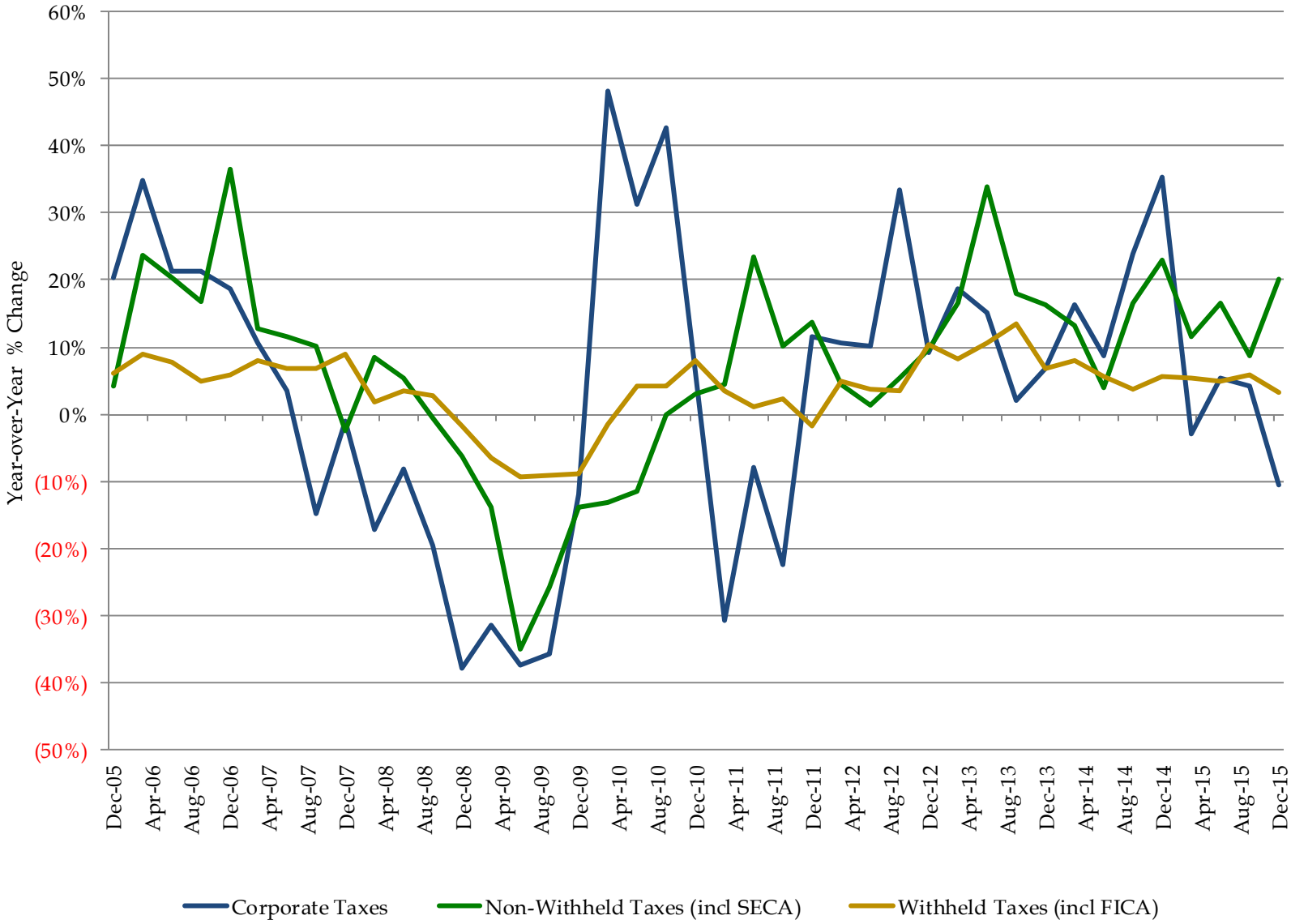
- 1-Month bill auctions from late September through October 2015 were characterized by temporarily elevated BTC ratios, due to debt limit-related constraints on bill auction sizes, however, these ratios have since retraced to more normal levels.
- BTC ratios for FRNs have risen in recent months, and have been little changed across the nominal curve.

Investor Class Allotments

- Since the beginning of October, investment fund awards rose in bills and long coupons (7-, 10-, and 30-Year), and fell slightly for short coupons (2-, 3-, and 5-Year).
- Primary dealer awards fell slightly in bills, and were broadly unchanged across other tenors.
- Other dealers and brokers awards rose noticeably in bills.

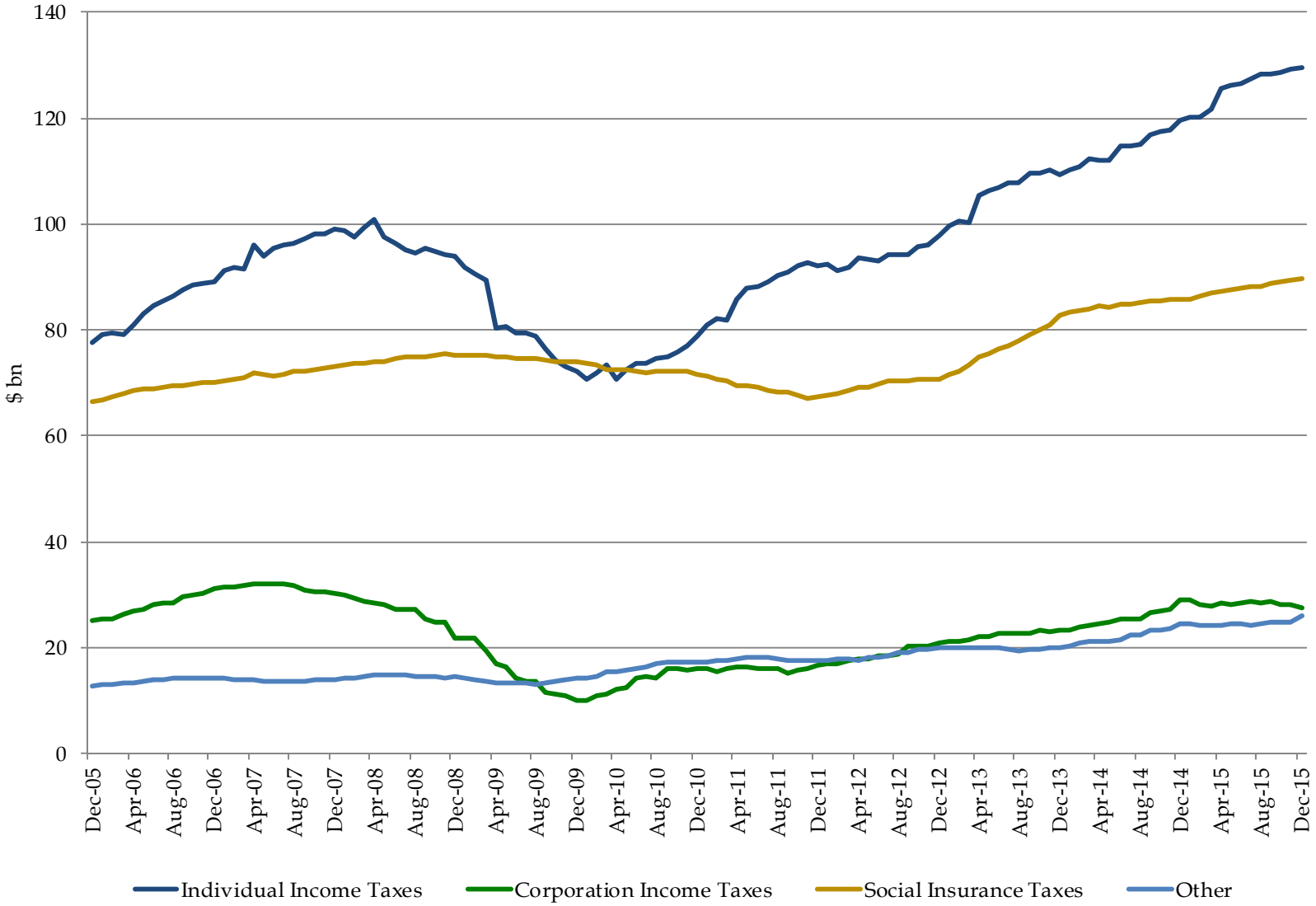
Section II:
Fiscal

Quarterly Tax Receipts

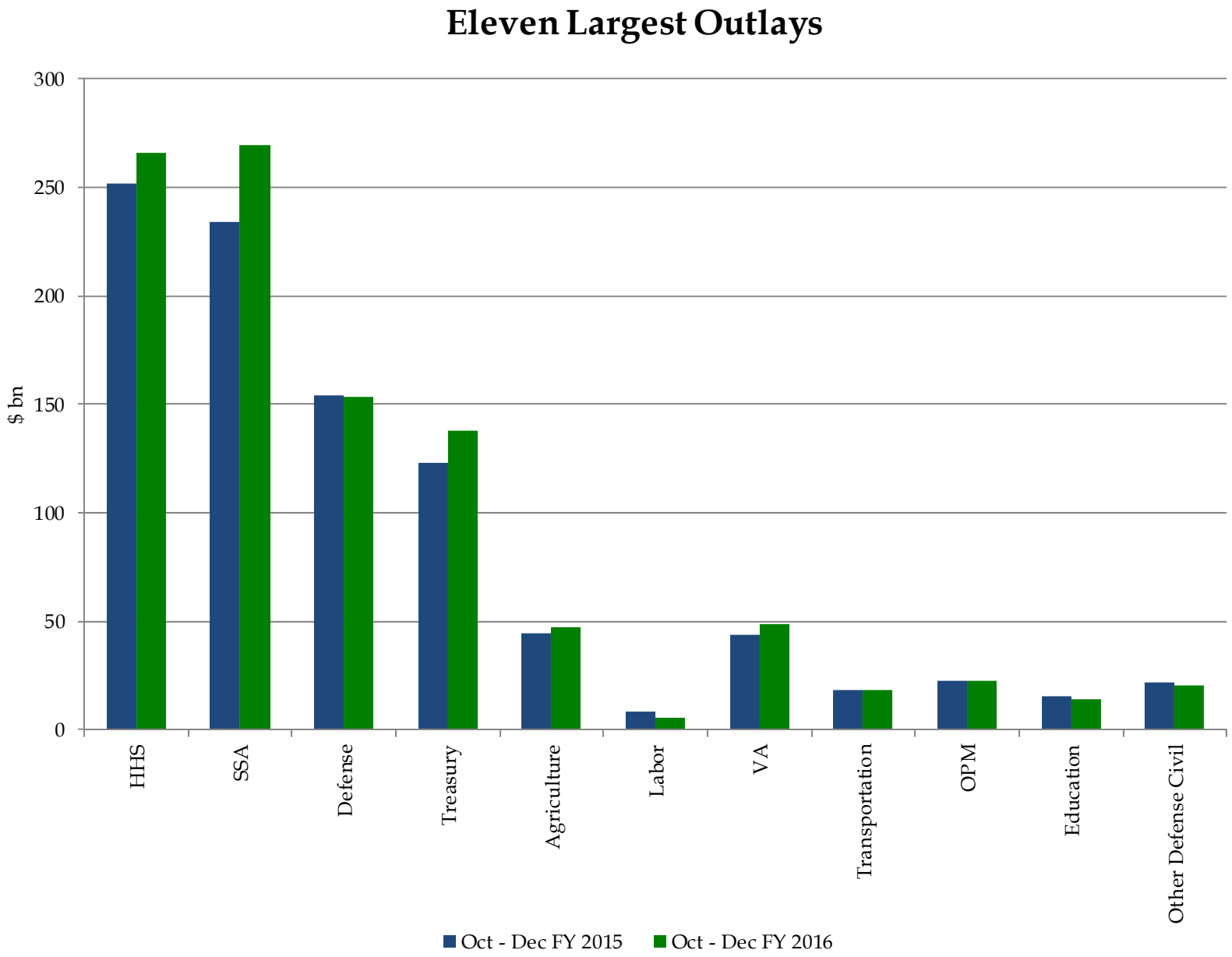


Source: United States Department of the Treasury

Monthly Receipt Levels
(12-Month Moving Average)

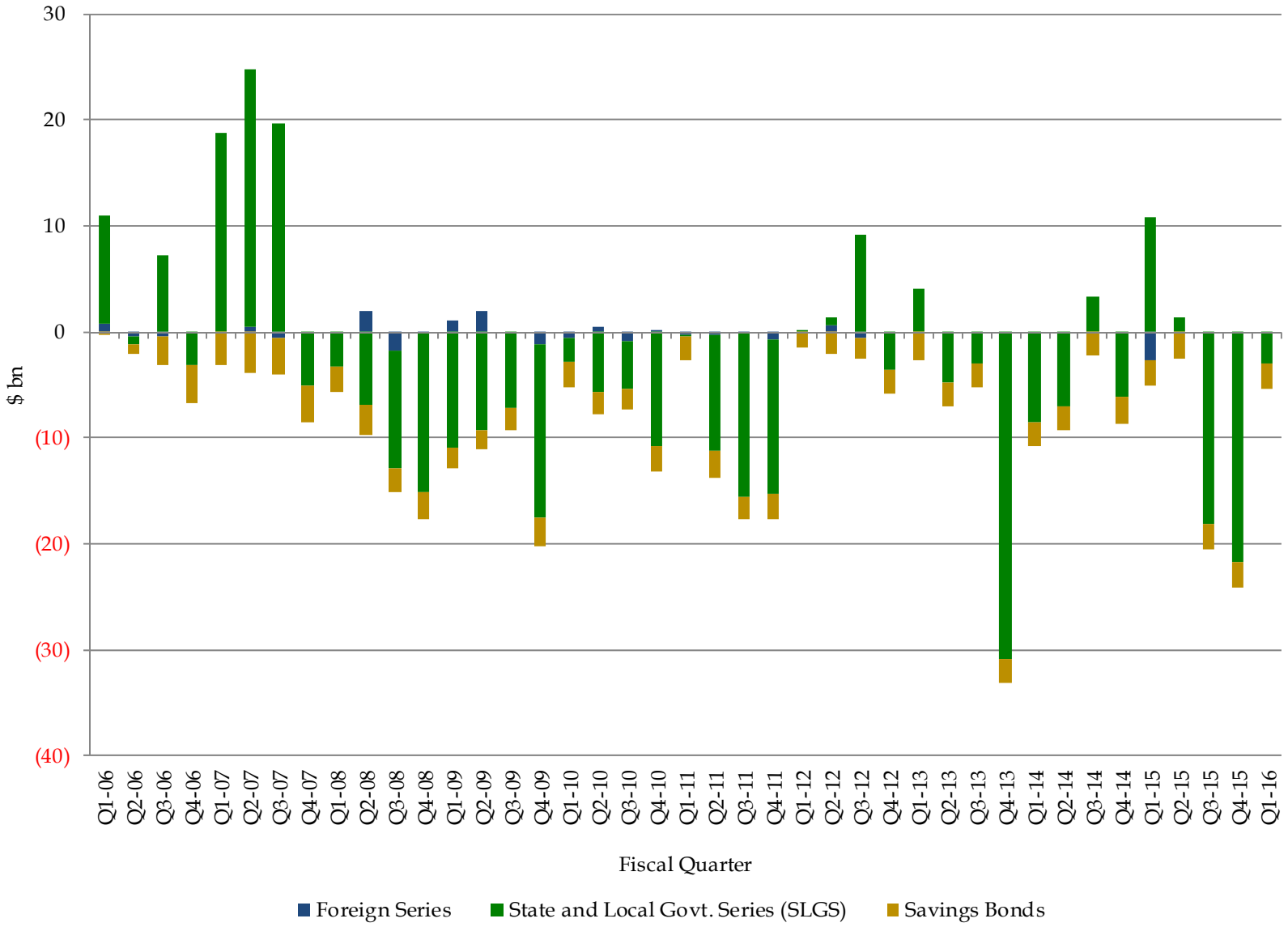


Individual Income Taxes include withheld and non-withheld. Social Insurance Taxes include FICA, SECA, RRTA, UTF deposits, FUTA and RUIA. Other includes excise taxes, estate and gift taxes, customs duties and miscellaneous receipts.
Source: United States Department of the Treasury



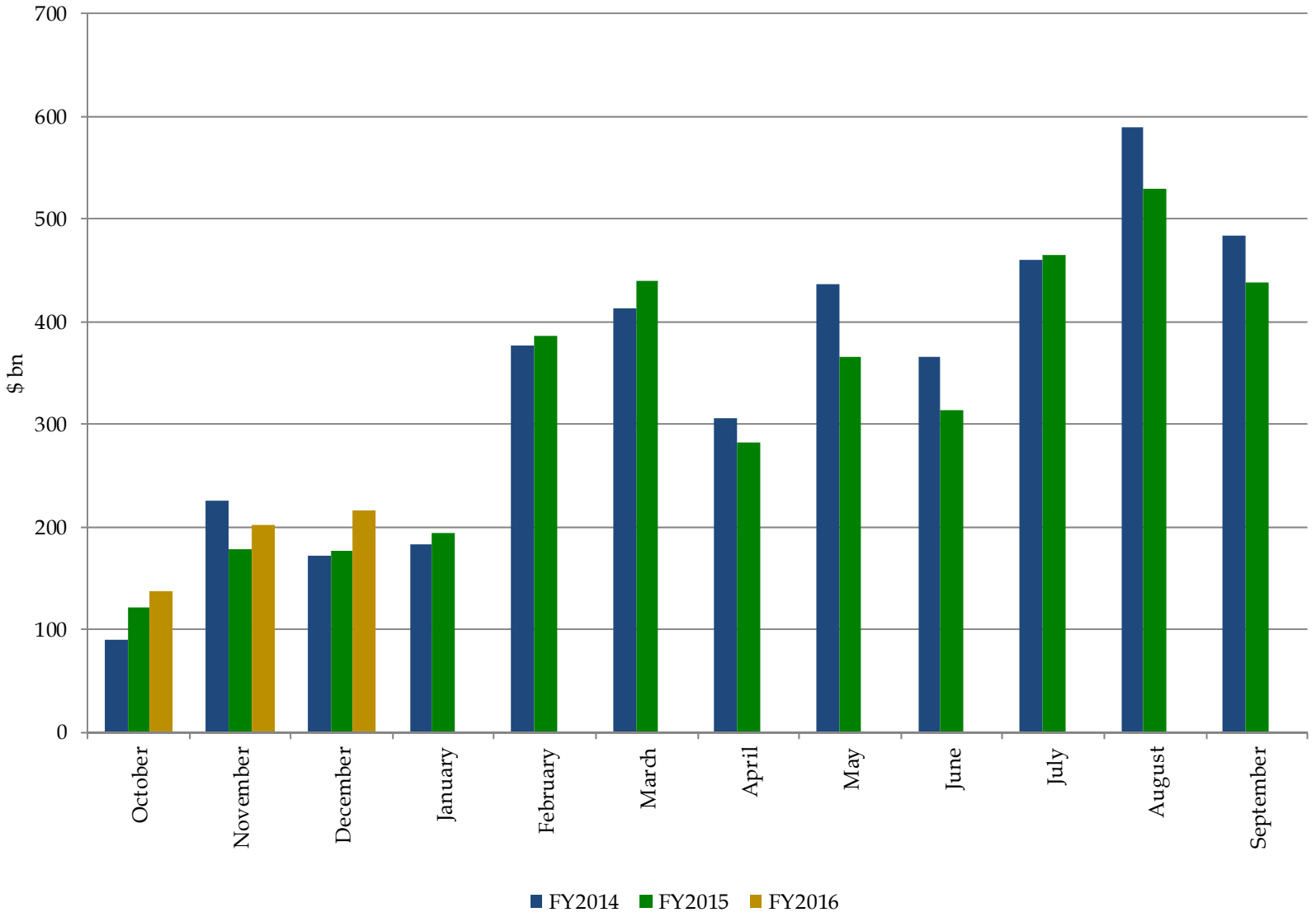
Source: United States Department of the Treasury

Treasury Net Nonmarketable Borrowing



Source: United States Department of the Treasury

Cumulative Budget Deficits by Fiscal Year



Source: United States Department of the Treasury

FY 2016-2018 Deficits and Net Marketable Borrowing Estimates

In $ billions

	Primary Dealers[1]	CBO[2]	OMB MSR[3]	CBO[4]	OMB[5]
FY 2016 Deficit Estimate	539	544	429	380	474
FY 2017 Deficit Estimate	546	561	436	401	463
FY 2018 Deficit Estimate	579	572	481	435	479
FY 2016 Deficit Range	414-650				
FY 2017 Deficit Range	416-640				
FY 2018 Deficit Range	500-685				
FY 2016 Net Marketable Borrowing Estimate	644	861	563	469	602
FY 2017 Net Marketable Borrowing Estimate	600	635	567	488	596
FY 2018 Net Marketable Borrowing Estimate	641	631	611	512	610
FY 2016 Net Marketable Borrowing Range	375-810				
FY 2017 Net Marketable Borrowing Range	375-750				
FY 2018 Net Marketable Borrowing Range	500-785				
Estimates as of:	Jan-16	Jan-16	Jul-15	Mar-15	Feb-15

[1]Based on primary dealer feedback on January 25, 2016. Estimates above are averages.

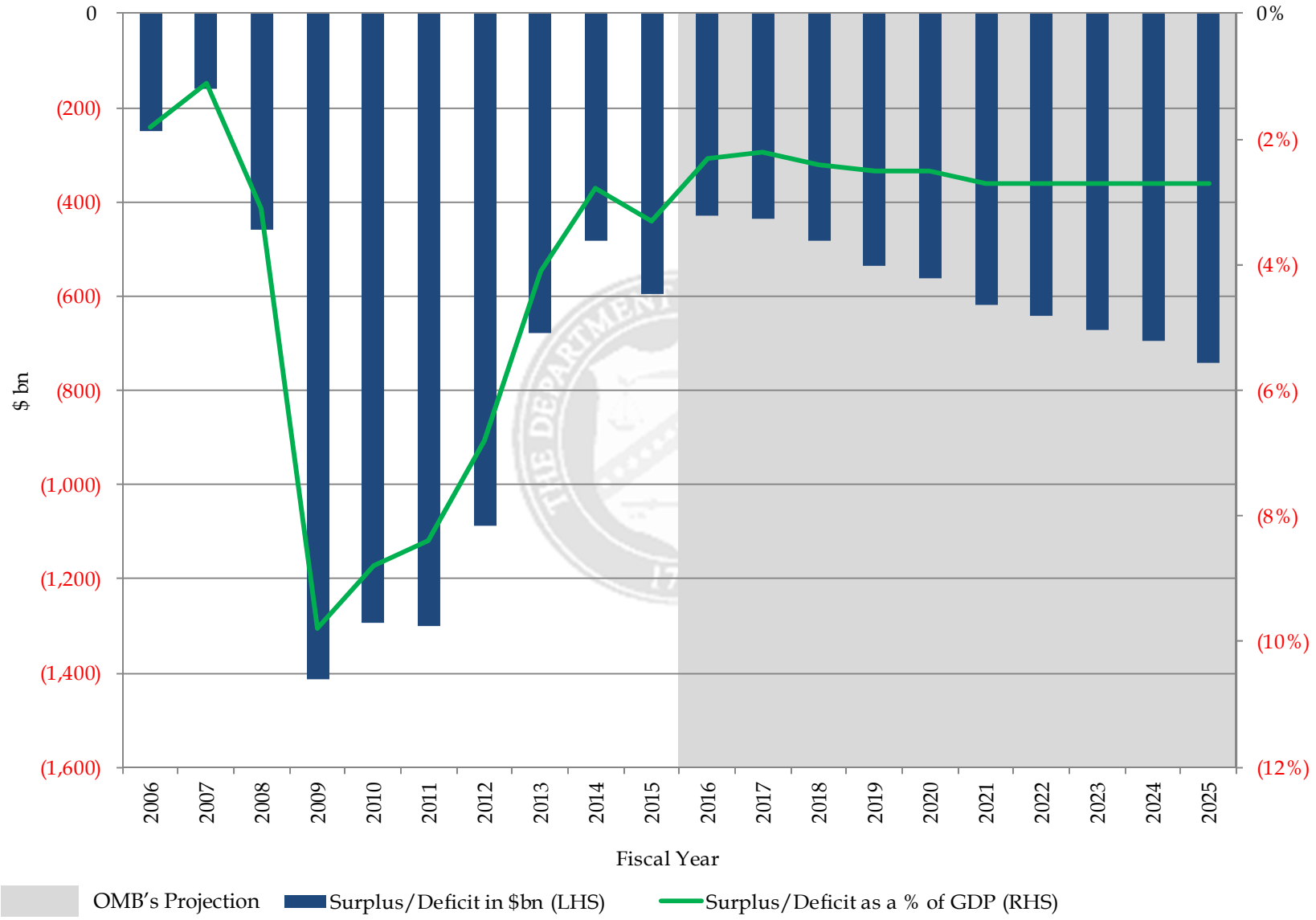
[2]Table 1 of CBO's "Summary of the Budget and Economic Outlook: 2016 to 2026."

[3]Table S-11 of OMB's "Fiscal Year 2016 Mid-Session Review"

[4]Table 1 and 3 of CBO's "An Analysis of the President's 2016 Budget"

[5]Table S-13 of OMB's "Fiscal Year 2016 Budget of the US Government"

Budget Surplus/Deficit



Projections are from Table S-1 of OMB's "Fiscal Year 2016 Mid-Session Review"

Section III: Financing

Assumptions for Financing Section (pages 15 to 22)

- Portfolio and SOMA holdings as of 12/31/2015.
- SOMA reinvestments until Q1 CY2017, and SOMA redemptions until and including February 2022. These assumptions are based on Chair Yellen's December 2015 press conference and the median expectations from the December FRB-NY survey of primary dealers.
- Assumes announced issuance sizes and patterns constant for Nominal Coupons, TIPS, and FRNs as of 12/31/2015, while using an average of ~$1.5 trillion of Bills outstanding.
- The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels as of 12/31/2015.
- No attempt was made to match future financing needs.

Sources of Financing in Fiscal Year 2016 Q1

October - December 2015	
Net Bill Issuance	156
Net Coupon Issuance	198
Subtotal: Net Marketable Borrowing	354
Ending Cash Balance	333
Beginning Cash Balance	199
Subtotal: Change in Cash Balance	135
Net Implied Funding for FY 2016 Q1*	219

Security	October - December 2015 Bill Issuance			Fiscal Year-to-Date Bill Issuance		
	Gross	Maturing	Net	Gross	Maturing	Net
4-Week	465	385	80	465	385	80
13-Week	367	320	47	367	320	47
26-Week	349	336	13	349	336	13
52-Week	36	75	(39)	36	75	(39)
CMBs	95	40	55	95	40	55
Bill Subtotal	1,312	1,156	156	1,312	1,156	156

Security	October - December 2015 Coupon Issuance			Fiscal Year-to-Date Coupon Issuance		
	Gross	Maturing	Net	Gross	Maturing	Net
2-Year FRN	41	0	41	41	0	41
2-Year	78	96	(18)	78	96	(18)
3-Year	72	96	(24)	72	96	(24)
5-Year	105	109	(4)	105	109	(4)
7-Year	87	0	87	87	0	87
10-Year	66	23	43	66	23	43
30-Year	42	6	36	42	6	36
5-Year TIPS	16	0	16	16	0	16
10-Year TIPS	13	0	13	13	0	13
30-Year TIPS	7	0	7	7	0	7
Coupon Subtotal	527	330	198	527	330	198

Total	1,839	1,486	354	1,839	1,486	354

*An end-of-December 2015 cash balance of $333 billion versus a beginning-of-October 2015 cash balance of $199 billion. By keeping the cash balance constant, Treasury arrives at the net implied funding number.

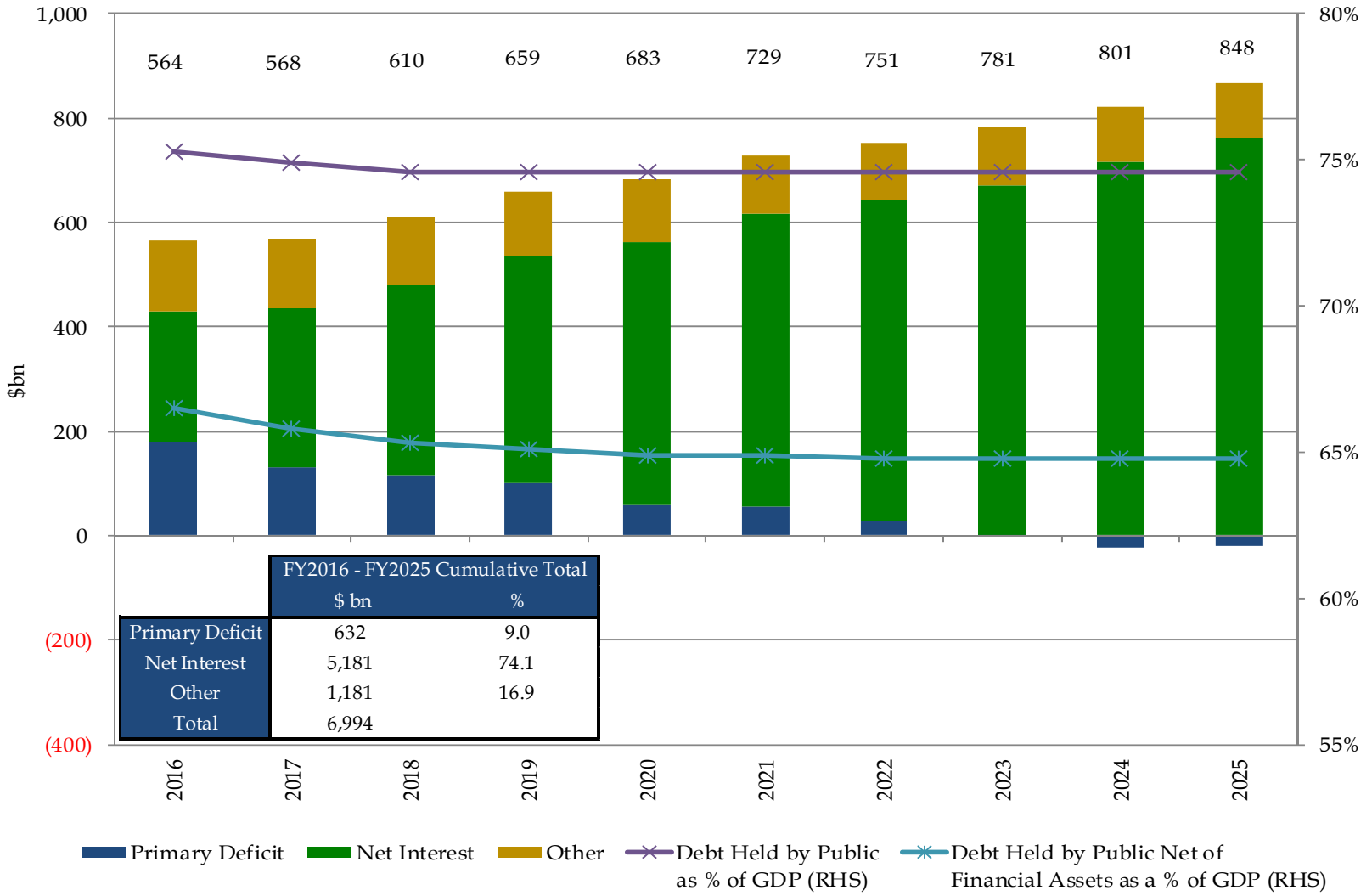
Sources of Financing in Fiscal Year 2016 Q2

January - March 2016	
Assuming Constant Coupon Issuance Sizes*	
Treasury Announced Net Marketable Borrowing**	250
Net Coupon Issuance	90
Implied Increase in Bills	160

Security	January - March 2016 Coupon Issuance			Fiscal Year-to-Date Coupon Issuance		
	Gross	Maturing	Net	Gross	Maturing	Net
2-Year FRN	41	41	(0)	82	41	41
2-Year	78	96	(18)	156	192	(36)
3-Year	72	96	(24)	144	192	(48)
5-Year	105	109	(4)	210	218	(8)
7-Year	87	48	39	174	48	126
10-Year	66	22	44	132	45	87
30-Year	42	5	37	84	11	73
5-Year TIPS	0	0	0	16	0	16
10-Year TIPS	28	20	8	41	20	21
30-Year TIPS	9	0	9	16	0	16
Coupon Subtotal	528	438	90	1,055	768	287

*Keeping announced issuance sizes and patterns constant for Nominal Coupons, TIPS, and FRNs as of 12/31/2015.
**Assumes an end-of-March 2016 cash balance of $320 billion versus a beginning-of-January 2016 cash balance of $333 billion.
Financing Estimates released by the Treasury can be found here: http://www.treasury.gov/resource-center/data-chart-center/quarterly-refunding/Pages/Latest.aspx

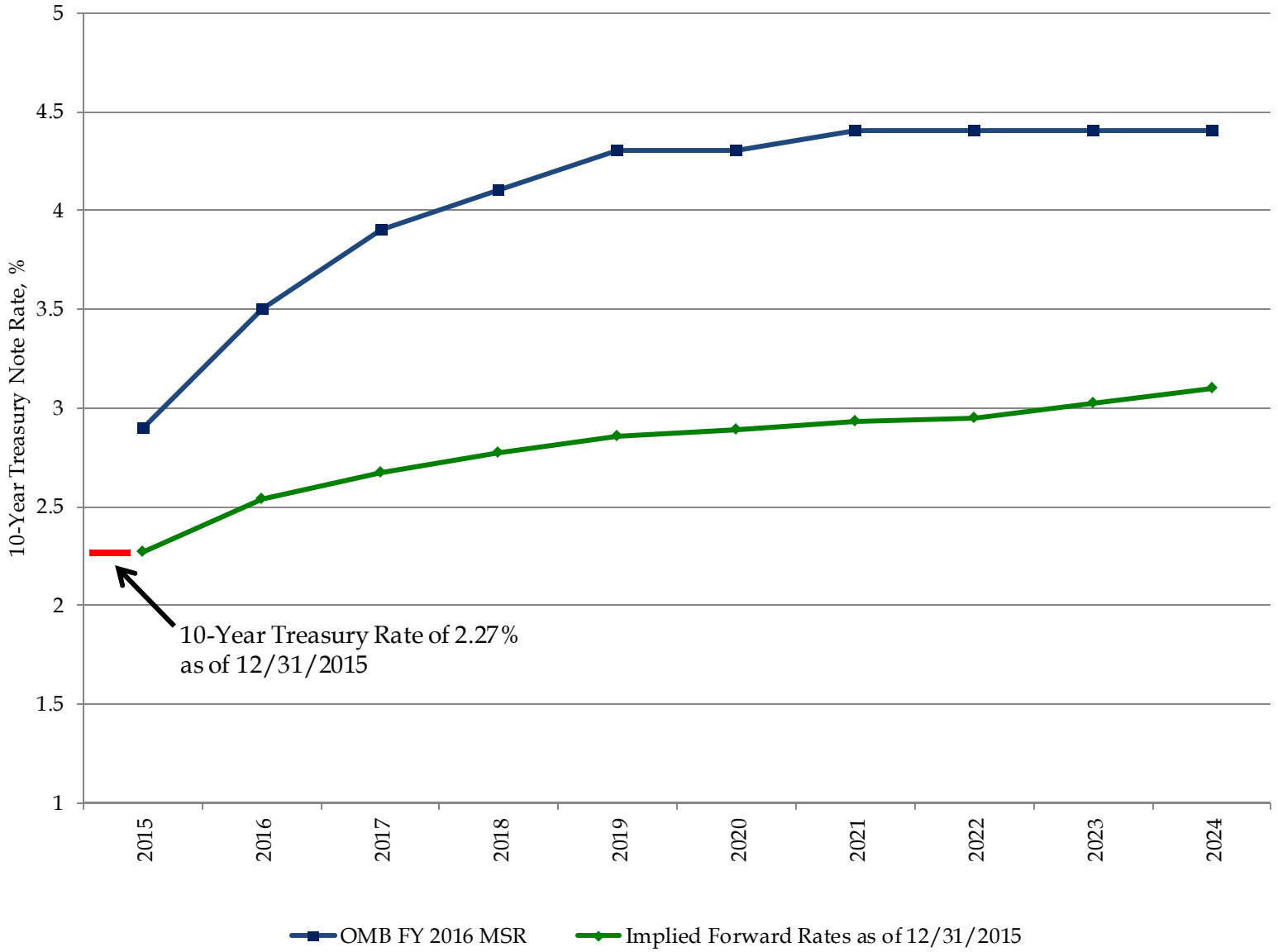
OMB's Projection of Borrowing from the Public



	FY2016 - FY2025 Cumulative Total	
	$ bn	%
Primary Deficit	632	9.0
Net Interest	5,181	74.1
Other	1,181	16.9
Total	6,994	

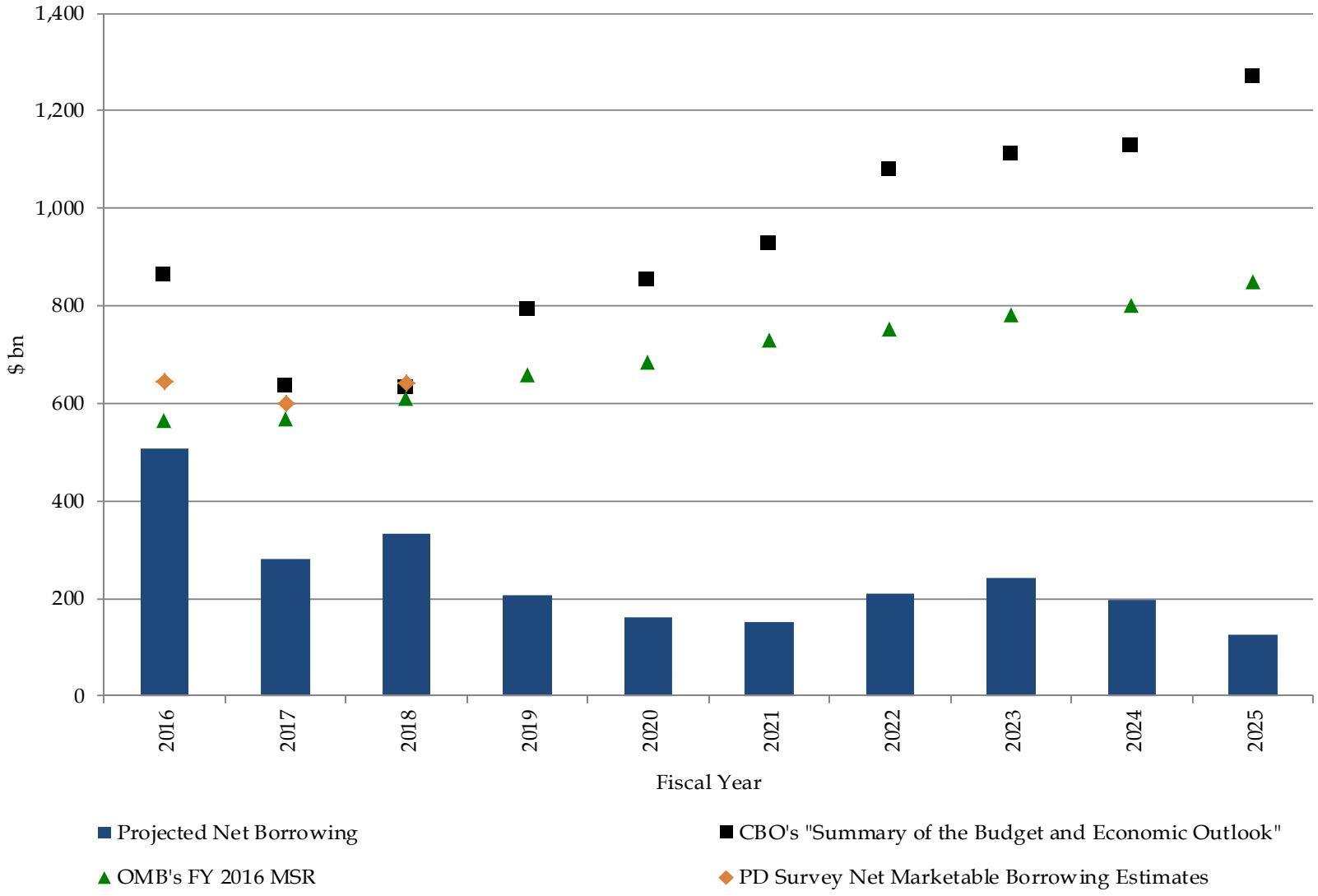
OMB's projections of net borrowing from the public are from Table S-11 of the "Fiscal Year 2016 Mid-Session Review." Data labels at the top represent the change in debt held by the public in $ billions. "Other" represents borrowing from the public to provide direct and guaranteed loans.

Interest Rate Assumptions: 10-Year Treasury Note



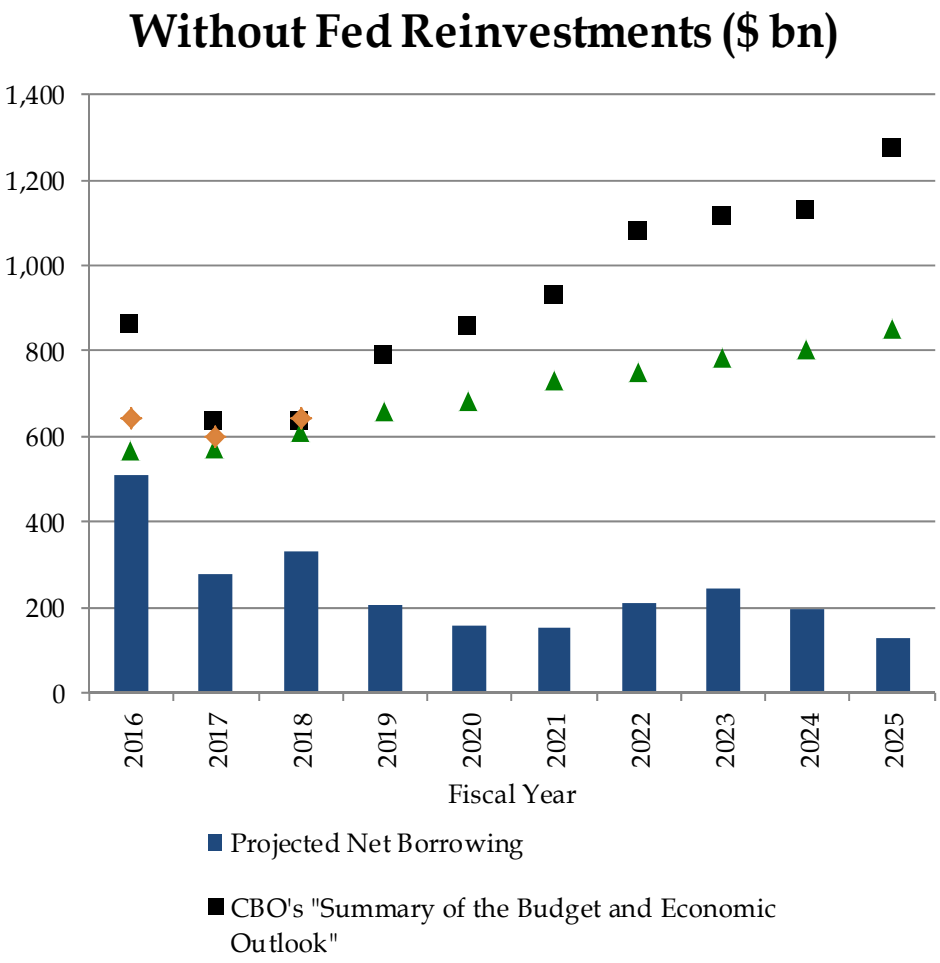
OMB's economic assumption of the 10-Year Treasury Note rates are from Table 2 of the "Fiscal Year 2016 Mid-Session Review." The forward rates are the implied 10-Year Treasury Note rates on December 31 of that year.

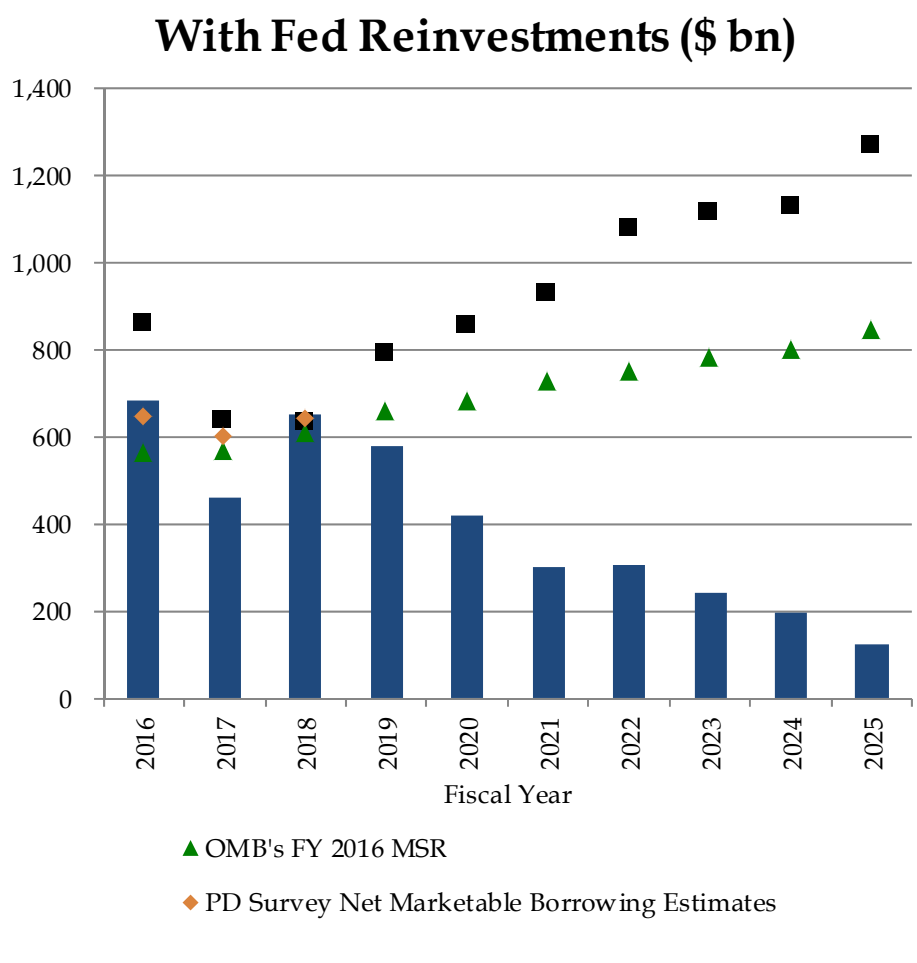
Projected Net Borrowing Assuming Constant Future Issuance



Treasury's primary dealer survey estimates can be found on page 9. OMB's projections of net borrowing from the public are from Table S-11 of the "Fiscal Year 2016 Mid-Session Review." CBO's estimates of the borrowing from the public are from Table 1 of "Summary of the Budget and Economic Outlook: 2016 to 2026." See table at the end of this section for details.

Impact of SOMA Actions on Projected Net Borrowing Assuming Future Issuance Remains Constant





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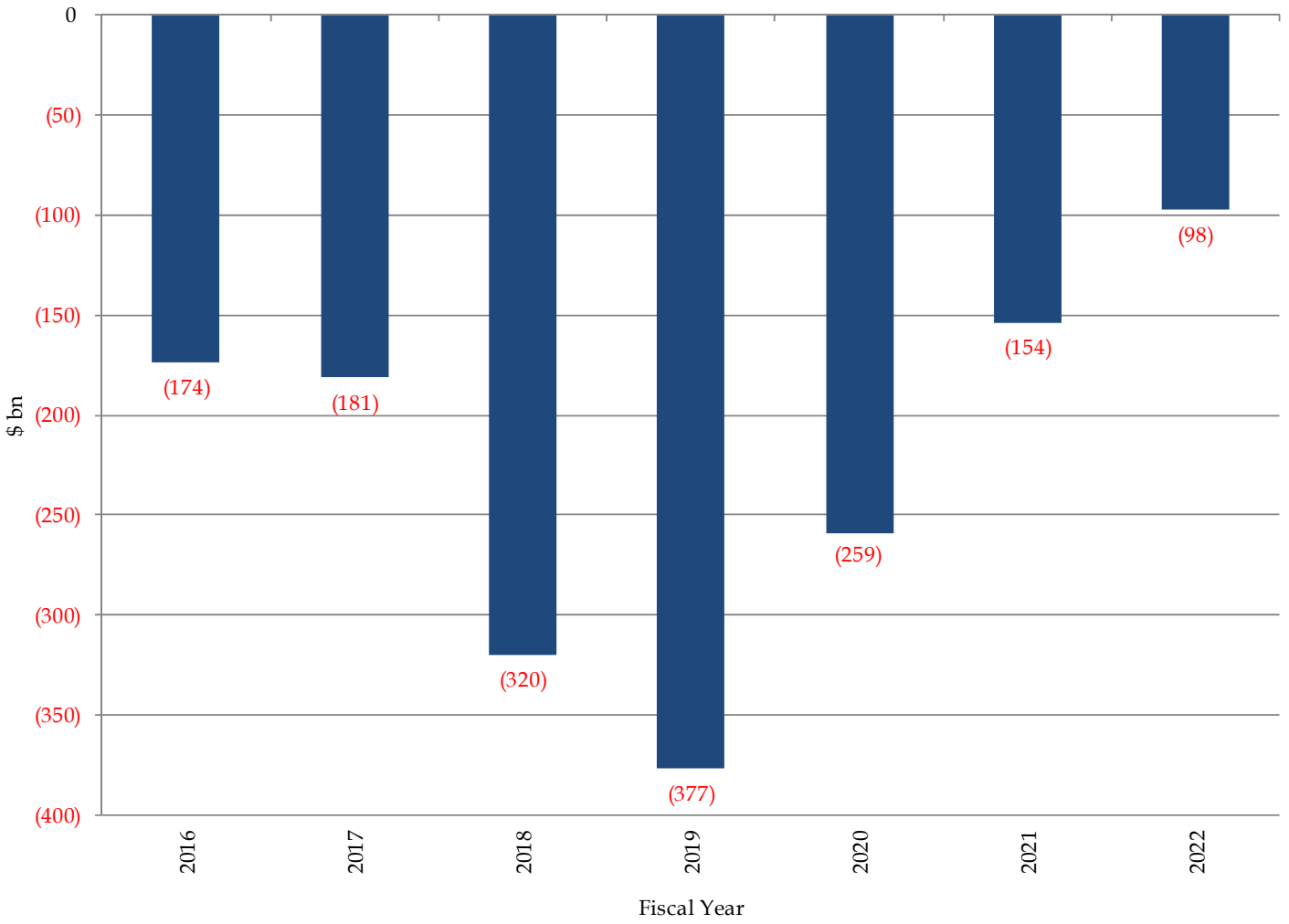
Additional Funding Gap Assuming No SOMA Roll



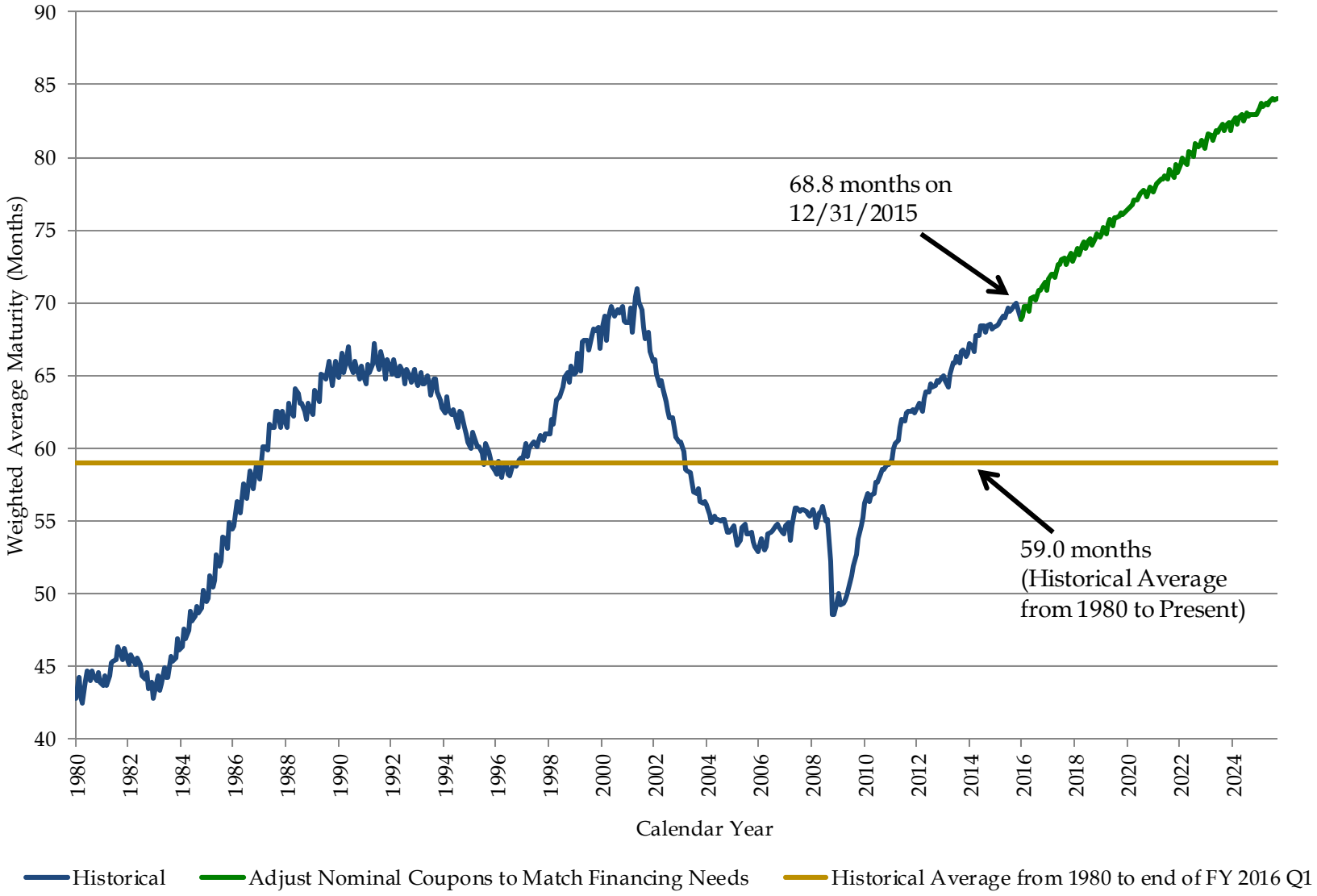
Historical Net Marketable Borrowing and Projected Net Borrowing Assuming Future Issuance Remains Constant, $ billions

Fiscal Year	Bills	2/3/5	7/10/30	TIPS	FRN	Historical/Projected Net Borrowing Capacity	OMB's FY 2016 Mid-Session Review	CBO's "Summary of the Budget and Economic Outlook: 2016 to 2026"	Primary Dealer Survey
2011	(311)	576	751	88	0	1,104			
2012	139	148	738	90	0	1,115			
2013	(86)	86	720	111	0	830			
2014	(119)	(92)	669	88	123	669			
2015	(53)	(282)	641	88	164	558			
2016	128	(172)	442	70	41	509	564	861	644
2017	27	(73)	256	71	(0)	280	568	635	600
2018	0	28	238	66	0	332	610	631	641
2019	0	35	104	67	0	205	659	789	
2020	0	(0)	119	41	0	160	683	853	
2021	0	(0)	135	16	0	151	729	927	
2022	0	35	170	5	0	210	751	1,078	
2023	0	44	195	5	0	243	781	1,112	
2024	0	10	185	4	(0)	198	801	1,126	
2025	0	(10)	176	(40)	0	126	848	1,270	

Treasury's primary dealer survey estimates can be found on page 9. OMB's projections of net borrowing from the public are from Table S-11 of the "Fiscal Year 2016 Mid-Session Review." CBO's estimates of the borrowing from the public are from Table 1 of "Summary of the Budget and Economic Outlook: 2016 to 2026."

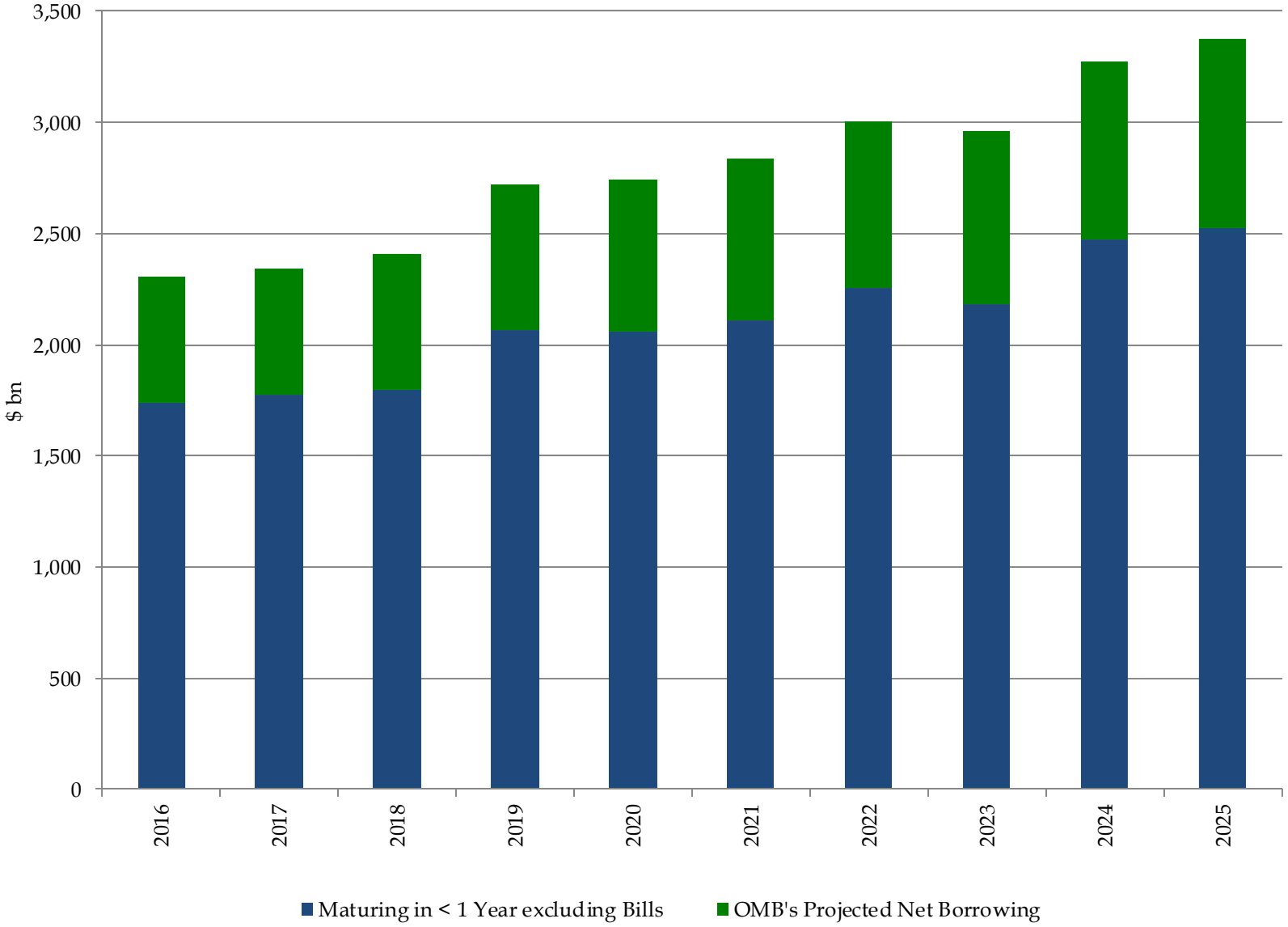
Section IV:
Portfolio Metrics

Weighted Average Maturity of Marketable Debt Outstanding



This scenario does not represent any particular course of action that Treasury is expected to follow. Instead, it is intended to demonstrate the basic trajectory of average maturity absent changes to the mix of securities issued by Treasury.

Projected Gross Borrowing excluding Bills for Fiscal Year



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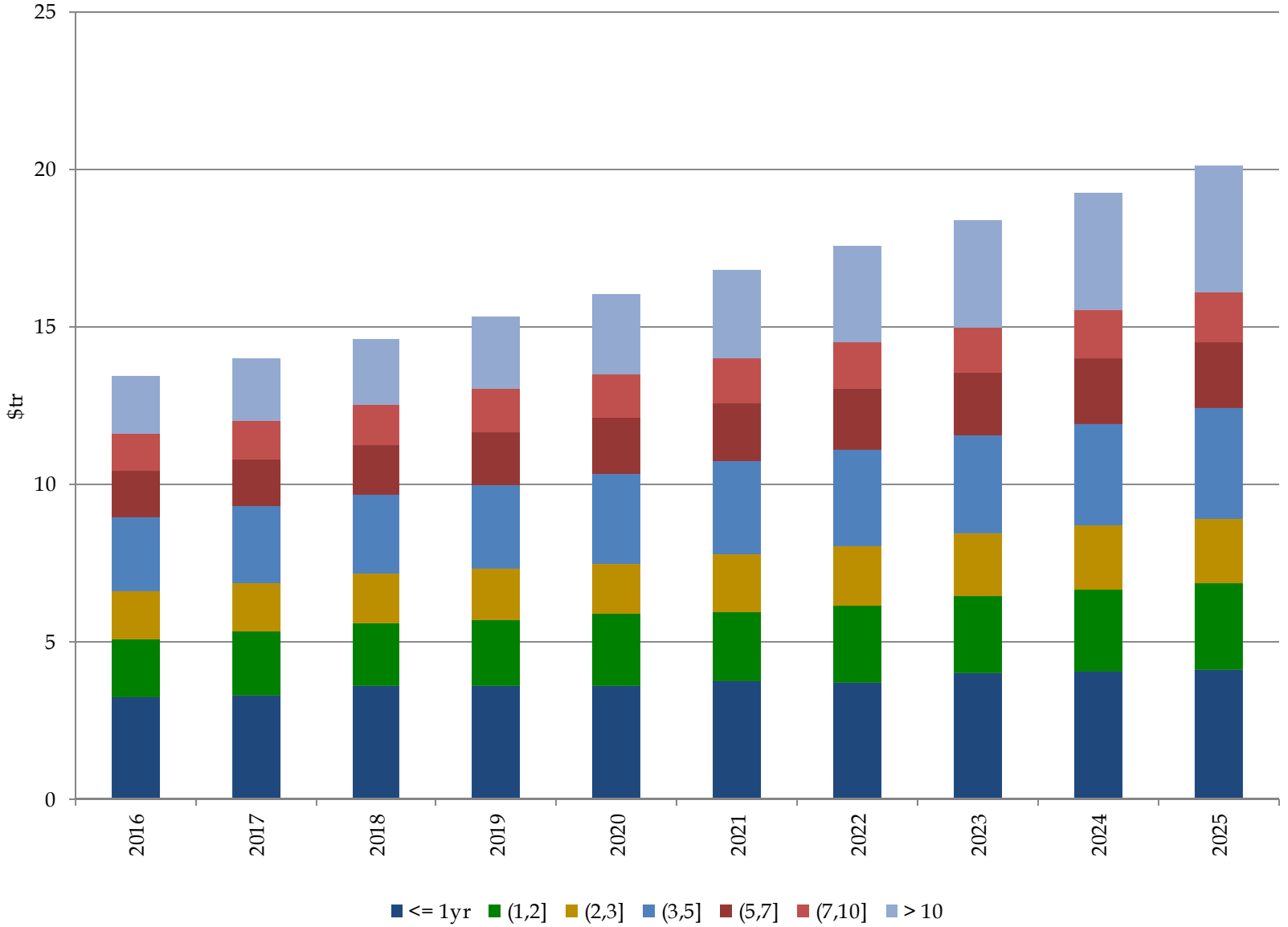
Projected Maturity Profile from end of Fiscal Year



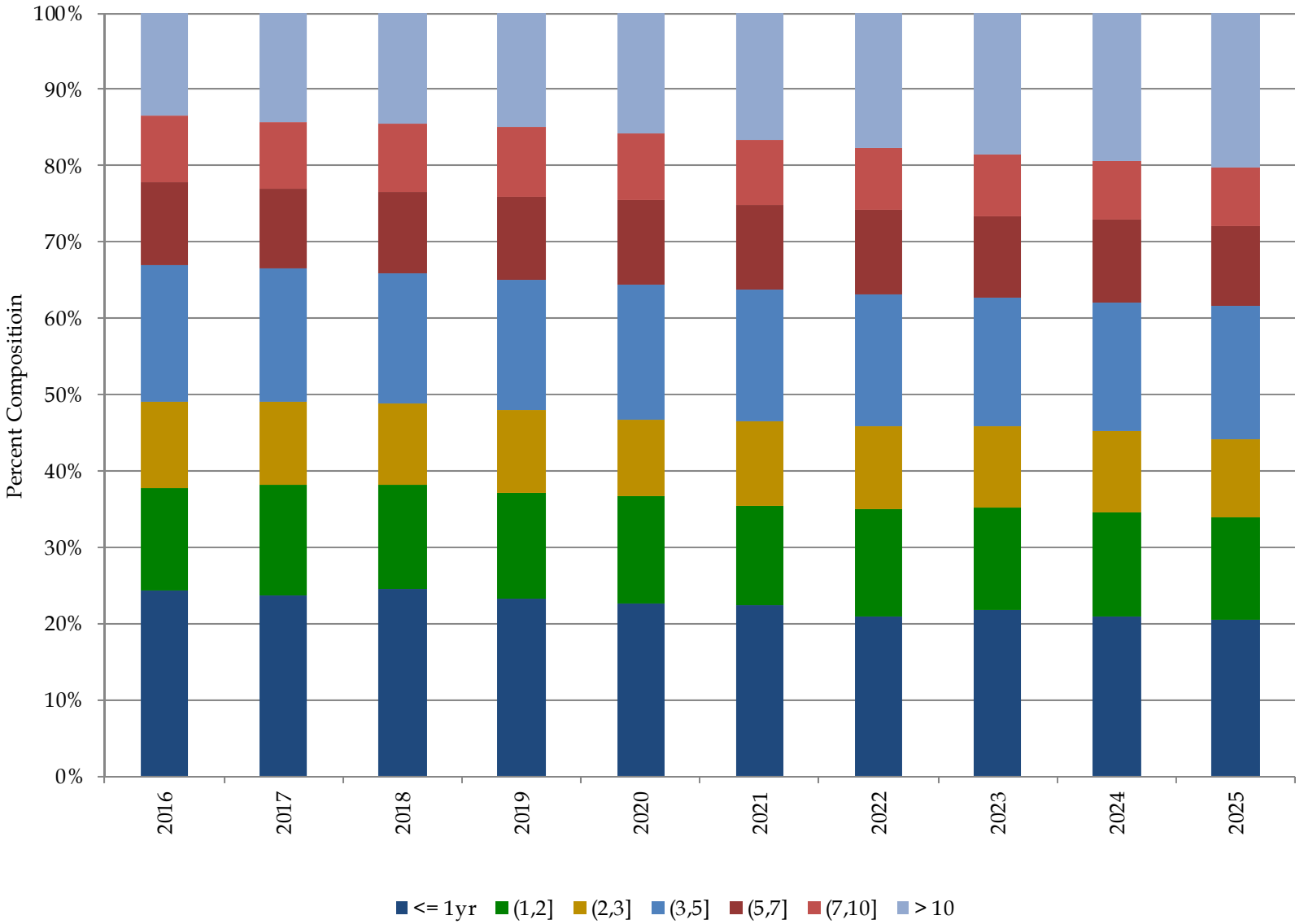
This scenario does not represent any particular course of action that Treasury is expected to follow. Instead, it is intended to demonstrate the basic trajectory of average maturity absent changes to the mix of securities issued by Treasury. See table on following page for details.

Recent and Projected Maturity Profile, $ billions

End of Fiscal Year	<= 1yr	(1,2]	(2,3]	(3,5]	(5,7]	(7,10]	> 10	Total	(0,5]
2008	2,152	711	280	653	310	499	617	5,222	3,796
2009	2,702	774	663	962	559	643	695	6,998	5,101
2010	2,563	1,141	895	1,273	907	856	853	8,488	5,872
2011	2,620	1,334	980	1,541	1,070	1,053	1,017	9,616	6,476
2012	2,951	1,373	1,104	1,811	1,214	1,108	1,181	10,742	7,239
2013	2,939	1,523	1,242	1,965	1,454	1,136	1,331	11,590	7,669
2014	2,935	1,739	1,319	2,207	1,440	1,113	1,528	12,281	8,199
2015	3,097	1,775	1,335	2,382	1,478	1,121	1,654	12,841	8,589
2016	3,261	1,794	1,534	2,380	1,478	1,159	1,807	13,412	8,969
2017	3,308	2,033	1,527	2,448	1,475	1,225	1,983	14,000	9,316
2018	3,577	2,023	1,544	2,503	1,572	1,283	2,131	14,632	9,647
2019	3,571	2,106	1,666	2,622	1,674	1,382	2,297	15,317	9,964
2020	3,621	2,250	1,611	2,842	1,766	1,399	2,539	16,029	10,324
2021	3,766	2,176	1,857	2,915	1,837	1,444	2,794	16,789	10,713
2022	3,692	2,470	1,894	3,046	1,931	1,452	3,089	17,573	11,101
2023	3,986	2,481	1,960	3,098	1,986	1,473	3,405	18,390	11,525
2024	4,038	2,608	2,031	3,239	2,092	1,508	3,714	19,230	11,916
2025	4,125	2,713	2,048	3,520	2,111	1,550	4,053	20,119	12,406

This scenario does not represent any particular course of action that Treasury is expected to follow. Instead, it is intended to demonstrate the basic trajectory of average maturity absent changes to the mix of securities issued by Treasury. Portfolio composition by original issuance type and term can be found in the appendix (Page 43).

Projected Maturity Profile from end of Fiscal Year



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Recent and Projected Maturity Profile, percent

End of Fiscal Year	<= 1yr	(1,2]	(2,3]	(3,5]	(5,7]	(7,10]	> 10	(0,3]	(0,5]
2008	41.2	13.6	5.4	12.5	5.9	9.6	11.8	60.2	72.7
2009	38.6	11.1	9.5	13.7	8.0	9.2	9.9	59.1	72.9
2010	30.2	13.4	10.5	15.0	10.7	10.1	10.0	54.2	69.2
2011	27.2	13.9	10.2	16.0	11.1	10.9	10.6	51.3	67.3
2012	27.5	12.8	10.3	16.9	11.3	10.3	11.0	50.5	67.4
2013	25.4	13.1	10.7	17.0	12.5	9.8	11.5	49.2	66.2
2014	23.9	14.2	10.7	18.0	11.7	9.1	12.4	48.8	66.8
2015	24.1	13.8	10.4	18.5	11.5	8.7	12.9	48.3	66.9
2016	24.3	13.4	11.4	17.7	11.0	8.6	13.5	49.1	66.9
2017	23.6	14.5	10.9	17.5	10.5	8.8	14.2	49.1	66.5
2018	24.4	13.8	10.5	17.1	10.7	8.8	14.6	48.8	65.9
2019	23.3	13.7	10.9	17.1	10.9	9.0	15.0	47.9	65.1
2020	22.6	14.0	10.1	17.7	11.0	8.7	15.8	46.7	64.4
2021	22.4	13.0	11.1	17.4	10.9	8.6	16.6	46.5	63.8
2022	21.0	14.1	10.8	17.3	11.0	8.3	17.6	45.8	63.2
2023	21.7	13.5	10.7	16.8	10.8	8.0	18.5	45.8	62.7
2024	21.0	13.6	10.6	16.8	10.9	7.8	19.3	45.1	62.0
2025	20.5	13.5	10.2	17.5	10.5	7.7	20.1	44.2	61.7

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Section V:
Demand

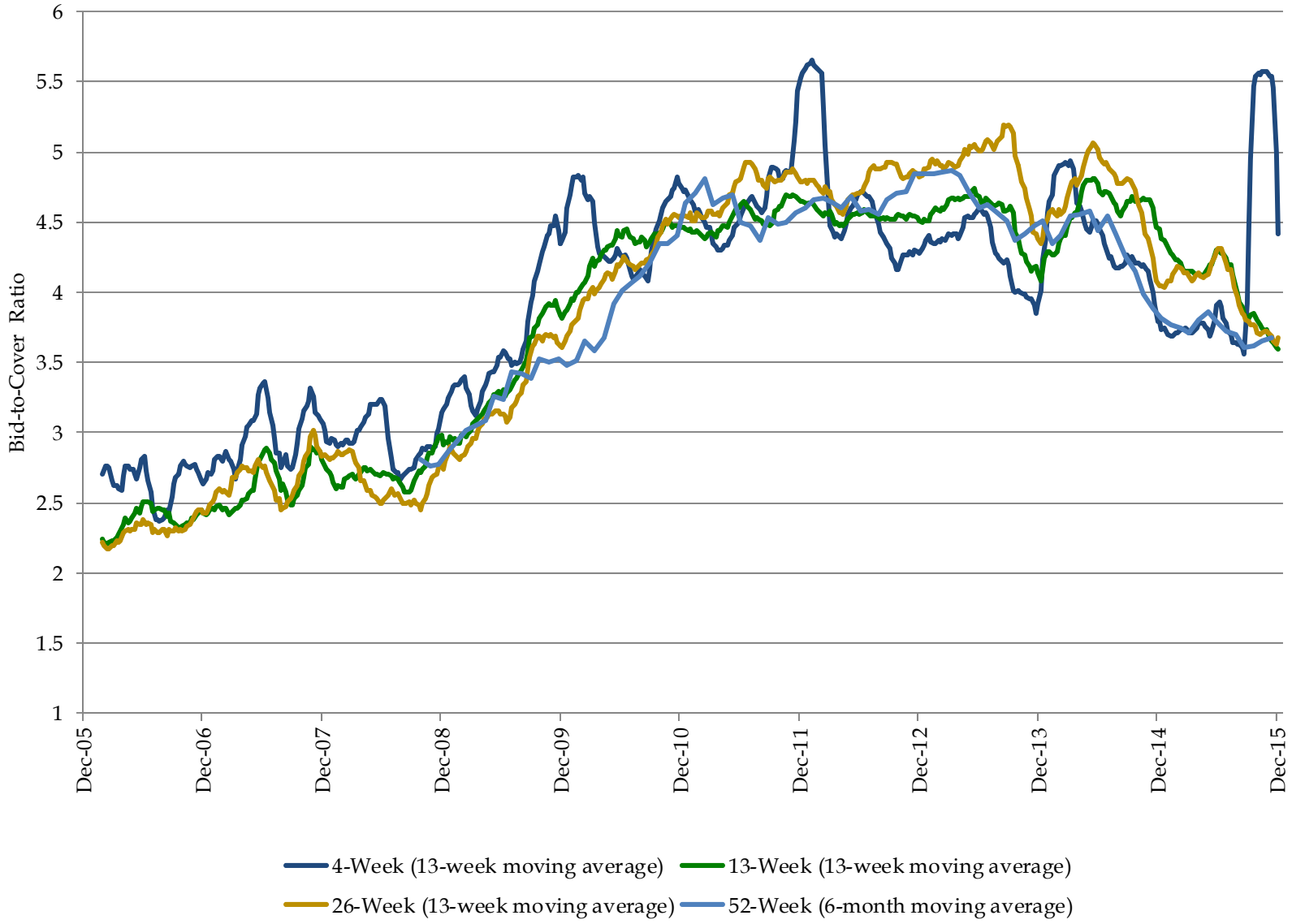
Summary Statistics for Fiscal Year 2016 Q1 Auctions

Security Type	Term	Stop Out Rate (%)*	Bid-to-Cover Ratio*	Competitive Awards ($bn)	% Primary Dealer*	% Direct*	% Indirect*	Non-Competitive Awards ($bn)	SOMA Add Ons ($bn)	10-Year Equivalent ($bn)**
Bill	4-Week	0.139	3.5	450.6	65.1	9.0	25.8	3.3	0.0	3.9
Bill	13-Week	0.150	3.6	340.6	64.7	8.2	27.1	4.6	0.0	9.8
Bill	26-Week	0.341	3.7	321.4	51.6	6.9	41.5	4.1	0.0	18.6
Bill	52-Week	0.512	3.9	35.5	55.6	5.3	39.0	0.4	0.0	4.0
Bill	CMBs	0.064	3.7	95.0	73.7	7.0	19.3	0.0	0.0	1.9
Coupon	2-Year	0.943	3.0	77.6	39.9	19.0	41.1	0.4	0.0	17.5
Coupon	3-Year	1.140	3.0	71.8	39.7	14.9	45.3	0.2	0.1	24.0
Coupon	5-Year	1.623	2.4	104.9	35.6	8.3	56.0	0.1	0.0	56.9
Coupon	7-Year	2.020	2.5	87.0	31.0	13.9	55.1	0.0	0.0	64.1
Coupon	10-Year	2.206	2.6	65.9	26.2	12.3	61.5	0.1	0.1	66.4
Coupon	30-Year	2.993	2.4	42.0	27.9	11.9	60.2	0.0	0.1	93.9
TIPS	5-Year	0.472	2.4	16.0	25.0	5.0	69.9	0.0	0.0	7.8
TIPS	10-Year	0.664	2.4	13.0	25.3	7.5	67.2	0.0	0.0	13.8
TIPS	30-Year	1.200	2.6	7.0	21.7	8.5	69.8	0.0	0.0	20.6
FRN	2-Year	0.235	3.2	41.0	53.0	2.2	44.7	0.0	0.0	0.0

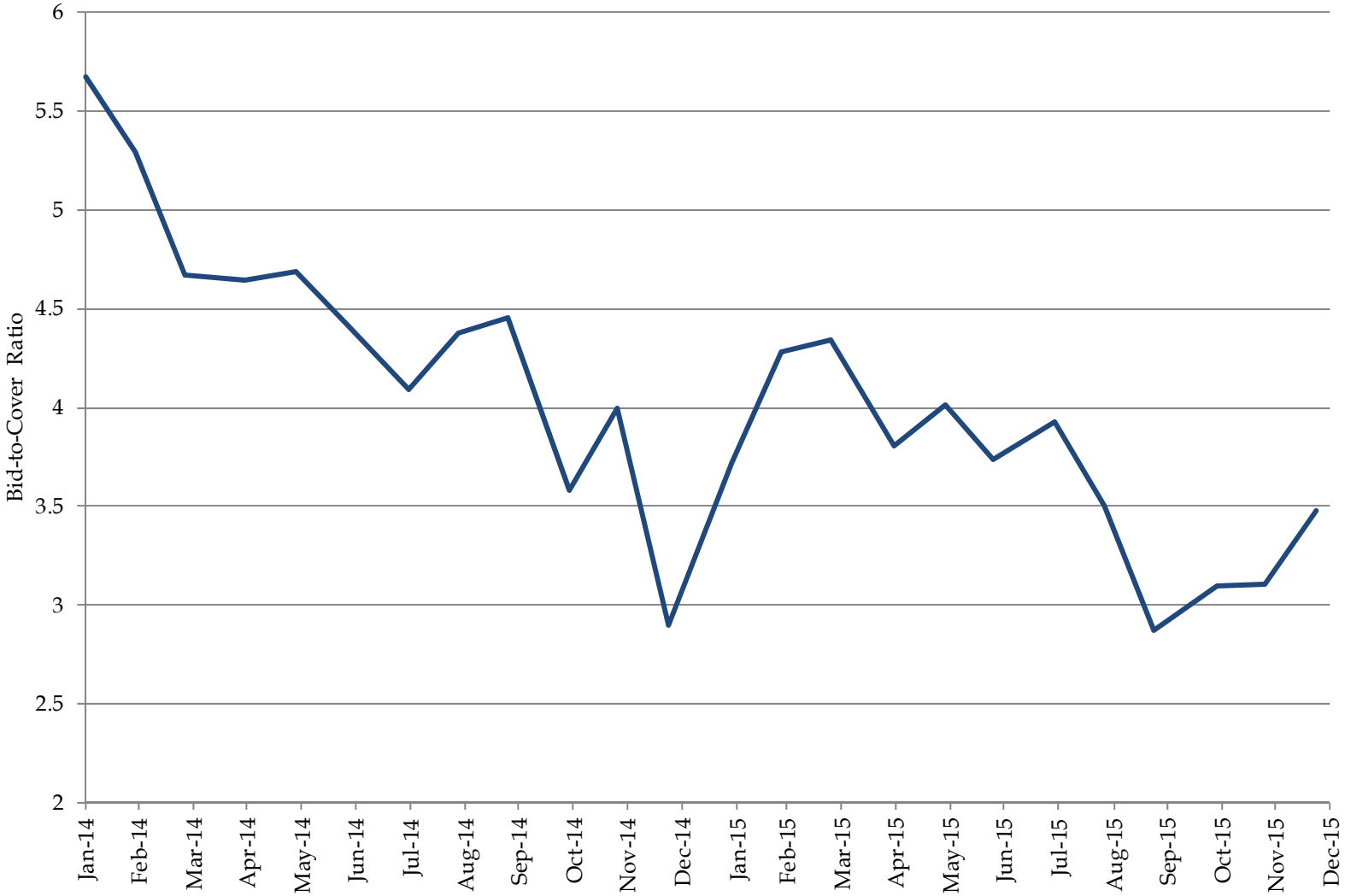
Total Bills	0.199	3.6	1,243.1	61.9	8.0	30.1	12.5	0.0	38.3
Total Coupons	1.719	2.7	449.1	34.0	13.2	52.8	0.9	0.3	322.8
Total TIPS	0.683	2.4	35.9	24.5	6.6	68.9	0.1	0.0	42.1
Total FRNs	0.235	3.2	41.0	53.0	2.2	44.7	0.0	0.0	0.0

*Weighted averages of Competitive Awards.
**Approximated using prices at settlement and includes both Competitive and Non-Competitive Awards. For TIPS' 10-year equivalent, a constant auction BEI is used as the inflation assumption.

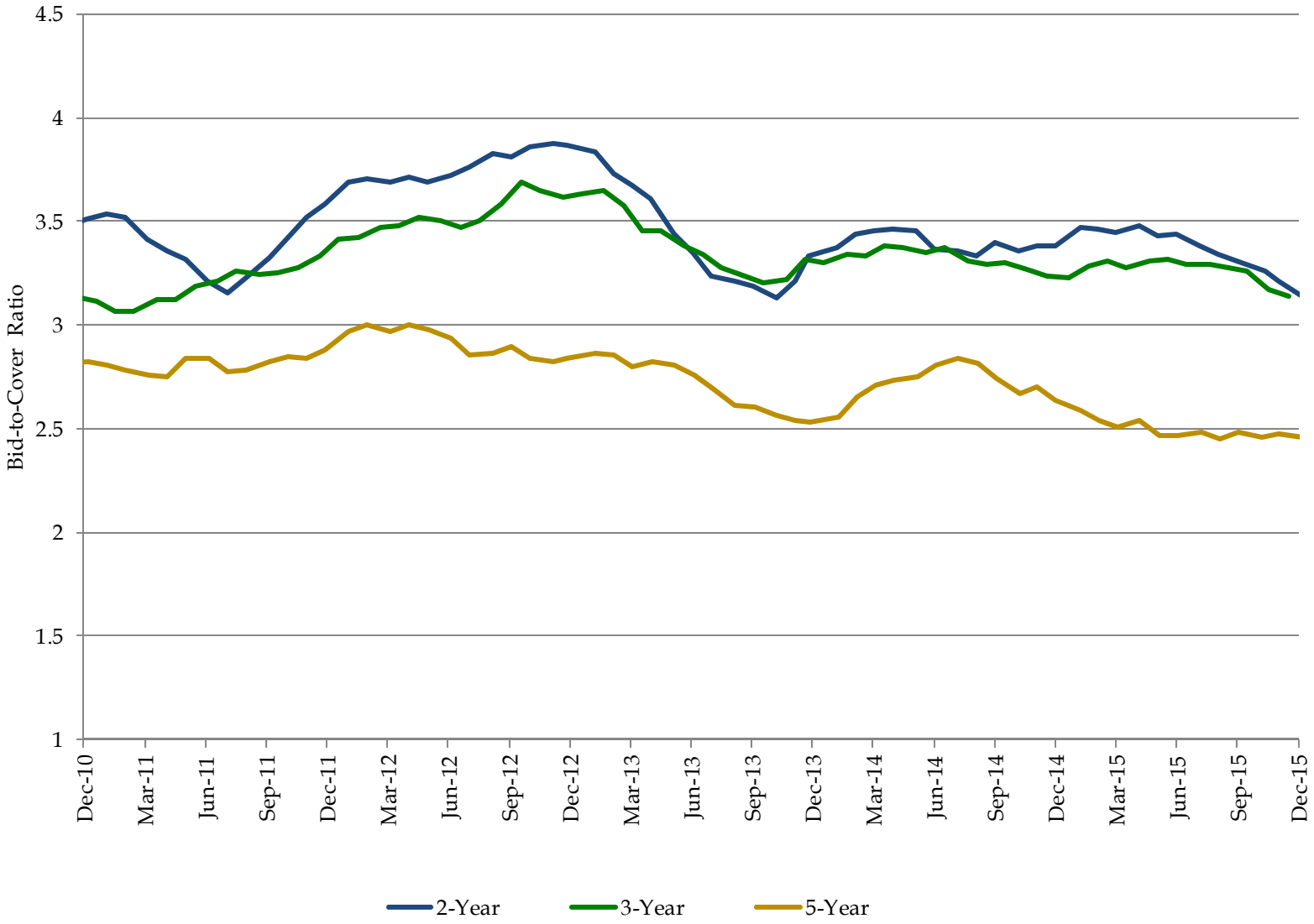
Bid-to-Cover Ratios for Treasury Bills



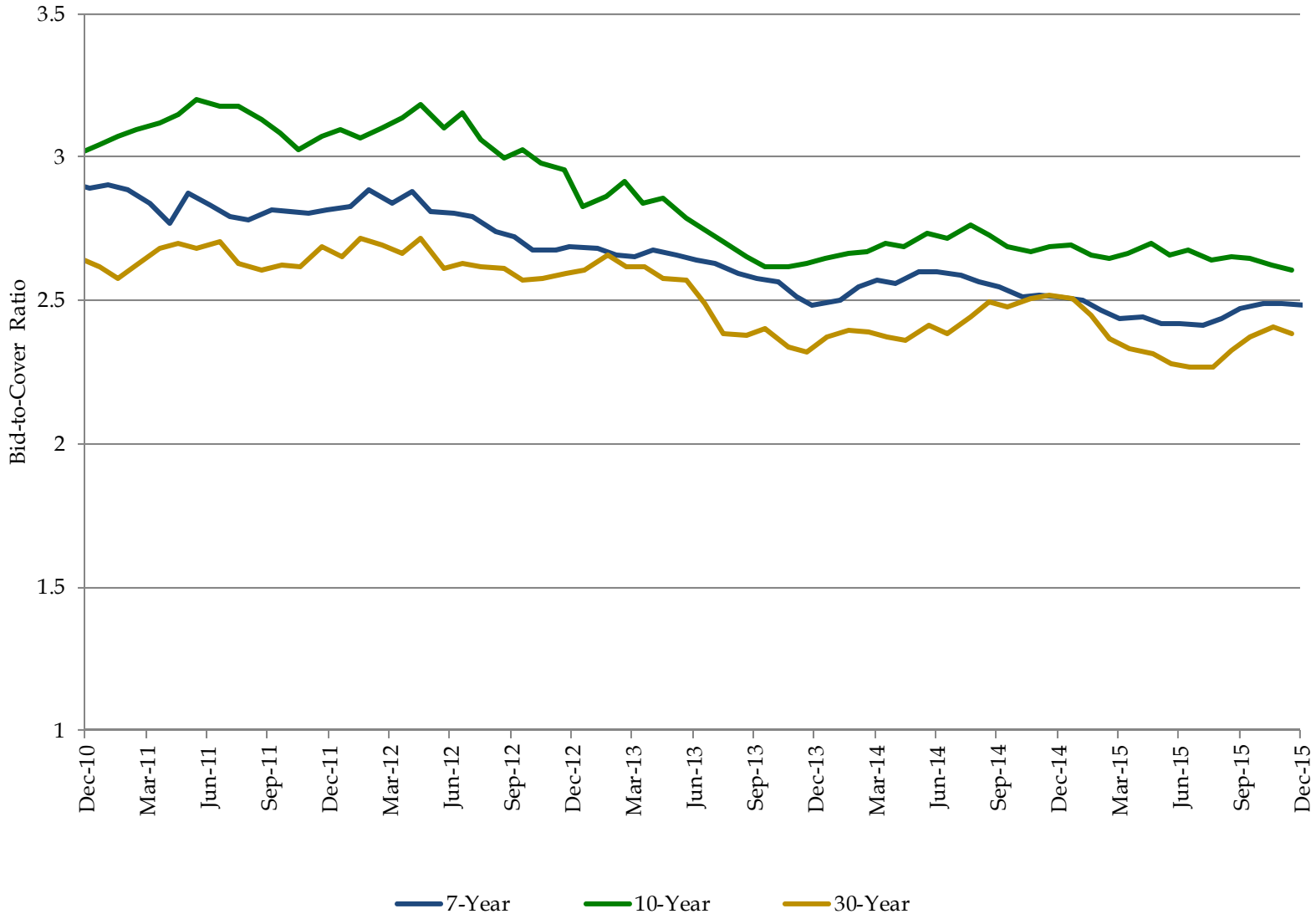
Bid-to-Cover Ratios for FRNs



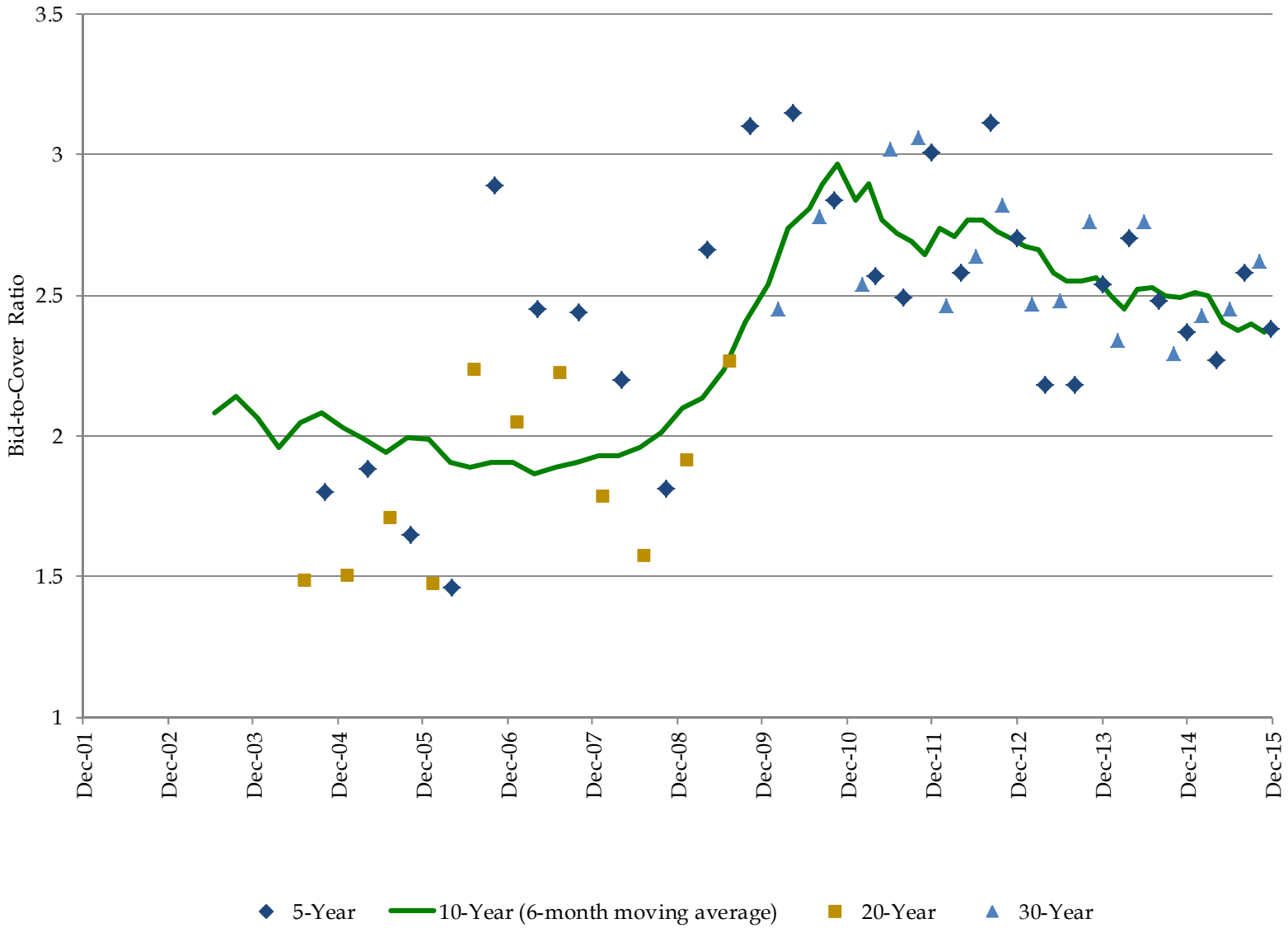
Bid-to-Cover Ratios for 2-, 3-, and 5-Year Nominal Securities (6-Month Moving Average)



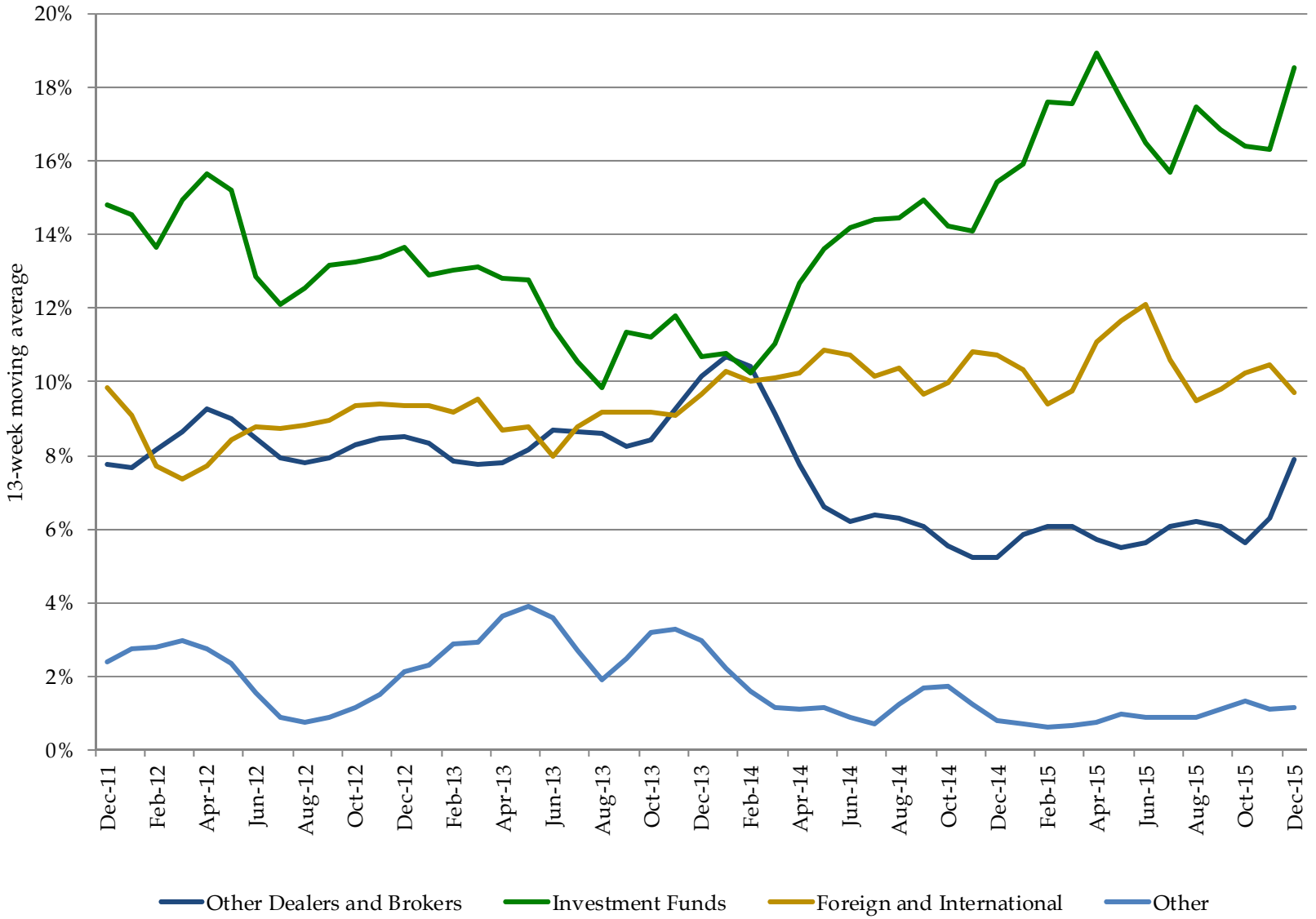
Bid-to-Cover Ratios for 7-, 10-, and 30-Year Nominal Securities (6-Month Moving Average)



Bid-to-Cover Ratios for TIPS

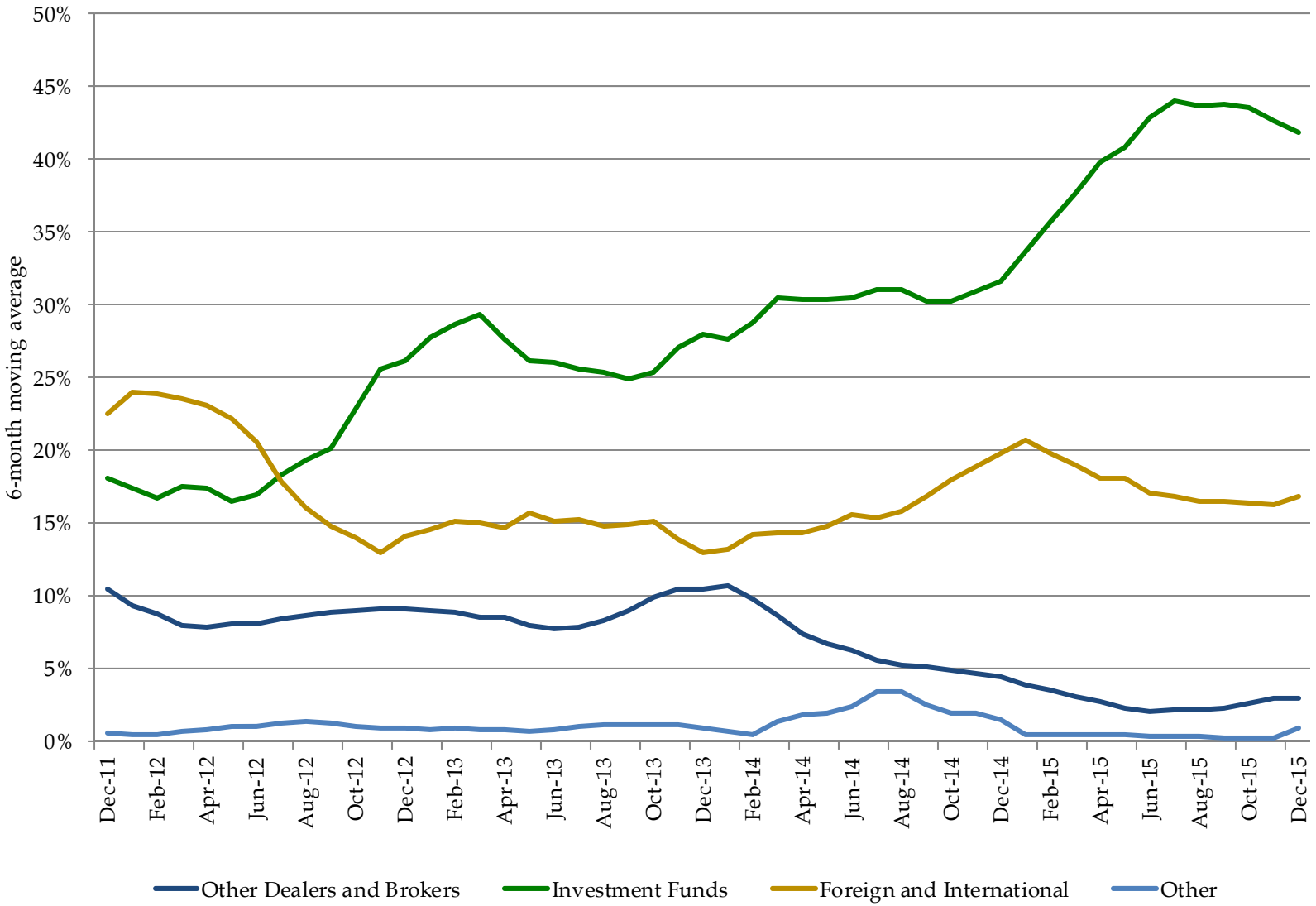


Percent Awarded in Bill Auctions by Investor Class (13-Week Moving Average)



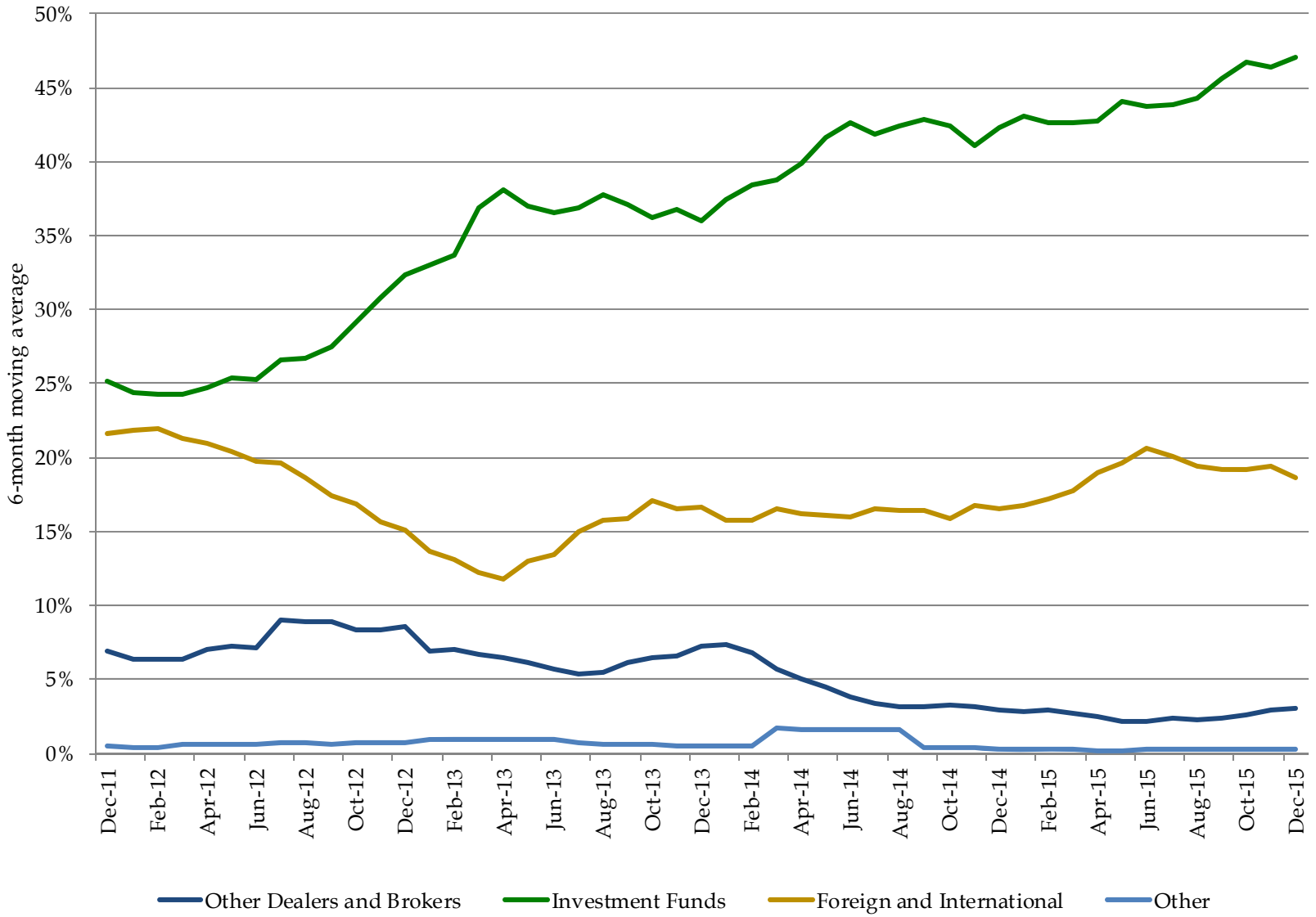
Excludes SOMA add-ons. The "Other" category includes categories that are each less than 2%, which include Depository Institutions, Individuals, Pension and Insurance.

Percent Awarded in 2-, 3-, and 5-Year Nominal Security Auctions by Investor Class (6-Month Moving Average)



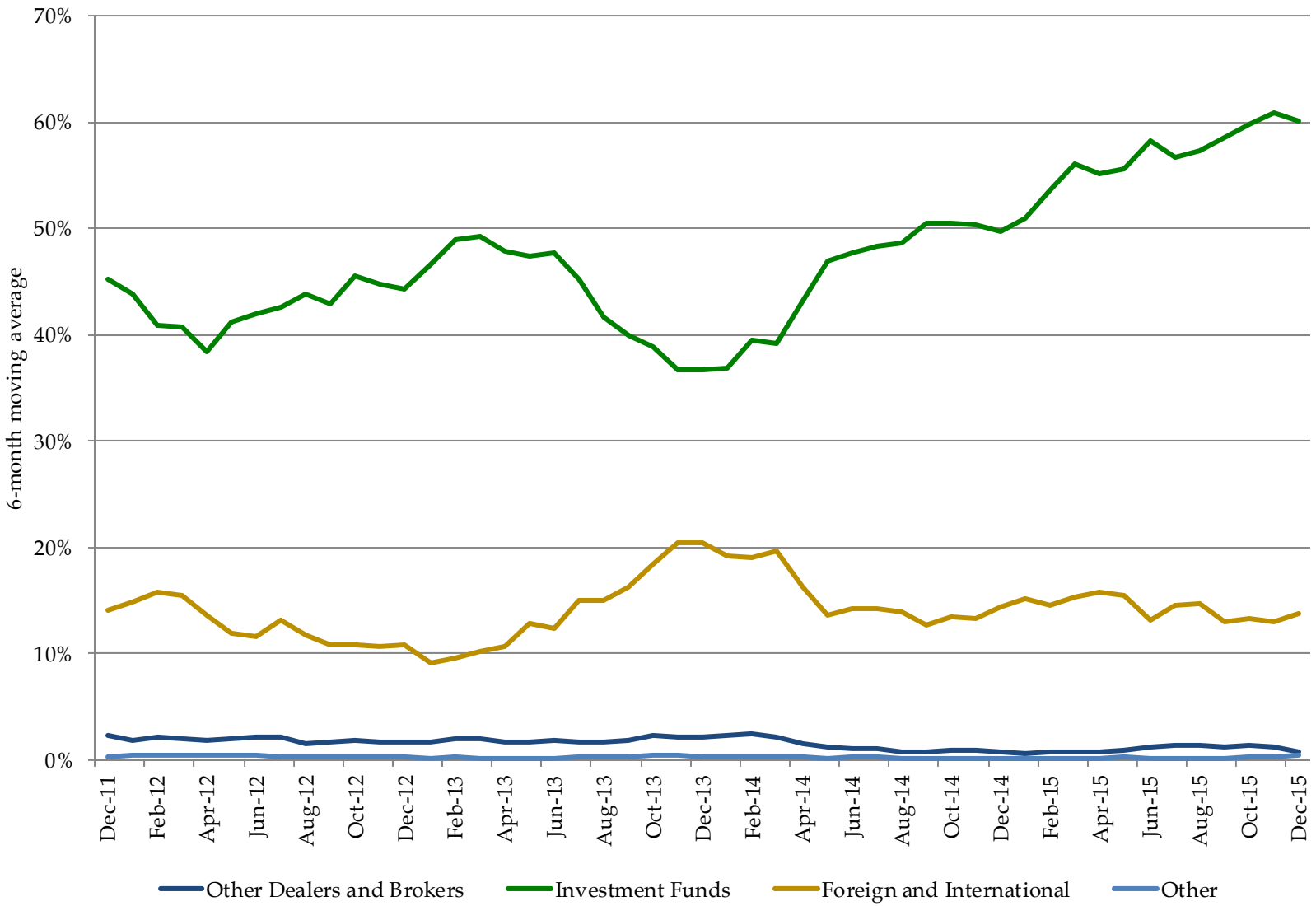
Excludes SOMA add-ons. The "Other" category includes categories that are each less than 2%, which include Depository Institutions, Individuals, Pension and Insurance.

Percent Awarded in 7-, 10-, 30-Year Nominal Security Auctions by Investor Class (6-Month Moving Average)



Excludes SOMA add-ons. The "Other" category includes categories that are each less than 2%, which include Depository Institutions, Individuals, Pension and Insurance.

Percent Awarded in TIPS Auctions by Investor Class (6-Month Moving Average)



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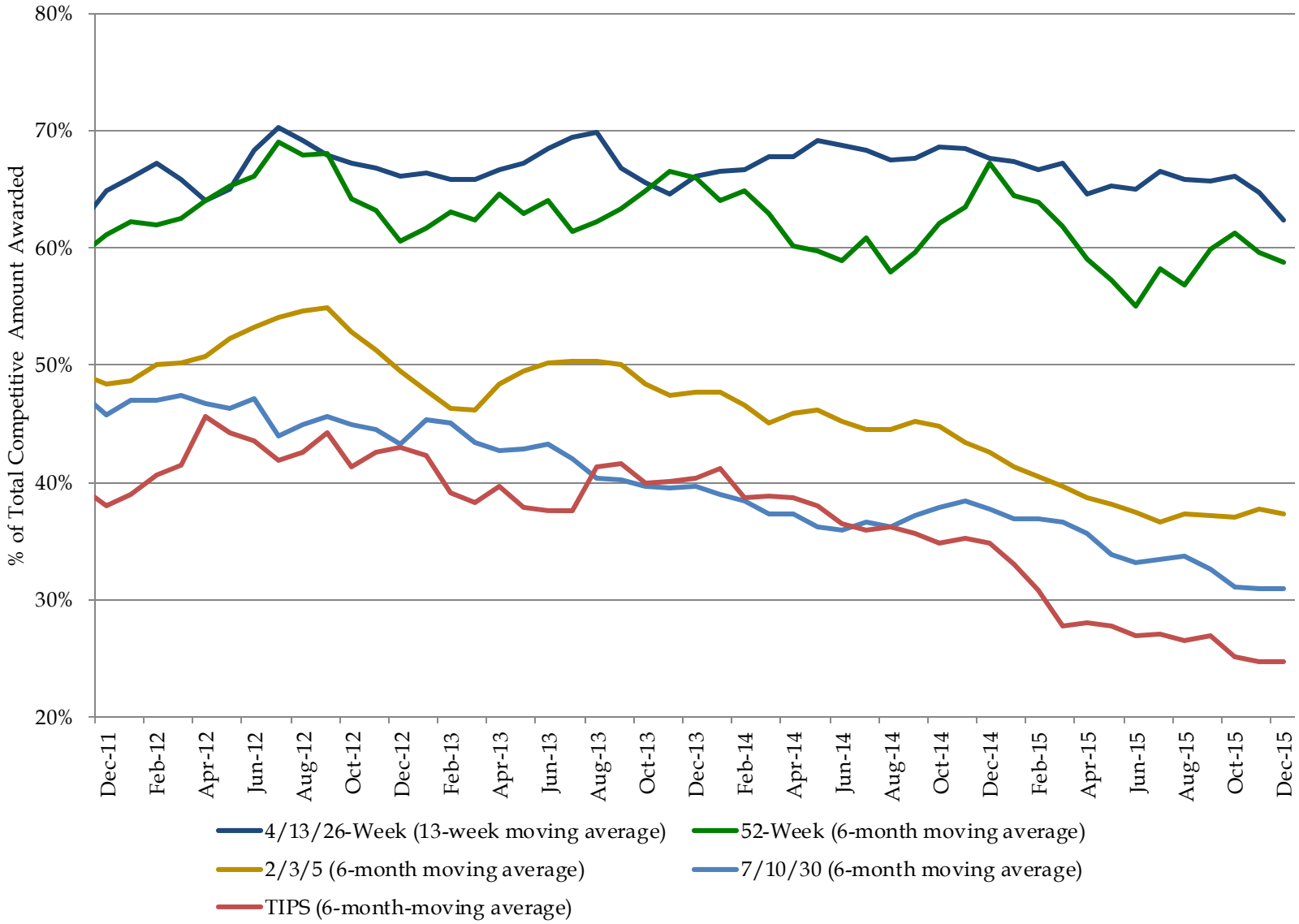
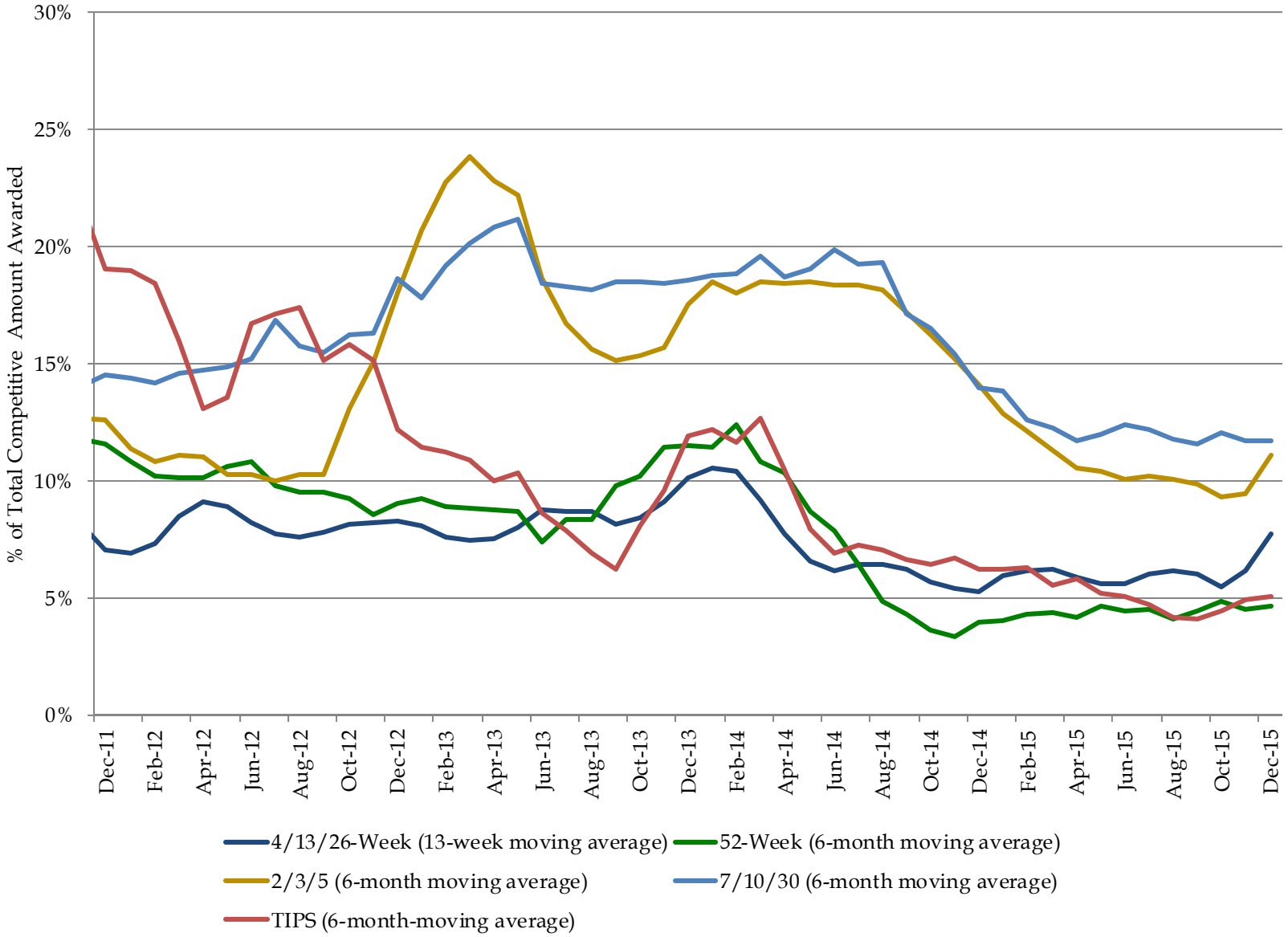
Primary Dealer Awards at Auction



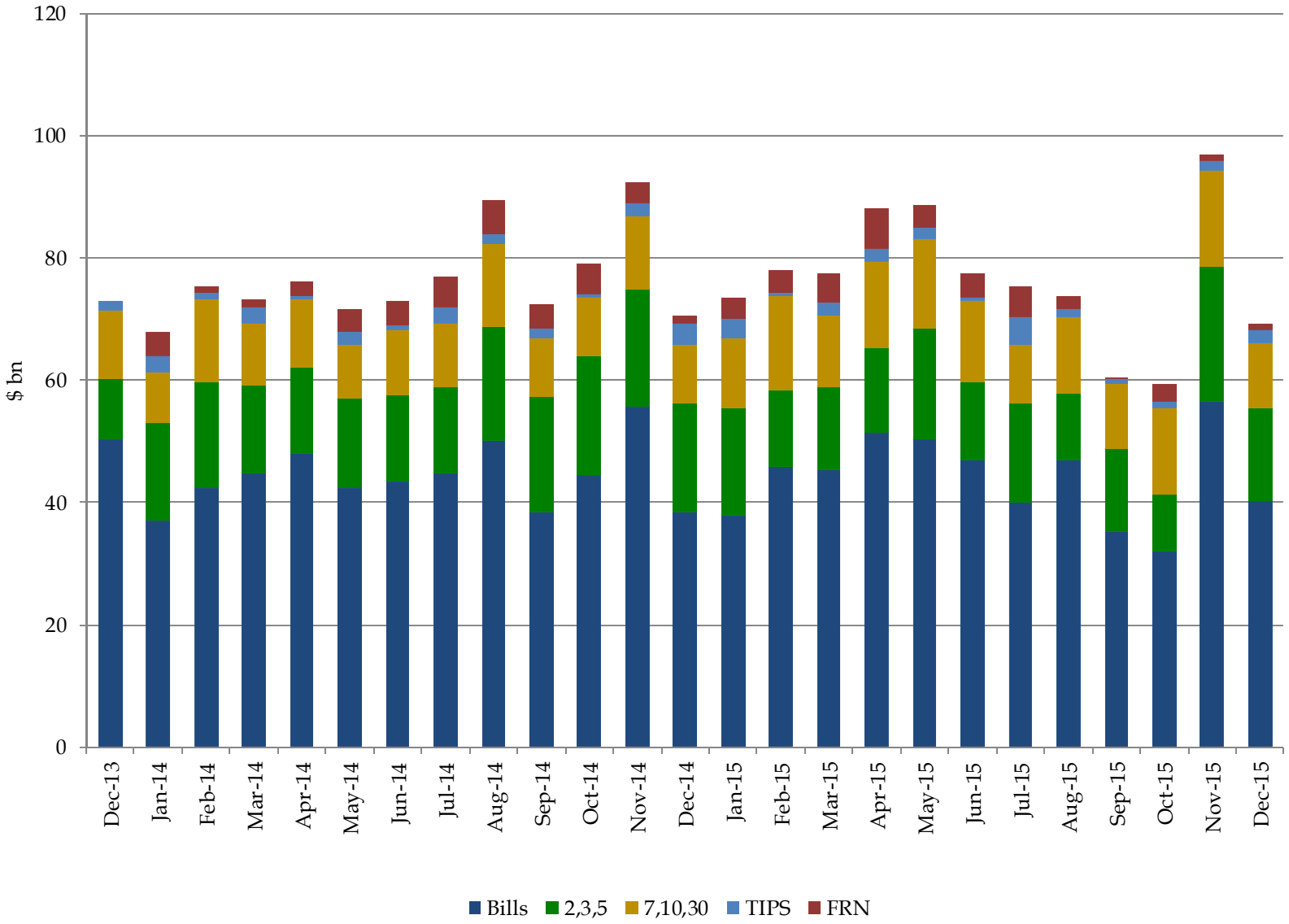
Excludes SOMA add-ons.

Direct Bidder Awards at Auction



Excludes SOMA add-ons.

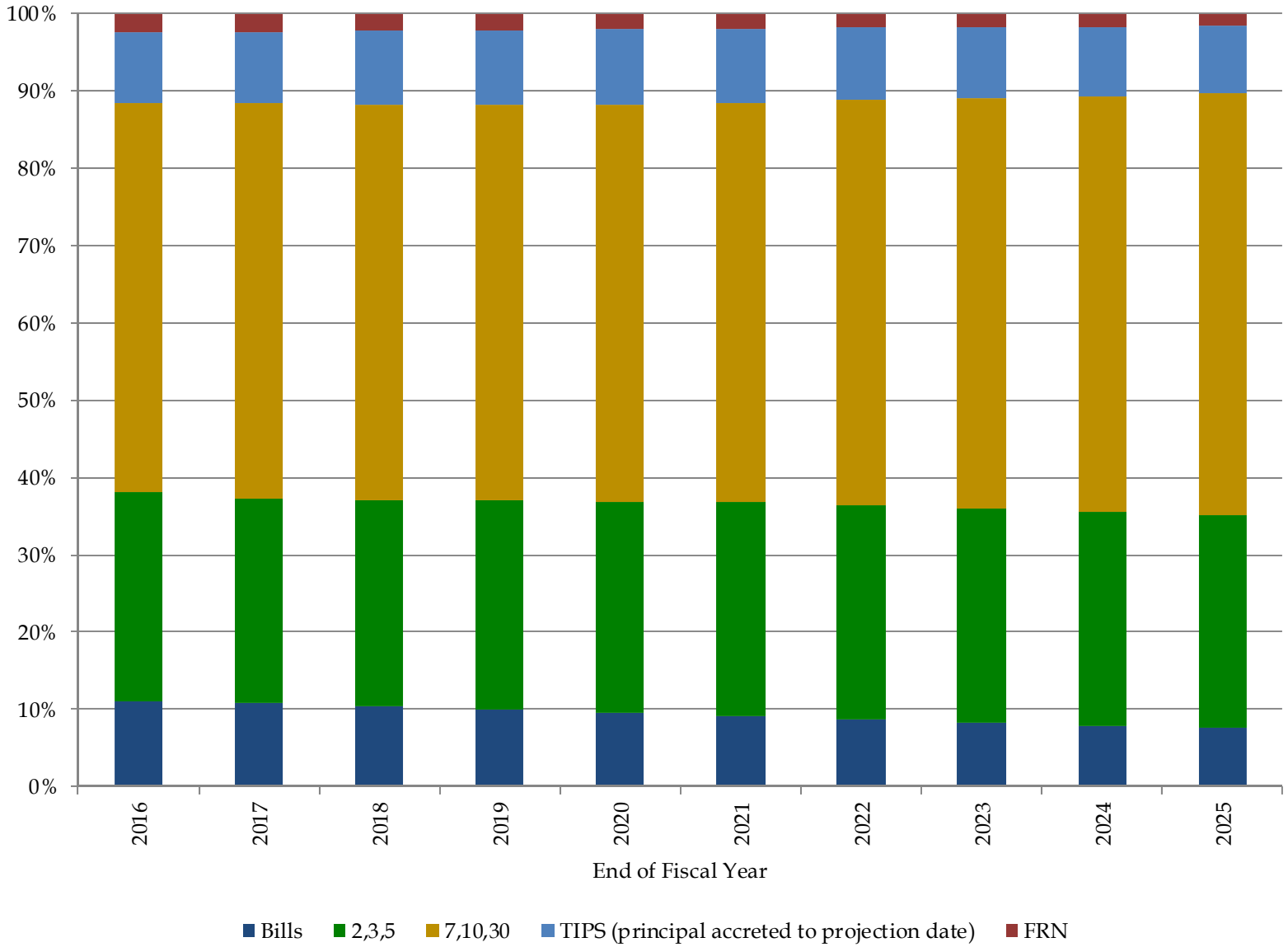
Total Foreign Awards of Treasuries at Auction, $ billions



Foreign includes both private sector and official institutions.

Appendix

Projected Portfolio Composition by Issuance Type



This scenario does not represent any particular course of action that Treasury is expected to follow. Instead, it is intended to demonstrate the basic trajectory of average maturity absent changes to the mix of securities issued by Treasury. See table on following page for details.

Recent and Projected Portfolio Composition by Issuance Type, Percent

End of Fiscal Year	Bills	2-, 3-, 5-Year Nominal Coupons	7-, 10-, 30-Year Nominal Coupons	Total Nominal Coupons	TIPS (principal accreted to projection date)	FRN
2008	28.5	34.5	26.9	61.4	10.0	0.0
2009	28.5	36.2	27.4	63.6	7.9	0.0
2010	21.1	40.1	31.8	71.9	7.0	0.0
2011	15.4	41.4	35.9	77.3	7.3	0.0
2012	15.0	38.4	39.0	77.4	7.5	0.0
2013	13.2	35.8	43.0	78.7	8.1	0.0
2014	11.5	33.0	46.0	79.0	8.5	1.0
2015	10.6	29.4	49.0	78.3	8.8	2.2
2016	11.1	27.1	50.4	77.4	9.0	2.4
2017	10.8	26.5	51.0	77.5	9.3	2.3
2018	10.3	26.6	51.3	77.9	9.5	2.2
2019	9.9	27.1	51.2	78.3	9.7	2.1
2020	9.4	27.5	51.4	78.8	9.7	2.0
2021	9.0	27.8	51.8	79.5	9.5	2.0
2022	8.6	27.8	52.4	80.2	9.3	1.9
2023	8.2	27.7	53.1	80.9	9.1	1.8
2024	7.9	27.6	53.8	81.5	9.0	1.7
2025	7.5	27.6	54.7	82.3	8.6	1.6

This scenario does not represent any particular course of action that Treasury is expected to follow. Instead, it is intended to demonstrate the basic trajectory of average maturity absent changes to the mix of securities issued by Treasury.

Bills										
Issue	Settle Date	Stop Out Rate (%)*	Bid-to-Cover Ratio*	Competitive Awards ($bn)	% Primary Dealer*	% Direct*	% Indirect*	Non-Competitive Awards ($bn)	SOMA Add Ons ($bn)	10-Year Equivalent ($bn)*
4-Week	10/8/2015	0.000	9.74	7.8	61.8	8.3	29.9	0.3	0.0	0.1
4-Week	10/15/2015	0.000	9.66	4.7	69.8	10.2	20.0	0.3	0.0	0.0
4-Week	10/22/2015	0.120	4.53	4.7	59.8	2.4	37.8	0.3	0.0	0.0
4-Week	10/29/2015	0.010	3.75	4.8	91.2	6.4	2.4	0.2	0.0	0.0
4-Week	11/5/2015	0.070	3.46	49.8	62.3	7.0	30.8	0.2	0.0	0.4
4-Week	11/12/2015	0.075	3.34	51.7	61.3	6.4	32.3	0.3	0.0	0.5
4-Week	11/19/2015	0.075	3.41	54.7	70.3	8.3	21.4	0.3	0.0	0.5
4-Week	11/27/2015	0.120	3.22	49.1	76.0	7.4	16.6	0.2	0.0	0.4
4-Week	12/3/2015	0.190	3.13	44.8	68.2	11.7	20.1	0.2	0.0	0.4
4-Week	12/10/2015	0.235	3.42	44.7	58.0	10.9	31.2	0.3	0.0	0.4
4-Week	12/17/2015	0.205	3.08	44.7	63.6	13.8	22.5	0.3	0.0	0.4
4-Week	12/24/2015	0.195	3.50	44.6	62.0	10.5	27.5	0.3	0.0	0.4
4-Week	12/31/2015	0.170	3.24	44.5	61.2	7.3	31.5	0.2	0.0	0.4
13-Week	10/8/2015	0.000	4.14	20.6	68.1	4.1	27.8	0.4	0.0	0.6
13-Week	10/15/2015	0.000	4.13	19.6	75.6	4.6	19.8	0.4	0.0	0.6
13-Week	10/22/2015	0.015	3.54	25.7	68.5	5.3	26.2	0.3	0.0	0.7
13-Week	10/29/2015	0.020	3.39	24.8	72.5	5.6	21.9	0.3	0.0	0.7
13-Week	11/5/2015	0.110	3.69	27.5	32.7	2.1	65.2	0.3	0.0	0.8
13-Week	11/12/2015	0.135	3.31	29.5	77.9	13.9	8.3	0.4	0.0	0.9
13-Week	11/19/2015	0.145	3.42	29.5	73.6	11.7	14.7	0.4	0.0	0.8
13-Week	11/27/2015	0.140	3.66	26.6	61.6	5.5	32.9	0.4	0.0	0.8
13-Week	12/3/2015	0.215	3.35	27.5	73.0	7.1	19.9	0.3	0.0	0.8
13-Week	12/10/2015	0.280	3.28	27.6	66.4	8.2	25.3	0.4	0.0	0.8
13-Week	12/17/2015	0.280	3.58	27.5	48.8	14.8	36.3	0.4	0.0	0.8
13-Week	12/24/2015	0.250	3.63	27.4	66.1	13.3	20.6	0.4	0.0	0.8
13-Week	12/31/2015	0.260	3.64	26.7	59.8	7.3	32.9	0.3	0.0	0.8
26-Week	10/8/2015	0.065	3.86	20.2	62.3	6.4	31.3	0.3	0.0	1.2
26-Week	10/15/2015	0.080	3.75	19.1	66.7	7.0	26.3	0.3	0.0	1.1
26-Week	10/22/2015	0.110	3.56	25.3	59.5	6.4	34.1	0.3	0.0	1.5
26-Week	10/29/2015	0.155	3.34	24.7	67.5	4.4	28.1	0.3	0.0	1.5
26-Week	11/5/2015	0.280	3.75	25.3	34.7	2.5	62.8	0.3	0.0	1.5
26-Week	11/12/2015	0.340	3.69	27.4	33.6	6.8	59.6	0.3	0.0	1.6
26-Week	11/19/2015	0.330	3.91	27.5	43.1	9.0	47.9	0.3	0.0	1.6
26-Week	11/27/2015	0.350	3.46	24.9	60.4	9.1	30.5	0.3	0.0	1.5
26-Week	12/3/2015	0.415	3.65	25.6	53.5	6.6	39.9	0.2	0.0	1.5
26-Week	12/10/2015	0.535	3.42	25.6	62.0	5.6	32.4	0.3	0.0	1.5
26-Week	12/17/2015	0.585	3.63	25.6	49.8	11.5	38.6	0.3	0.0	1.5
26-Week	12/24/2015	0.515	3.56	25.4	47.8	8.0	44.2	0.4	0.0	1.5
26-Week	12/31/2015	0.550	4.15	24.8	37.6	6.3	56.1	0.3	0.0	1.5
52-Week	10/15/2015	0.205	4.12	9.8	58.9	4.5	36.6	0.2	0.0	1.1
52-Week	11/12/2015	0.500	4.03	11.9	47.5	4.6	47.9	0.1	0.0	1.4
52-Week	12/10/2015	0.740	3.58	13.9	60.3	6.6	33.2	0.1	0.0	1.6
CMBs	10/8/2015	0.000	7.93	15.0	57.9	7.4	34.7	0.0	0.0	0.1
CMBs	10/30/2015	0.070	2.99	35.0	71.8	6.4	21.8	0.0	0.0	0.7
CMBs	11/3/2015	0.080	2.76	45.0	80.4	7.4	12.2	0.0	0.0	1.0

*Weighted averages of Competitive Awards.
**Approximated using prices at settlement and includes both Competitive and Non-Competitive Awards.

Nominal Coupons										
Issue	Settle Date	Stop Out Rate (%)*	Bid-to-Cover Ratio*	Competitive Awards ($bn)	% Primary Dealer*	% Direct*	% Indirect*	Non-Competitive Awards ($bn)	SOMA Add Ons ($bn)	10-Year Equivalent ($bn)*
2-Year	11/5/2015	0.824	3.01	25.9	48.9	11.0	40.0	0.1	0.0	5.8
2-Year	11/30/2015	0.948	3.15	25.8	35.3	19.0	45.7	0.2	0.0	5.8
2-Year	12/31/2015	1.056	2.80	25.8	35.4	27.1	37.5	0.2	0.0	5.8
3-Year	10/15/2015	0.895	3.14	24.0	41.1	11.1	47.7	0.0	0.0	8.0
3-Year	11/16/2015	1.271	2.82	23.9	44.1	15.1	40.8	0.1	0.1	8.1
3-Year	12/15/2015	1.255	3.14	23.9	34.0	18.6	47.4	0.1	0.0	8.0
5-Year	11/2/2015	1.415	2.43	35.0	37.2	3.8	58.9	0.0	0.0	19.1
5-Year	11/30/2015	1.670	2.52	35.0	33.2	10.1	56.7	0.0	0.0	18.8
5-Year	12/31/2015	1.785	2.32	35.0	36.5	11.0	52.5	0.0	0.0	19.0
7-Year	11/2/2015	1.885	2.55	29.0	23.7	14.0	62.3	0.0	0.0	21.5
7-Year	11/30/2015	2.013	2.51	29.0	30.5	13.5	55.9	0.0	0.0	21.2
7-Year	12/31/2015	2.161	2.34	29.0	38.8	14.1	47.1	0.0	0.0	21.4
10-Year	10/15/2015	2.066	2.59	21.0	27.5	10.3	62.2	0.0	0.0	20.9
10-Year	11/16/2015	2.304	2.58	23.9	25.2	14.3	60.5	0.1	0.1	24.5
10-Year	12/15/2015	2.233	2.64	21.0	26.0	12.1	62.0	0.0	0.0	21.0
30-Year	10/15/2015	2.914	2.46	13.0	28.1	15.5	56.4	0.0	0.0	29.0
30-Year	11/16/2015	3.070	2.41	16.0	29.6	10.2	60.3	0.0	0.1	36.0
30-Year	12/15/2015	2.978	2.42	13.0	25.7	10.4	63.9	0.0	0.0	28.9
2-Year FRN	11/2/2015	0.168	3.10	15.0	48.4	2.0	49.6	0.0	0.0	0.0
2-Year FRN	11/27/2015	0.216	3.11	13.0	52.4	3.2	44.4	0.0	0.0	0.0
2-Year FRN	12/28/2015	0.330	3.48	13.0	59.1	1.5	39.4	0.0	0.0	0.0

TIPS										
Issue	Settle Date	Stop Out Rate (%)*	Bid-to-Cover Ratio*	Competitive Awards ($bn)	% Primary Dealer*	% Direct*	% Indirect*	Non-Competitive Awards ($bn)	SOMA Add Ons ($bn)	10-Year Equivalent ($bn)*
5-Year TIPS	12/31/2015	0.472	2.38	16.0	25.0	5.0	69.9	0.0	0.0	7.8
10-Year TIPS	11/30/2015	0.664	2.38	13.0	25.3	7.5	67.2	0.0	0.0	13.8
30-Year TIPS	10/30/2015	1.200	2.62	7.0	21.7	8.5	69.8	0.0	0.0	20.6

*Weighted averages of Competitive Awards.
**Approximated using prices at settlement and includes both Competitive and Non-Competitive Awards. For TIPS' 10-Year Equivalent, a constant auction BEI is used as the inflation assumption.

Treasury Borrowing Advisory Committee Presentation

- ***At the November 2015 Quarterly Refunding, and consistent with a recommendation by the Committee, Treasury reaffirmed its commitment to increase Treasury bill issuance. Because of declining deficits, Treasury's borrowing needs have declined over the last several years. Thus, in order to increase Treasury bill issuance meaningfully, Treasury may need to reduce some nominal coupon or TIPS issuance over the next year or two.***

- ***We would like the Committee to discuss the appropriate size of an increase in bill issuance needed over the next couple of years. If a reduction in nominal coupon and TIPS issuance would be required, discuss how Treasury should evaluate issuance across these securities. What criteria should be considered and how should they be weighed against each other?***

Agenda

Bills supply and demand dynamics

- What are the drivers of demand for HQLA?
- What are the supply dynamics for Tbills/HQLA?
- How substitutable are various short-end products?

Given these demand dynamics, how much should TBill supply be increased?

- Are there any particular tenors of T-Bills that should be the focus of increases?
- Should Treasury consider adding an additional T-bill tenor (e.g, 2 month)?

Treasury financing needs

- What is the deficit/net borrowing needs outlook through the end of FY2017?
- With the existing auction sizes, is Treasury over financed or underfinanced? By how much?
- What is the likelihood that the Federal Reserve will begin to reduce the SOMA portfolio by end of FY2017?
- What are the estimates for the magnitude of the reductions through FY2017?
- To what extent should Treasury reduce coupon or TIPS issuance in order to increase bill issuance this year?

Framework for determining how to reduce coupon and TIPS issuance?

- What sort of framework(s)/factors should Treasury consider for evaluating where to reduce issuance?
- How should Treasury implement any such reductions in coupons and/or TIPS?
- If Treasury should reduce TIPS issuance, how should Treasury communicate the fact that it remains committed to the TIPS program?

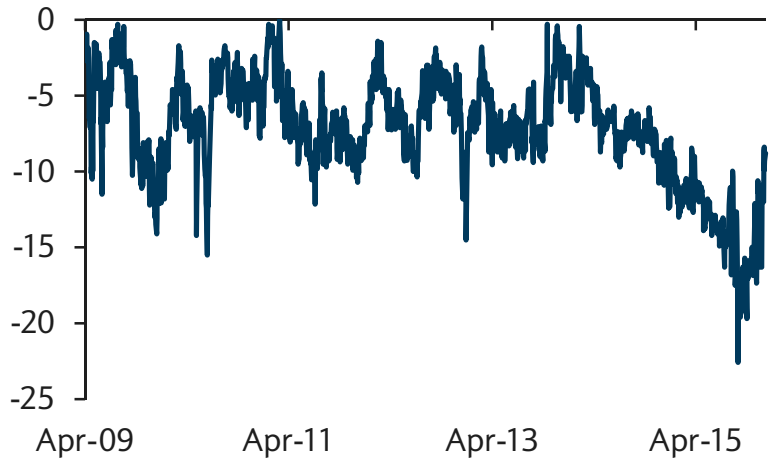
Bills supply and demand dynamics

A supply imbalance will develop for government safe assets

Est. imbalance for short term safe assets ($bn)

	2016	2017
Demand for safe ST assets		
Gov-only money fund balances	300	100
Bank deposit outflows	150	0
Other demand (HQLA, margin)	50	50
Total	500	150
Supply of safe ST assets		
Private sector repo	-90	-90
FHLB issuance	75	25
RRP usage	285	150
Total	270	85
Projected supply imbalance	**-230**	**-65**

Bill-OIS, 3m (bp)



- We expect the demand for government safe assets to exceed the available supply in 2016 and 2017
- The Treasury can fill the gap through increased bill issuance

- Even if the Treasury increases bill issuance in 2016 by $230bn **there may not be much cheapening in bill rates** given the equally strong demand
  - The bill-OIS spread may stay near the current -10bp to-15bp level
- Additional issuance in 2017 would be needed to cheapen bills
  - In 2013, when the bill/total debt ratio was last at 13%, 3m bills traded about 7bp under OIS

Source: US Treasury, Bloomberg, Barclays Research

Factors affecting bills on the demand side (1)

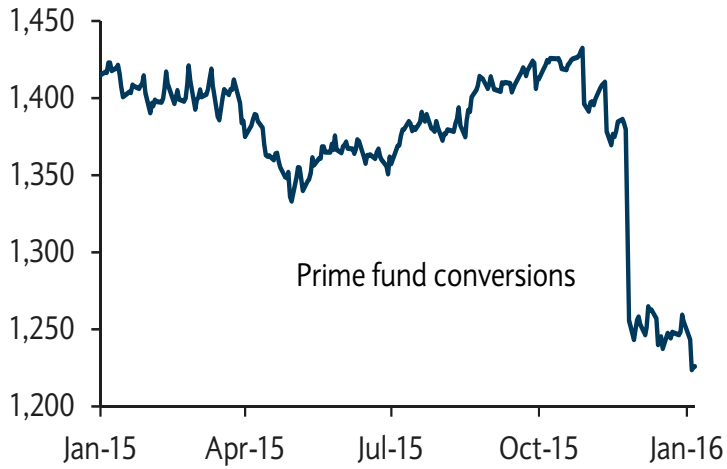
Institutional prime fund departures in 2016

- Institutional prime fund investors are likely to start leaving next year ahead of the October 2016 mandatory money fund reform deadline
- The pace and scale of the departures will depend on:
  - Level of market rates
    - Are prime fund returns high enough to overcome investor dislike of floating NAVs, liquidity fees, and redemption gates?
    - How aggressively will the Fed raise interest rates?
  - Availability of substitutes – such as bank deposits and gov-only money funds
    - Large US banks face capital and deposit insurance assessments that make them unwilling deposit recipients
- **We have little sense of how much money will leave institutional prime funds next year but our initial estimate is $300bn**

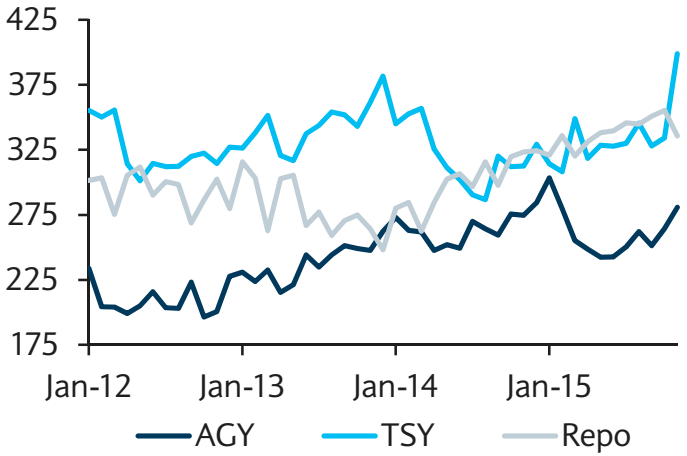
Gov-only money fund portfolio reallocation

- If $300bn leaves prime funds for gov-only funds in the first half of 2016 the demand for gov-safe assets could rise sharply
  - Based on current gov-only fund allocations:
    - Tsys +$105bn, Agencies +$85bn, Gov-repo +$111bn
  - But if agency and private sector gov-repo is less available, gov-only funds could ramp up their Treasury allocations
    - To 50% or more from 35% currently

Prime fund balances ($bn)



Gov-only holdings ($bn)



Source: Crane's Data

Factors affecting bills on the demand side (2)

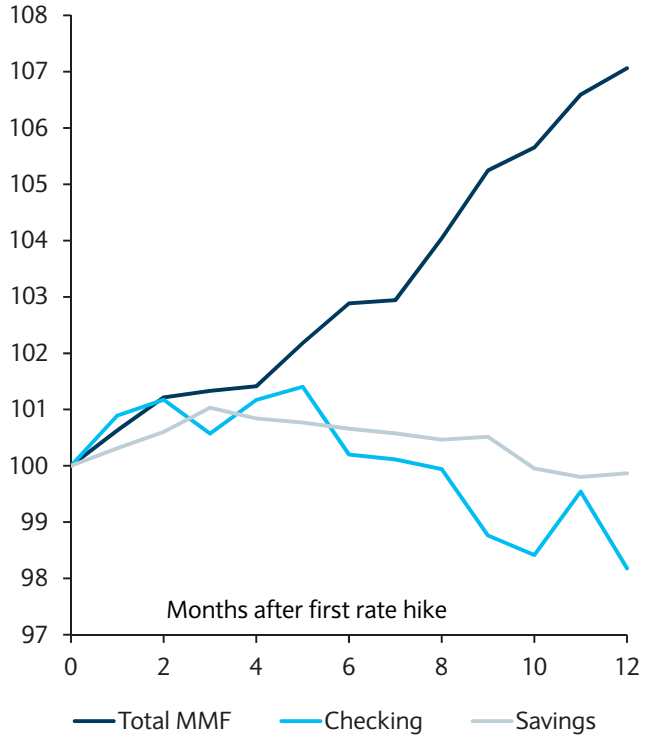
Other sources of demand

- Large US banks are eager to shed non-operating deposits as these balances are expensive for the banks to maintain
  - A shortage of safe assets for them to deploy these cash balances
  - Deposit insurance assessments are determined by the total sum of the banks' assets
  - Likewise the supplemental leverage ratio is determined by total assets (without regard to risk weighting) less capital
- One large bank has already shed $200bn in non-operating balances in 2015 (after announcing plans to shed $100bn in February 2015)
- ***There are few places for this cash to go beside government-only money funds***

Money fund balances typically increase in a tightening

- Traditionally, bank deposit rates lag the increase in the fed funds rate during a tightening
  - And deposits flow into money funds
- In past rate hike cycles, money fund balances have risen an average of 7% in the year after the first hike
  - But the increase may be larger as banks are eager to shed balances given capital and deposit insurance costs

Money fund balances (index)



Note: Money fund balances are indexed to the first month of the tightening cycle. Average across the 1994, 1999, and 2004 cycles. Source: Federal Reserve, Barclays Research

Source: Crane's Data, Barclays Research

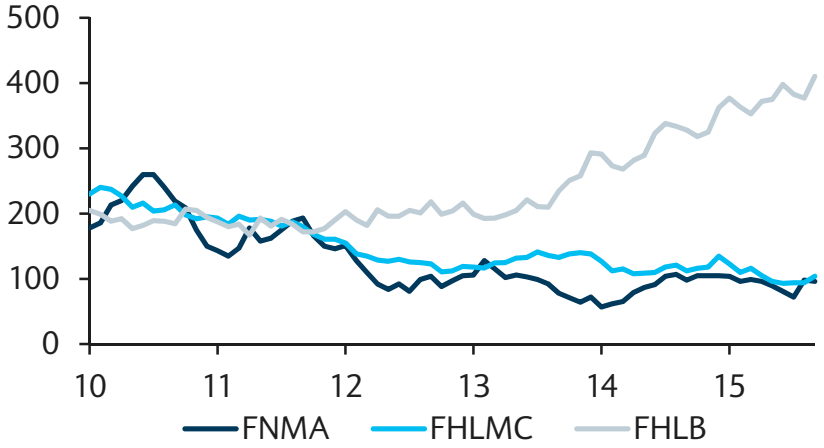
Factors affecting bills on the supply side (1)

- **Less competition from private sector TSY repo**
  - Bank capital requirements become more binding
  - More institutions shift to average daily net exposure reporting
    - effectively makes "every day a quarter-end"
  - **We expect Treasury tri-party repo volumes to shrink by 20% (or $180bn) through 2017**
    - Although this is conservative given the behavior of the GCF market on quarter-ends where the decline is closer to 40%

Declining dealer Treasury repo volumes 1/ ($bn)

- **FHLB discount note issuance to slow**
  - Recent surge driven by demand for advances from a handful of large US banks (FHLB advances used to purchase HQLA)
    - FHLB discount note issuance has picked up sharply as other GSEs have stepped back from issuing disc notes
  - But in 2015, bank demand for FHLB advances began to cool as the largest banks are already LCR-compliant

Discount notes outstanding ($bn)

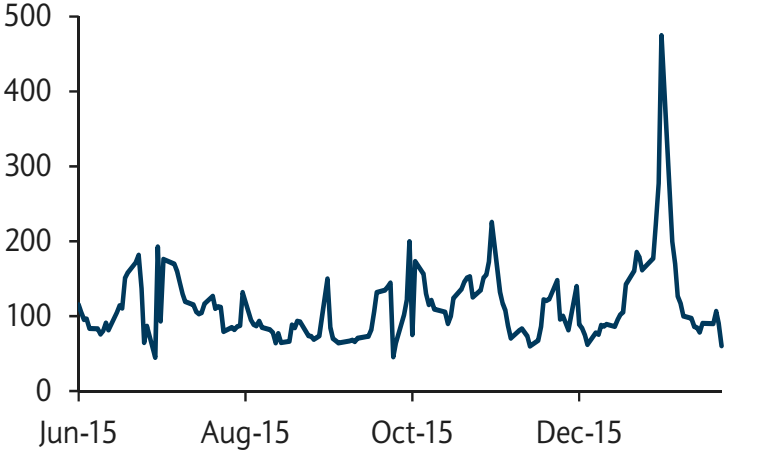


1/ Includes bilateral repo. Source: Federal Reserve

Factors affecting bills on the supply side (2)

- More collateral from the Fed's RRP
  - Close, but not perfect, substitute for Treasury bills
    - Not all cash-long institutions have access to the RRP
      - Small money funds (under $5bn in AUM), non-money market asset managers, securities lenders
  - The Fed is likely uncomfortable with an unlimited RRP program given its potential to dis-intermediate bank financing in a crisis
    - We expect a cap will be re-imposed on the RRP – perhaps as early as Jun'16, and then steadily reduced through '17

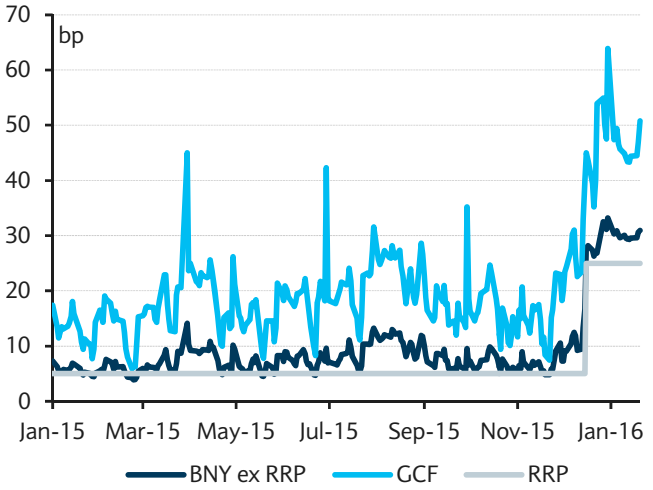
Daily overnight RRP usage ($bn)



RRP use has been moderate since lift-off

- The volume of extra collateral provided by the RRP depends on the spread between market interest rates and the RRP and dealer balance sheet capacity
  - Treasury tri-party repo rates have averaged 4bp above the RRP since lift-off
    - And this has been sufficient to keep daily program usage fairly moderate
    - Outside of the balance sheet driven surge at year-end average post-lift off usage has been $160bn/day

Tsy triparty repo rate have averaged 4bp higher than RRP



Source: Federal Reserve, Barclays Research

A new bill maturity?

Should Treasury consider adding an additional T-bill tenor (e.g, 2 month)?

- An increase in bill issuance of $230bn in 2016 might justify the introduction of a new maturity
  - Balance sheet constraints make it more difficult for the primary dealers to bid for large, pro-rata shares of super-sized bill auctions
    - Market participants seem interested in a 2m maturity
      - Other suggestions have included bills with of less than 1m to maturity
      - Or changing the settlement cycle so that some weekly bills settle on a day other than Thursday
        - But it is not clear how either would benefit the Treasury
    - Investors are somewhat familiar with the 2m maturity from the Treasury's 2009-11 Supplemental Financing Bill program

- *If the Treasury decides to introduce a new bill maturity we expect the most demand would be for a 2m security*

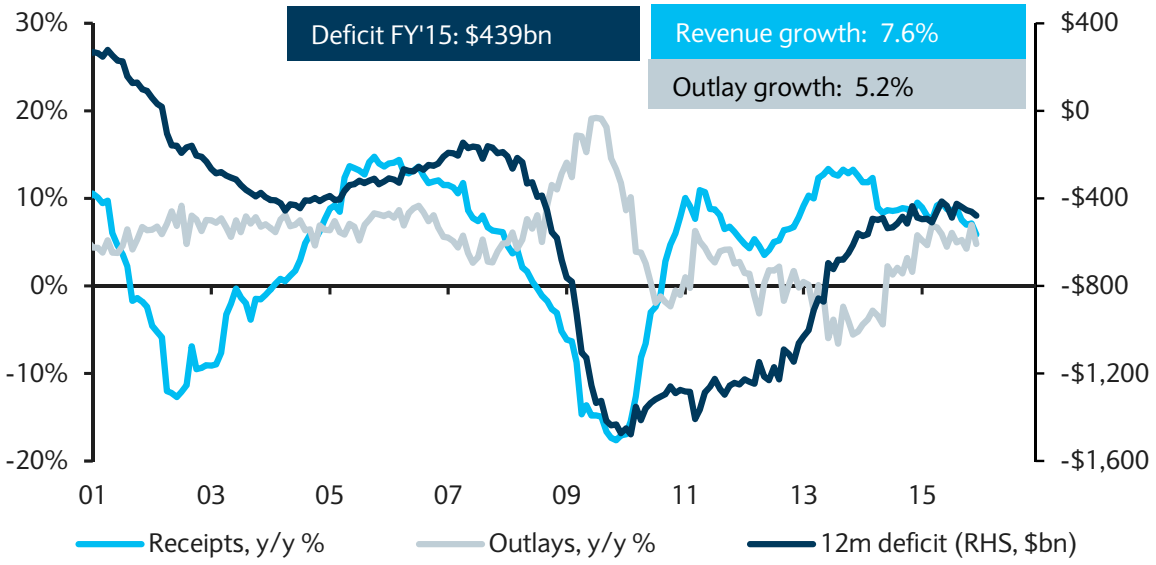
Treasury financing needs and issuance outlook

Budget deficits are likely to be higher going forward

What is the deficit/net borrowing needs outlook through the end of FY2017?

- Budget deficits have been shrinking over the last few years amid solid tax revenue growth. They seem to have stabilized recently as growth of outlays has increased
- Budget deficits expected to widen going forward amid a modest slowdown in revenue growth and a pickup in outlays. We expect budget deficits of ~$550bn in FY16 and FY17.
- The increase is largely a result of the Bipartisan Budget Act of 2015, a retroactive extension of tax provisions calendar effects. More broadly, entitlement related outlays will continue to grow

Budget Deficit Outlook



Barclays Forecast

	Revenue Growth, y/y	Outlay Growth, y/y	Deficit
FY'14	8.9%	1.4%	483
FY'15	7.6%	5.2%	439
FY'16	3.9%	6.3%	550
FY'17	4.5%	4.0%	550

Source: Haver Analytics, Barclays Research

Borrowing needs likely to remain higher than deficits

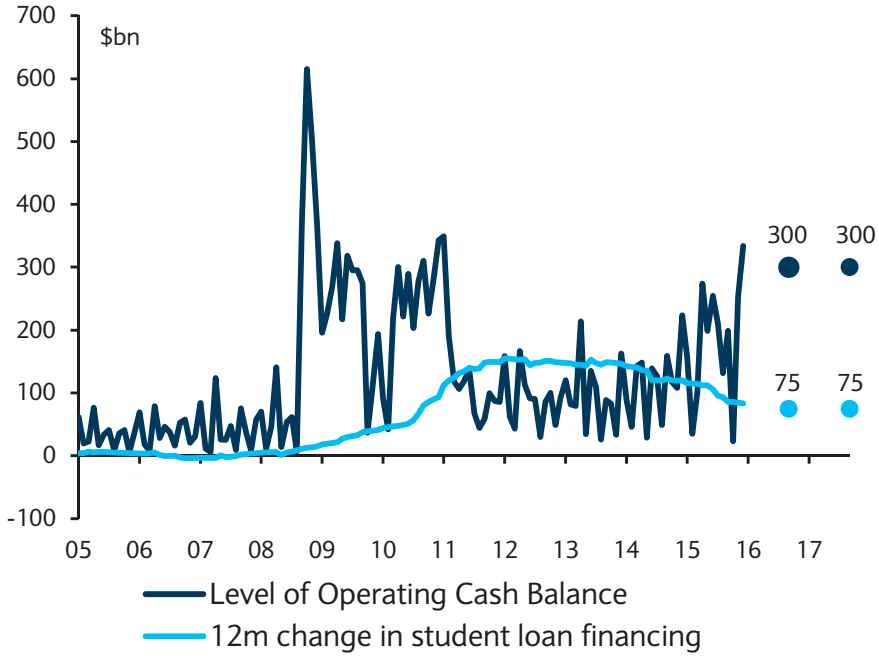
What is the deficit/net borrowing needs outlook through the end of FY2017?

- Borrowing needs are likely to be higher than budget deficits owing to changes in cash balance and other financing needs, particularly student loans
- Expect Borrowing needs of roughly $725bn in FY16 and $625bn in FY17

Net Borrowing Need Projection

		Projection	
	FY2015	FY2016	FY2017
Deficit (Barclays Estimate)	439	550	550
+ Increase in operating cash balance	40	100	0
Starting Cash Balance	*158*	*199*	*300*
Ending Cash Balance	*199*	*300*	*300*
+Other financing needs (inc student loan program)	79	75	75
Net Borrowing Need	558	725	625

Projection for cash balance and student loan financing program



Source: Haver Analytics, Barclays Research

The Treasury is underfinanced through FY2017

With the existing auction sizes, is Treasury over financed or underfinanced between now and then end of FY2017?

Scenario 1: The Fed continues to reinvest the entire maturing amount of Treasuries

$bn	FY2015	FY2016	FY2017
Gross to Pvt Investors (ex-bills) (A)	$ 2,131	$ 2,119	$ 2,119
Fed Add-ons (B)	$ 3	$ 174	$ 192
Total Gross Issuance (C=A+B)	$ 2,134	$ 2,293	$ 2,311
Maturing Debt (ex-bills) (D)	$ 1,523	$ 1,738	$ 1,867
Net Issuance (ex-bills) (E=C-D)	$ 611	$ 555	$ 444
Borrowing Needs (F)	$ 558	$ 725	$ 625
Funding gap (F-E, +ve shows underfunding)	*$ (53)*	*$ 170*	*$ 181*
Bills, % of outstanding	*10.6%*	*11.3%*	*12.0%*

With existing coupon sizes, the Treasury is underfinanced by ~$170bn in FY16 and $180bn in FY17

Bills, as % of outstanding rises to 12.0%

Scenario 2: The Fed maintains reinvestment policy in FY2016, but tapers reinvestments gradually starting after Q1'17

$bn	FY2015	FY2016	FY2017
Gross to Pvt Investors (ex-bills) (A)	$ 2,131	$ 2,119	$ 2,119
Fed Add-ons (B)	$ 3	$ 174	$ 164
Total Gross Issuance (C=A+B)	$ 2,134	$ 2,293	$ 2,283
Maturing Debt (ex-bills) (D)	$ 1,523	$ 1,738	$ 1,867
Net Issuance (ex-bills) (E=C-D)	$ 611	$ 555	$ 416
Borrowing Needs (F)	$ 558	$ 725	$ 625
Funding gap (F-E, +ve shows underfunding)	*$ (53)*	*$ 170*	*$ 209*
Bills, % of outstanding	*10.6%*	*11.3%*	*12.2%*

With existing coupon sizes, the Treasury is underfinanced by ~$380bn in FY2016/17
Bills, as % of outstanding rises to 12.2%

By FY'18, bills will be 13.9% of outstanding

Source: Haver Analytics, Barclays Research

SOMA Reinvestments: Likely to remain in place in 2016

What is the likelihood that the Federal Reserve will begin to reduce the SOMA portfolio between now and the end of FY17?

FOMC statement Dec'15: The Committee … anticipates [reinvesting] until normalization of the level of the federal funds rate is well under way.

NY Fed President Dudley (Jan'16): "If the economy were growing very quickly and the risks of an early return to the zero lower bound for the federal funds rate were deemed to be low, then I could see ending reinvestment at a relatively low federal funds rate…in contrast, if the economy lacked forward momentum and the risks of a return to the zero lower bound were judged to be considerably higher, I would want to continue reinvestment until the federal funds rate was higher."

Low unemployment rate, modestly above trend GDP growth and rising core inflation should allow the FOMC to begin phasing out reinvestments around Q1'17

Consensus Forecasts

Median Consensus Forecast	2015	2016				2017	
%		Q1	Q2	Q3	Q4	Q1	Q2
Real GDP (q/q saar)	2.0*	2.5	2.6	2.5	2.5	2.3	2.3
Private consumption (q/q saar)	2.7*	2.8	2.8	2.7	2.6	2.4	
Unemployment rate	5.0	4.9	4.8	4.8	4.7	4.7	4.7
Core PCE (y/y)	1.3	1.5	1.5	1.6	1.7	1.8	1.8
Fed Funds rate (upper end)	0.50	0.75	0.75	1.00	1.25	1.50	1.75

* Assuming consensus forecast of 1.4% and 2.3% in Q4 for real GDP and Private Consumption

Source: Federal Reserve, Bloomberg

Consensus for reinvestment phase out to begin in Q1'17 and last 12 months

What is the likelihood that the Federal Reserve will begin to reduce the SOMA portfolio between now and the end of FY17?

NY Fed Survey suggests Q1 17 as the start of ending reinvestments, or ~15m after the first hike

Most likely time for Fed to first cease reinvesting

	Treasuries	Agency Debt and MBS
25th percentile response	Q1'17	Q4'16
Median response	Q1'17	Q1'17
75th percentile response	Q2'17	Q1'17

Number of months relative to liftoff

	Treasuries	Agency Debt and MBS
25th percentile response	12	12
Median response	15	13
75th percentile response	18	15

NY Fed Survey suggests a 65% chance that reinvestments will be phased out - on average over 12m

Probability of phase-out process for reinvestments in Treasuries

	No change to reinvestments	Reinvestments ceased all at once	Reinvestments phased out over time
Average	19%	18%	64%

Anticipated duration of phase-out (mths)

25th percentile response	8
Median response	12
75th percentile response	12

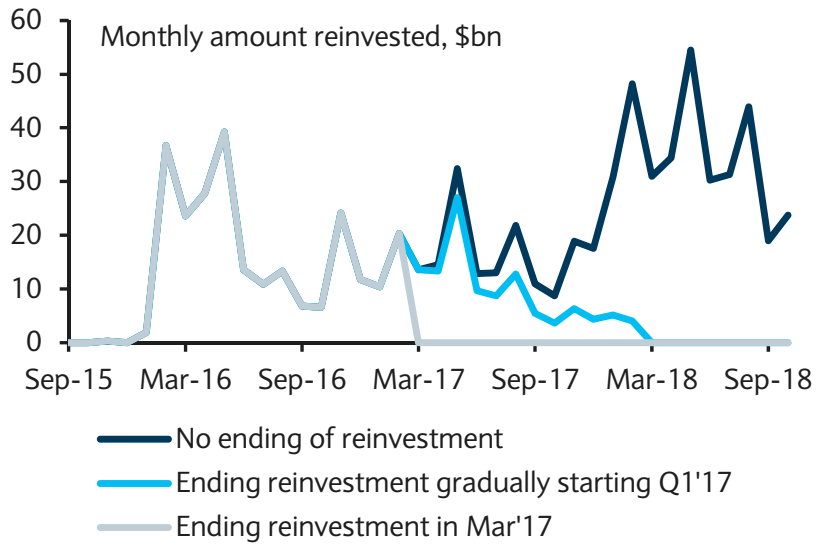
Source: NY Fed

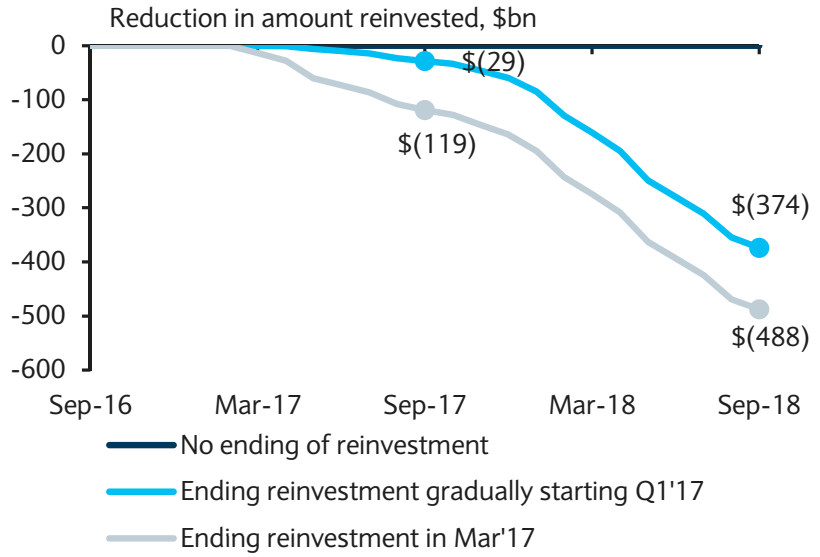
SOMA portfolio is unlikely to be materially reduced by FY 17

If the Fed decides to reduce the SOMA portfolio, what are the estimates for magnitude of the reductions through FY17?

SOMA portfolio should shrink by $29bn by FY 17 and $375bn by FY 18 assuming gradual phase out

Amt reinvested from maturing Tsy in SOMA			
$bn	No ending of reinvestment	Ending reinvestment gradually starting Q1'17	Ending reinvestment in Mar'17
FY2016	174	174	174
FY2017	192	164	73
Total	366	338	247
Cumulative Change		-29	-119





Source: Haver Analytics, Barclays Research

Room for cuts in coupon sizes

- Bill issuance to fall short of ex-ante demand in 2016 by ~$50-75bn.
- We recommend that the Treasury cut auction sizes to allow for a faster expansion of the bill universe
- **Extent of cuts should also take into account future funding gaps. Deeper cuts now would significantly increase funding gap in future years**
- For instance, if the Treasury cuts all coupon sizes by just $1bn each starting February, funding gap in FY 17 would be $295bn in addition to roughly $225bn in FY 16.
- While $225bn in net bill issuance is likely to be easily absorbed in FY 16, another $295bn in FY 17 likely to cheapen bills.
- The Treasury could also temporarily increase the cash balance in FY 16 to allow for a greater expansion of the bill universe in the near term without having to rely on cutting coupon auction sizes
- Where should the Treasury reduce auction sizes?

Est. imbalance for short term safe assets ($bn)

	2016	2017
Demand for safe ST assets		
Gov-only money fund balances	300	100
Bank deposit outflows	150	0
Other demand (HQLA, margin)	50	50
Total	500	150
Supply of safe ST assets		
Private sector repo	-90	-90
FHLB issuance	75	25
RRP usage	285	150
Total	270	85
Projected supply imbalance	**-230**	**-65**

Tsy overfinancing under scenario of Fed tapering reinvestments

$bn	FY2015	FY2016	FY2017
Gross to Pvt Investors (ex-bills) (A)	$ 2,131	$ 2,119	$ 2,119
Fed Add-ons (B)	$ 3	$ 174	$ 164
Total Gross Issuance (C=A+B)	$ 2,134	$ 2,293	$ 2,283
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Bills, % of outstanding	*10.6%*	*11.3%*	*12.2%*

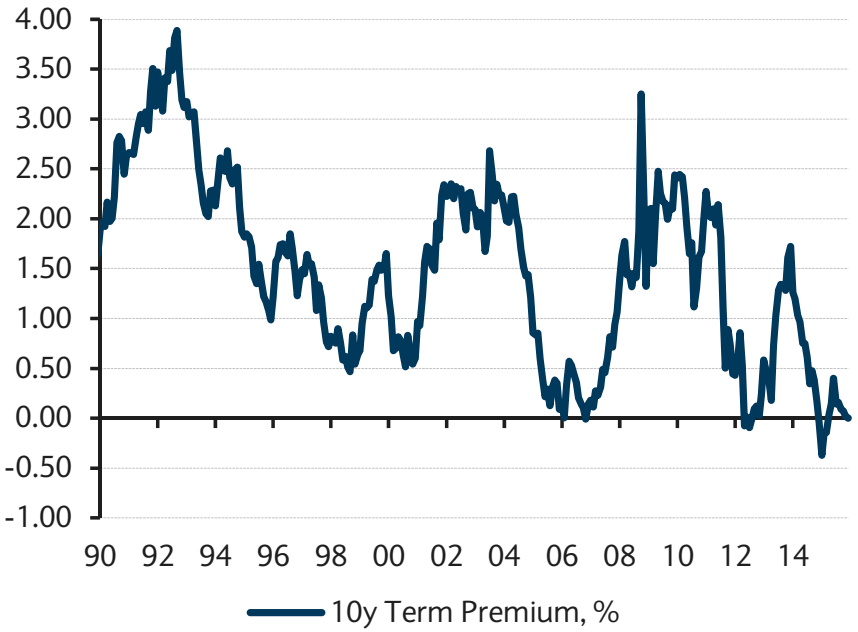
Source: Haver Analytics, Barclays Research

Ex-ante cost of issuing debt is highest at the long end

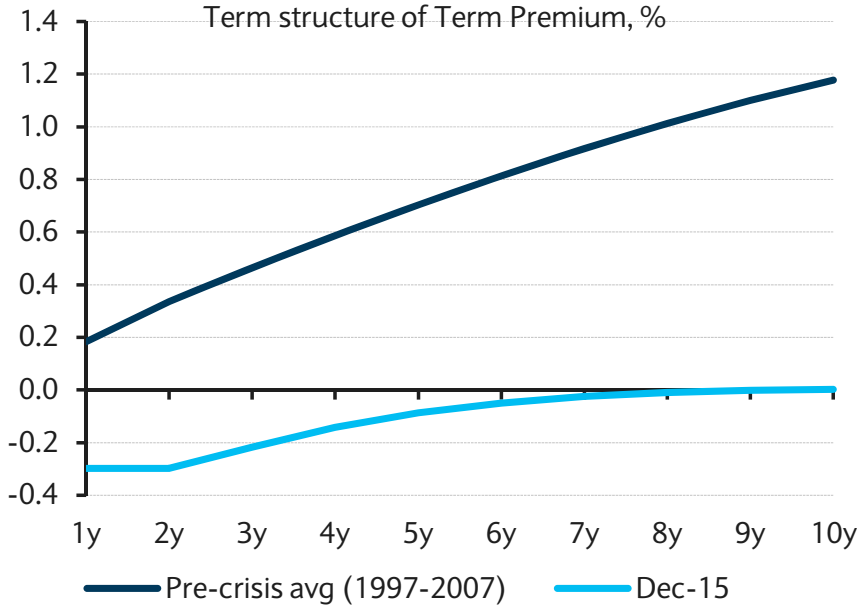
- Even though term premium has declined recently and is currently close to zero, the shape of the term premium curve remains upward sloping

- Ex-ante cost of issuing long term debt is higher than issuing short term debt

While term premium has declined…



…term structure of term premium is upward sloping

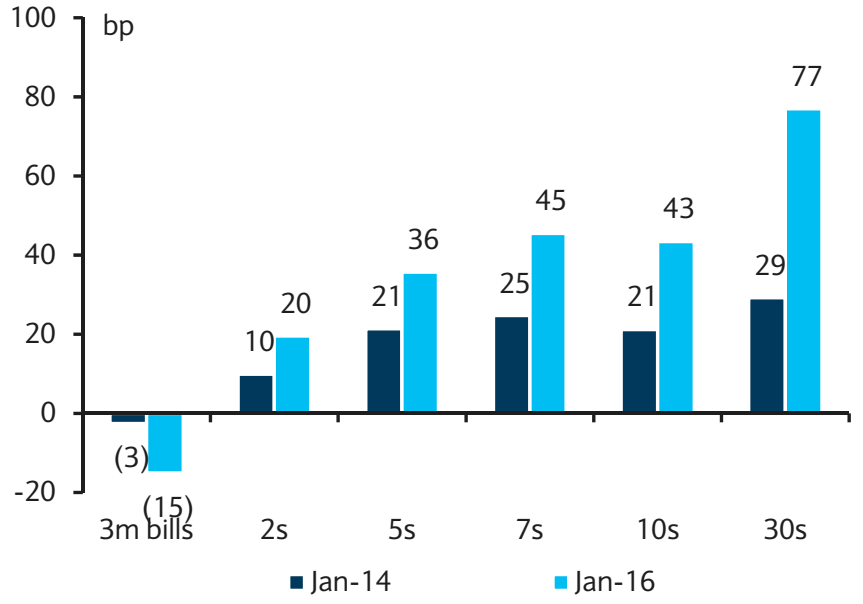


Source: Haver Analytics, Barclays Research

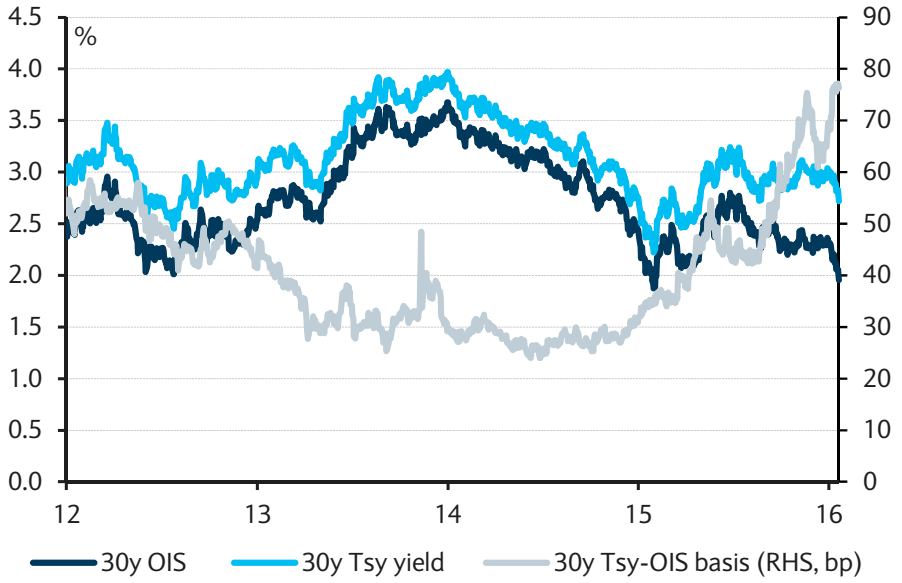
Long end is trading significantly cheap relative to OIS

- In sharp contrast to a few years ago, long end Treasuries are trading significantly cheap to OIS.
- This cheapening has happened throughout 2015 and seems persistent.
- This increases the ex-ante cost of issuing long term debt

Long end Treasuries cheap to OIS



30y Tsy have cheapened to OIS over the past year



Source: Bloomberg

WAM is already close to the historical highs

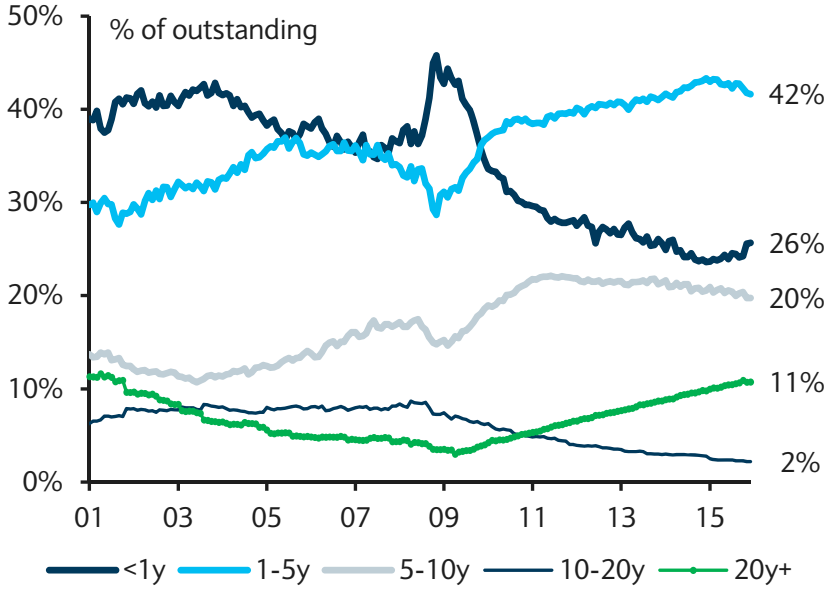
- WAM of the Treasury universe has already risen to the highs.

- % maturing at the very long end has steadily risen over the last few years.

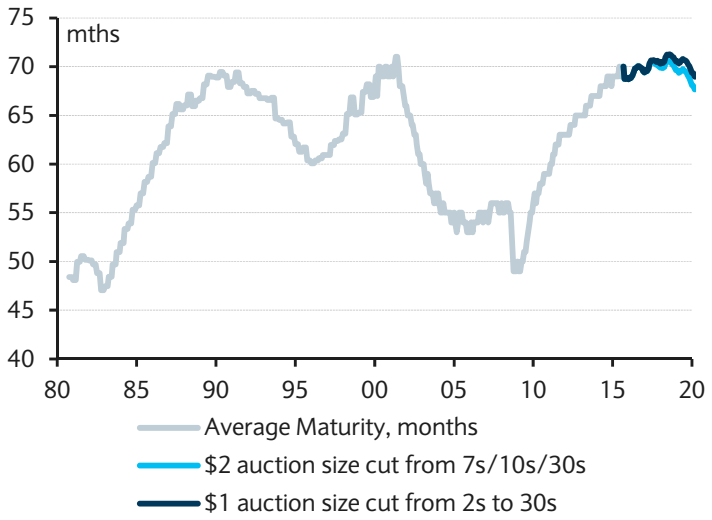
- % bills is close to the historical lows

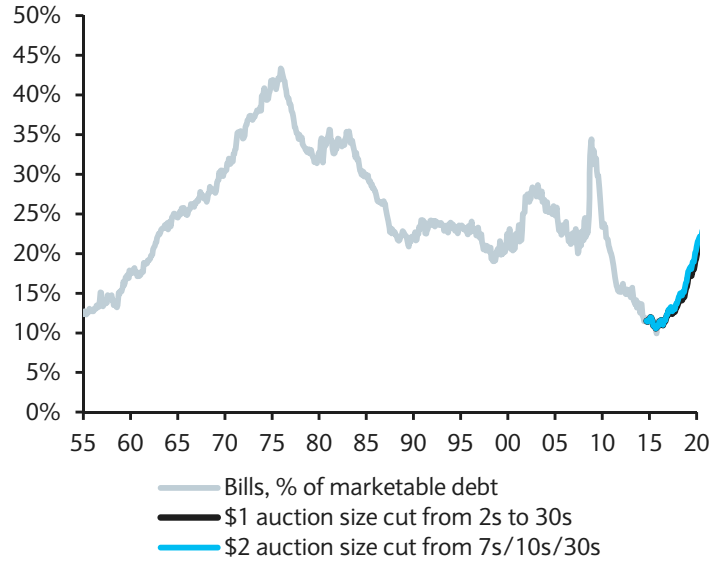
- These along with upward sloping term premia suggest room for long end sizes to be reduced

% of debt maturing in 20y+ has already risen back to the 2000 highs



WAM is already at multi-decade highs and % outstanding in bills is close to the lows

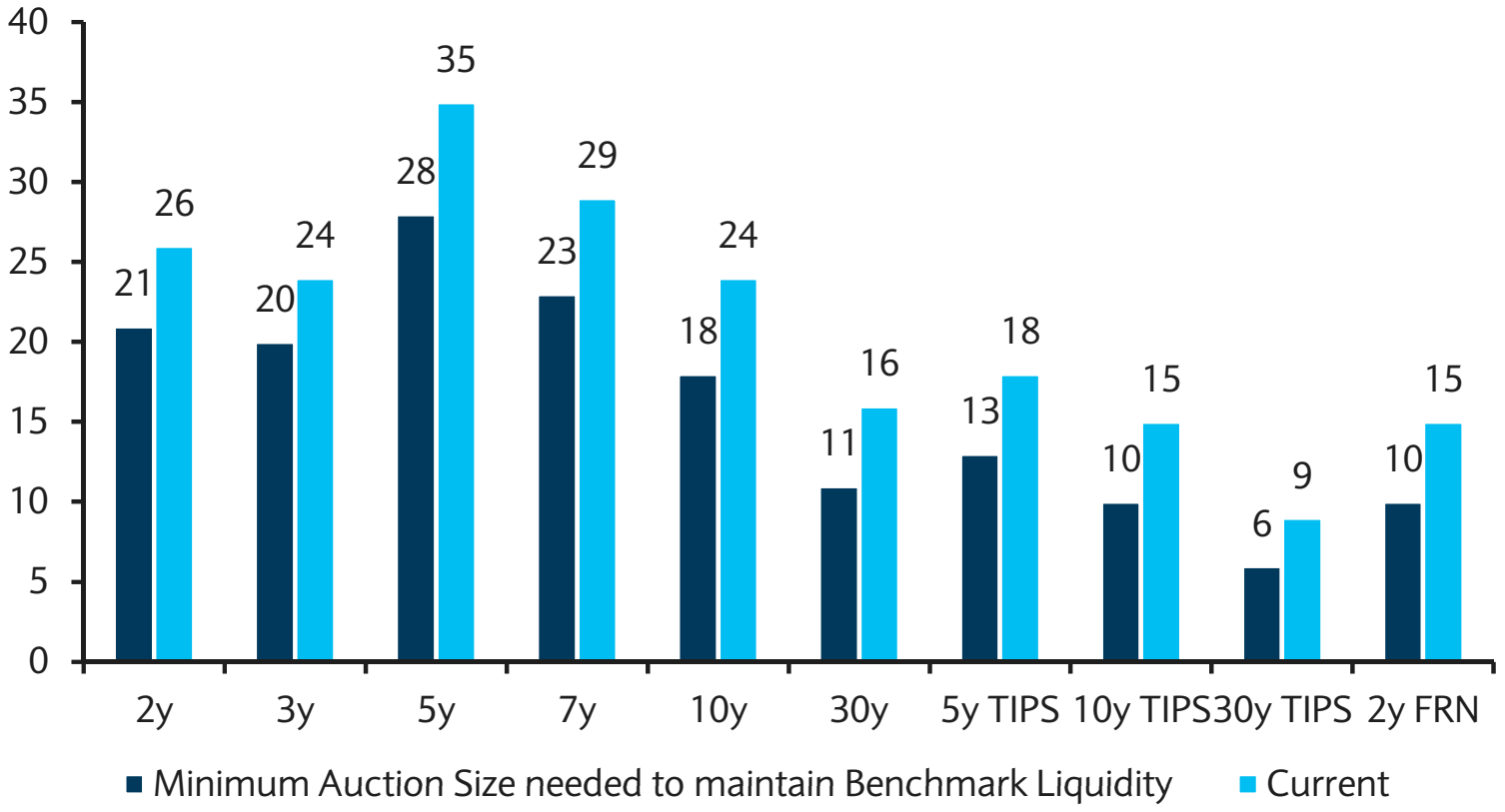




Source: Haver Analytics, Barclays Research

Deep cuts in auction size of any tenor should be avoided

The Treasury should maintain a certain buffer versus the minimum size needed to maintain liquidity

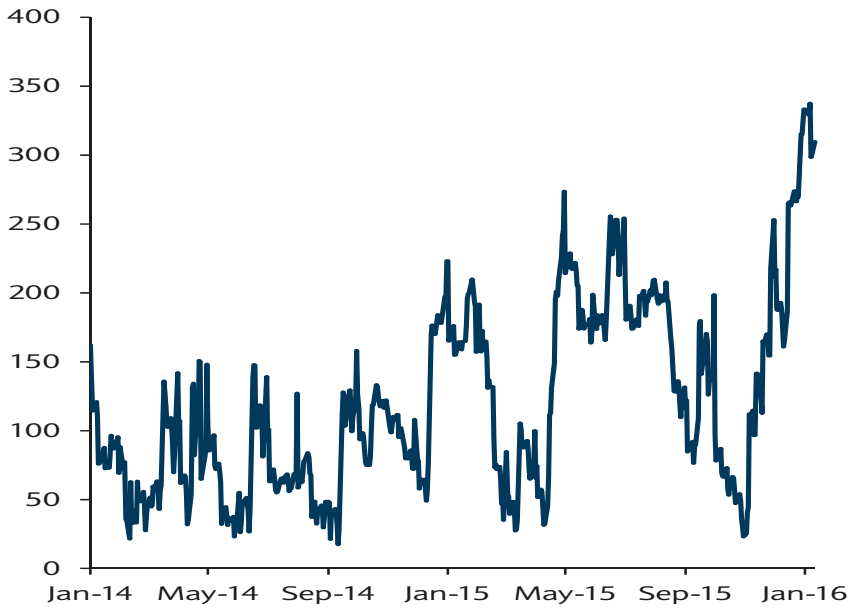


Source: US Treasury, Barclays Research

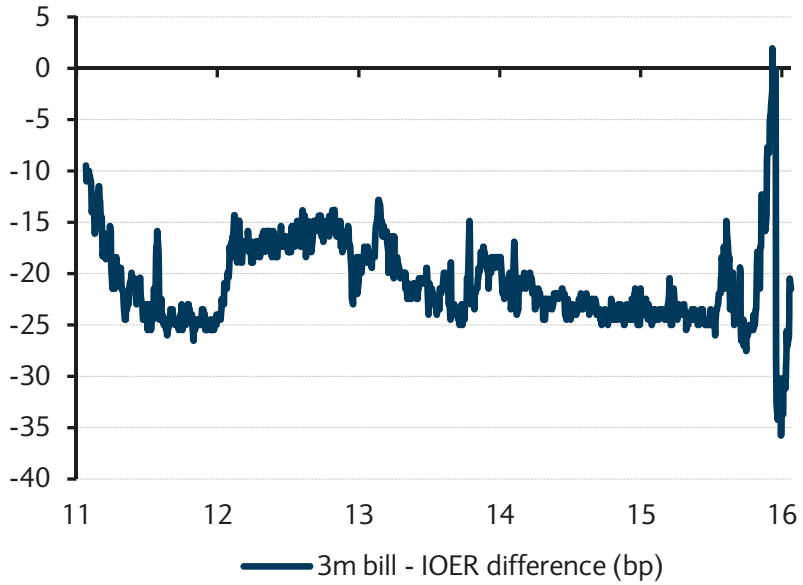
The Treasury could also rely on a higher cash balance to expand the T-bill universe in a short order

- To increase bill issuance significantly in 2016 without aggressively cutting coupon issuance the Treasury could also increase its year-end cash buffer
- TBAC recommendation was to maintain $500bn in cash balance for 10d of liquidity. YE-15 cash balance was $333bn.

The Treasury could also target a higher cash balance



Higher cash balance would result in cost savings



Source: Bloomberg

The Treasury should also consider reducing TIPS issuance

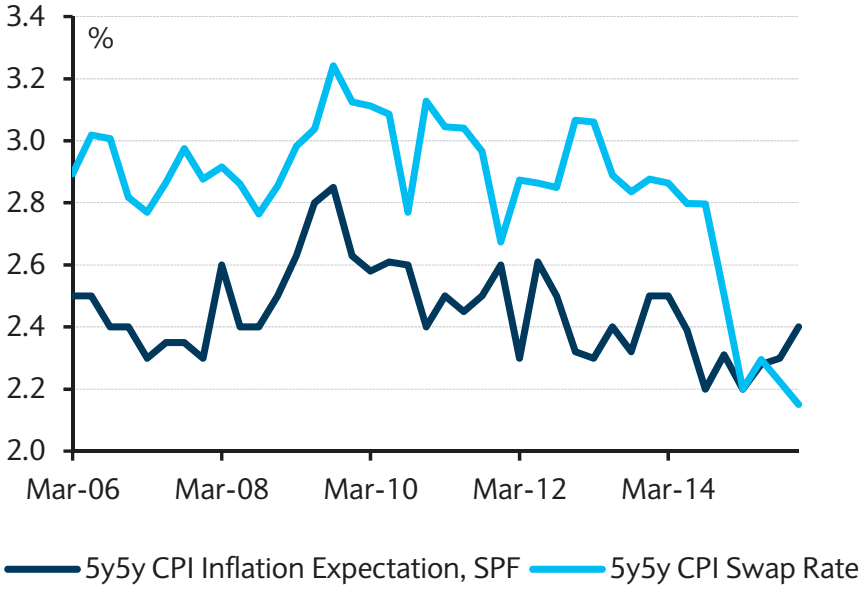
•The Treasury should also consider reducing TIPS issuance, along with nominals coupon Treasuries

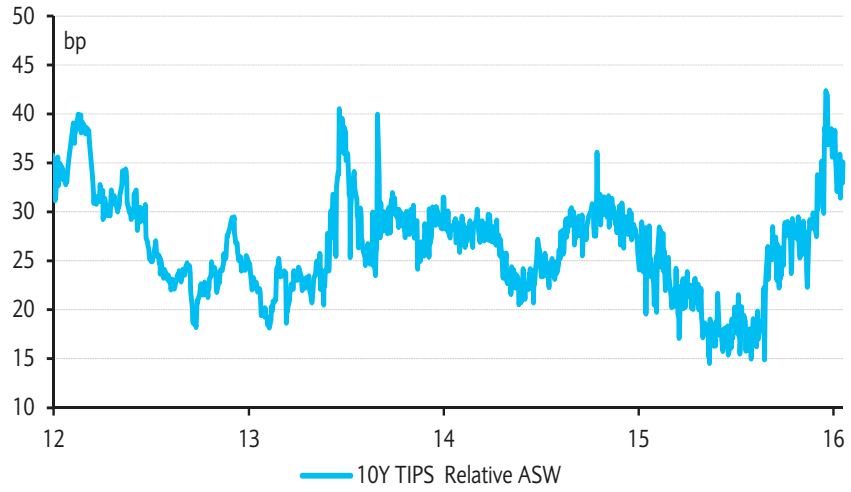
•TIPS' share of net coupon issuance would rise to about 17% and TIPS current share of the outstanding stock would also rise from about 10.3% to 10.6% by year-end.
•It should not increase TIPS relative to nominal coupon supply as a time when structural demand for the asset class may have declined.

- •Foreign official institutions may have reached a steady state in their TIPS holdings as a percentage of FX reserves. Risk-parity funds, a historically important TIPS demand base, may also be less keen on the asset class because of its increase volatility and correlation of breakeven performance with risk assets.

•It appears that inflation risk premium is much lower now where as illiquidity discount has remained persistent suggesting a greater cost in issuing TIPS relative to Nominals.

Inflation risk premium is likely now negative and illiquidity discount has remained persistent





Source: Haver Analytics, Barclays Research

Implementation / Communication strategy

- Overall, the Treasury should consider making modest cuts to coupon auction sizes.
- Long end of the nominal curve and TIPS appear to be the best candidates for making modest cuts
- Were the Treasury to pursue much deeper cuts, they should be spread across all tenors to maintain a buffer to minimum size needed for liquidity
- The Treasury should gradually reduce auction sizes maintaining its policy of being regular and predictable.
- Specifically with respect to TIPS, the Treasury should emphasise commitment to the program.
    - It should stress that reduction in TIPS auction sizes is in line with the overall policy of reducing coupon sizes to make way for T-bills.
    - Highlight that from the peak, reduction in nominal coupon sizes is still larger than that for TIPS
    - Note that TIPS auction sizes may very well be raised again if coupon auction sizes are raised.

- The Treasury should increase the frequency of new issue 5y TIPS auctions

    • The Treasury should issue the same, or slightly lower, annual amount but across two cusips, each reopened once, where one would mature in April and the other in October.

    • This would add another maturity seasonal point to the curve; this would help the inflation derivatives market . The Treasury should point to this as an example of greater commitment to the inflation market.

    • The Treasury would save borrowing costs through a lower auction concession which will reduce the need to cut sizes.

    • Most April issues trade cheap because of their large size. The large size of the April series also exacerbates the pressure on them when they roll out of 1-30y TIPS indices

TBAC Charge # 2

- The extent of publicly available data on transactions in U.S. Treasury markets is substantially less than what is available for other major asset classes. For example, cash Treasury securities do not have any public transaction or order book reporting.

- Observers have cited several potential benefits associated with greater transparency in the Treasury market including 1) improved market efficiency, 2) reduced transaction costs, 3) enhanced fairness, 4) improved risk management practices and 5) greater participation by new entrants, who may otherwise be reluctant to engage in a market where they have less information than their counterparties.

- Others have suggested that the current level of transparency in the Treasury market is sufficient and note that additional trade reporting requirements could adversely affect the willingness of some intermediaries to engage in "block" trading of Treasury securities which could impair market liquidity

- We would like the Committee to comment the appropriate level and form of data that should be made available to the public, including that related to market prices, trading volumes, market participant inventories, and trends in market risk and liquidity.

Trace in Corp Bond Mkt

- The Trade Reporting and Compliance Engine (TRACE), introduced in 2002, captures real-time transaction data for all eligible public and private (144A) corporate bonds, including investment grade, high-yield and convertible debt, agency debt, and asset and mortgage-backed securities.

- Per FINRA, TRACE procedures and practices increase transparency by fully disseminating transaction information related to trades—namely time, price and volume. Brokers and firms are required to report to TRACE within 15 minutes of effecting a transaction (for corporate bonds)

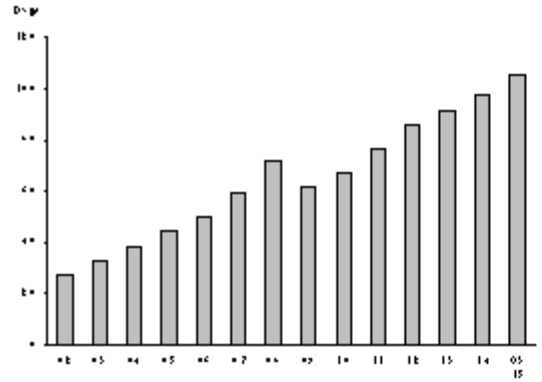
- Per FINRA, bond liquidity may become clearer by consulting a bond's trading history—if a bond has not traded in days or weeks, it may be illiquid.

- Helps in discovery of the costs associated with buying or selling a bond before actually trading a bond

Trace Stats & History

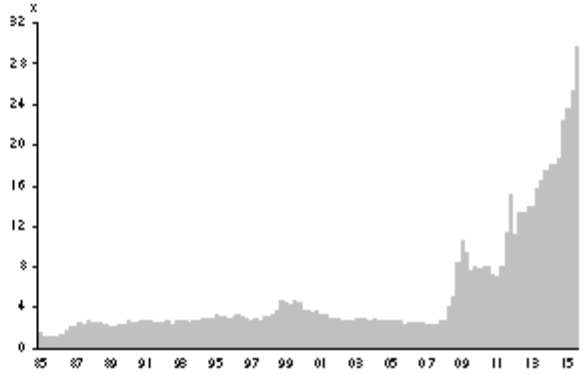
- Brokers and Dealers Inventory of Corporate bonds has continued to decline.
- Since TRACE was introduced in 2002, we have seen that growth of Mutual Funds, Closed-End Funds and ETF holdings continue to outpace the daily trading volumes.
- Also, after TRACE was introduced for 144A bonds, the HY market participants anecdotally noted that liquidity among 144A issues has fallen.
- Mutual Funds, Closed-End Funds and ETFs Corporate Bonds holdings as a multiple of those held by Brokers and Dealers has gone up sharply in the recent years

Mutual Funds, Closed-End Funds and ETFs Corporate Bonds Holdings as a Multiple of Daily Trading Volume 2002 through Q3 2015



Source: Federal Reserve Board, SIFMA, Empirical Research Partners Analysis.

Mutual Funds, Closed-End Funds and ETFs Corporate Bonds Holdings as a Multiple of Those Held by Brokers and Dealers 1985 through Q3 2015



Source: Federal Reserve Board, Empirical Research Partners Analysis.

Equity Market

Equity Market

- All-to-all platform through centralized exchanges: e.g. NYSE, NASDAQ
- Price transparency: continuous pre-trade information, publicly available best quotation etc.
- Comprehensive execution information: immediate availability of prices and sizes of completed trades
- Smooth risk transfer: less transaction cost, better inventory risk sharing

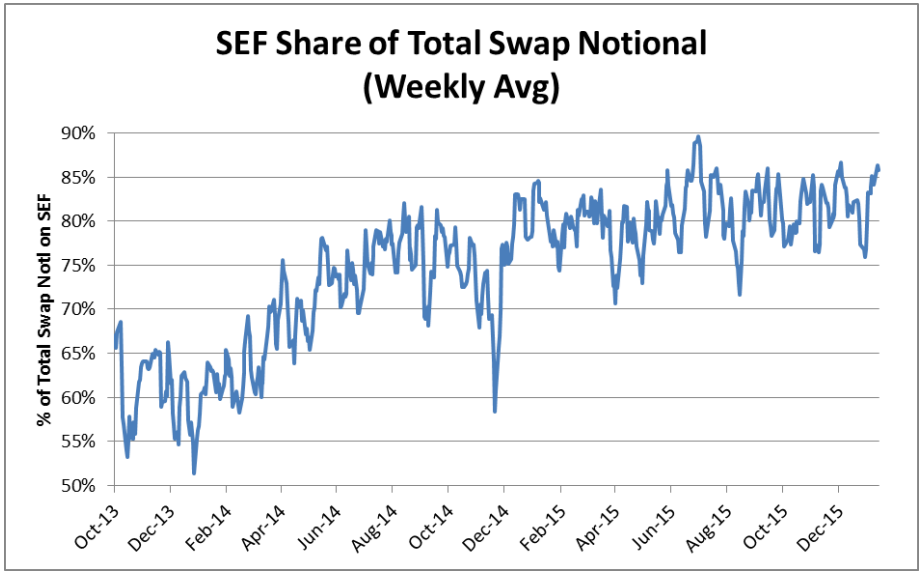
Treasury Market

- Fragmented platforms: dealer & vendor dependent
- Price discovery: more difficult due to lack of centralized platform
- Opaque execution information: details of executed trades unavailable to all market participants
- Risk transfer: higher transaction cost, increasing inventory carry cost

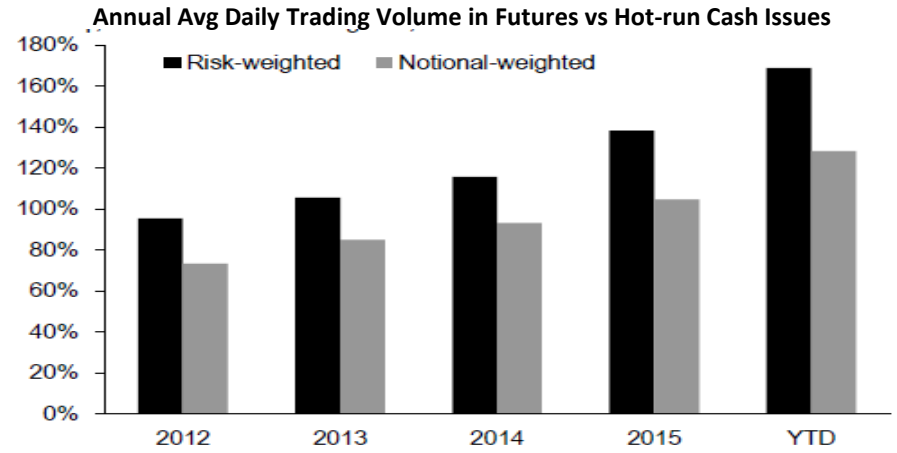
Treasury Market

- Past developments increasing price transparency were actually through direct access platforms.
- Tradeweb, led by a consortium of dealers, provided the first true visibility into off-the-run pricing where levels were executable.
- Bloomberg, though older, was late to offer direct access so the transparency was lacking.
- This was because unlike other markets, risk transfer in Treasuries has been and remains principal-based, with dealers expected to be the conduit between end users.

Why so much daily volume has shifted to Treasury futures and SEFs



Source: DTCC



* Includes TU, FV, TY, TN, US, and WN. Risk weighted from the front futures DV01. We exclude the three weeks around the first delivery date to avoid distortions owing to the quarterly roll.
† Includes hot-run 2s, 3s, 5s, 7s, 10s, and 30s from two electronic interdealer markets (e-Speed and BrokerTec). Same dates excluded as above for consistency.
Note: YTD data through 1/21/16.
Source: J.P. Morgan, CME, Reuters, e-Speed, BrokerTec

Trading activity in Treasuries futures has grown relative to cash, similar to the shift towards SEFs in swaps:

- Desire to move to a common platform
- All-to-all execution
- Anonymity
- Price transparency

What could Trace or SDR in Treasuries look like

Similarities to Trace / SDR:

- Block size -> all blocks above “X” amount would be reported as “X+”
  - “X” could equal 240mm similar to SDR

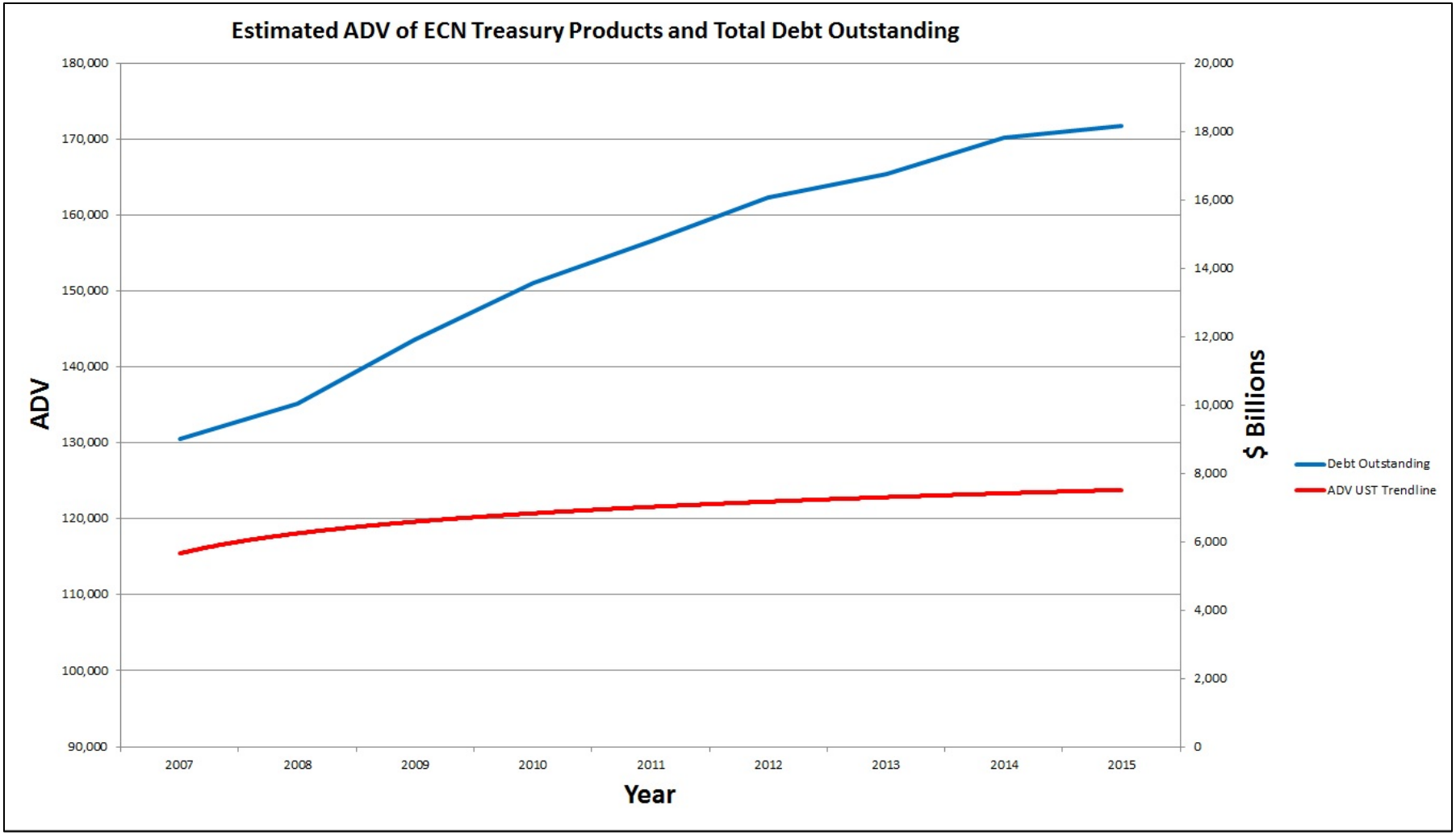
- Timing -> All reportable transactions would need to be recorded within 15 minutes

Differences to Trace / SDR:

- Limit on what transactions need to be reported -> minimum threshold for transaction size
  - Volumes in treasury market are significantly larger than other markets
  - Unless you had an all-to-all platform, operationally reporting all transactions would be tedious and too time consuming
  - Transactional data on small odd-lot amount may not add to increased transparency and liquidity in the market

- Consider grouping trades by maturity bucket
  - By giving trace data on specific off-the-run issues you could diminish liquidity and widen bid/ask -> opposite of goal

ADV of Treasury Products



Lit Secondary has been relatively flat, while the Outstanding Debt has grown significantly

Is Public UST Information Sufficient? Lit vs Dark

The market for active UST's is bifurcated between Lit and Dark venues

- **Lit Venues (Interdealer ECN's): Broker Tec (BTEC), eSpeed (ESPD), Dealer Web**
  - BTEC (70+% market share for 2015) sells their market data that includes full depth of book, all order levels for a fee of $20,000 per month. Information is delivered via API.
  - ESPD also sells full order depth for substantially less, and maintains ~25% market share (2015 Stats).
  - Dealer Web market share is small.

- **Dark Venues (Dealer to Client) - no market data is made available**
  - Tradeweb has not allowed NON banks in as market makers.
  - Bloomberg (BBERG) only recently has allowed NON Banks. Citadel is active, and Virtu is working to on board. Through BPipe on BBERG, and for ~$10,000 per month, post traded volumes can be seen via an api.

Is Public UST Information Sufficient?

- Based upon market participant assumptions, the D to C Dark space is as large as the interdealer space, yet Price, Time, and Volume are basically dark.

- All pre or post trade data could easily be made available without attribution from D to D and all D to C venues.
  - Only issue to be resolved would be whether a real time display or an agreed upon delay is implemented analogous to TRACE for Corporate.
  - Given that in active USTs, we're only speaking about 2's 3's 5's 7's 10's and 30's, the data capture and publication should be very easy.

Is Public UST Information Sufficient? (Cont'd)

- In Off the Runs ("OTR's") - which includes hundreds of cusips - trade capture and reporting would be much more difficult
  - Given the illiquid nature of OTR's, a TRACE-like 15 minute delay in reporting Price, Time & Volume would have limited market impact.

- An advisable change to public reporting of Active UST data would be a minimum volume threshold in the D to C space.

- For all ECN data, as close to real time reporting could be expected for any volume amounts traded. In the D to C space, however, amounts less than $X Million in ALL active issues could require a reporting timeline of no more than 5 minutes. In Off the Runs, regardless of amounts traded, a reporting window of no more than 15 minutes could be required.

Additional UST Information that should be made available

- A consolidated and aggregated **UST ACTIVE TAPE**, could easily be made available for public consumption, yet it would only capture approximately 50% of the total UST market trades.

- This data could easily be aggregated from the existing ECN's, and the reporting delay is all that is really left to be determined.

- A related question: do the following also get called in for reporting and the appropriate delays in reporting?
  - Dealer to Client Direct
  - Electronic RFQ
  - Single Bank Portal
  - Telephone Market
  - Chat Room Trades

- For actives, a sub 5 minute delay would be recommended. Off the Runs, a 15 minute delay would be recommended, regardless of execution venue. Again, Price, Time, and Volume inputs would be required.

Secondary Market Transparency

- Although equally as large, the D to C component of ACTIVE USTs - especially Block Transactions, and the drilling down “at transaction level data" - could be viewed as disruptive to the current “working environment" in the Direct Dealer to Client space.
    - Large buy side firms are trying to manage large risk positions and hope to minimize market impact.
    - In the traditional, principal risk transfer model - deployed in USTs by the dealers - anything more than PTV, post trade with a notional +/- $XMillion traded with no longer than 5 minute and 15 minute reporting requirements will have limited negative impact. In addition, it will hopefully bring new players to the market place.

Secondary Market Transparency (Cont'd)

- Should quotes and or orders be made public?
  - LIT ECNs: full order books; *e.g.* full depth levels of Bids and Offers made available via an api and reported at near to real-time for a fee.
  - DARK: Capturing pre-trade market data in a D to C model is impossible, given that none really exists. If the long term desire is to move UST active trading to an ALL to ALL Lit Institutional venue, then some new entrants are coming to the market, and their success or failure can be easily monitored.

- What characteristics should be reported (e.g. participant type, aggressor side, volume, price)? Should the data be in real-time or delayed?
  - Any type of attribution to client type or name is not really necessary. In Client Limit Order Books "CLOBs" (BTEC, ESPD) most if not all participants are either FICC netting or PB'd.
  - Again, the greater issue is whether to drill down on the D to C venues and if so then, Price, Time and Volume are the only parameters required.

- Should the available data differ depending on the age of other characteristics of a particular security or transaction?
  - Regarding Active USTs traded on ECNs, or CLOBs or ATS's, a real-time reporting of all transactions would be recommended. For D to C venue or direct trades where notional amounts traded are less than $X mil, a reporting delay of no more than 5 minutes would be recommended. D to C trades executed with Notional of > $X million, a reporting delay of no longer than 15 minutes would be expected.

Existing Transparency Model for USTs?

- Given that 50% of Active UST's trade on Lit venues like BTEC (who have >70% market share and publish market data at or near real time to those participants willing to pay for full access), reporting on a SIP is almost available now.

- Larger issue is merging the dark D to C Active markets into the existing D to D market data, and creating a SIP or TAPE

- It is important to note that the Fed decided to publish complete transaction level details of its Large Scale Asset Purchases with a lag.
  - They didn't want to publish those details in real-time, but thought that the lagged disclosure would be beneficial. It would allow customers to keep tabs on the dealers and reduce the information asymmetry at the relationship level, if not at the individual-transaction level.

Takeaways

- The principal-based risk transfer model is disappearing from fixed income markets
- End users are forced to provide liquidity more so than ever before
- Greater transparency would help these end users limit volatility in the market
- Absent an all-to-all platform for risk transfer, these efforts are necessary but not sufficient
- Possible reporting timelines by type of transaction:

Category	Real-time	5 mins	15 mins
D to D actives (i.e. BTEC, ESPD)	X		
D to C actives < $X mio Notional		X	
D to C actives > $X mio Notional			X
Off the Run Trades			X