## Treasury Presentation to TBAC

## Office of Debt Management



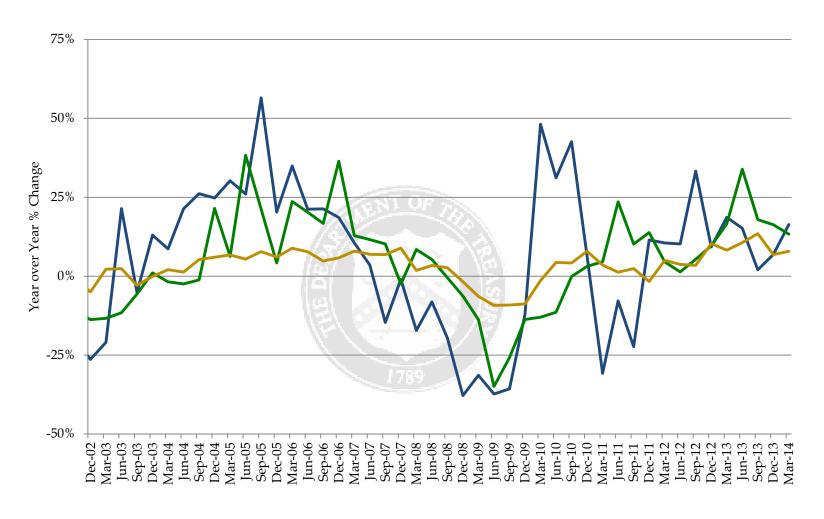
Fiscal Year 2014 Q2 Report

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# Section I: Fiscal

### **Quarterly Tax Receipts**

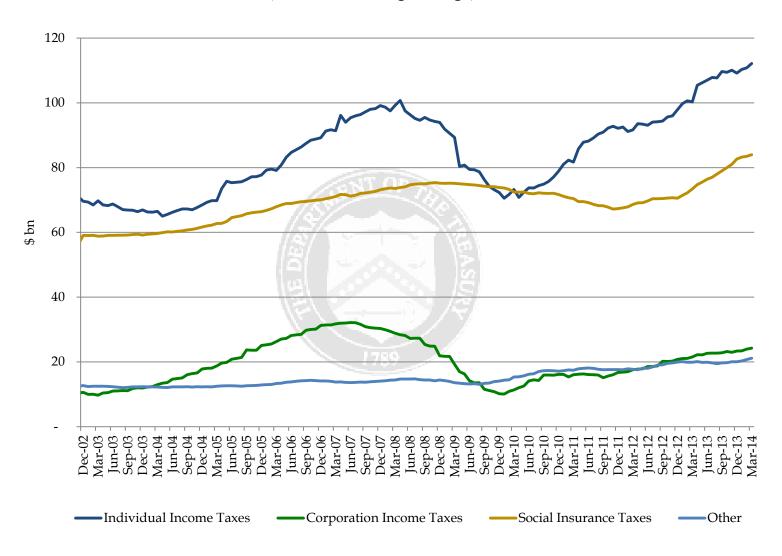


—Corporate Taxes —Non-Withheld Taxes (incl SECA) —

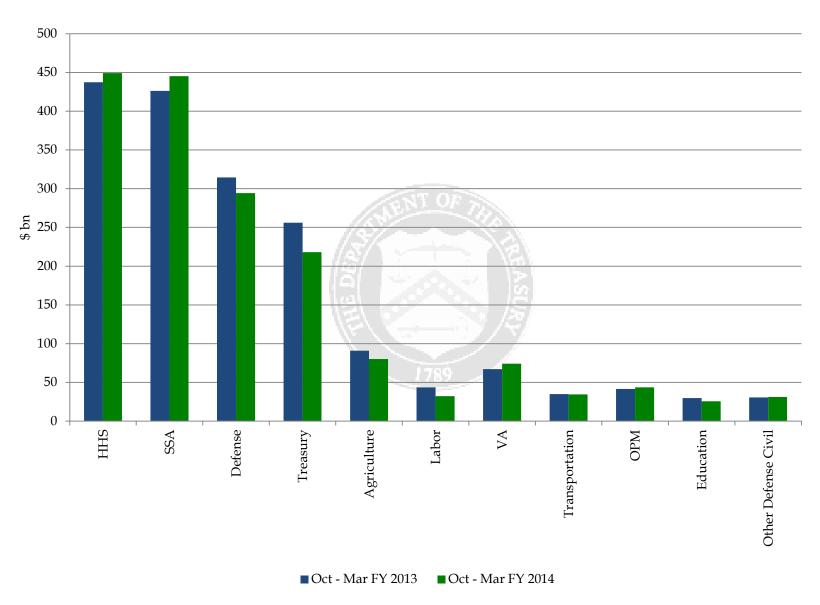
— Withheld Taxes (incl FICA)

#### **Monthly Receipt Levels**

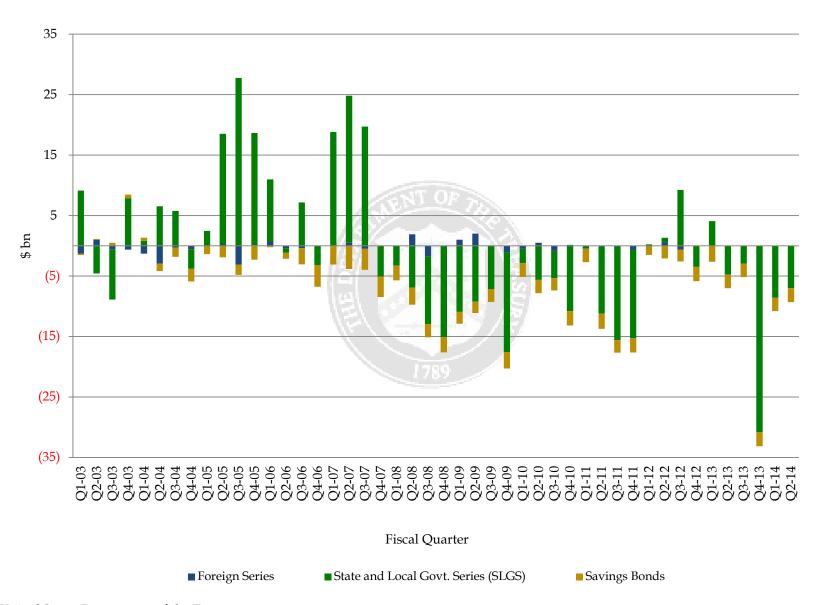
(12-Month Moving Average)



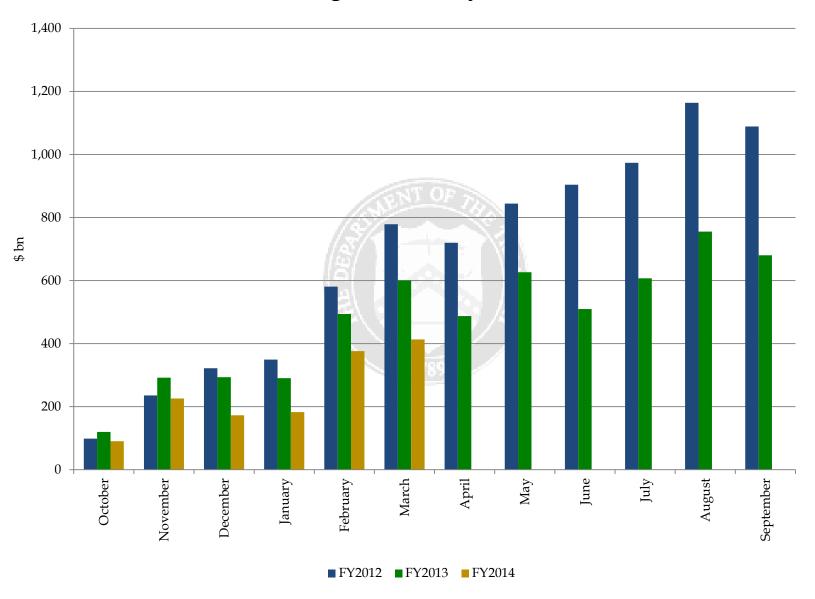
## **Eleven Largest Outlays**



## **Treasury Net Nonmarketable Borrowing**



## **Cumulative Budget Deficits by Fiscal Year**



FY 2014-2016 Deficits and Net Marketable Borrowing Estimates

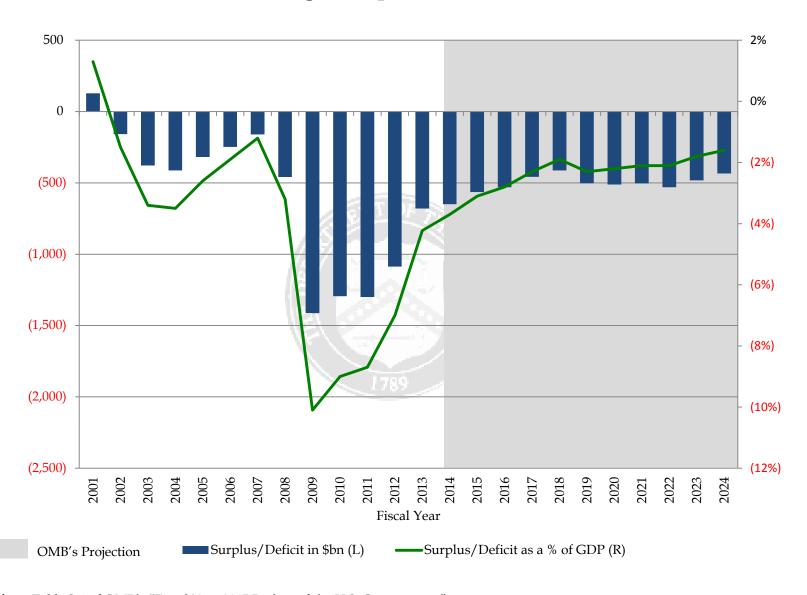
In \$ Billions

			CBO's Analysis	
	Primary		of the	
	Dealers <sup>1</sup>	CBO <sup>2</sup>	President's Budget <sup>3</sup>	$OMB^4$
FY 2014 Deficit Estimate	528	492	506	649
FY 2015 Deficit Estimate	510	496	509	564
FY 2016 Deficit Estimate	548	536	548	531
FY 2014 Deficit Range	460 - 800			
FY 2015 Deficit Range	400 - 850			
FY 2016 Deficit Range	375 - 900			
		12		
FY 2014 Net Marketable Borrowing Estimate	650	757	772	920
FY 2015 Net Marketable Borrowing Estimate	589	545	579	689
FY 2016 Net Marketable Borrowing Estimate	622	599	611	665
FY 2014 Net Marketable Borrowing Range	500 - 820			
FY 2015 Net Marketable Borrowing Range	375 - 750			
FY 2016 Net Marketable Borrowing Range	425 - 825			
Estimates as of:	Apr-14	Apr-14	Apr-14	Mar-14

<sup>&</sup>lt;sup>1</sup>Based on primary dealer feedback on Apr 21, 2014. Estimates above are averages. <sup>2</sup> Table 1 of the "Updated Budget Projections: Fiscal Years 2014 to 2024" <sup>3</sup> Table 1 of the "An Analysis of the President's 2015 Budget"

<sup>&</sup>lt;sup>4</sup>Table S-1 of the "Fiscal Year 2015 Budget of the U.S. Government"

## **Budget Surplus/Deficit**



## Section II: Financing

## Sources of Financing in Fiscal Year 2014 Q2

January - March 2014	
Net Bill Issuance	60
Net Coupon Issuance	205
Subtotal: Net Marketable Borrowing	265
Ending Cash Balance	142
Beginning Cash Balance	162
Subtotal: Change in Cash Balance	(20)
Net Implied Funding for FY 2014 Q2*	285

	•	ry - March 20 Fill Issuance	14	Fiscal Year to Date			
Issuance	Gross	Maturing	Net	Gross	Maturing	Net	
4-Week	293	293	0	773	793	(20)	
13-Week	367	422	(55)	789	812	(23)	
26-Week	334	325	9	701	665	36	
52-Week	66	75	(9)	138	150	(12)	
CMBs	115	0	115	196	55	141	
Bill Subtotal	1,175	1,115	60	2,597	2,475	122	

Gross	pon Issuance	*	Fiscal Year to Date			
G1033	Maturing	Net	Gross	Maturing	Net	
96	107	(11)	192	216	(24)	
41	0	41	41	0	41	
90	97	(7)	180	195	(15)	
105	101	4	210	184	27	
87	0	87	174	0	174	
66	28	38	132	59	73	
42	0	42	84	0	84	
0	0	0	16	0	16	
28	27	1	41	27	14	
9	0	9	16	0	16	
564	360	205	1,086	680	406	
	41 90 105 87 66 42 0 28 9	41 0 90 97 105 101 87 0 66 28 42 0 0 0 28 27 9 0	41     0     41       90     97     (7)       105     101     4       87     0     87       66     28     38       42     0     42       0     0     0       28     27     1       9     0     9	41     0     41     41       90     97     (7)     180       105     101     4     210       87     0     87     174       66     28     38     132       42     0     42     84       0     0     16       28     27     1     41       9     0     9     16	41     0     41     41     0       90     97     (7)     180     195       105     101     4     210     184       87     0     87     174     0       66     28     38     132     59       42     0     42     84     0       0     0     0     16     0       28     27     1     41     27       9     0     9     16     0	

Total	1,739	1,475	265	3,683	3,155	528

<sup>\*</sup>Assumes an end-of-March 2014 cash balance of \$142 billion versus a beginning-of-January 2014 cash balance of \$162 billion. By keeping the cash balance constant, Treasury arrives at the net implied funding number.

### Sources of Financing in Fiscal Year 2014 Q3

April - June 2014	
Assuming Constant Coupon and Average Bill Issuance Sizes as of 03/31/2014*:	
Net Bill Issuance	(195)
Net Coupon Issuance	206
Subtotal: Net Marketable Borrowing	11
Treasury Announced Estimate: Net Marketable Borrowing**	(78)
Implied: Decrease In FY 2014 Q3 Net Issuances	(89)

	-	oril - June 20 Bill Issuance		Fisc	al Year to Da	ıte
Issuance	Gross	Maturing	Net	Gross	Maturing	Net
4-Week	416	423	(7)	1,189	1,216	(27)
13-Week	364	367	(3)	1,153	1,179	(26)
26-Week	325	367	(42)	1,026	1,032	(6)
52-Week	96	98	(2)	234	248	(14)
CMBs	0	141	(141)	196	196	0
Bill Subtotal	1,201	1,396	(195)	3,798	3,871	(73)

	_	oril - June 20 oupon Issuan		Fisc	al Year to Da	ate
Issue	Gross	Maturing	Net	Gross	Maturing	Net
2-Year	96	106	(10)	288	322	(34)
2-Year FRN	41	0	41	82	0	82
3-Year	90	98	(8)	270	293	(23)
5-Year	105	110	(5)	315	294	21
7-Year	87	0	87	261	0	261
10-Year	66	27	39	198	86	112
30-Year	42	0	42	126	0	126
5-Year TIPS	18	17	1	34	17	17
10-Year TIPS	13	0	13	54	27	27
30-Year TIPS	7	0	7	23	0	23
Coupon Subtotal	565	359	206	1,651	1,038	613

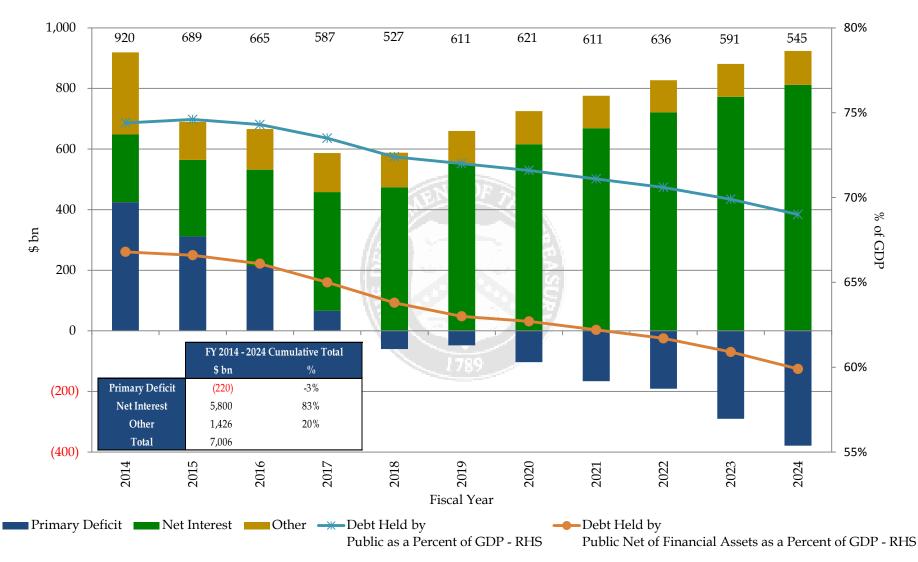
Total	1,766	1,755	11	5,449	4,909	540

Financing Estimates released by the Treasury can be found via the following url: <a href="http://www.treasury.gov/resource-center/data-chart-center/quarterly-refunding/Pages/Latest.aspx">http://www.treasury.gov/resource-center/data-chart-center/quarterly-refunding/Pages/Latest.aspx</a>

<sup>\*</sup>Keeping issuance sizes and patterns constant for Nominal Coupons, TIPS, and FRNs as of 03/31/2014, while using an average of ~1.45 Trillion of Bills Outstanding consistent with Treasury's guidance of the FRN program replacing some Bills issuance.

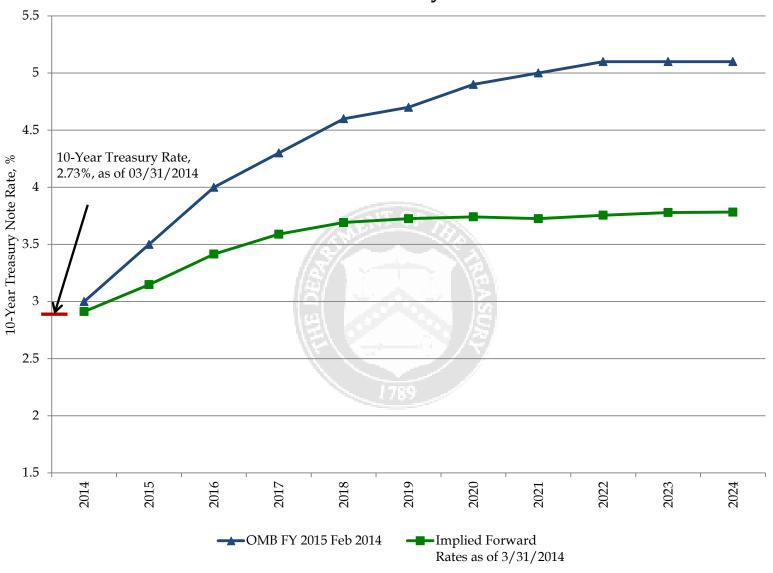
<sup>\*\*</sup>Assumes an end-of-June 2014 cash balance of \$130 billion versus a beginning-of-April 2014 cash balance of \$142 billion.

## **OMB's Projections of Borrowing from the Public**

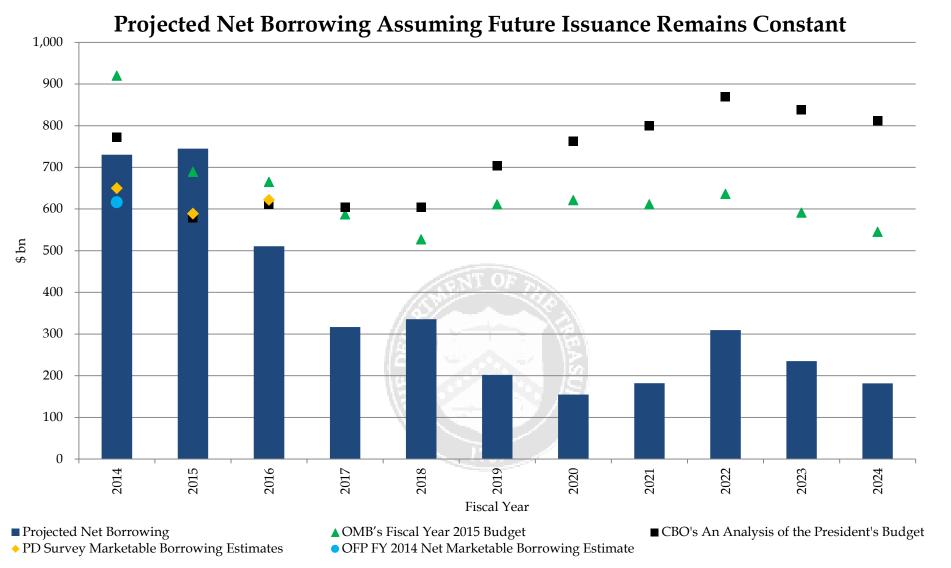


OMB's projections of net borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." Data labels at the top represent the change in debt held by the public in \$ billions. "Other" represents borrowing from the public to provide direct and guaranteed loans.

## **Interest Rate Assumptions:** 10-Year Treasury Notes



OMB's economic assumption of the 10-year Treasury note rates are from Table S-12 of the "Fiscal Year 2015 Budget of the U.S. Government." The implied 10-Year Treasury note forward rates are the averages for each fiscal year.

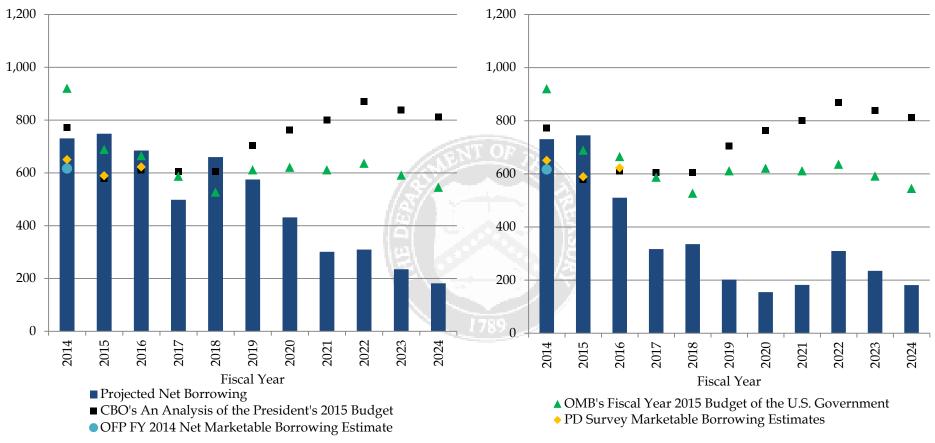


Portfolio & SOMA holdings as of 03/31/2014 and estimated projections of the Large Scale Asset Purchase program, announced on 12/12/2012 by the Federal Reserve, assumed to last until October 2014 with SOMA redemptions until June 2021. These assumptions are based on the Federal Reserve's January 2014 primary dealer survey and Chairman Bernanke's June 2013 press conference. Assumes issuance sizes and patterns constant for Nominal Coupons, TIPS, and FRNs as of 03/31/2014, while using an average of ~1.45 Trillion of Bills Outstanding consistent with Treasury's guidance of the FRN program replacing some Bills issuance. The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels. No attempt was made to match future financing needs. Treasury's primary dealer survey estimates can be found on page 9. OMB's estimates of borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." CBO's estimates of the borrowing from the public are from Table 2 of the "An Analysis of the President's 2015 Budget." See table at the end of this section for details.

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

#### With Fed Reinvestments (\$bn)

### Without Fed Reinvestments (\$bn)



Portfolio & SOMA holdings as of 03/31/2014 and estimated projections of the Large Scale Asset Purchase program, announced on 12/12/2012 by the Federal Reserve, assumed to last until October 2014 with SOMA redemptions until June 2021. These assumptions are based on the Federal Reserve's January 2014 primary dealer survey and Chairman Bernanke's June 2013 press conference. Assumes issuance sizes and patterns constant for Nominal Coupons, TIPS, and FRNs as of 03/31/2014, while using an average of ~1.45 Trillion of Bills Outstanding consistent with Treasury's guidance of the FRN program replacing some Bills issuance. The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels. No attempt was made to match future financing needs. Treasury's primary dealer survey estimates can be found on page 9. OMB's estimates of borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." CBO's estimates of the borrowing from the public are from Table 2 of the "An Analysis of the President's 2015 Budget." See table at the end of this section for details.

## Historical Net Marketable Borrowing and Projected Net Borrowing Assuming Future Issuance Remains Constant, \$ Billion

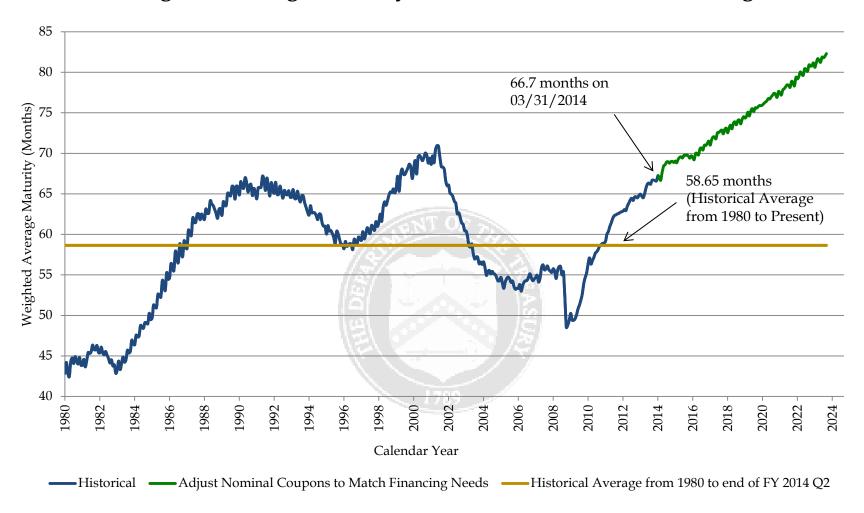
End of Fiscal Year	Bills	2/3/5	7/10/30	TIPS	FRN	Historical Net Marketable Borrowing/Projected Net Borrowing Capacity	OMB's Fiscal Year 2015 Budget	CBO's An Analysis of the President's Budget	April 2014 Primary Dealer Survey
2009	503	732	514	38	0	1,786			
2010	(204)	869	783	35	0	1,483			
2011	(311)	576	751	88	0	1,104			
2012	139	148	738	90	0	1,115			
2013	(86)	86	720	111	0	830			
2014	(82)	(68)	669	88	123	731	619*	772	650
2015	6	(151)	639	87	164	745	689	579	589
2016	0	(41)	442	68	41	511	665	611	622
2017	0	(7)	256	69	0	317	587	604	
2018	0	35	238	63	0	336	527	604	
2019	0	35	104	63	0	202	611	704	
2020	0	0	119	36	0	155	621	762	
2021	0	17	156	9	0	182	611	800	
2022	0	86	227	(4)	0	310	636	869	
2023	0	50	190	(5)	(0)	235	591	838	
2024	0	(0)	189	(7)	(0)	182	545	812	

#### \*OFP's FY 2014 Net Marketable Borrowing Projection

Portfolio & SOMA holdings as of 03/31/2014 and estimated projections of the Large Scale Asset Purchase program, announced on 12/12/2012 by the Federal Reserve, assumed to last until October 2014 with SOMA redemptions until June 2021. These assumptions are based on the Federal Reserve's January 2014 primary dealer survey and Chairman Bernanke's June 2013 press conference. Assumes issuance sizes and patterns constant for Nominal Coupons, TIPS, and FRNs as of 03/31/2014, while using an average of ~1.45 Trillion of Bills Outstanding consistent with Treasury's guidance of the FRN program replacing some Bills issuance. The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels. No attempt was made to match future financing needs. Treasury's primary dealer survey estimates can be found on page 9. OMB's estimates of borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." CBO's estimates of the borrowing from the public are from Table 2 of the "An Analysis of the President's 2015 Budget." See table at the end of this section for details.

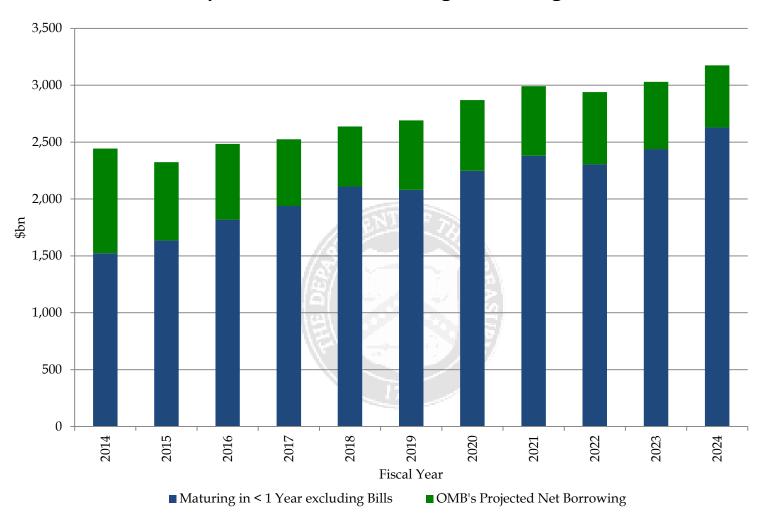
## Section III: Portfolio Metrics

#### Weighted Average Maturity of Marketable Debt Outstanding



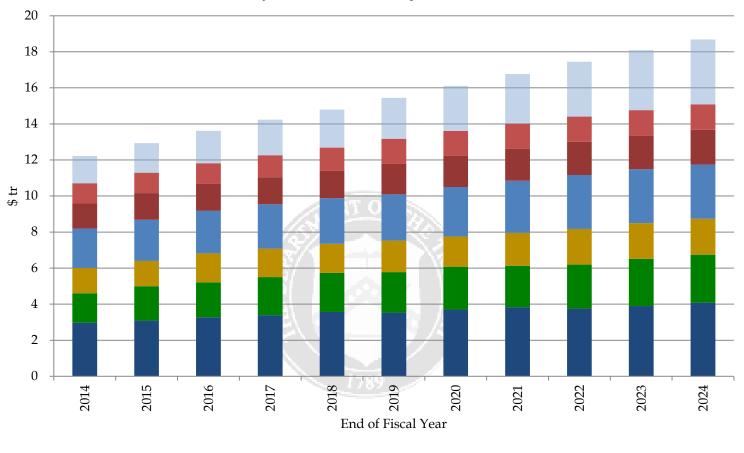
Portfolio & SOMA holdings as of 03/31/2014 and estimated projections of the Large Scale Asset Purchase program, announced on 12/12/2012 by the Federal Reserve, assumed to last until October 2014 with SOMA redemptions until June 2021. These assumptions are based on the Federal Reserve's January 2014 primary dealer survey and Chairman Bernanke's June 2013 press conference. To match OMB's projected borrowing from the public for the next 10 years, nominal coupon securities (2-, 3-, 5-, 7-, 10-, and 30-year) were adjusted by the same percentage. The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels. OMB's estimates of borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." 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**



Portfolio & SOMA holdings as of 03/31/2014 and estimated projections of the Large Scale Asset Purchase program, announced on 12/12/2012 by the Federal Reserve, assumed to last until October 2014 with SOMA redemptions until June 2021. These assumptions are based on the Federal Reserve's January 2014 primary dealer survey and Chairman Bernanke's June 2013 press conference. To match OMB's projected borrowing from the public for the next 10 years, nominal coupon securities (2-, 3-, 5-, 7-, 10-, and 30-year) were adjusted by the same percentage. The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels. OMB's estimates of borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." 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.

#### Recent and Projected Maturity Profile, \$ Trillion



■ < 1yr ■ [1, 2) ■ [2, 3) ■ [3, 5) ■ [5, 7) ■ [7, 10) ■ >= 10yr

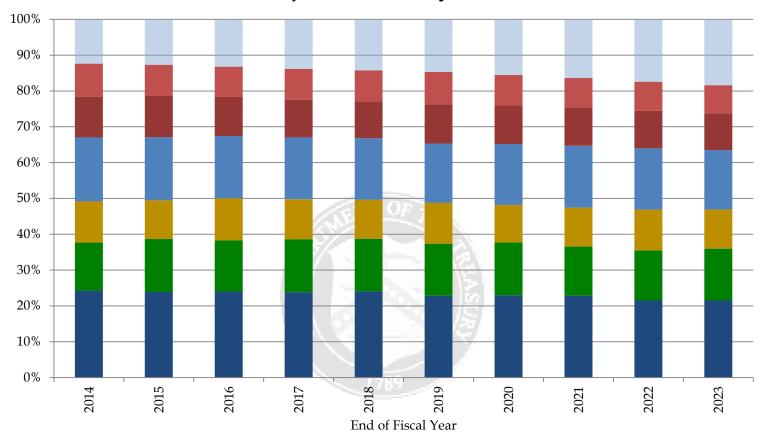
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#### Recent and Projected Maturity Profile, \$ Billions

End of Fiscal Year	< 1yr	[1, 2)	[2, 3)	[3,5)	[5, 7)	[7, 10)	>= 10yr	Total	[0,5)
2007	1,581	663	341	545	267	480	557	4,434	3,130
2008	2,152	711	280	653	310	499	617	5,222	3,796
2009	2,702	774	663	962	529	672	695	6,998	5,101
2010	2,563	1,141	869	1,299	907	856	853	8,488	5,872
2011	2,620	1,272	1,002	1,516	1,136	1,053	1,017	9,616	6,410
2012	2,889	1,395	1,109	1,847	1,214	1,108	1,181	10,742	7,239
2013	2,939	1,523	1,176	2,031	1,425	1,165	1,331	11,590	7,669
2014	2,971	1,634	1,403	2,182	1,394	1,121	1,515	12,221	8,191
2015	3,090	1,911	1,396	2,283	1,484	1,125	1,639	12,929	8,680
2016	3,273	1,937	1,606	2,366	1,484	1,149	1,803	13,618	9,182
2017	3,393	2,108	1,583	2,459	1,492	1,224	1,974	14,234	9,543
2018	3,565	2,174	1,607	2,538	1,526	1,273	2,113	14,795	9,883
2019	3,535	2,241	1,755	2,561	1,690	1,390	2,272	15,445	10,092
2020	3,703	2,377	1,680	2,743	1,735	1,366	2,505	16,108	10,502
2021	3,835	2,300	1,816	2,897	1,764	1,401	2,751	16,764	10,848
2022	3,758	2,435	1,986	2,986	1,834	1,407	3,042	17,448	11,165
2023	3,893	2,622	1,976	2,993	1,864	1,409	3,333	18,090	11,484
2024	4,084	2,664	1,985	3,009	1,928	1,409	3,608	18,687	11,742

Portfolio & SOMA holdings as of 03/31/2014 and estimated projections of the Large Scale Asset Purchase program, announced on 12/12/2012 by the Federal Reserve, assumed to last until October 2014 with SOMA redemptions until June 2021. These assumptions are based on the Federal Reserve's January 2014 primary dealer survey and Chairman Bernanke's June 2013 press conference. To match OMB's projected borrowing from the public for the next 10 years, nominal coupon securities (2-, 3-, 5-, 7-, 10-, and 30-year) were adjusted by the same percentage. The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels. OMB's estimates of borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." 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 40).

#### Recent and Projected Maturity Profile, Percent



$$= < 1 \text{yr}$$
  $= [1, 2)$   $= [2, 3)$   $= [3, 5)$   $= [5, 7)$   $= [7, 10)$   $= > = 10 \text{yr}$ 

Portfolio & SOMA holdings as of 03/31/2014 and estimated projections of the Large Scale Asset Purchase program, announced on 12/12/2012 by the Federal Reserve, assumed to last until October 2014 with SOMA redemptions until June 2021. These assumptions are based on the Federal Reserve's January 2014 primary dealer survey and Chairman Bernanke's June 2013 press conference. To match OMB's projected borrowing from the public for the next 10 years, nominal coupon securities (2-, 3-, 5-, 7-, 10-, and 30-year) were adjusted by the same percentage. The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels. OMB's estimates of borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." 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, Percent

End of Fiscal Year	<1yr	[1, 2)	[2, 3)	[3,5)	[5, 7)	[7, 10)	>= 10yr	[0, 3)	[0,5)
2007	35.7%	15.0%	7.7%	12.3%	6.0%	10.8%	12.6%	58.3%	70.6%
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%	7.6%	9.6%	9.9%	59.1%	72.9%
2010	30.2%	13.4%	10.2%	15.3%	10.7%	10.1%	10.0%	53.9%	69.2%
2011	27.2%	13.2%	10.4%	15.8%	11.8%	10.9%	10.6%	50.9%	66.7%
2012	26.9%	13.0%	10.3%	17.2%	11.3%	10.3%	11.0%	50.2%	67.4%
2013	25.4%	13.1%	10.1%	17.5%	12.3%	10.1%	11.5%	48.6%	66.2%
2014	24.3%	13.4%	11.5%	17.9%	11.4%	9.2%	12.4%	49.2%	67.0%
2015	23.9%	14.8%	10.8%	17.7%	11.5%	8.7%	12.7%	49.5%	67.1%
2016	24.0%	14.2%	11.8%	17.4%	10.9%	8.4%	13.2%	50.0%	67.4%
2017	23.8%	14.8%	11.1%	17.3%	10.5%	8.6%	13.9%	49.8%	67.0%
2018	24.1%	14.7%	10.9%	17.2%	10.3%	8.6%	14.3%	49.6%	66.8%
2019	22.9%	14.5%	11.4%	16.6%	10.9%	9.0%	14.7%	48.8%	65.3%
2020	23.0%	14.8%	10.4%	17.0%	10.8%	8.5%	15.6%	48.2%	65.2%
2021	22.9%	13.7%	10.8%	17.3%	10.5%	8.4%	16.4%	47.4%	64.7%
2022	21.5%	14.0%	11.4%	17.1%	10.5%	8.1%	17.4%	46.9%	64.0%
2023	21.5%	14.5%	10.9%	16.5%	10.3%	7.8%	18.4%	46.9%	63.5%
2024	21.9%	14.3%	10.6%	16.1%	10.3%	7.5%	19.3%	46.7%	62.8%

Portfolio & SOMA holdings as of 03/31/2014 and estimated projections of the Large Scale Asset Purchase program, announced on 12/12/2012 by the Federal Reserve, assumed to last until October 2014 with SOMA redemptions until June 2021. These assumptions are based on the Federal Reserve's January 2014 primary dealer survey and Chairman Bernanke's June 2013 press conference. To match OMB's projected borrowing from the public for the next 10 years, nominal coupon securities (2-, 3-, 5-, 7-, 10-, and 30-year) were adjusted by the same percentage. The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels. OMB's estimates of borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." 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 40).

# Section IV: Demand

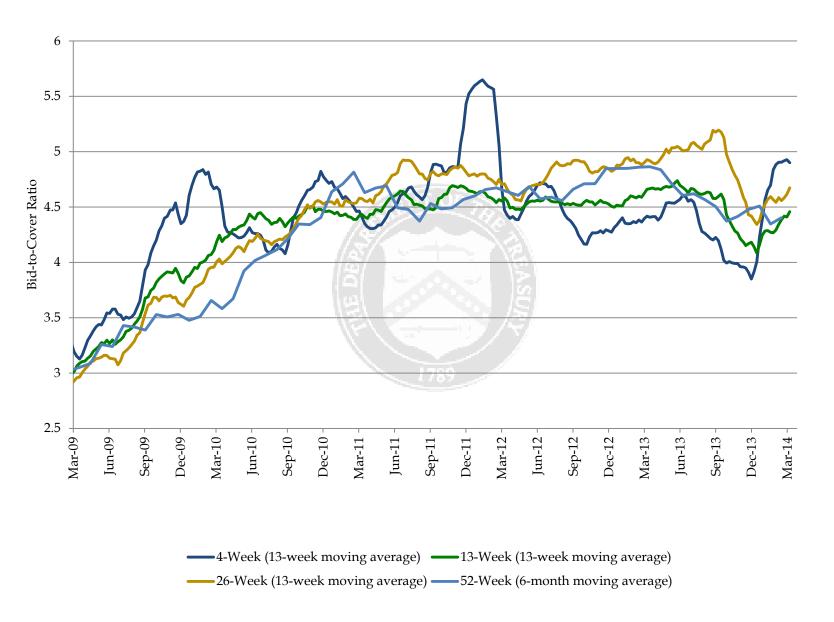
## **Summary Statistics for Fiscal Year 2014 Q2 Auctions**

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-Yr Equivalent (\$ bn)**
Bill	4-Week	0.038	4.6	288.1	73.0%	10.1%	17.0%	3.0	0.0	2.6
Bill	13-Week	0.054	4.4	357.5	71.5%	7.4%	21.1%	5.6	0.0	10.7
Bill	26-Week	0.078	4.6	321.2	57.5%	10.5%	32.0%	5.1	0.0	19.5
Bill	52-Week	0.120	4.5	65.3	60.0%	10.0%	30.0%	0.5	0.0	7.7
Bill	CMBs	0.067	3.7	115.0	80.4%	9.0%	10.5%	0.0	0.0	2.4
Coupon	2-Year	0.396	3.4	95.2	44.4%	21.1%	34.6%	0.5	0.1	22.3
Coupon	3-Year	0.772	3.3	89.6	48.5%	18.2%	33.3%	0.1	0.0	31.2
Coupon	5-Year	1.606	2.9	104.8	36.9%	14.3%	48.7%	0.2	0.1	58.7
Coupon	7-Year	2.184	2.7	86.9	30.8%	25.7%	43.4%	0.1	0.1	65.7
Coupon	10-Year	2.842	2.7	65.8	34.3%	19.0%	46.7%	0.1	0.0	66.6
Coupon	30-Year	3.736	2.4	42.0	42.4%	14.6%	43.0%	0.0	0.0	88.5
TIPS	10-Year	0.660	2.4	27.9	42.5%	8.1%	49.4%	0.1	0.0	77.0
TIPS	30-Year	1.495	2.3	9.0	38.5%	4.9%	56.5%	0.0	0.0	101.3
FRN	2-Year	0.059	5.2	40.9	56.8%	6.4%	36.8%	0.1	0.0	0.8
Total Bills		0.062	4.5	1,147.0	68.2%	9.2%	22.6%	14.3	0.0	42.9
Total Coupons		1.670	2.9	484.2	39.5%	19.1%	41.4%	1.1	0.3	333.1
Total TIPS		0.863	2.4	36.9	41.5%	7.3%	51.1%	0.1	0.0	178.3
Total FRN		0.059	5.2	40.9	56.8%	6.4%	36.8%	0.1	0.0	0.8

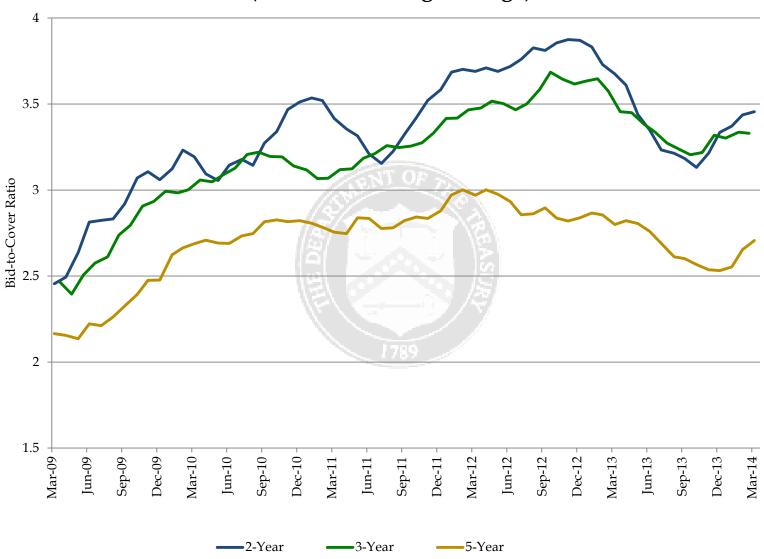
<sup>\*</sup>Weighted averages of Competitive Awards.

<sup>\*\*</sup>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.

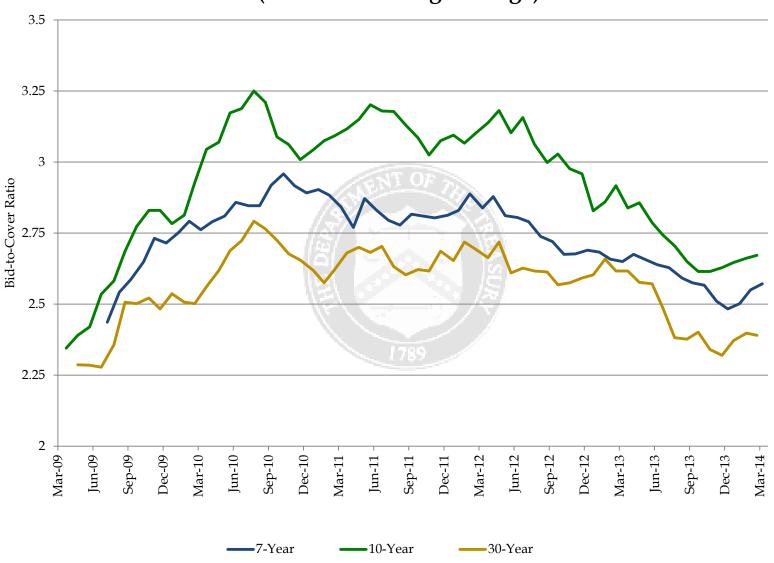
## **Bid-to-Cover Ratios for Treasury Bills**



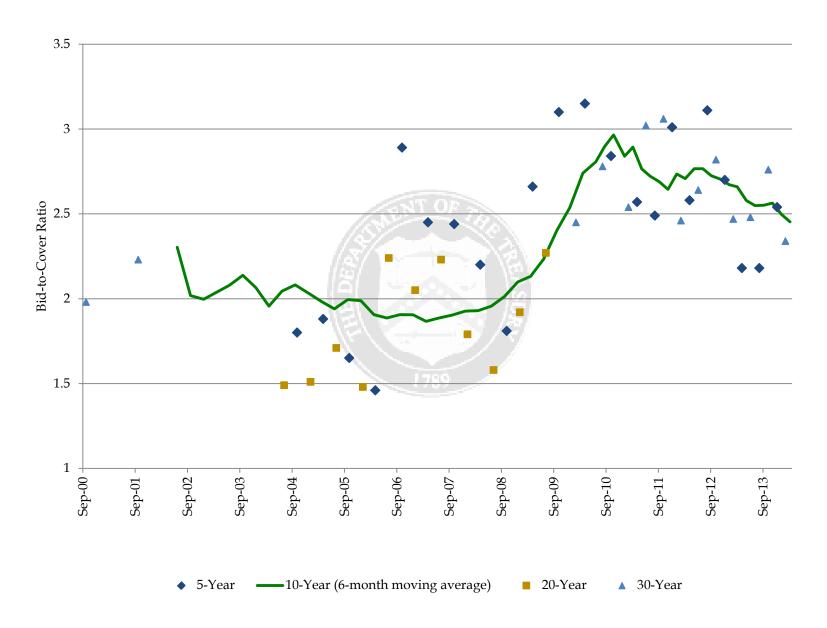
## Bid-to-Cover Ratios for 2-, 3-, and 5-Year Nominal Securities (6-Month Moving Average)



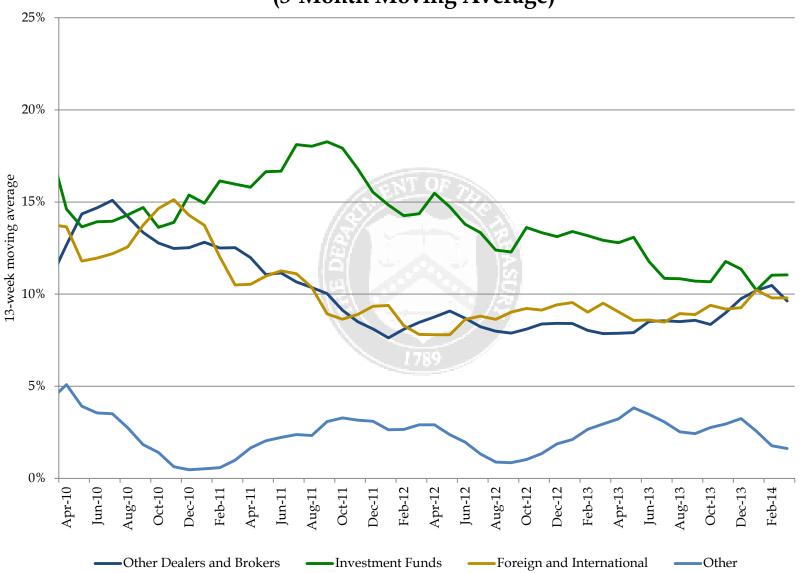
## Bid-to-Cover Ratios for 7-, 10-, and 30-Year Nominal Securities (6-Month Moving Average)



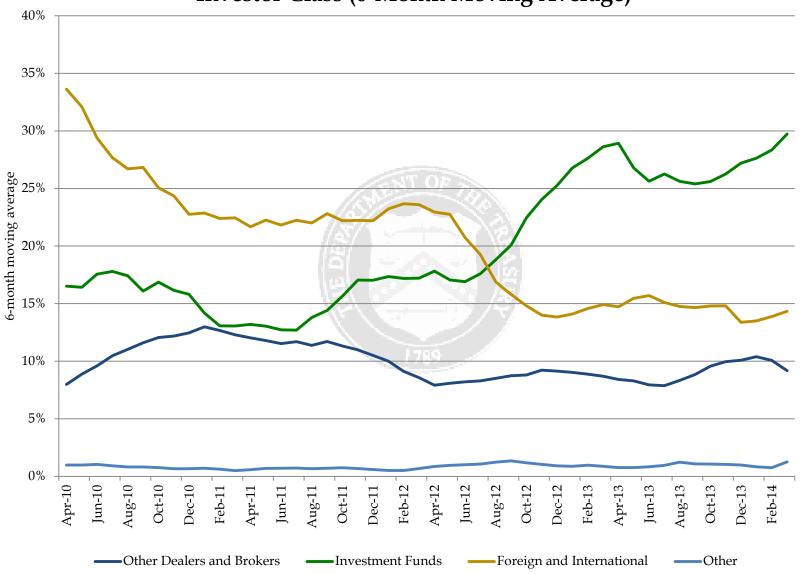
### **Bid-to-Cover Ratios for TIPS**



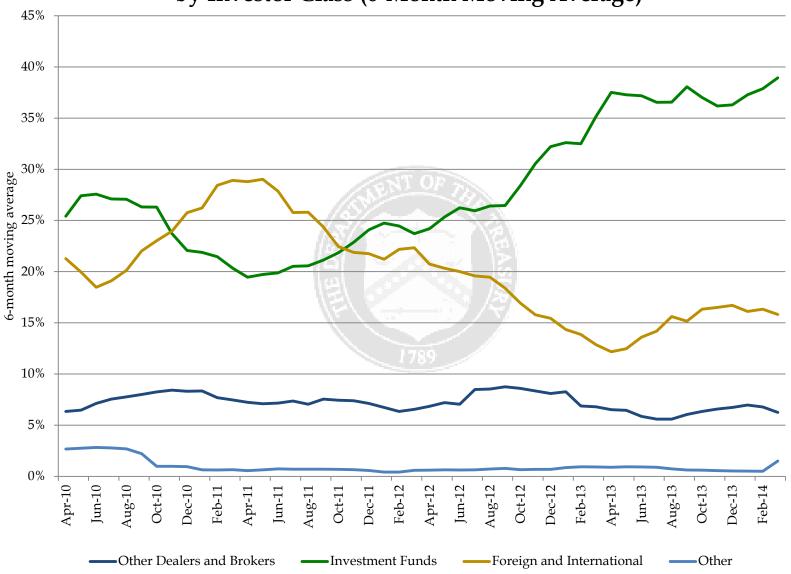
## Percent Awarded in Bills Auctions by Investor Class (3-Month Moving Average)



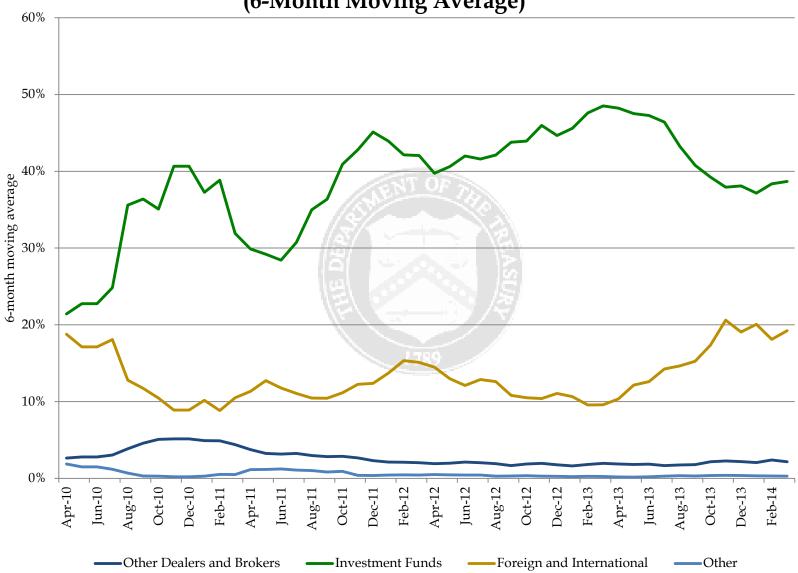
## Percent Awarded in 2-, 3-, 5-Year Nominal Security Auctions by Investor Class (6-Month Moving Average)



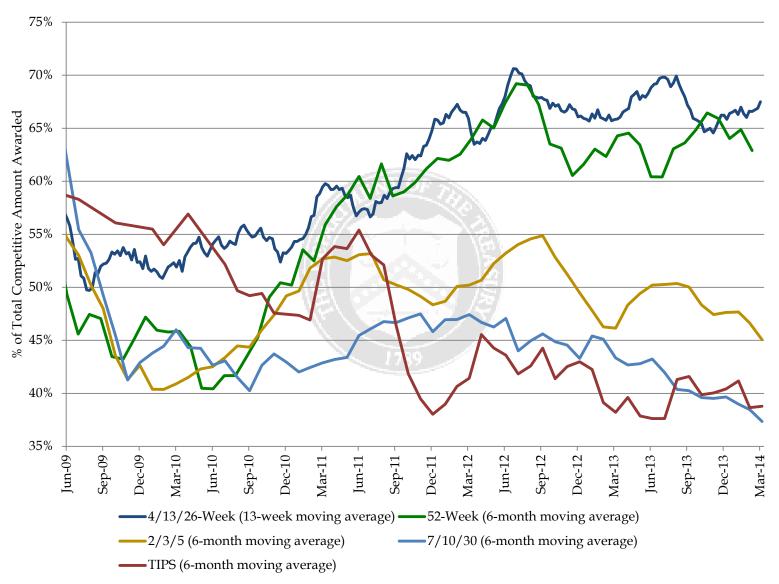
## Percent Awarded in 7-, 10-, 30-Year Nominal Security Auctions by Investor Class (6-Month Moving Average)



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

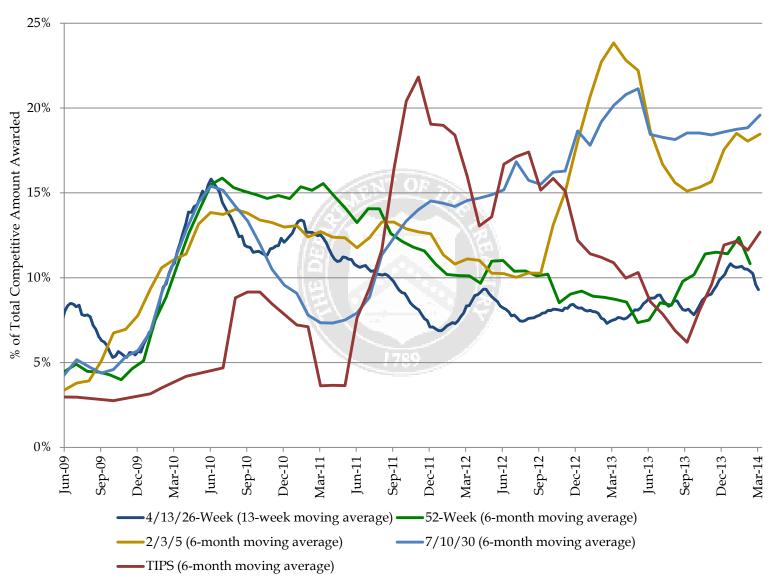


### Primary Dealer Awards at Auction, Percent



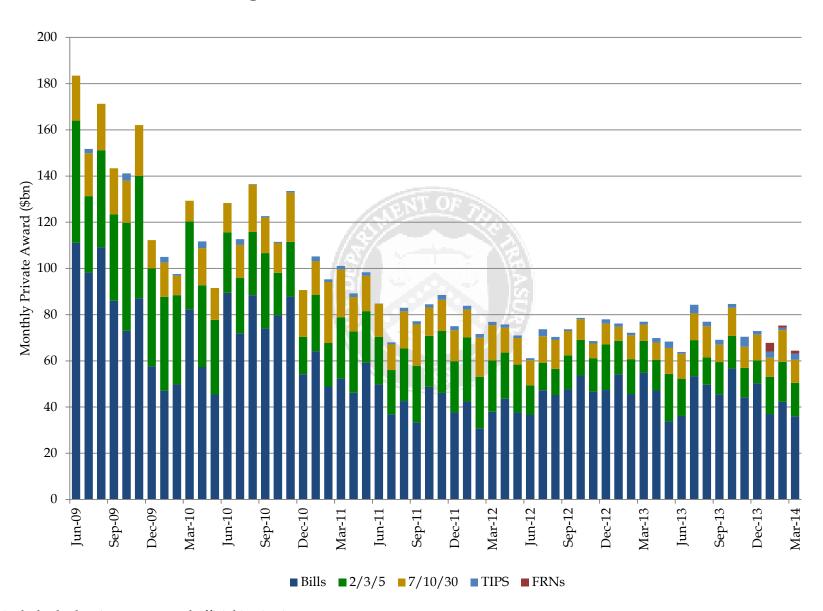
Excludes SOMA add-ons.

### Direct Bidder Awards at Auction, Percent



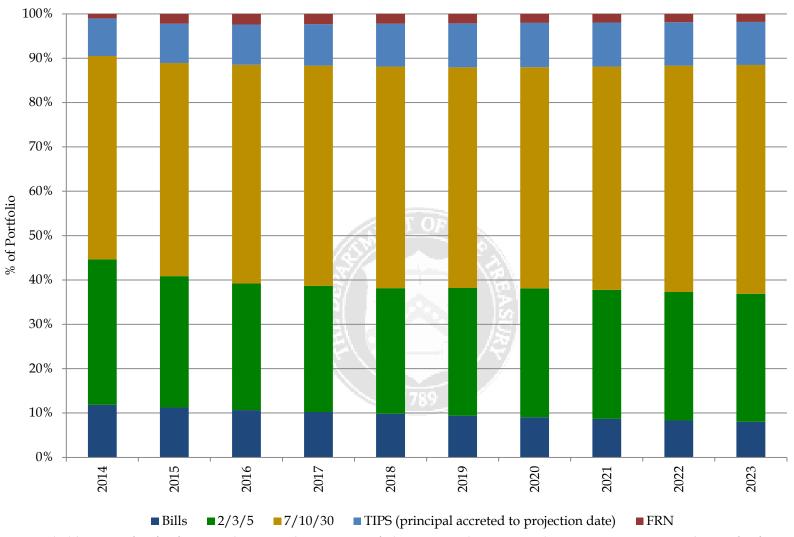
Excludes SOMA add-ons.

## **Total Foreign Awards of Treasuries at Auction, \$ Billion**





### Projected Portfolio Composition by Issuance Type, Percent



Portfolio & SOMA holdings as of 03/31/2014 and estimated projections of the Large Scale Asset Purchase program, announced on 12/12/2012 by the Federal Reserve, assumed to last until October 2014 with SOMA redemptions until June 2021. These assumptions are based on the Federal Reserve's January 2014 primary dealer survey and Chairman Bernanke's June 2013 press conference. To match OMB's projected borrowing from the public for the next 10 years, nominal coupon securities (2-, 3-, 5-, 7-, 10-, and 30-year) were adjusted by the same percentage. The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels. OMB's estimates of borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." 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
2006	21.3%	40.5%	29.0%	69.5%	9.2%	0.0%
2007	21.6%	38.9%	29.2%	68.1%	10.3%	0.0%
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	11.8%	32.8%	45.8%	78.6%	8.5%	1.0%
2015	11.2%	29.6%	48.1%	77.7%	8.9%	2.2%
2016	10.7%	28.5%	49.3%	77.8%	9.1%	2.4%
2017	10.2%	28.4%	49.7%	78.1%	9.4%	2.3%
2018	9.8%	28.3%	50.0%	78.3%	9.7%	2.2%
2019	9.4%	28.8%	49.8%	78.5%	9.9%	2.1%
2020	9.0%	29.1%	49.8%	78.9%	10.0%	2.0%
2021	8.7%	29.1%	50.3%	79.4%	9.9%	2.0%
2022	8.3%	28.9%	51.0%	80.0%	9.8%	1.9%
2023	8.0%	28.9%	51.6%	80.4%	9.7%	1.8%

Portfolio & SOMA holdings as of 03/31/2014 and estimated projections of the Large Scale Asset Purchase program, announced on 12/12/2012 by the Federal Reserve, assumed to last until October 2014 with SOMA redemptions until June 2021. These assumptions are based on the Federal Reserve's January 2014 primary dealer survey and Chairman Bernanke's June 2013 press conference. To match OMB's projected borrowing from the public for the next 10 years, nominal coupon securities (2-, 3-, 5-, 7-, 10-, and 30-year) were adjusted by the same percentage. The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels. OMB's estimates of borrowing from the public are from Table S-13 of the "Fiscal Year 2015 Budget of the U.S. Government." 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.

					Bill Issues					
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-Yr Equivalent (\$ bn)**
4-Week	1/2/2014	0.005	4.26	19.79	56.0%	9.9%	34.1%	0.21	0.00	0.18
4-Week	1/9/2014	0.000	5.66	17.76	78.0%	14.4%	7.6%	0.24	0.00	0.16
4-Week	1/16/2014	0.000	6.36	14.75	79.9%	12.5%	7.6%	0.25	0.00	0.14
4-Week	1/23/2014	0.000	6.63	11.79	83.0%	5.9%	11.1%	0.21	0.00	0.11
4-Week	1/30/2014	0.050	4.92	9.19	75.7%	13.4%	10.9%	0.26	0.00	0.09
4-Week	2/6/2014	0.130	4.50	7.76	73.6%	23.4%	3.0%	0.22	0.00	0.07
4-Week	2/13/2014	0.030	5.88	7.75	81.2%	11.6%	7.2%	0.25	0.00	0.07
4-Week	2/20/2014	0.035	4.48	31.78	62.8%	7.1%	30.2%	0.22	0.00	0.28
4-Week	2/27/2014	0.035	4.05	34.24	71.7%	12.5%	15.8%	0.26	0.00	0.31
4-Week	3/6/2014	0.045	3.93	34.76	71.7%	11.3%	17.0%	0.24	0.00	0.31
4-Week	3/13/2014	0.055	4.11	34.76	78.5%	11.1%	10.4%	0.24	0.00	0.31
4-Week	3/20/2014	0.060	4.27	34.79	79.7%	4.3%	16.0%	0.21	0.00	0.31
4-Week	3/27/2014	0.045	4.65	28.96	70.2%	7.4%	22.4%	0.23	0.00	0.27
13-Week	1/2/2014	0.065	3.84	29.30	69.6%	11.1%	19.3%	0.45	0.00	0.88
13-Week	1/9/2014	0.055	4.85	27.38	66.5%	9.5%	24.0%	0.47	0.00	0.82
13-Week	1/16/2014	0.035	4.26	27.40	84.8%	10.5%	4.7%	0.50	0.00	0.82
13-Week	1/23/2014	0.035	4.53	27.57	85.8%	9.0%	5.2%	0.43	0.00	0.82
13-Week	1/30/2014	0.055	3.94	26.75	64.7%	7.0%	28.3%	0.40	0.00	0.82
13-Week	2/6/2014	0.040	3.93	27.37	83.4%	8.3%	8.3%	0.43	0.00	0.82
13-Week	2/13/2014	0.095	4.49	41.44	50.4%	6.2%	43.3%	0.45	0.00	1.24
13-Week	2/20/2014	0.050	4.34	29.40	71.1%	5.4%	23.5%	0.47	0.00	0.86
13-Week	2/27/2014	0.045	4.96	23.67	74.2%	8.0%	17.8%	0.38	0.00	0.72
13-Week	3/6/2014	0.050	5.02	24.39	57.6%	5.2%	37.2%	0.40	0.00	0.72
13-Week	3/13/2014	0.050	4.76	24.57	73.8%	5.3%	20.9%	0.43	0.00	0.72
13-Week	3/20/2014	0.050	4.42	24.53	78.8%	3.3%	17.9%	0.37	0.00	0.72
13-Week	3/27/2014	0.050	4.61	23.73	81.0%	6.6%	12.3%	0.46	0.00	0.73
26-Week	1/2/2014	0.090	4.18	25.07	54.7%	13.3%	32.0%	0.33	0.00	1.52
26-Week	1/9/2014	0.080	4.84	25.01	51.0%	12.6%	36.4%	0.39	0.00	1.52
26-Week	1/16/2014	0.055	4.71	25.11	59.2%	10.4%	30.4%	0.41	0.00	1.52
26-Week	1/23/2014	0.060	5.18	23.94	56.8%	10.4%	32.8%	0.49	0.00	1.47
26-Week	1/30/2014	0.065	4.81	18.92	53.3%	7.3%	39.4%	0.41	0.00	1.17
26-Week	2/6/2014	0.060	4.76	18.97	51.0%	10.1%	38.9%	0.45	0.00	1.18
26-Week	2/13/2014	0.110	4.11	40.87	58.7%	12.0%	29.3%	0.46	0.00	2.48
26-Week	2/20/2014	0.075	4.07	29.00	64.9%	13.9%	21.1%	0.45	0.00	1.72
26-Week	2/27/2014	0.075	4.76	23.89	60.9%	11.7%	27.4%	0.34	0.00	1.44
26-Week	3/6/2014	0.080	4.46	24.31	64.7%	11.8%	23.5%	0.31	0.00	1.44
26-Week	3/13/2014	0.080	4.97	22.18	64.3%	3.0%	32.8%	0.35	0.00	1.33
26-Week	3/20/2014	0.080	4.86	22.28	52.3%	4.8%	42.9%	0.35	0.00	1.33
26-Week	3/27/2014	0.075	5.05	21.63	55.5%	9.0%	35.5%	0.40	0.00	1.33
52-Week	1/9/2014	0.125	4.83	22.78	55.9%	11.9%	32.1%	0.14	0.00	2.69
52-Week	2/6/2014	0.115	3.70	17.75	77.3%	12.4%	10.3%	0.18	0.00	2.12
52-Week	3/6/2014	0.120	4.85	24.75	51.4%	6.5%	42.1%	0.17	0.00	2.88
CMBs	2/11/2014	0.090	3.38	50.00	79.5%	9.5%	11.0%	0.00	0.00	1.17
CMBs	2/18/2014	0.050	3.81	45.00	79.4%	9.6%	10.9%	0.00	0.00	0.85
CMBs	3/3/2014	0.050	4.53	20.00	85.2%	6.3%	8.5%	0.00	0.00	0.42

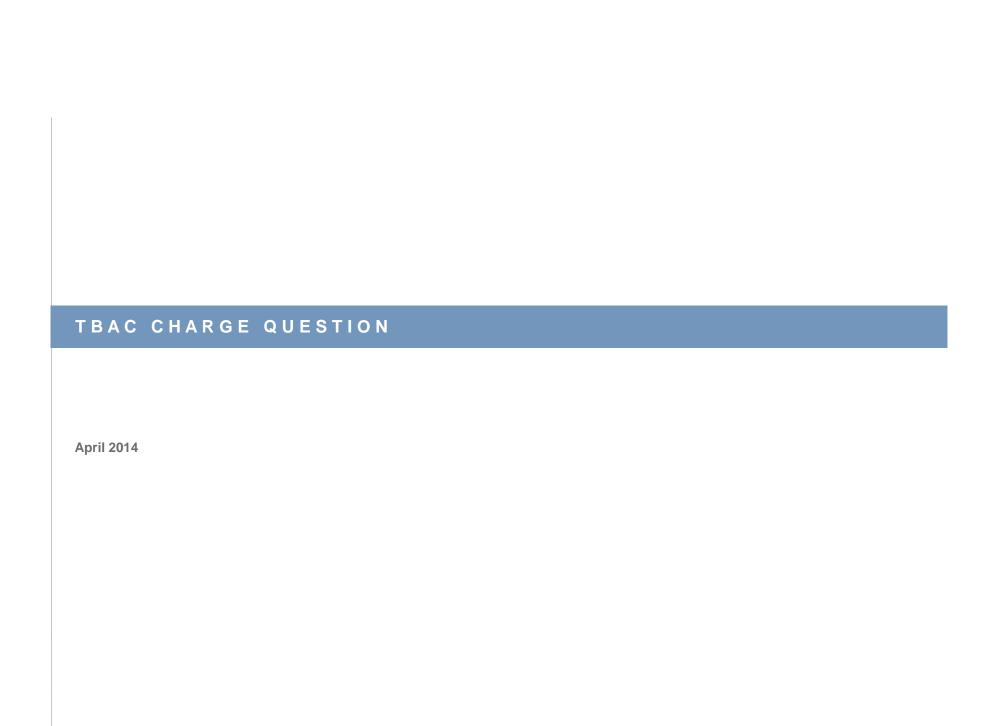
<sup>\*</sup>Weighted averages of Competitive Awards.

\*\*Approximated using prices at settlement and includes both Competitive and Non-Competitive Awards.

				Nomina	al Coupon S	ecurities				
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-Yr Equivalent (\$ bn)**
2-Year	1/31/2014	0.380	3.30	31.71	49.2%	22.4%	28.5%	0.18	0.00	7.50
2-Year	2/28/2014	0.340	3.60	31.74	46.4%	19.3%	34.3%	0.16	0.09	7.38
2-Year	3/31/2014	0.469	3.20	31.75	37.5%	21.5%	40.9%	0.16	0.00	7.43
3-Year	1/15/2014	0.799	3.25	29.87	49.4%	22.6%	28.0%	0.03	0.00	10.44
3-Year	2/18/2014	0.715	3.42	29.83	41.3%	16.6%	42.0%	0.05	0.00	10.51
3-Year	3/17/2014	0.802	3.25	29.86	54.6%	15.5%	29.9%	0.04	0.00	10.29
5-Year	1/31/2014	1.572	2.59	34.93	44.7%	10.7%	44.6%	0.06	0.00	19.77
5-Year	2/28/2014	1.530	2.98	34.94	40.2%	9.2%	50.7%	0.06	0.10	19.44
5-Year	3/31/2014	1.715	2.99	34.93	25.9%	23.1%	50.9%	0.07	0.00	19.52
7-Year	1/31/2014	2.190	2.65	28.96	32.3%	19.9%	47.8%	0.03	0.00	22.09
7-Year	2/28/2014	2.105	2.72	28.94	34.3%	24.6%	41.1%	0.04	0.08	21.80
7-Year	3/31/2014	2.258	2.59	28.98	26.0%	32.6%	41.4%	0.01	0.00	21.79
10-Year	1/15/2014	3.009	2.68	20.96	39.8%	13.6%	46.6%	0.04	0.00	20.97
10-Year	2/18/2014	2.795	2.54	23.92	34.1%	16.2%	49.7%	0.07	0.00	24.68
10-Year	3/17/2014	2.729	2.92	20.96	29.1%	27.5%	43.4%	0.04	0.00	20.99
30-Year	1/15/2014	3.899	2.57	12.99	38.1%	17.5%	44.4%	0.01	0.00	26.85
30-Year	2/18/2014	3.690	2.27	15.97	40.8%	13.9%	45.3%	0.02	0.00	34.34
30-Year	3/17/2014	3.630	2.35	12.98	48.6%	12.6%	38.8%	0.02	0.00	27.33
2-Year FRN	1/31/2014	0.045	5.67	14.93	53.2%	8.9%	37.8%	0.07	0.00	0.40
2-Year FRN	2/28/2014	0.064	5.29	12.99	54.6%	5.7%	39.7%	0.01	0.00	0.22
2-Year FRN	3/28/2014	0.069	4.67	12.99	63.0%	4.3%	32.7%	0.01	0.00	0.11

					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-Yr Equivalent (\$ bn)**
10-Year	1/31/2014	0.661	2.31	14.96	39.9%	8.3%	51.8%	0.04	0.00	33.99
10-Year	3/31/2014	0.659	2.48	12.98	45.4%	7.9%	46.6%	0.02	0.00	43.05
30-Year	2/28/2014	1.495	2.34	8.99	38.5%	4.9%	56.5%	0.01	0.03	101.29

<sup>\*</sup>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.



## Charge question May 2014

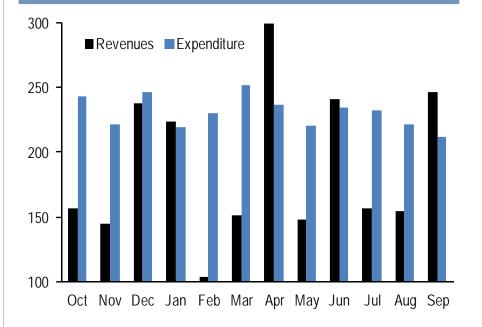
As prudent debt managers, Treasury regularly considers ways to effectively manage potential risks associated with the Treasury portfolio. We would like the Committee's views on the effectiveness and practicality of the following (1): the use of buybacks to smooth the maturity profile, manage cash balances, and provide cost savings to the taxpayer; (2) modifications to the current auction schedule, particularly for 10- and 30-year securities, as a means of more evenly distributing Treasury's maturity profile; (3) optimizing the cash balance as a means of reducing operational and market access risk.

### **Executive Summary**

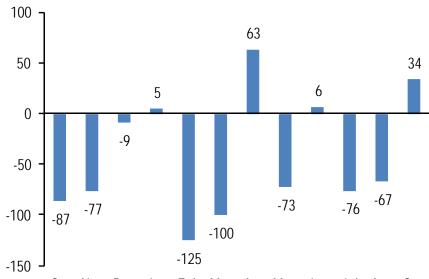
- Treasury's non-uniform issuance profile likely evolved in part due to intra-year variations in the primary deficit
- This has led to considerable seasonal variation in gross financing needs on a month-to-month basis, with the variation likely to worsen going forward. Fluctuations in financing needs are also highly variable on an intra-month basis
- Short term bill issuance is typically used as a smoothing tool. Fluctuating bill supply does not appear to add to Treasury's funding costs on average through the cycle
- Heavy seasonal issuance results in elevated reliance on market access around select dates and therefore increased operational risk in the event of an extended market shutdown
- Treasury has a host of potential solutions for mitigating market access risk
  - Structurally increase the size of Treasury's operating cash balance
  - Modification to auction schedules
  - Make use of buybacks in order to manage seasonal variation in financing needs

Treasury's non-uniform issuance profile likely evolved in part due to intra-year variations in the primary deficit

# Average monthly revenues and expenditures (excluding interest expense); average of FY02-FY13; \$bn



# Average monthly primary deficit\*; average of FY02-FY13; \$bn



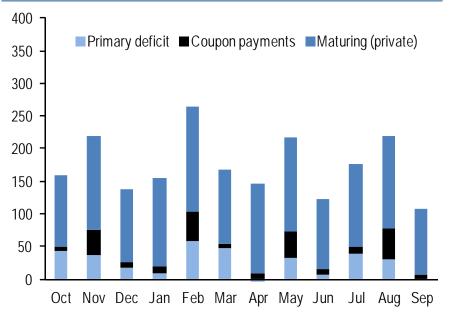
Oct Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep

- Expenditures (excluding interest payments) exhibit only limited variability between months
- Revenues are much noisier, driven by quarterly corporate tax receipts, estimated individual tax payments, tax refunds paid in February/March, and April tax receipts

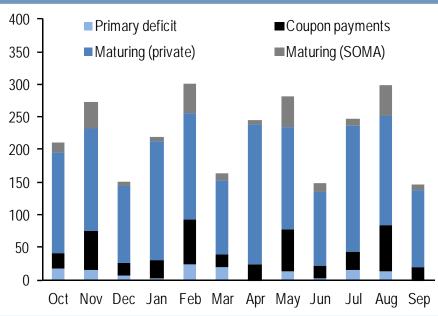
<sup>\*</sup> Primary deficit is revenues less expenditures, excluding interest payments

This has led to considerable seasonal variation in gross financing needs on a month-to-month basis, with the variation likely to worsen going forward





# Treasury's projected monthly gross financing needs (excluding bills)\* in FY 2020; \$bn



- Intra-year variation in Treasury's gross financing needs are driven by the following sources.
  - Swings in primary deficits
  - Seasonal variation in interest payments on Treasury debt
  - Seasonal variation in maturity schedule of Treasury debt; in particular, quarterly maturities of 10-year notes and 30-year bonds in February,
     May, August and November, as well as TIPS maturities in January, February, April and July
- If not addressed, this intra-year variation will become more pronounced in the future, driven by the existing maturity structure of Treasury debt the peak month-over-month variation in gross financing needs increases from \$115bn in FY15 to \$154bn by FY20
- Should the Fed cease reinvestments of maturing Treasuries, that would serve to amplify the variation in private market financing

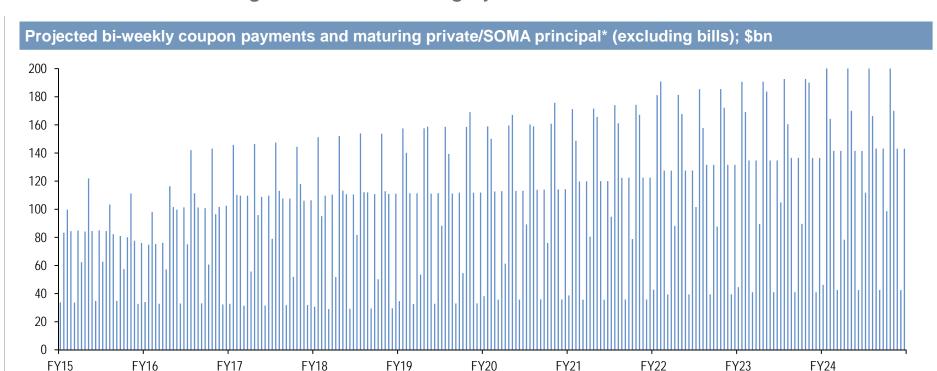
<sup>\*</sup> Decomposes monthly gross financing needs into primary deficits, coupon payments and maturing principal of Treasury securities. Primary deficits based off April 2014 CBO *Analysis of the President's Budget*, table 2 and seasonality of primary deficit from FY2002-FY2013

Projections for beyond FY14 assume bill percentage of marketable debt is held constant at 11.8%. Assumes nominal coupon-bearing Treasuries and TIPS are increased pro-rata to meet residual financing needs, financed at forward rates.

Source: US Treasury, CBO

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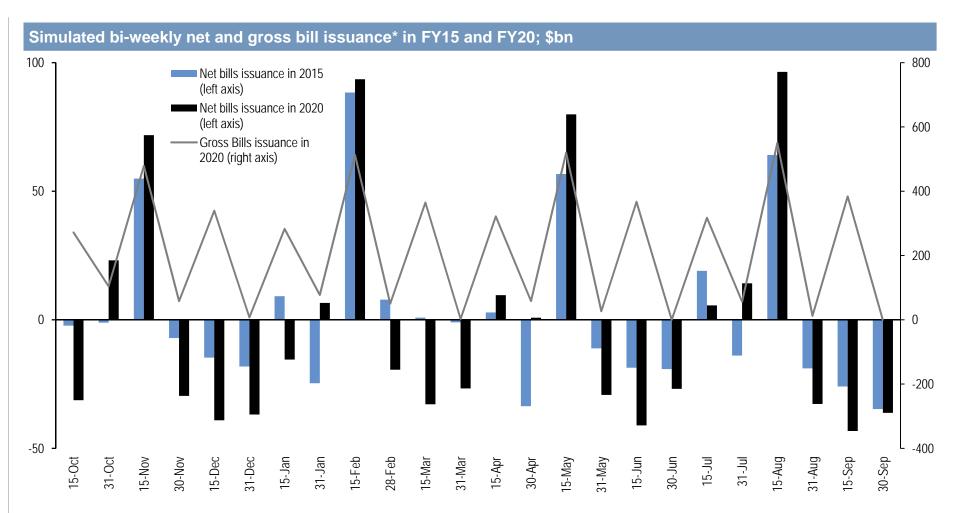
## Fluctuations in financing needs are also highly variable on an intra-month basis



\*Assumes nominal coupon-bearing Treasuries and TIPS are increased pro-rata to meet residual financing needs. Projections for beyond FY14 assume bill percentage of marketable debt is held constant at 11.8%.

- As already noted, the monthly variation in Treasury's coupon and maturity profile is highly volatile. Furthermore, this variation exists on an intra-month basis as well
- This intra-month variation is projected to increase through time as shown above

### Short term bill issuance is typically used as a smoothing tool



<sup>\*</sup> Assumes a constant cash balance. Simulations assume bill percentage of marketable debt is held constant at 11.8%.

- As the stock of Treasury's debt rises in the future the intra-year and intra-month variation in gross financing needs will increase. Accordingly, the seasonal variation in net and gross bill issuance will increase as well
- Both variations in regular T-bill issuance and cash management bills (CMBs) are used to smooth out this seasonality in gross financing needs

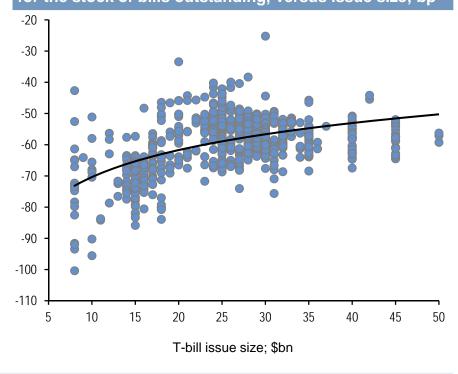
Fluctuating bill supply does not appear to add to Treasury's funding costs on average through the cycle; the sensitivity of bill yields to issue size declines as issue sizes increase

Statistics from regressing historical T-bill/OIS spreads (%), versus (1) the natural log of auction size (\$bn) and (2) the aggregate stock of T-bills (\$bn)

	Coeff	T-stat
Log of Issue Size (bn)	0.12492	13.1
Stock (\$bn)	0.00031904	29.5
Intercept	-0.99	-43.9
R^2	78	

<sup>\*</sup> Data from all non-CMB bill auctions over 2006-current, but excluding 04/2007 – 12/2009.

T-bill/OIS spreads at close on day of auction, adjusted for the stock of bills outstanding, versus issue size; bp



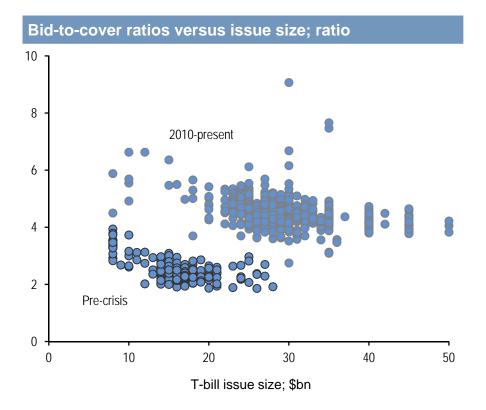
- Adjusted for the stock of bills, spreads versus OIS at close on auction day exhibit diminishing sensitivity to issue size as issue size increases. Holding the stock of bills constant, starting at an issue size of \$25bn, a \$10bn increase in issue size tends to cheapen Treasury bills by 5bp relative to OIS. This sensitivity declines to 3bp per each \$10bn size increase, if issue sizes reach \$40bn
- Thus, while the overall growth in issuance in the bill sector would bias Treasury's funding costs higher, there is no evidence seasonal variation in sizes are likely to prove detrimental from a funding cost standpoint

# ... but there is some evidence that bid-to-cover ratios drift lower when gross issuance sizes are large

# Statistics from regressing historical T-bill bid-to-cover ratios versus (1) auction size (\$bn) and (2) the aggregate stock of T-bills (\$bn)

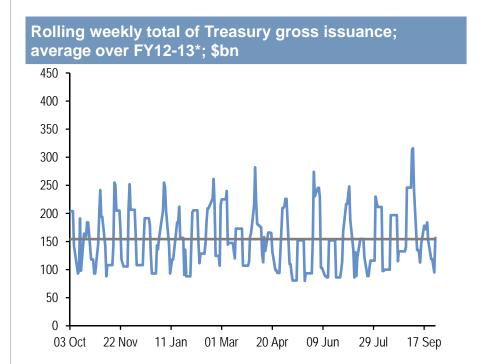
	Coeff	T-stat
Issue Size (bn)	-0.0135	-3.9
Stock	0.00283	32.2
Intercept	0.22	2.23
R^2	63.	8

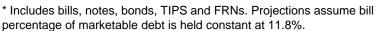
<sup>\*</sup> Data from all non-CMB bill auctions over 2006-current, but excluding 04/2007 – 12/2009.



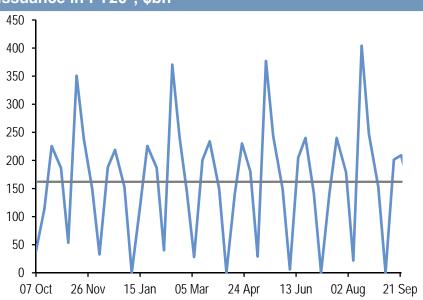
- Empirical work suggests larger issue sizes in bills are coincident with lower bid-to-cover ratios. Holding the stock of Treasury bills constant, each \$10bn increase in issue size leads to a 0.13 decline in bid-to-cover ratios
- This suggests that considerable increases in bill auction sizes could pose some operational risk in the event that it causes bid-to-cover ratios to fall. However, given the current high level of coverage ratios, auction sizes would have to more than quadruple for bid-to-cover ratios to fall closer to 1

Heavy seasonal issuance results in elevated reliance on market access around select dates and therefore increased operational risk in the event of an extended market shutdown





# Simulated rolling weekly total of Treasury gross issuance in FY20\*; \$bn



<sup>\*</sup> Includes bills, notes, bonds, TIPS and FRNs. Assumes constant cash balance. Projections assume bill percentage of marketable debt is held constant at 11.8%.

- Gross issuance has averaged approximately \$154bn per week over FY12-FY13 with a 5-day peak of \$316bn
- On a simulated basis this grows through time: in FY20, gross issuance will average approximately \$162bn per week with a 5-day peak
  of \$404bn
- This brings heightened operational risk: if Treasury loses market access at any point due to an extended market shutdown, it runs the risk, albeit remote, of a potential technical default
- While this risk is relatively small, the political risk of such loss of market access can outweigh the monetary costs to Treasury

# In recent history, Treasury has lost market access for up to 3 days

# Unforeseen and tragic incidents have disrupted regular market operations in the past, leading to market access risk for Treasury

Incident	Disruption dates	# of days	Description	Auctions affected and sizes
September 11 attack	Sep 11, 2001 (market fully closed) Sep 12, 2001 (market fully closed) Sep 13, 2001 (open w/ limited trading)	2-3	Bond markets were closed on Sep 11 and Sep 12, and reopened with extremely limited trading on Sep 13 (equities were closed until Sep 17).	\$10bn 4-week bill auction Sep 11, 2001 was rescheduled for Sep 12, 2001 and then finally cancelled
Super storm Sandy	Oct 29, 2012 (market closed early) Oct 30, 2012 (market fully closed)	1.5	Bond markets were closed for a day and a half – it closed early on Oct 29, 2012 and was fully closed on Tuesday Oct 30. (Note: Fed was open, so settlements could occur)	\$25bn 4-week bill auction brought forward from Oct 30, 2012 to Oct 29, 2012
TAAPS (Treasury auction system) IT Issue	Dec 2, 2013 (auction postponed)	1	The noncompetitive and competitive portion of the 13- and 26-week bill auctions, originally scheduled to close on Dec 2, had to be rescheduled to the next day due to an error that occurred during a test of Treasury's auction system.  Settlement date remained unchanged.	\$32bn 13-week bills and \$27bn 26-week bills postponed from Dec 2, 2013 to Dec 3, 2013

## Treasury has a host of potential solutions for mitigating market access risk

#### Potential solutions

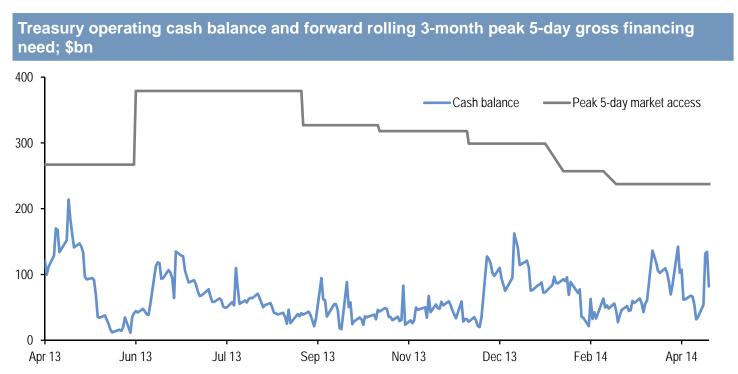
#### Mitigating average market access risk

Structurally increase the size of Treasury's operating cash balance

#### Mitigating peak market access risk

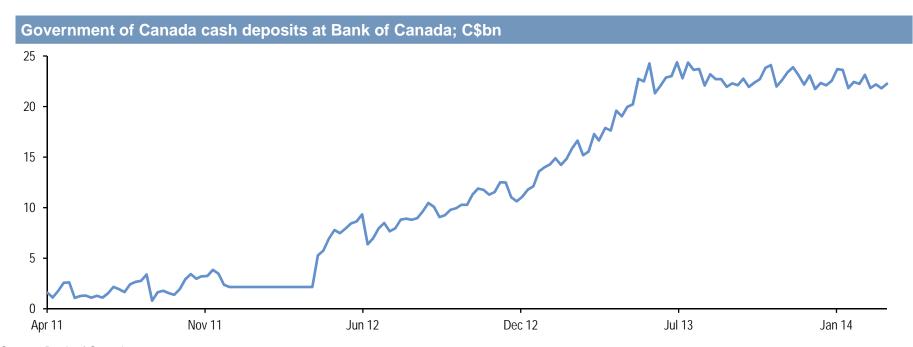
- Move from quarterly 10-year notes and 30-year bonds to monthly new issues
- Shift maturities into non-refunding months from refunding months
  - This can be done, for instance, by auctioning new-issue 3s on a quarterly Mar/Jun/Sep/Dec cycle, with reopenings in other months
  - Such an approach is scalable, and can begin to mitigate the seasonal variation in a shorter time frame modifying 3-year issuance now will begin to bear fruit in 3 years
- Make use of buybacks in order to manage seasonal variation in financing needs

Treasury can permanently increase its operating cash balance to mitigate market access risk



- While the Treasury market has not been closed for more than 2-3 days in a row in the past, we believe a 5-day liquidity buffer may be prudent
- Increases in Treasury's operating cash balance at the Fed reduces reserves balances, and hence lowers the aggregate amount of interest on reserves paid. Provided Treasury bill yields are lower than or equal to IOR, funding this increased cash balance will have no cost (or negative cost) to Treasury. If funded with term debt, the cost to Treasury over time will be the term premium
- Treasury can design the liquidity buffer to meet average, peak, or time-varying gross issuance needs. How Treasury decides to fund
  this buffer will have impacts on gross issuance patterns in the future

### Internationally, other countries make use of liquidity buffers

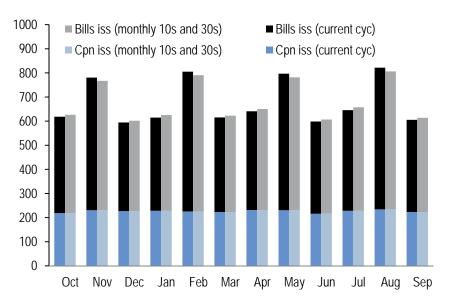


Source: Bank of Canada

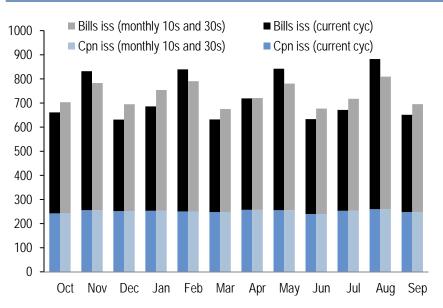
- The Government in Canada announced changes to its debt management strategy in 2011, aiming to borrow an additional \$35bn and structurally increase its cash balance in order to mitigate market access risk: "To improve prudential liquidity management, over the next three years, the Government will borrow an additional amount of \$35 billion to safeguard its ability to meet payment obligations in situations where normal access to funding markets may be disrupted or delayed. This financing activity will have no material impact on the budgetary balance or the federal debt as the cost of the additional borrowing will be offset by a corresponding increase in returns on interest-bearing assets." (Source: Government of Canada, Budget 2011, Debt Management Strategy for 2011-2012, 6/6/11)
- In addition, Canada employs three types of buybacks: cash management, regular and switch-based buybacks. In particular, "cash management buybacks program helps to manage the government's cash requirements by reducing the high levels of government cash balances needed on key coupon and maturity payments dates. This program also helps to smooth variations in the issuance of treasury bills over the year." (Source: Bank of Canada, *Details on Bond Buyback Operations*, 4/2/12)
- Further work should be undertaken to see whether other developed market debt management offices maintain liquidity buffers or have access to liquidity facilities with their respective central banks

Treasury can increase the frequency of new issue 10-year notes and 30-year bonds from quarterly to monthly - this would reduce the seasonal variation in financing needs modestly, but not materially for a decade...

Projected monthly gross issuance of Treasuries\* (including FRNs and T-bills) in 2020, under current issuance plan as well as modified issuance plan that uses monthly 10- and 30-year maturities; \$bn



Projected monthly gross issuance of Treasuries\* (including FRNs and T-bills) in 2025, under current issuance plan as well as modified issuance plan that uses monthly 10- and 30-year maturities; \$bn



<sup>\*</sup> Decomposes monthly gross financing needs into primary deficits, coupon payments and maturing principal of Treasury securities. Primary deficits based off April 2014 CBO *Analysis of the President's Budget*, table 2 and seasonality of primary deficit from FY2002-FY2013

Projections for beyond FY14 assume bill percentage of marketable debt is held constant at 11.8%. Assumes nominal coupon-bearing Treasuries and TIPS are increased pro-rata to meet residual financing needs. Baseline case uses current issuance schedule financed at forward rates, alternate uses monthly 10- and 30-year maturities

Source: US Treasury, CBO

- Monthly new issues will immediately help to smooth monthly coupon payment concentration, but this impact is relatively small (for example, in 2020, the projected reduction in peak issuance during refunding months is ~ \$15bn)
- Monthly maturities of 10-year notes and 30-year bonds will reduce seasonal variation further beginning a decade from now (in 2025, the projected reduction in peak issuance during refunding months is ~ \$58bn)

# ... and this approach risks higher average funding costs due to a lower liquidity premium

Yield error on current issue less yield error on old issue for various on-the-run issues, averages over 1-, 3-, and 5-years

Sector	New issue frequency	1y avg	3y avg	5y avg
2s	Monthly	-0.2	-0.5	-0.4
3s	Monthly	-0.8	-0.5	-0.2
5s	Monthly	-0.4	-0.3	-0.4
7s	Monthly	0.0	0.0	0.0
10s	Quarterly	-1.3	-1.5	-2.3
30s	Quarterly	-0.3	-0.4	-0.5

<sup>\*</sup>Yield error is actual yield less model yield derived from par fitted Treasury curve

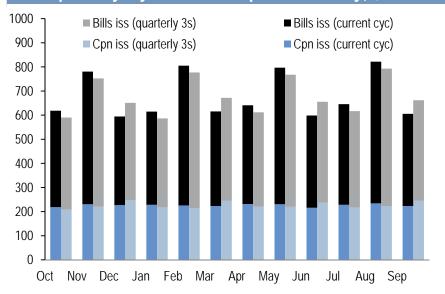
# Yield error on current 5-year less yield error on old 5-year, under four different auction cycles

Years	New Issue cycle	Reopened	Yield error spread (bp)
1999	Quarterly		-5.7
2000-2001	Semiannual	Quarterly	-6.0
2002	Quarterly		-2.8
2003-present	Monthly		-0.6

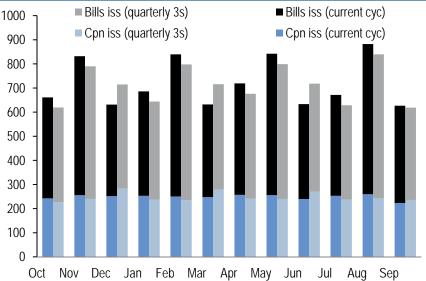
- Over the last five years, quarterly maturity 10-year notes and 30-year bonds have enjoyed substantially higher liquidity premium when compared to 2, 3-, 5-, and 7-year notes, which have been auctioned with monthly new issues
- 5-year notes enjoyed a substantially larger liquidity premium when they were auctioned under a semiannual or quarterly cycle than under a monthly cycle
- 21% of the most recent off-the-run 30-year bonds are held in stripped form, or about \$9.1bn per issue. If Treasury moves to monthly new issues, this could reduce the tradable float of 30-year issues as they become off-the-run, potentially reducing liquidity

Alternatively, Treasury can issue 3-year notes on a Mar/Jun/Sep/Dec cycle with reopenings in subsequent months: this reduces the intra-month variation more quickly versus moving to monthly 10-year notes and 30-year bonds

Projected monthly gross issuance of Treasuries\* (including FRNs and T-bills) in 2020, under current issuance plan as well as modified issuance plan that uses quarterly 3-year notes reopened monthly; \$bn



Projected monthly gross issuance of Treasuries\* (including FRNs and T-bills) in 2025, under current issuance plan as well as modified issuance plan that uses quarterly 3-year notes reopened monthly; \$bn

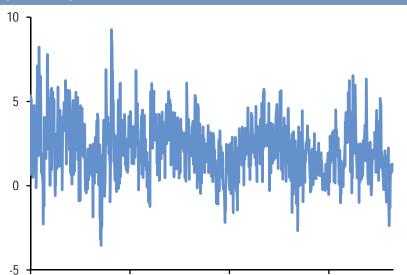


<sup>\*</sup> Decomposes monthly gross financing needs into primary deficits, coupon payments and maturing principal of Treasury securities. Primary deficits based off April 2014 CBO Analysis of the President's Budget, table 2 and seasonality of primary deficit from FY2002-FY2013
Projections for beyond FY14 assume bill percentage of marketable debt is held constant at 11.8%. Assumes nominal coupon-bearing Treasuries and TIPS are increased pro-rata to meet residual financing needs. Baseline case uses current issuance schedule, alternate uses quarterly 3-year notes which mature in March, June, September and December, and are reopened in subsequent months
Source: US Treasury, CBO

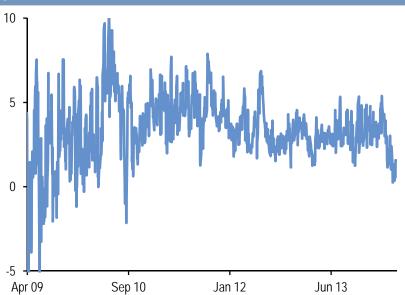
- Moving to quarterly 3-year notes that mature in March, June, September and December, with reopenings in following months, will help reduce peak financing needs in refunding months. This move will reduce projected peak issuance during refunding months by ~ \$30bn in 2020 and ~ \$42bn in 2025
- This strategy should be more beneficial in reducing intra-year variation compared to monthly new issues of 10s and 30s in the near term. In FY20, quarterly 3-year notes reduces peak issuance during refunding months by ~ \$15bn more compared to the alternate strategy. However, in FY25, this strategy reduces peak issuance during refunding months by ~ \$16bn less compared to the alternate strategy

Treasury can utilize different buyback strategies in order to smooth peaks, manage near-term cash balances, as well as take advantage of relative value

3-month Treasury coupon matched-maturity OIS spread less 3-month Treasury bill matched-maturity OIS spread; bp



1-year Treasury coupon matched-maturity OIS spread less 1-year Treasury bill matched-maturity OIS spread; bp



- Given projected overfunding through FY15, buybacks are another option for Treasury to smooth peaks. For every \$10bn in monthly buybacks, the
  average refunding month peak issuance will be reduced by ~ \$30bn
- Treasury can employ a number of buyback/switch strategies:

Jan 12

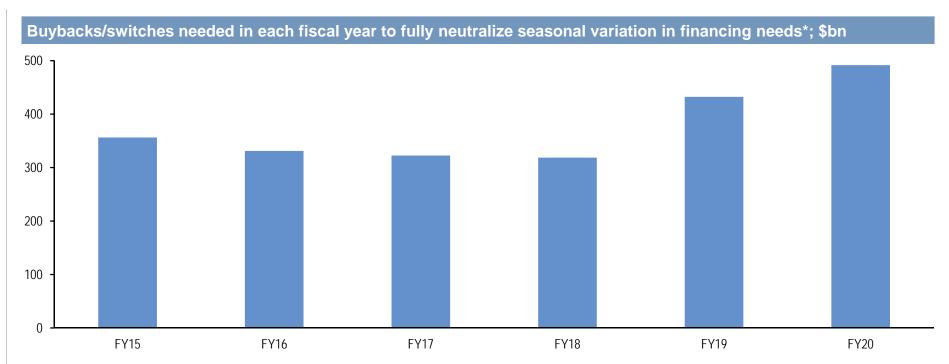
**Jun 13** 

Sep 10

Apr 09

- Short-term facility: Treasury uses excess cash balances to buy back near-maturity Treasuries. Off-the-run notes at the front end of the curve have traded 2bp cheap, on average, relative to matched-maturity Treasury bills over the past 5 years
- Medium-term facility: Treasury attempts to smooth funding costs in the future. Under the current auction schedule, Treasury is overfunded by more than \$200bn for FY15 and can purchase 1-year off-the-run coupons more cheaply than it currently auctions 1-year bills; over the last 5 years, coupons have traded more than 3bp cheap to bills in the 1-year sector
- Standing switch facility: Treasury buys issues with Feb/May/Aug/Nov maturities which trade cheap to the curve in order to actively manage seasonal variation in financing needs. If market participants understand the Treasury's focus on relative value, they may prematurely richen issues where Treasury would likely focus and reduce the value in this strategy

While buybacks can make an immediate difference, the scale needed to fully offset peaks will be large



<sup>\*</sup> Seasonal variation is the difference between peak monthly issuance and the average monthly issuance in each quarter; this sums the seasonal variation in each quarter of the fiscal year.

- Buybacks would help manage Treasury's seasonal variation in gross financing needs, while also maintaining larger new issue auction sizes
- Treasury has made use of buybacks before: it repurchased \$67.5bn between 2000 and 2002 to address steadily declining Treasury financing needs. These purchases were largely focused in the 10-year and longer sector against the backdrop of the potential for longer-term budget surpluses and this represented approximately of 2% of publicly held Treasury debt
- Monthly purchases averaged approximately \$2.5bn between March 2000 and April 2002
- In order to reduce volatility between peak market access needs versus projected annual averages, Treasury will need to purchase ~ \$90bn securities per quarter in FY15, and this rises to ~ \$125bn per quarter in FY20.

Treasury has a number of options to mitigate market access risk, but each are accompanied with benefits and costs

### Summary of benefits and costs of potential solutions

Potential solution	Benefits	Costs
Increase the size of operating cash balance	Mitigates average market access risk	Could produce a small cost if bills yield more than IOR or if term premium is positive
Monthly new issue 10-year notes and 30-year bonds	Reduces seasonal variation in gross financing needs	Most benefits begin to accrue after 10 years Reduces liquidity premium in on-the-run issues
Shift 3-year note maturities from refunding months to Mar/Jun/Sep/Dec with re-openings in subsequent months	Reduces seasonal variation in gross financing needs more quickly	Results in very large-sized 3-year note issues
Make use of buybacks	Reduces fluctuations in gross financing needs over the course of a fiscal year Enhances market liquidity	Scale needed is very large

# Financing Outlook

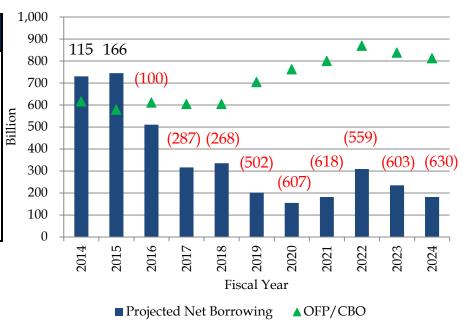
# Introduction

- Current deficit and borrowing projections indicate that Treasury is likely to be overfunded in Fiscal Year (FY) 2014 and 2015.
  - Treasury Marketable Borrowing announcement states that Treasury will be overfunded by \$115 billion for FY 2014
  - CBO projections indicate that Treasury will be overfunded by \$166 billion for FY 2015
- One way to address this overfunding is to reduce coupon issuance in the 2-year and 3-year securities (currently at \$32 billion and \$30 billion, respectively), by \$4 billion each over four months starting in May 2014 (\$1 billion per month). Issuance could then be raised back to current levels over four months starting October 2015.

# Financing Outlook

Based upon Treasury's forecast for 2014 and CBO forecasts from 2015 onwards, Treasury appears to be overfunded in the near-term.

	Forecasted	Net Cash Raised	
	Borrowing Needs	W/ Current Calendar*	Over/Underfunding
2014	616	731	115
2015	579	745	166
2016	611	511	(100)
2017	604	317	(287)
2018	604	336	(268)
2019	704	202	(502)
2020	762	155	(607)
2021	800	182	(618)
2022	869	310	(559)
2023	838	235	(603)
2024	812	182	(630)



<sup>\*</sup>Net Cash Raised W/ Current Calendar represents the net cash raised with current calendar/size of coupon issuance held constant and \$1.45 trillion bills outstanding.

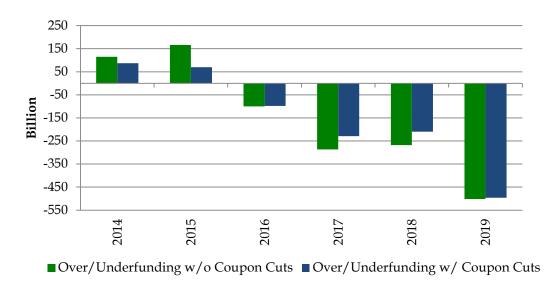
<sup>\*\*</sup>Data labels represent over/underfunding to target projections; assumes \$1.45 trillion in bills outstanding; assumes Federal Reserve redemptions until June 2021.

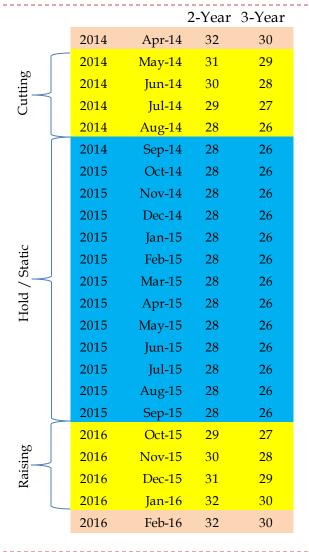
# Potential Coupon Cuts

- Current monthly 2- and 3-year issuance is \$32 billion and \$30 billion, respectively.
- One potential path of coupon cuts would be:
  - Cutting 2-year by \$1 billion per month from \$32 billion to \$28 billion starting in May 2014 and raising again starting October 2015.
    - Issuance size decreases from \$32 billion to \$28 billion from April 2014 to August 2014.
    - Issuance size held constant at \$28 billion from August 2014 to September 2015.
    - Issuance size increases from \$28 billion to \$32 billion from September 2015 to January 2016.
  - Cutting 3-year by \$1 billion per month from \$30 billion to \$26 billion starting May 2014 and raising again starting October 2015
    - Issuance size decreases from \$30 billion to \$26 billion from April 2014 to August 2014.
    - Issuance size held constant at \$26 billion from August 2014 to September 2015.
    - Issuance size increases from \$26 billion to \$30 billion from September 2015 to January 2016.
- This will result in outright reductions of \$128 billion in coupon issuance in 2014 and 2015.
- The remaining overfunding of \$157 billion in 2014 and 2015 would therefore be met through a reduction in bills issuance.

# Potential Coupon Cuts

	Forecasted	Over/Underfunding	Over/Underfunding
	Borrowing Needs	W/ Coupon Cut	W/O Coupon Cut
2014	616	87	115
2015	579	70	166
2016	611	(98)	(100)
2017	604	(229)	(287)
2018	604	(210)	(268)
2019	704	(496)	(502)
2020	762	(607)	(607)
2021	800	(618)	(618)
2022	869	(559)	(559)
2023	838	(603)	(603)
2024	812	(630)	(630)

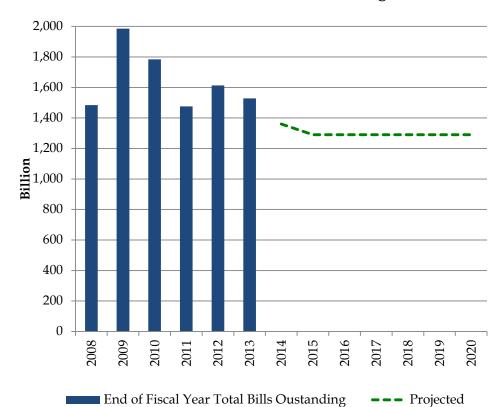




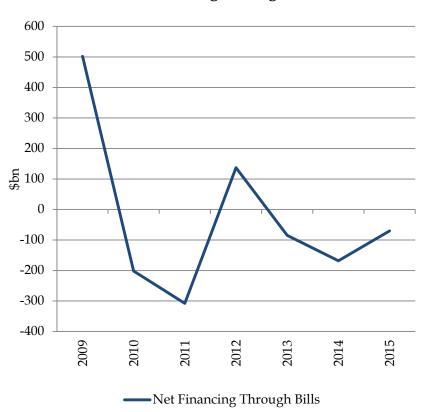
# Change in Total Bills Outstanding

The remaining overfunding of \$157 billion would therefore be met through a reduction in bills issuance bringing outstanding bills to \$1.36 trillion and \$1.29 trillion in 2014 and 2015 respectively.





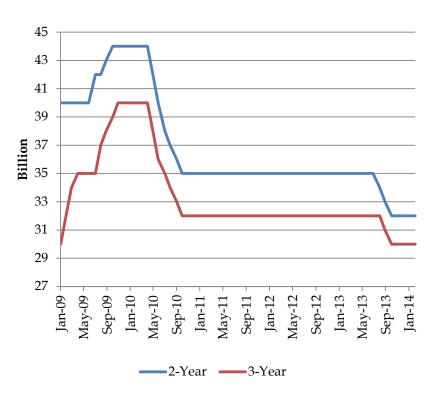
#### **Net Financing Through Bills**



## Other Considerations

- ▶ The path of coupon cuts fits within the scope of past reductions.
- It is also consistent with Treasury's commitment to extending the Weighted Average Maturity (WAM) of outstanding US marketable debt.

#### Path of FY 2010/2011 2- and 3-year Coupon Issuance



#### Weighted Average Maturity of Marketable Debt Outstanding

