Treasury Presentation to TBAC

Office of Debt Management

THE DEPARTMENT OF THE TREASURY

1789

Fiscal Year 2022 Q2 Report

Table of Contents

Section I:
Executive Summary

Highlights of Treasury's May 2022 Quarterly Refunding Presentation to the Treasury Borrowing Advisory Committee (TBAC)

<u>*Receipts and Outlays through Q2 FY2022*</u>

- Through Q2 FY2022, receipts were $2.12 trillion, $418 billion (25%) higher than the same period last year. Withheld & FICA taxes were up $285 billion (21%) due to the recovery's impact on wages and employment, the required repayment by early January 2022 of 50% of the employer portion of the FICA taxes deferred under the CARES Act between March and December 2020, and the impact of the deferral lowering FY2021 FICA taxes received in October through December of 2020. Non-withheld and SECA taxes were $51 billion (22%) higher, reflecting growth in nominal income, a rebounding economy, and potentially the processing of backlogged returns. Gross corporate taxes were $20 billion (16%) higher due to higher corporate profits. Federal Reserve earnings were $19 billion (47%) higher. Miscellaneous and other social insurance was $17 billion (47%) higher due primarily to large Unemployment Trust Fund deposits. Gross excise taxes were $7 billion (21%) higher than last year at this point including $3 billion (16%) increases in highway, and $2 billion (52%) increases in airport and airway exercise taxes as driving and travel increased with the recovery. Customs duties were up $11 billion (27%) due to the recovery in international commerce. Individual refunds were $5 billion (-4%) lower than last year. Corporate refunds were $2 billion (-9%) lower, which brought them more in-line with pre-COVID levels. Fiscal-year-to-date, receipts were 17.2% of GDP, compared to 15.2% for the same period last year.

- Through Q2 FY2022, outlays were $2.79 trillion, $620 billion (-18%) lower than the same period last year. Department of Treasury outlays were $326 billion (-38%) lower due to lower Economic Impact Payments and Covid relief payments of $510 billion, partially offset by higher tax credits of $86 billion in Child Tax Credits, $15 billion in earned income tax credits, and $13 billion in refundable premium tax credits and higher interest on the public debt of $62 billion. Department of Labor outlays were $184 billion (-87%) lower due to the reduction in unemployment and expiration of expanded benefits attributable to the COVID-19 pandemic. Small Business Administration outlays were $165 billion (-90%) lower primarily due to lower subsidy costs in FY2022 for the Paycheck Protection Program. Other outlays were $75 billion (-28%) lower due to the proceeds from a Federal Communications Commission spectrum auction being booked in January 2022 ($81 billion) as a negative outlay. Health and Human Services outlays were $76 billion (11%) higher mainly due to increases in Medicare and Medicaid. Social Security Administration outlays were $34 billion (6%) higher due to increases in the number of beneficiaries and in the average benefit amount. Department of Education outlays were $18 billion (35%) higher due to increased spending on emergency grants to the Education Stabilization Fund to support K-12 and postsecondary education. Fiscal-year-to-date, outlays were 22.6% of GDP, compared to 30.5% for the same period last year.

<u>*Projected Net Marketable Borrowing*</u>

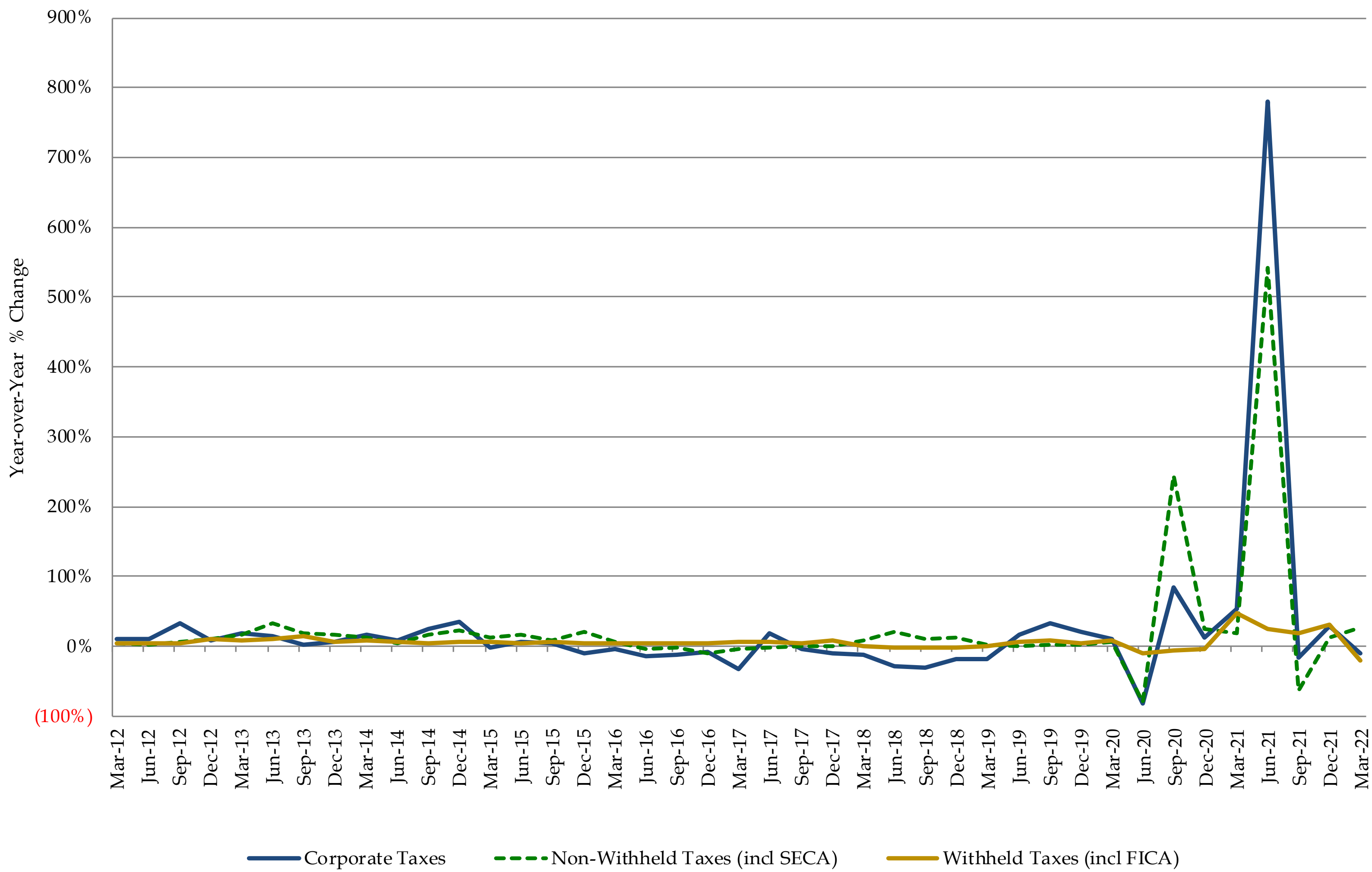
- Treasury's Office of Fiscal Projections (OFP) currently forecasts a net privately-held marketable borrowing need of -$26 billion for Q3 FY2022, with an end-of-June cash balance of $800 billion. For Q4 FY2022, OFP forecasts a net privately-held marketable borrowing need of $182 billion and end-of-September cash balance of $650 billion. These borrowing estimates are based upon current law and do not include any assumptions for the impact of additional legislation that may be passed. These estimates do not include any assumptions for SOMA redemptions pending Federal Reserve official announcement.

<u>*Demand for Treasury Securities*</u>

- Bid-to-cover ratios for all securities were within historical ranges over the last quarter.
- Foreign demand remained stable.

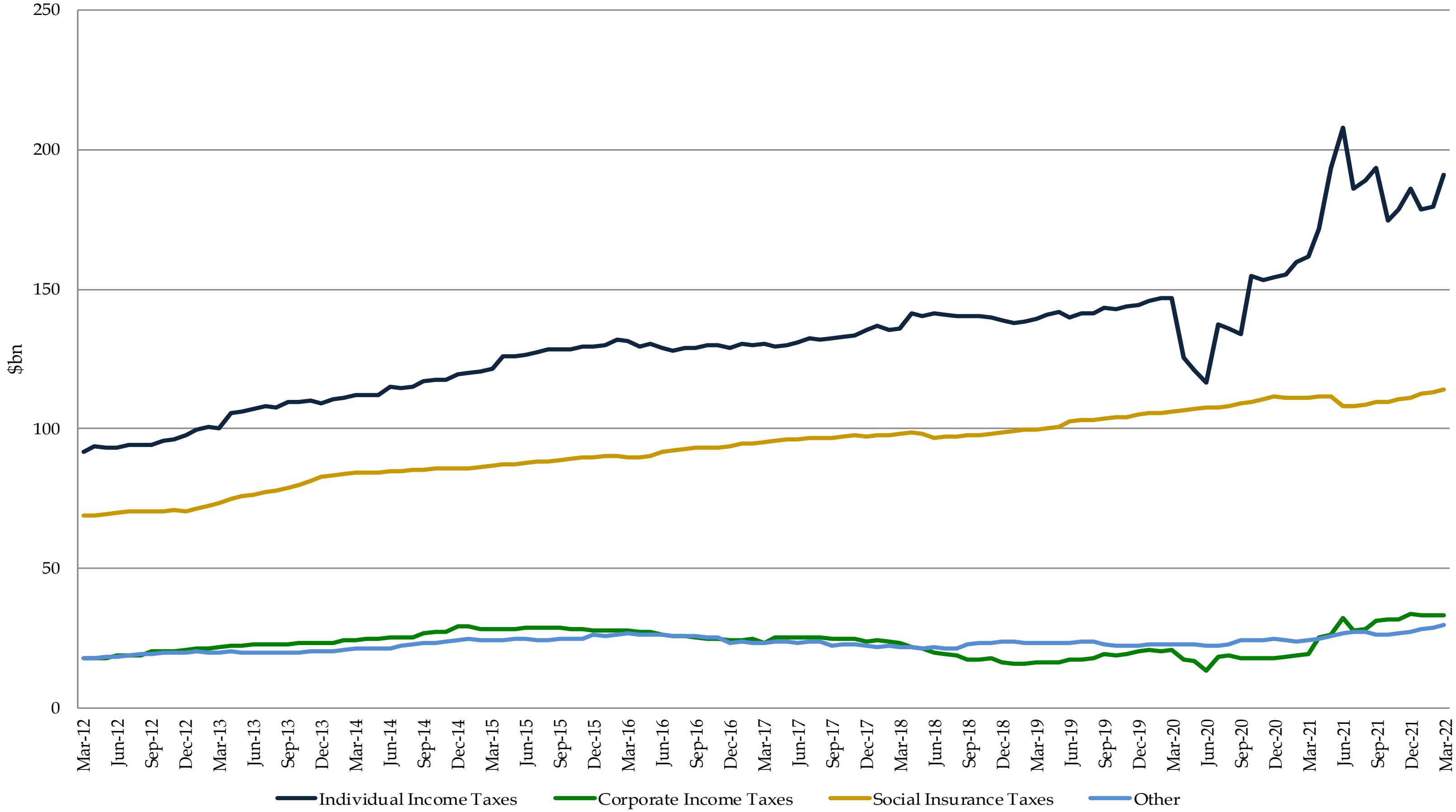
Section II:
Fiscal

Quarterly Tax Receipts



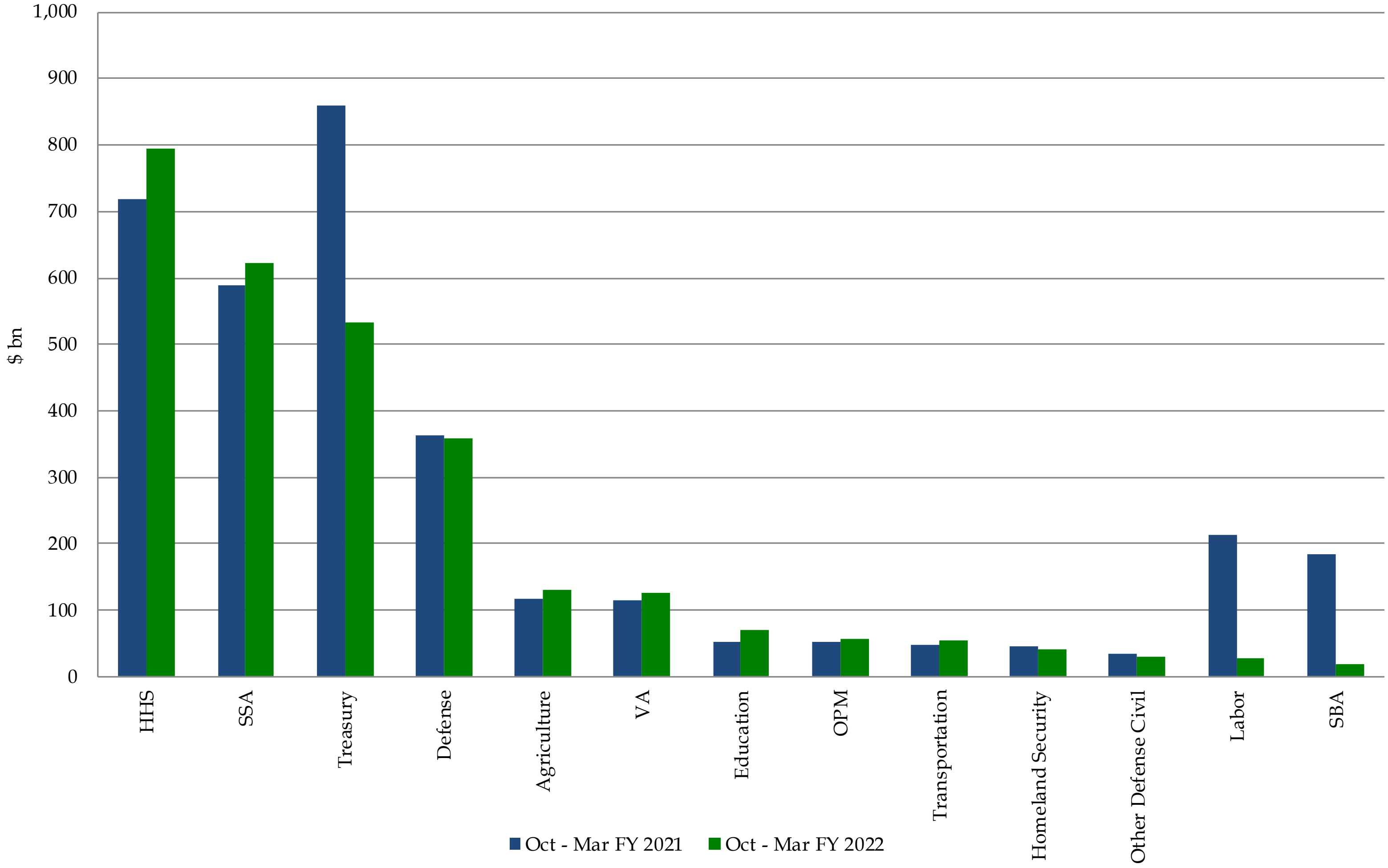
Quarterly tax receipts for Q4 FY2020 reflect the adjustment of April and June 2020 tax deadlines to July 15th, 2020.
Source: United States Department of the Treasury

Monthly Receipt Levels
(12-Month Moving Average)

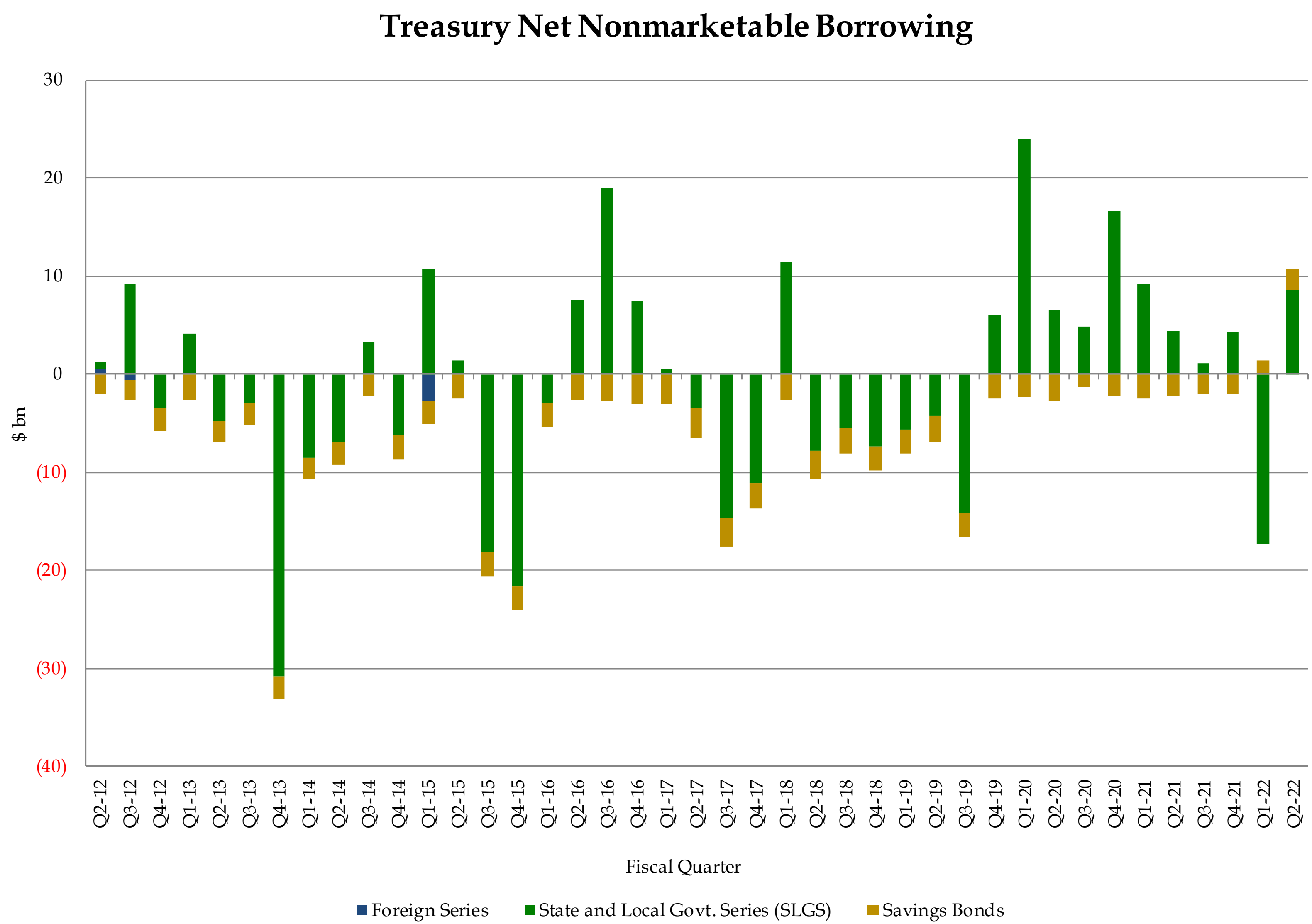


Quarterly tax receipts for Q4 FY2020 reflect the adjustment of April and June 2020 tax deadlines to July 15th, 2020. Individual Income Taxes include withheld and non-withheld. Social Insurance Taxes include FICA, SECA, RRTA, UTF deposits, FUTA and RUIA. Other includes excise taxes, estate and gift taxes, customs duties and miscellaneous receipts.
Source: United States Department of the Treasury

Largest Outlays

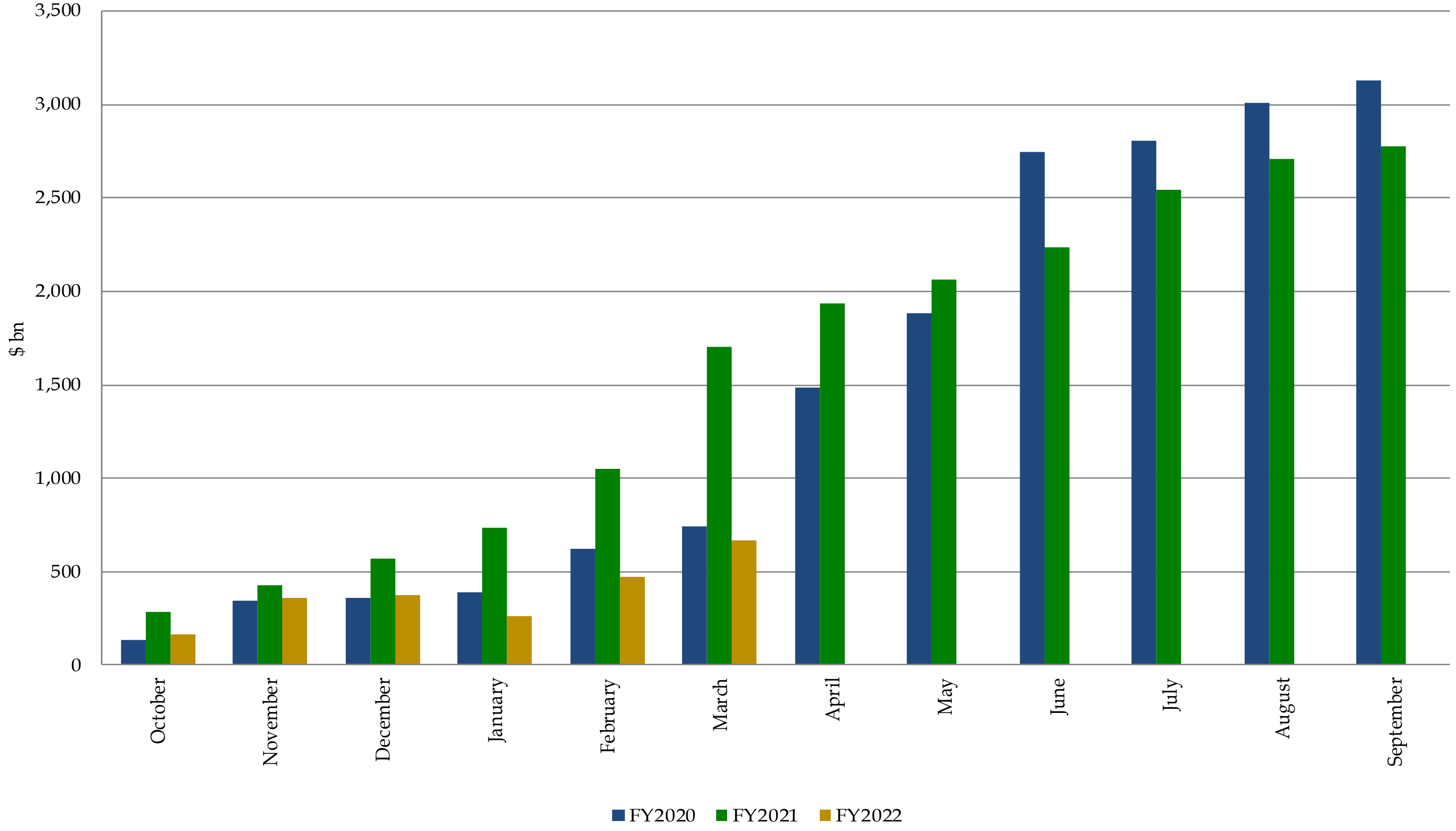


Source: United States Department of the Treasury



Source: United States Department of the Treasury

Cumulative Budget Deficits by Fiscal Year



Source: United States Department of the Treasury

Privately-Held Net Marketable Borrowing Definition and Calculation Example

FY 2018 Actual Deficits and Privately-Held Net Marketable Borrowing, in $ billions

	FY 2018 Actual
FY 2018 Deficit	779
FY 2018 + Change in Cash Balance	225
FY 2018 + Other Means of Financing (e.g. Direct Loans)	35
FY 2018 **= Total Net Marketable Borrowing**	1,039
FY 2018 + SOMA Redemption	156
FY 2018 **= Privately-Held Net Marketable Borrowing**	1,195

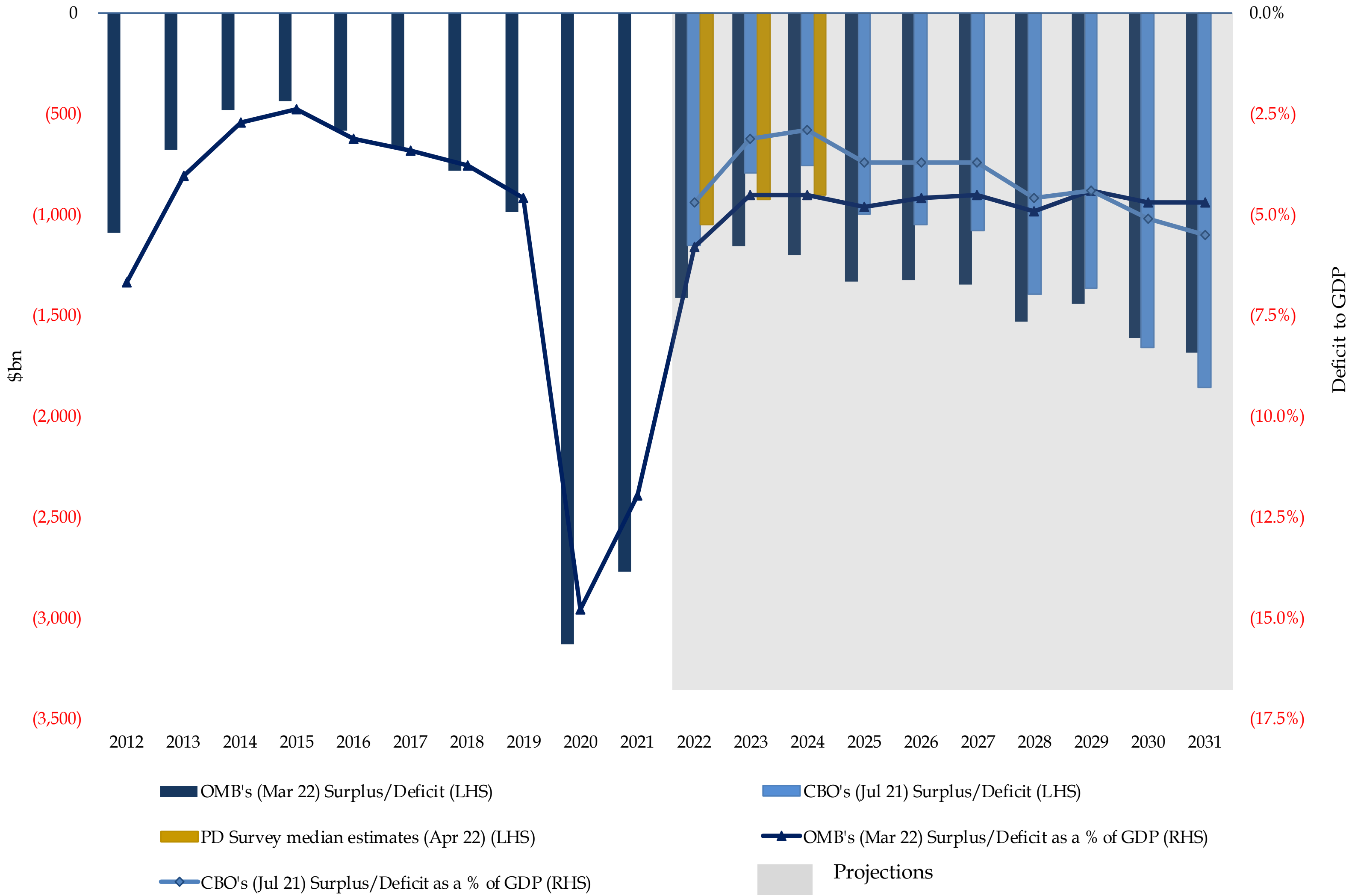
- Actual deficits are sourced from the Monthly Treasury Statement.
- Actual change in cash balance is sourced from the Daily Treasury Statement. Change in cash balance = cash balance of Sept 28, 2018 - cash balance of Sept 29, 2017
- Other Means of Financing include cash flows associated with federal credit programs, such as those related to student loans and loans to small businesses.
- Privately-Held Net Marketable Borrowing = Total Net Marketable Borrowing + SOMA Redemption
- SOMA redemption is the amount that the Federal Reserve redeems securities that Treasury has to replace with privately-held marketable borrowing. Actual SOMA redemptions amounts is from the Sources and Uses Reconciliation Table.
- Actual Privately-Held Net Marketable Borrowing is from the Sources and Uses Reconciliation Table.

FY 2022-2024 Deficits and Privately-Held Net Marketable Borrowing Estimates*, in $ billions

	Primary Dealer[1]			OFP[2]	OMB[3]	CBO[4]
	25th	Median	75th			
FY 2022 Deficit	1,000	1,050	1,135		1,415	1,153
FY 2023 Deficit	800	925	1,045		1,154	789
FY 2024 Deficit	780	900	1,011		1,200	753
FY 2022 Change in Cash Balance	435	485	485	435	535	285**
FY 2023 Change in Cash Balance	0	0	0		0	0
FY 2024 Change in Cash Balance	0	0	0		0	0
FY 2022 Total Net Marketable Borrowing				1,513	2,552	1,380
FY 2023 Total Net Marketable Borrowing					1,197	764
FY 2024 Total Net Marketable Borrowing					1,238	803
FY 2022 SOMA Redemption	180	180	240			
FY 2023 SOMA Redemption	719	720	720			
FY 2024 SOMA Redemption	388	715	720			
FY 2022 Privately-Held Net Marketable Borrowing	1,560***	1,700***	1,965***	1,693***	2,632***	1,710***
FY 2023 Privately-Held Net Marketable Borrowing	1,363	1,560	1,795		1,917***	1,484***
FY 2024 Privately-Held Net Marketable Borrowing	1,231	1,475	1,742		1,953***	1,518***
Estimates as of:		Apr-22		May-22	Mar-22	Jul-21

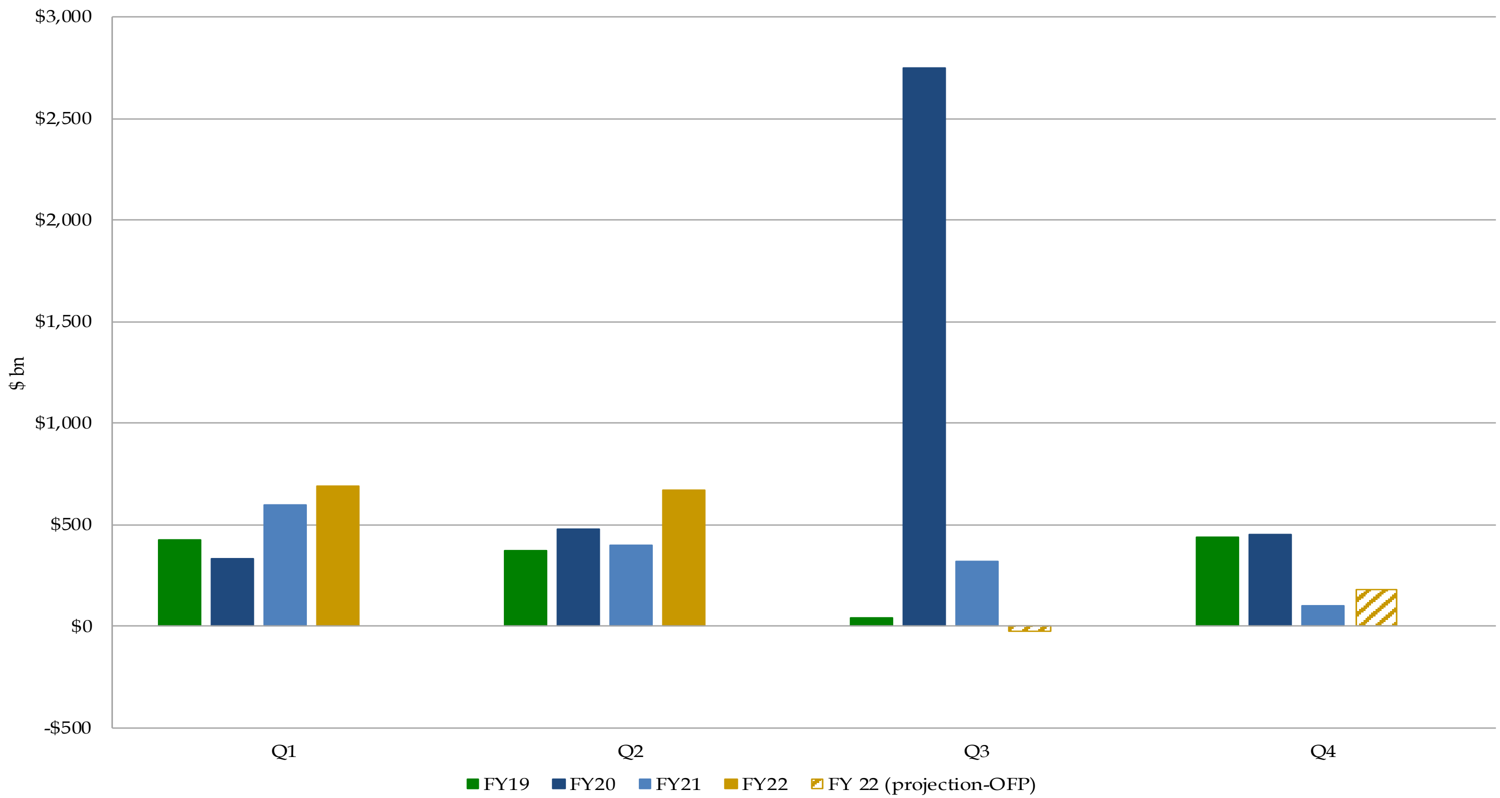
[1] Estimates represent the medians/interquartile ranges from the primary dealer survey in April 2022.
[2] Treasury's Office of Fiscal Projections (OFP) borrowing estimates announced on May 2, 2022.
[3] OMB projections are using estimates are from Table S-1 of "Budget of The U.S. Government Fiscal Year 2023," March 2022.
[4] CBO projections are using estimates are from Table 1 of "An Update to The Budget and Economic Outlook: 2021 to 2031," July 2021.
*Privately-held marketable borrowing excludes rollovers (auction "add-ons") of Treasury securities held in the Federal Reserve System Open Market Account (SOMA) but includes financing required due to SOMA redemptions. Secondary market purchases of Treasury securities by SOMA do not directly change net privately-held marketable borrowing but, all else equal, when the securities mature and assuming the Fed does not redeem any maturing securities, would increase the amount of cash raised for a given privately-held auction size by increasing the SOMA "add-on" amount.
**FY2022 net borrowing estimates from CBO assume that the cash balance is $500 billion at the end of FY2022. The end of FY2021 cash balance was $215 billion, which implies a FY2022 change in cash balance of $285 billion.
***Both OMB and CBO borrowing estimates are normalized to privately-held net borrowing after adding PD survey median SOMA redemption assumptions for FY22/23/24. OFP borrowing estimate for FY22 is also normalized using the same method. In addition, all the PD, CBO and OMB's FY22 privately-held net borrowing estimates are normalized with OFP's FY22 ending cash balance of $650 billion.

Budget Surplus/Deficit*



*OMB's projections are from OMB's Table S-1 of "Budget of The U.S. Government Fiscal Year 2023," March 2022.
CBO's deficit projections are using estimates from CBO's Table 1 of "An Update to The Budget and Economic Outlook: 2021 to 2031," July 2021.

Privately-Held Net Marketable Borrowing Outlook*



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The Federal Reserve is expected to begin paying down some of its System Open Market Account (SOMA) holdings of Treasury securities as early as May. These estimates do not include any assumptions for SOMA redemptions pending Federal Reserve official announcement. Privately-held net marketable borrowing is expected to increase from these estimates in an amount necessary to offset SOMA redemptions.

Section III: Financing

Assumptions for Financing Section (pages 17 to 21)

- Portfolio and SOMA holdings as of 03/31/2022.
- Estimates assume private announced issuance sizes and patterns remain constant for nominal coupons, TIPS, and FRNs given changes made before the May 2022 refunding, while using total bills outstanding of ~$3.93 trillion.
- The principal on the TIPS securities was accreted to each projection date based on market ZCIS levels as of 03/31/2022.
- No attempt was made to account for future financing needs.
- Privately-held net marketable borrowing excludes rollovers (auction "add-ons") of Treasury securities held in the Federal Reserve System Open Market Account (SOMA) but includes financing required due to SOMA redemptions. Secondary market purchases of Treasury securities by SOMA do not directly change net privately-held marketable borrowing but, all else equal, when the securities mature and assuming the Fed does not redeem any maturing securities, would increase the amount of cash raised for a given privately-held auction size by increasing the SOMA "add-on" amount.

Sources of Privately-Held Financing in FY22 Q2

January - March 2022	
Net Bill Issuance	159
Net Coupon Issuance	509
Subtotal: Net Marketable Borrowing	668
Ending Cash Balance	652
Beginning Cash Balance	406
Subtotal: Change in Cash Balance	245
Net Implied Funding for FY 2022 Q2*	422

	January - March 2022 Bill Issuance			Fiscal Year-to-Date Bill Issuance		
Security	Gross	Maturing	Net	Gross	Maturing	Net
4-Week	615	545	70	920	820	100
8-Week	490	415	75	830	785	45
13-Week	774	699	75	1,473	1,365	108
26-Week	657	633	24	1,287	1,335	(48)
52-Week	102	102	(0)	238	238	(0)
CMBs						
17-Week	490	455	35	975	875	100
CMBs	0	120	(120)	675	765	(90)
Bill Subtotal	3,128	2,969	159	6,398	6,183	215

	January - March 2022 Coupon Issuance			Fiscal Year-to-Date Coupon Issuance		
Security	Gross	Maturing	Net	Gross	Maturing	Net
2-Year FRN	70	56	14	146	110	36
2-Year	156	95	61	330	194	136
3-Year	150	79	71	318	154	164
5-Year	159	72	87	336	157	179
7-Year	150	73	77	327	150	177
10-Year	107	28	79	220	67	153
20-Year	55	0	55	122	0	122
30-Year	65	0	65	136	9	127
5-Year TIPS	0	0	0	36	0	36
10-Year TIPS	30	40	(10)	44	40	4
30-Year TIPS	9	0	9	9	0	9
Coupon Subtotal	951	442	509	2,024	882	1,142

Total	4,079	3,411	668	8,422	7,065	1,357

*By adjusting the change in cash balance, Treasury arrives at the net implied funding number.

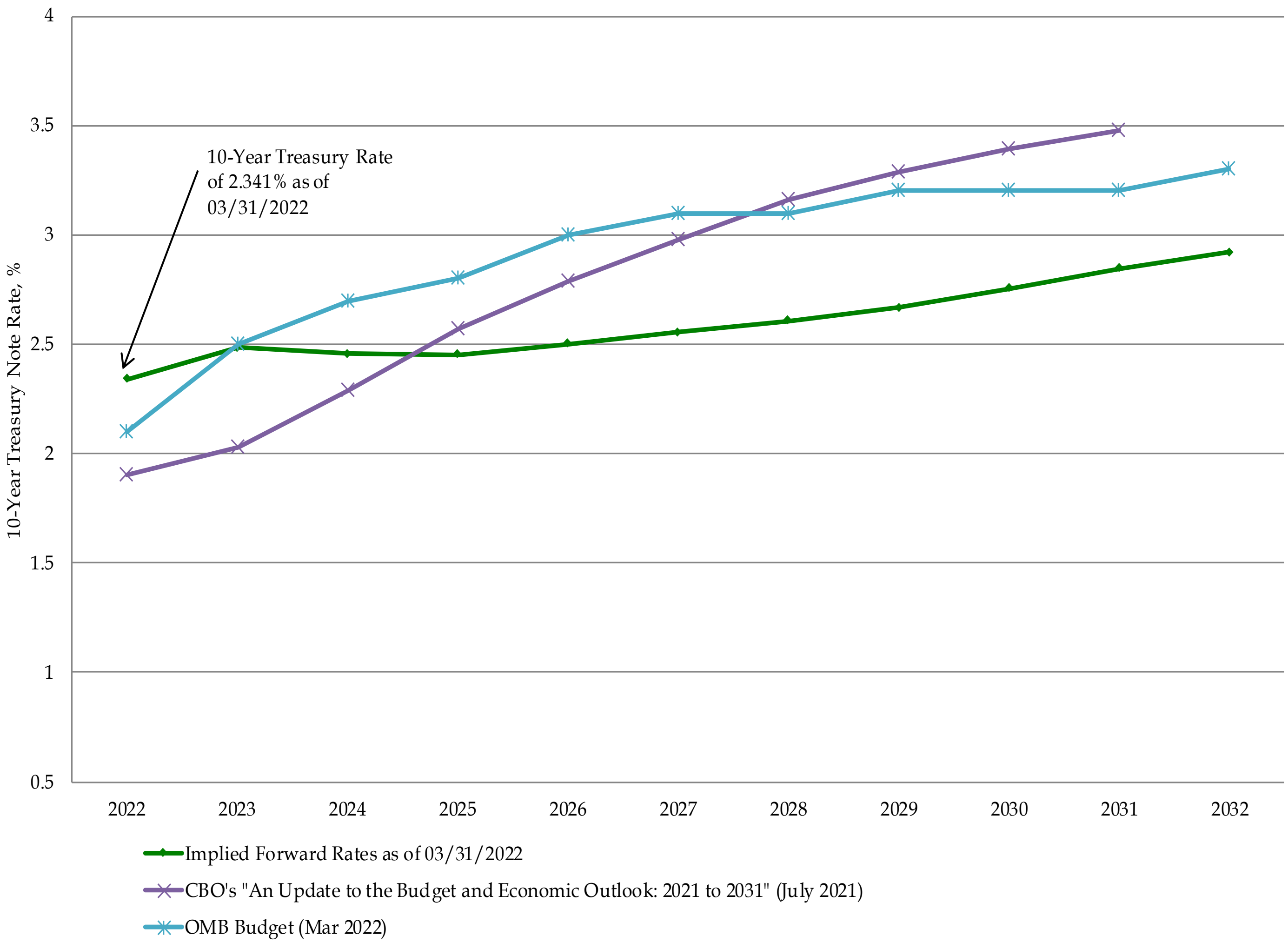
Sources of Privately-Held Financing in FY22 Q3

April - June 2022	
Assuming Constant Coupon Issuance Sizes*	
Treasury Announced Net Marketable Borrowing**	(26)
Net Coupon Issuance	435
Implied Change in Bills	(461)

	April - June 2022 Coupon Issuance			Fiscal Year-to-Date Coupon Issuance		
Security	Gross	Maturing^	Net	Gross	Maturing	Net
2-Year FRN	68	62	6	214	172	42
2-Year	144	111	33	474	305	169
3-Year	138	73	65	456	227	229
5-Year	147	78	69	483	235	248
7-Year	132	78	54	459	228	231
10-Year	105	23	82	325	91	234
20-Year	51	0	51	173	0	173
30-Year	63	0	63	199	9	190
5-Year TIPS	38	40	(2)	74	40	34
10-Year TIPS	14	0	14	58	40	18
30-Year TIPS	0	0	0	9	0	9
Coupon Subtotal	900	465	435	2,924	1,347	1,577

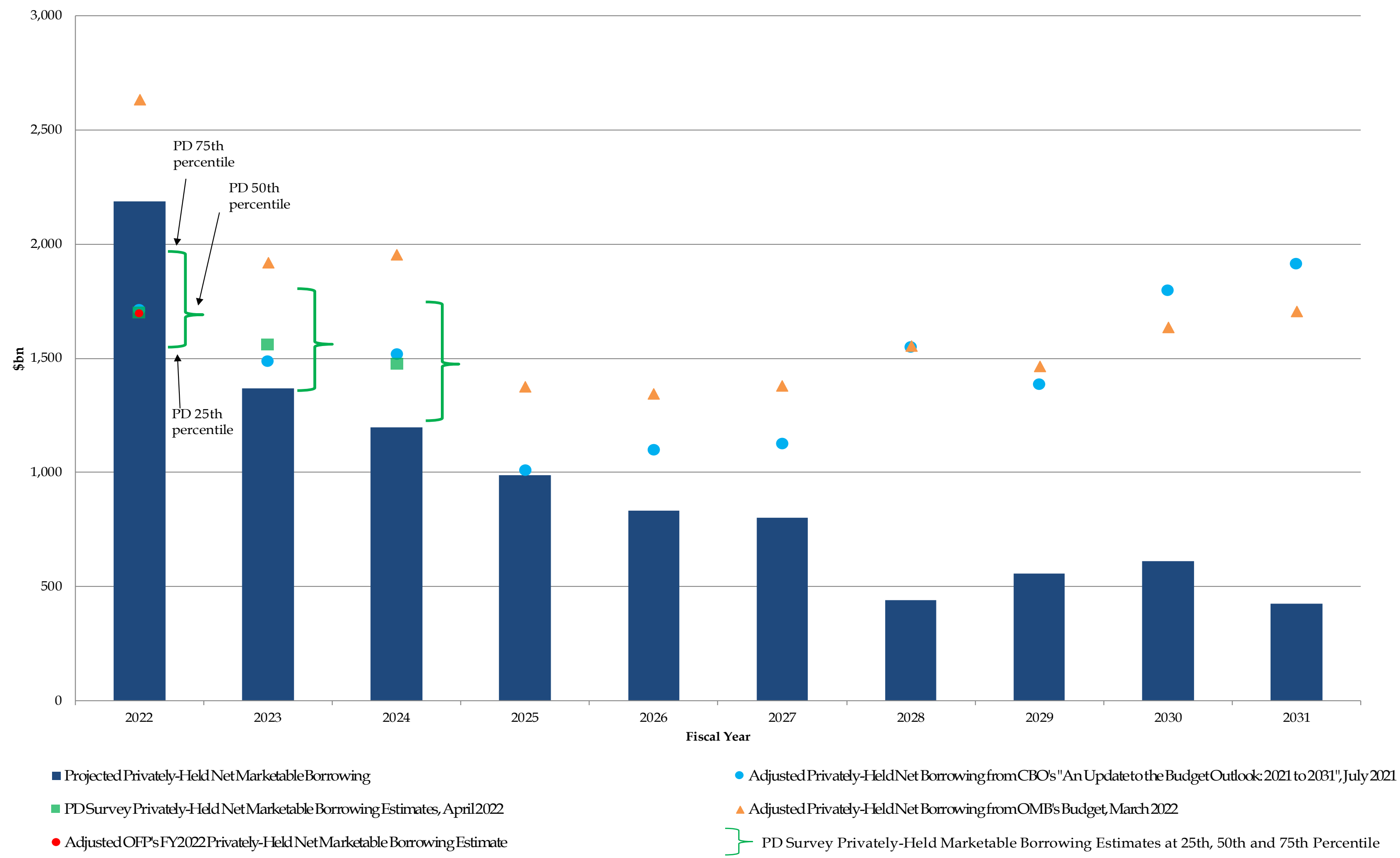
* Keeping announced issuance sizes and patterns constant for nominal coupons, TIPS, and FRNs based on changes made before the May 2022 refunding.
** Assumes an end-of-June 2022 cash balance of $800 billion versus a beginning-of-April 2022 cash balance of $652 billion.
Financing Estimates released by the Treasury can be found here: http://www.treasury.gov/resource-center/data-chart-center/quarterly-refunding/Pages/Latest.aspx
^ Maturing amounts could change based on future Federal Reserve purchases.

Interest Rate Assumptions: 10-Year Treasury Note



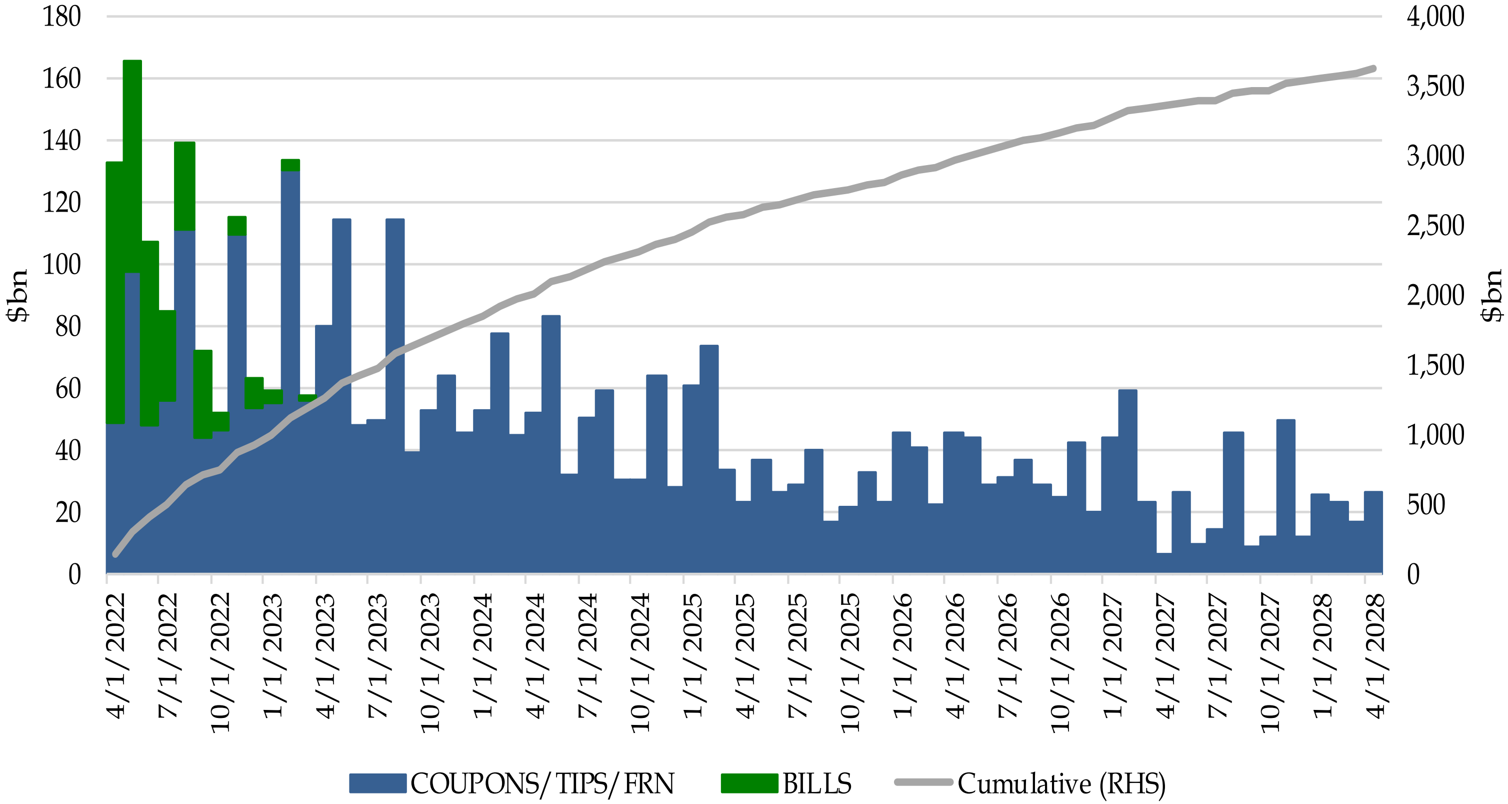
Projected Privately-Held Net Marketable Borrowing

Assuming Private Coupon Issuance & Total Bills Outstanding Remain Constant as of 03/31/2022*



*Treasury's latest primary dealer survey median/interquartile range estimates can be found on page 12. OMB's borrowing projections are from Table S-1 of "Budget of the U.S. Government Fiscal Year 2023," March 2022. CBO's borrowing projections are using estimates from Table 1 of CBO's "An Update to The Budget and Economic Outlook: 2021 to 2031," July 2021. Both OMB and CBO borrowing estimates are normalized to privately-held net borrowing after adding PD survey median SOMA redemption assumptions for FY22/23/24. OFP borrowing estimate for FY22 is also normalized using the same method. FY2022 net borrowing estimates from PD, OMB and CBO are normalized with OFP's FY22 ending cash balance of $650 billion (details can be found on page 12).

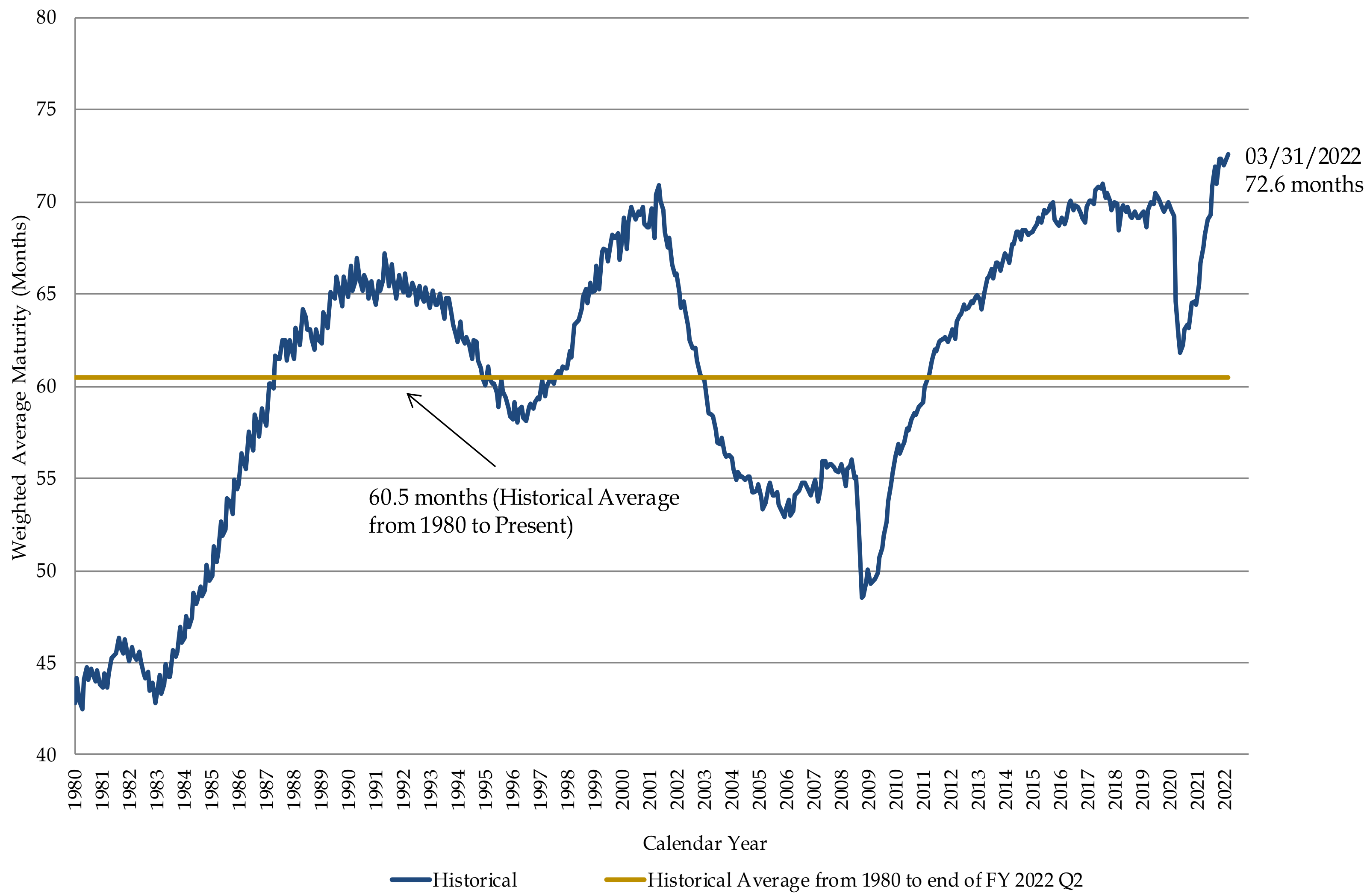
Federal Reserve SOMA Treasury Holdings Maturity Profile as of 3/31/2022

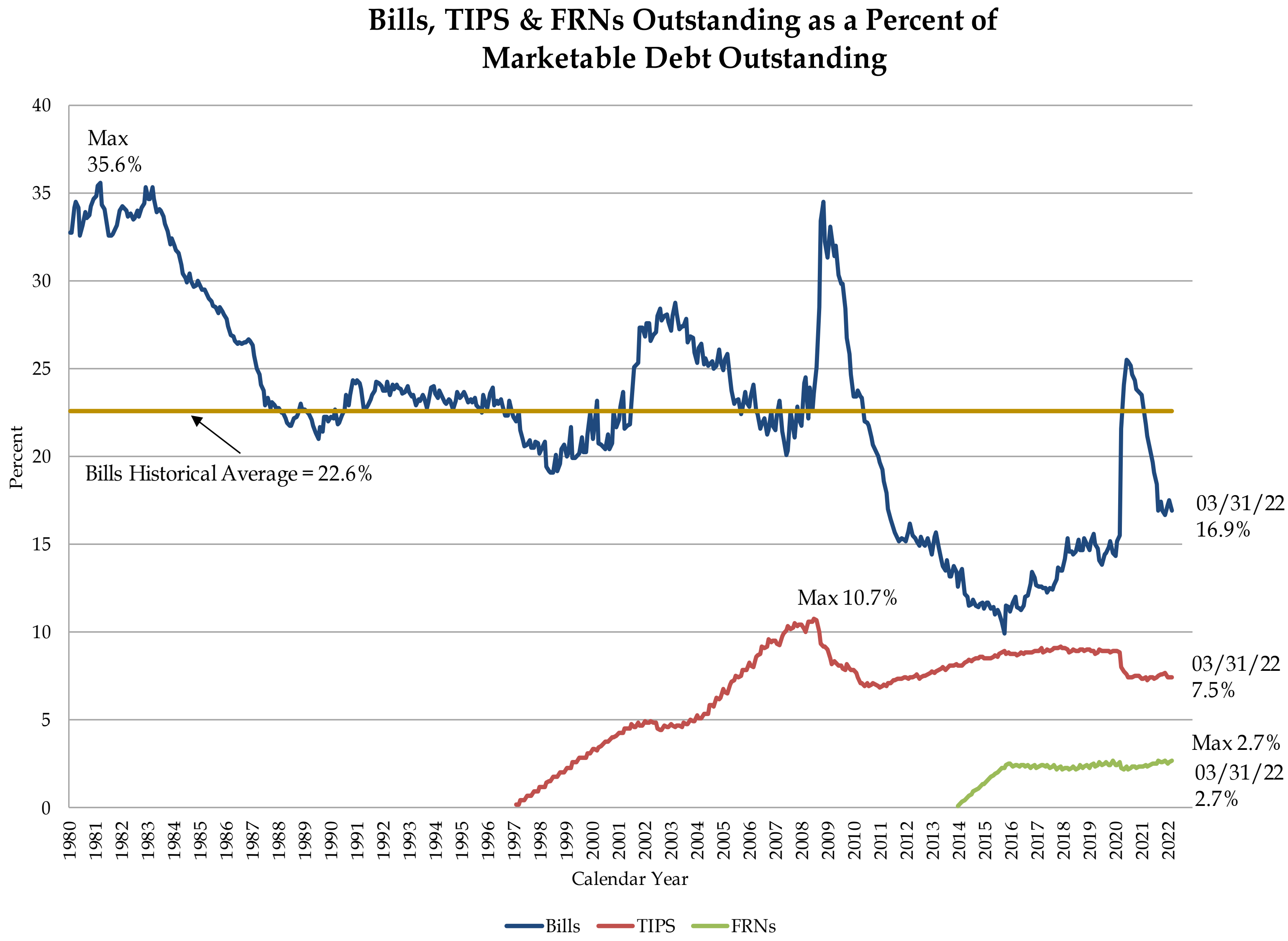


The figures do not include any assumptions for Federal Reserve balance sheet normalization.

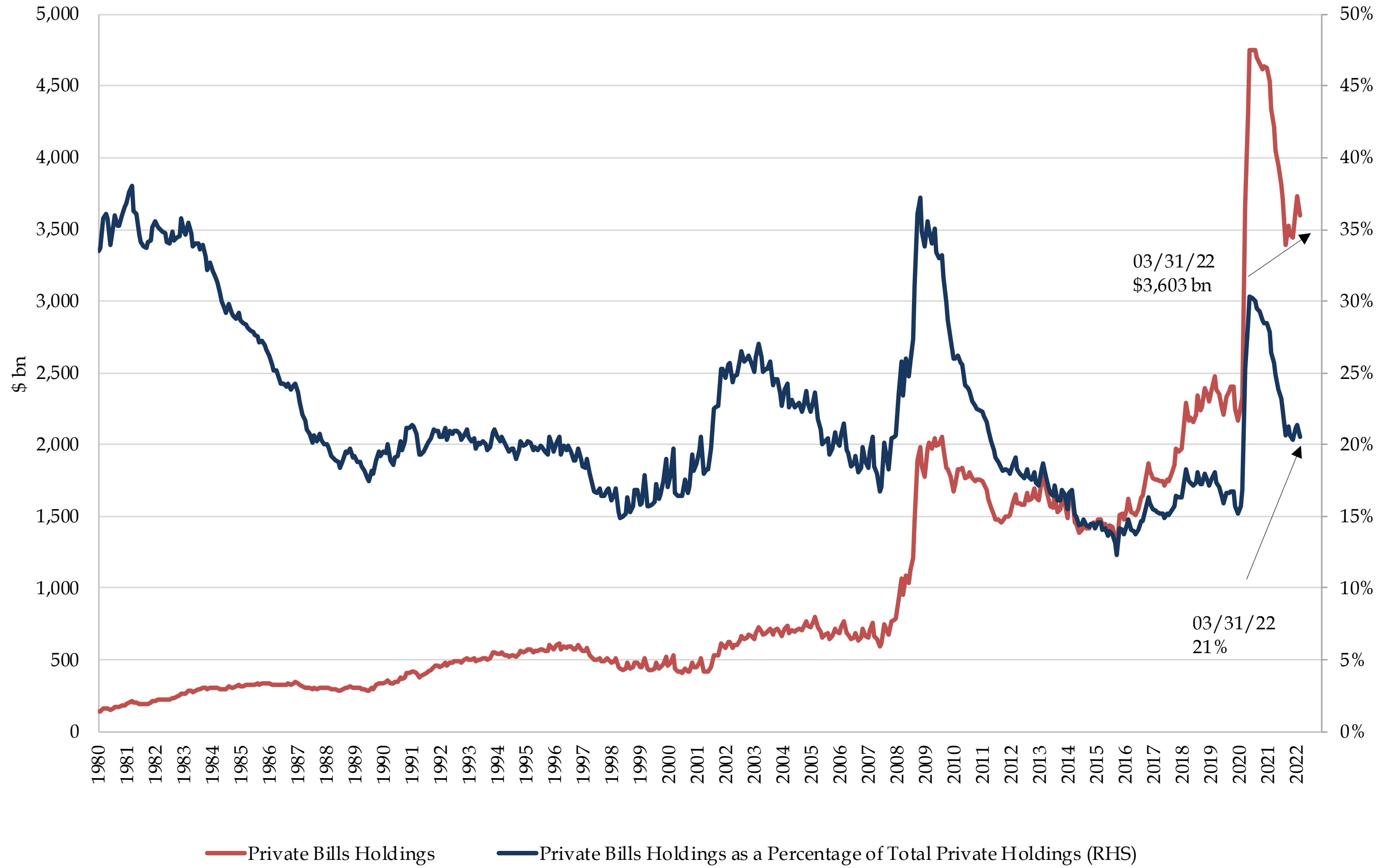
Section IV:
Portfolio Metrics

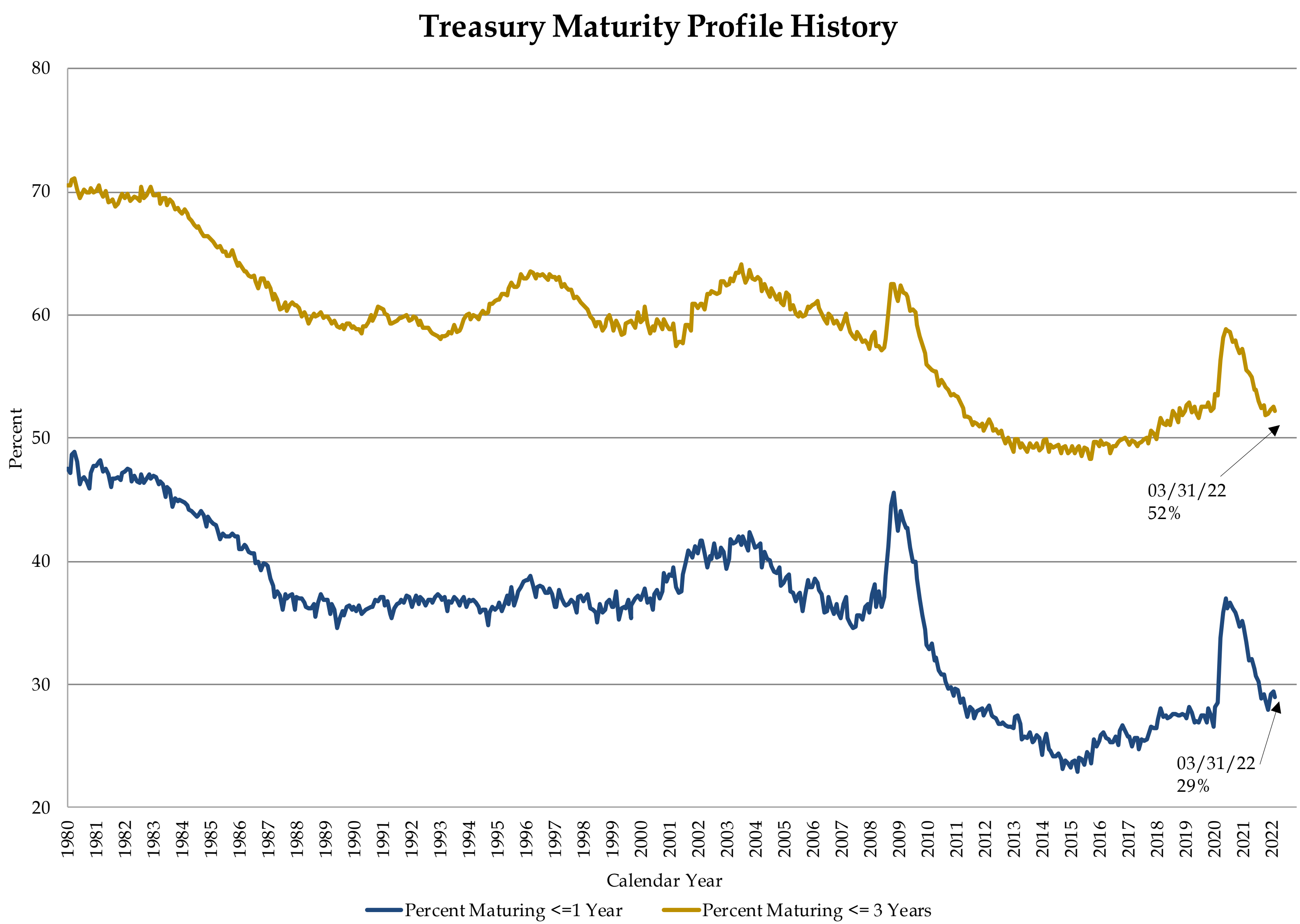
Historical Weighted Average Maturity of Marketable Debt Outstanding




Bills, TIPS & FRNs Outstanding as a Percent of
Marketable Debt Outstanding
Max
35.6%
Bills Historical Average = 22.6%
Max 10.7%
03/31/22
16.9%
03/31/22
7.5%
Max 2.7%
03/31/22
2.7%
Percent
Calendar Year
Bills
TIPS
FRNs

Private Bills Holdings as a Percentage of Total Private Holdings





Treasury Maturity Profile History
80
70
60
50
40
30
20
Percent
03/31/22
52%
03/31/22
29%
1980
1981
1982
1983
1984
1985
1986
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2014
2015
2016
2017
2018
2019
2020
2021
2022
Calendar Year
Percent Maturing <=1 Year
Percent Maturing <= 3 Years

Section V: Demand

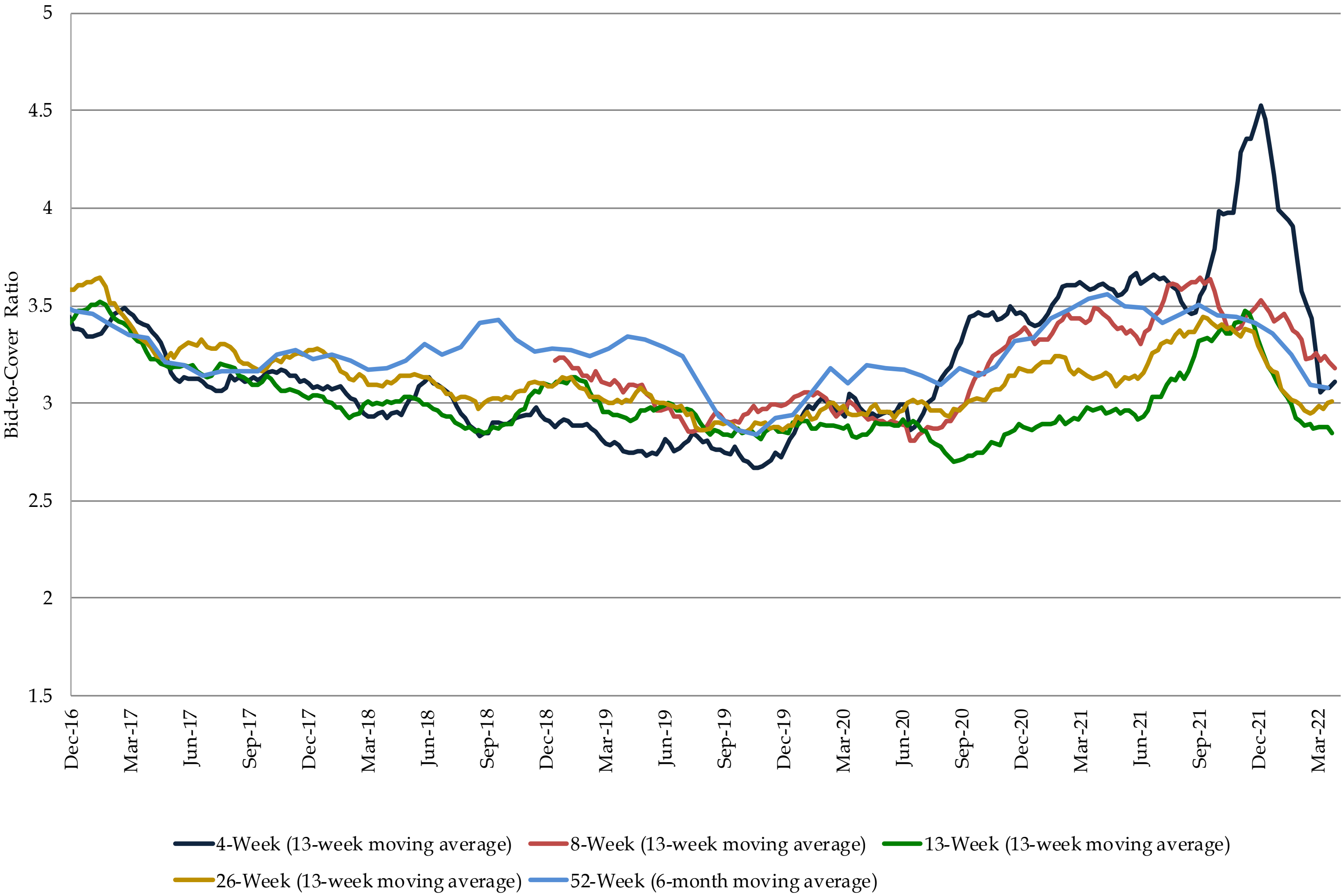
Summary Statistics for Fiscal Year 2022 Q2 Auctions

Security Type	Term	Stop Out Rate (%)*	Bid-to-Cover Ratio*	Competitive Awards ($bn)	% Primary Dealer*	% Direct*	% Indirect*	Non-Competitive Awards ($bn)	SOMA "Add-Ons" ($bn)	10-Year Equivalent ($bn)**
Bill	4-Week	0.09	3.12	591.15	41.85	5.51	52.64	8.86	47.45	5.50
Bill	8-Week	0.19	3.18	476.77	46.98	7.71	45.31	3.24	38.02	8.80
Bill	13-Week	0.32	2.85	761.34	43.31	7.60	49.09	12.66	87.21	23.77
Bill	26-Week	0.61	3.00	643.87	41.15	9.56	49.29	13.13	74.05	40.29
Bill	52-Week	1.12	3.03	100.55	42.51	15.73	41.76	1.45	8.89	12.18
CMB	17-Week	0.45	3.29	478.20	45.35	8.09	46.56	1.81	-	17.30
Coupon	2-Year	1.62	2.64	154.54	19.96	17.67	62.37	1.46	26.29	39.70
Coupon	3-Year	1.53	2.44	149.52	23.11	15.04	61.85	0.48	46.66	63.43
Coupon	5-Year	1.97	2.51	158.80	16.14	18.17	65.69	0.20	26.79	97.78
Coupon	7-Year	2.04	2.39	149.94	12.52	24.96	62.51	0.06	25.24	126.45
Coupon	10-Year	1.85	2.56	106.96	12.53	16.93	70.54	0.04	33.87	141.06
Coupon	20-Year	2.40	2.54	54.99	14.45	21.01	64.54	0.01	9.22	112.68
Coupon	30-Year	2.26	2.37	64.99	14.84	17.11	68.04	0.01	20.80	207.24
TIPS	10-Year	(0.56)	2.36	29.92	12.94	18.44	68.62	0.08	5.00	38.25
TIPS	30-Year	0.20	2.17	8.99	20.26	9.86	69.88	0.01	1.54	34.17
FRN	2-Year	(0.04)	3.43	69.86	25.11	-	74.89	0.14	3.89	0.07

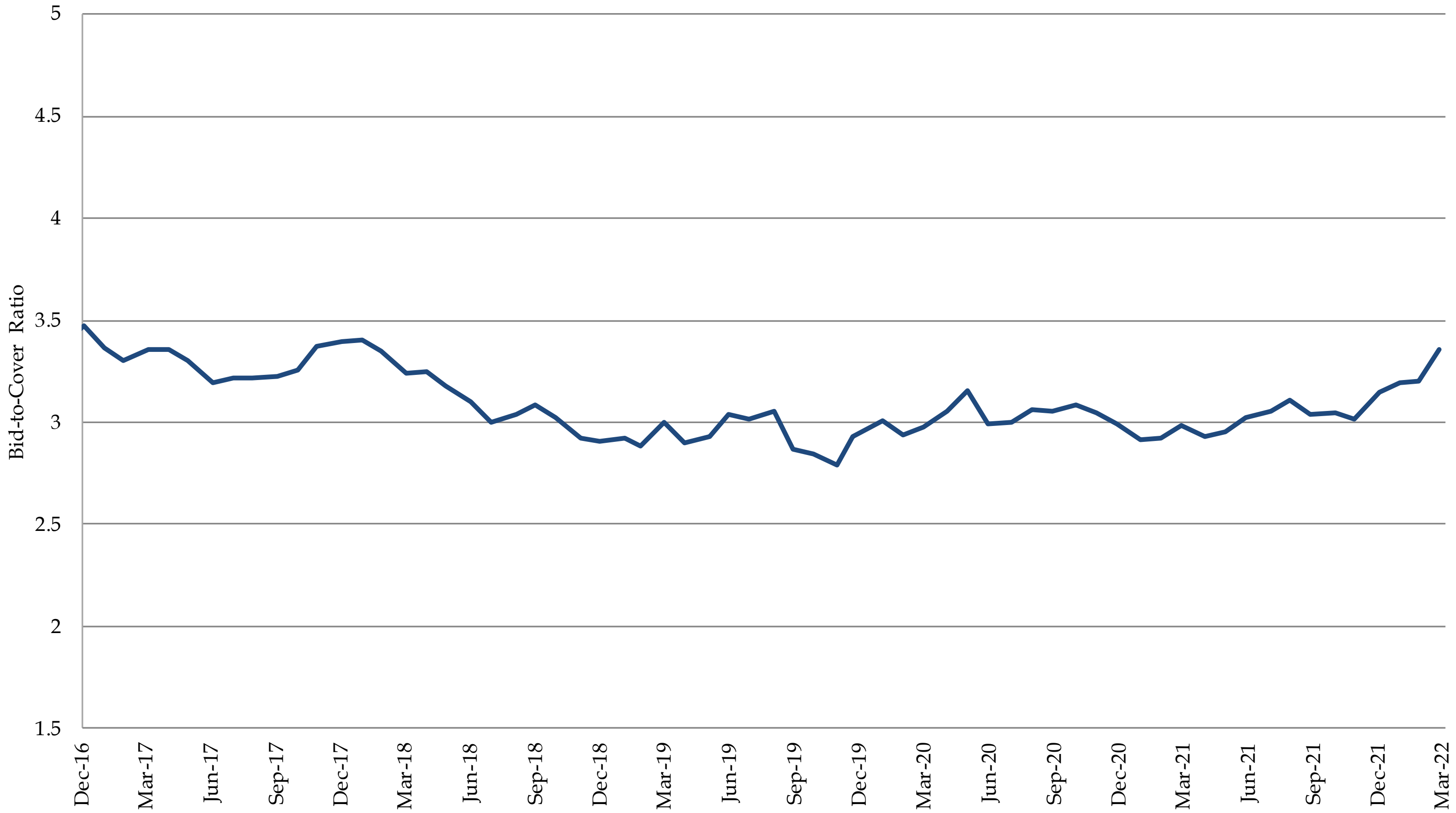
	Stop Out Rate (%)*	Bid-to-Cover Ratio*	Competitive Awards ($bn)	% Primary Dealer*	% Direct*	% Indirect*	Non-Competitive Awards ($bn)	SOMA "Add-Ons" ($bn)	10-Year Equivalent ($bn)**
Total Bills	0.36	3.06	3,051.88	43.44	7.97	48.59	41.15	255.63	107.83
Total Coupons	1.87	2.49	839.74	16.77	18.68	64.55	2.26	188.88	788.34
Total TIPS	(0.39)	2.32	38.91	14.63	16.46	68.92	0.09	6.54	72.41
Total FRN	(0.04)	3.43	69.86	25.11	-	74.89	0.14	3.89	0.07

*Weighted averages of Competitive Awards. FRNs are reported on discount margin basis.
**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.

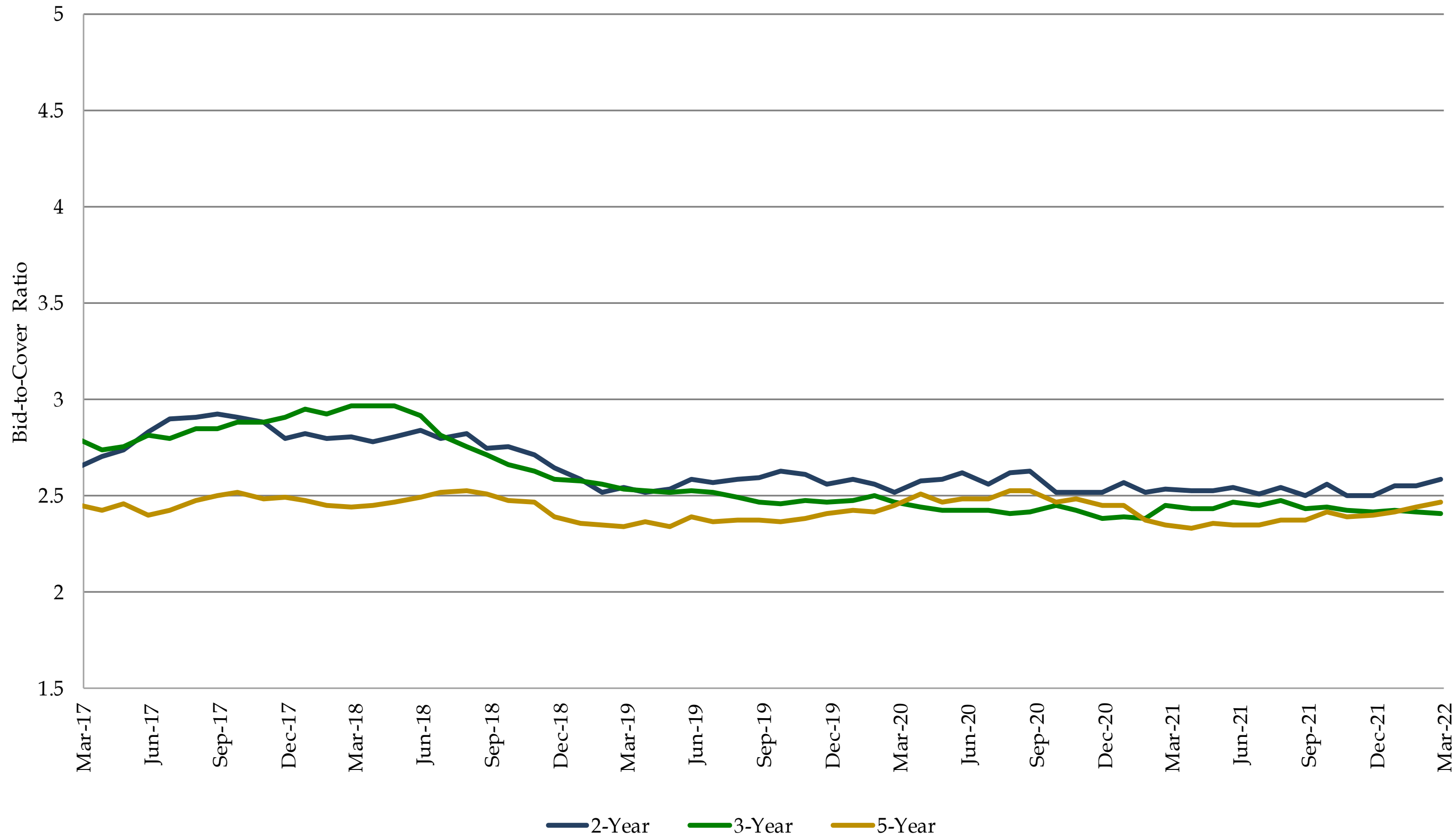
Bid-to-Cover Ratios for Treasury Bills



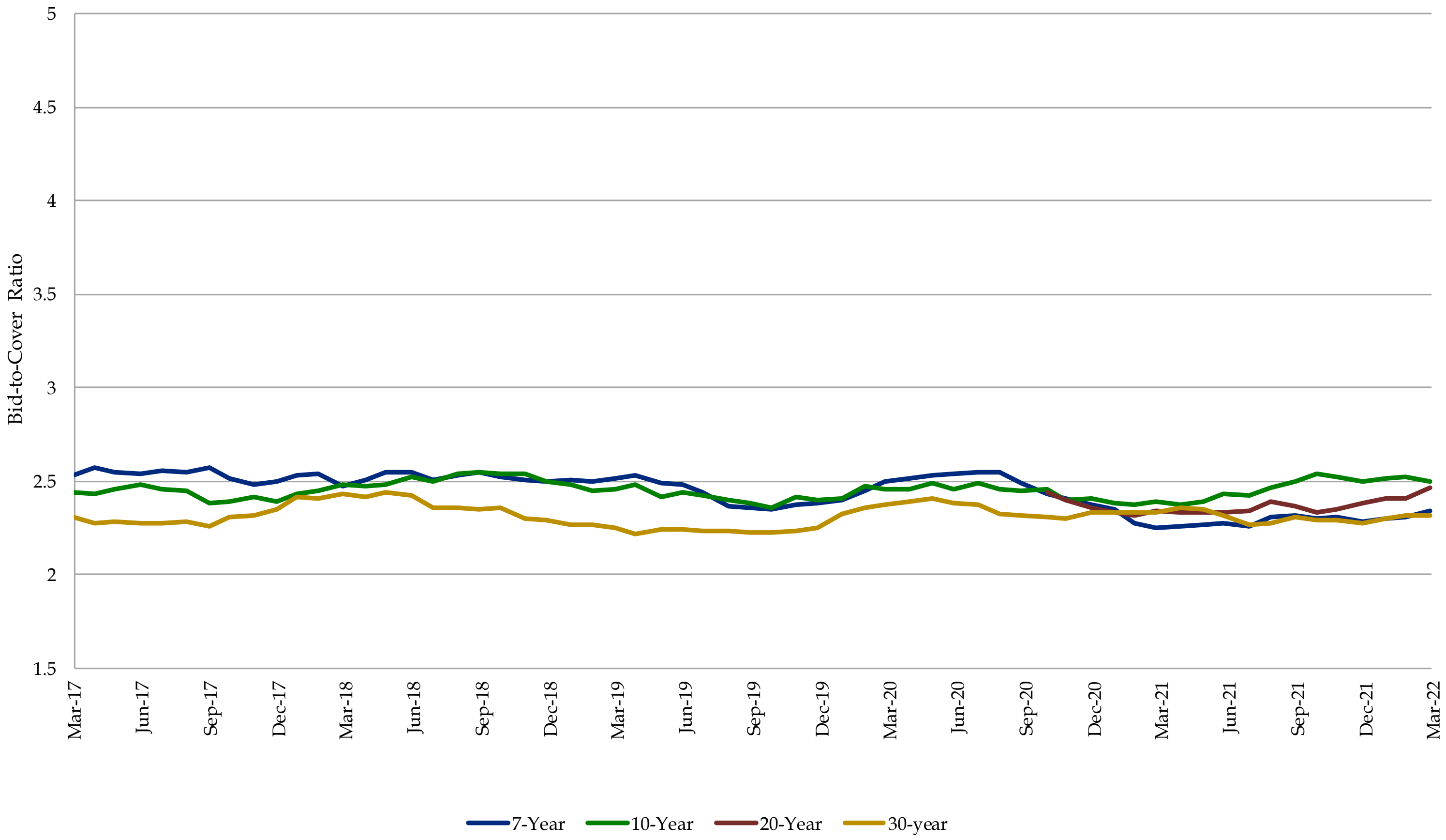
Bid-to-Cover Ratios for FRNs
(6-Month Moving Average)

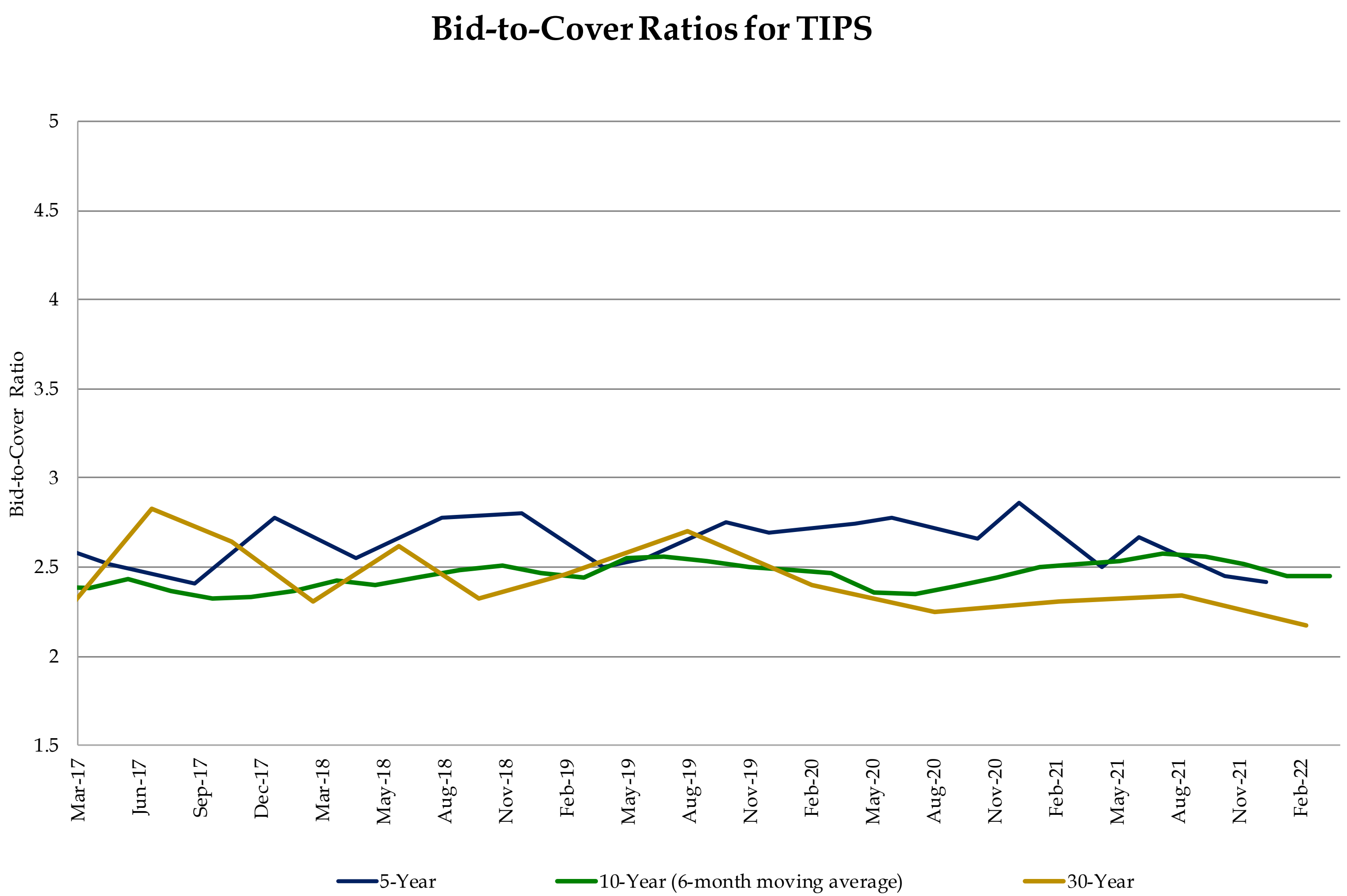


Bid-to-Cover Ratios for 2-, 3-, and 5-Year Nominal Securities (6-Month Moving Average)

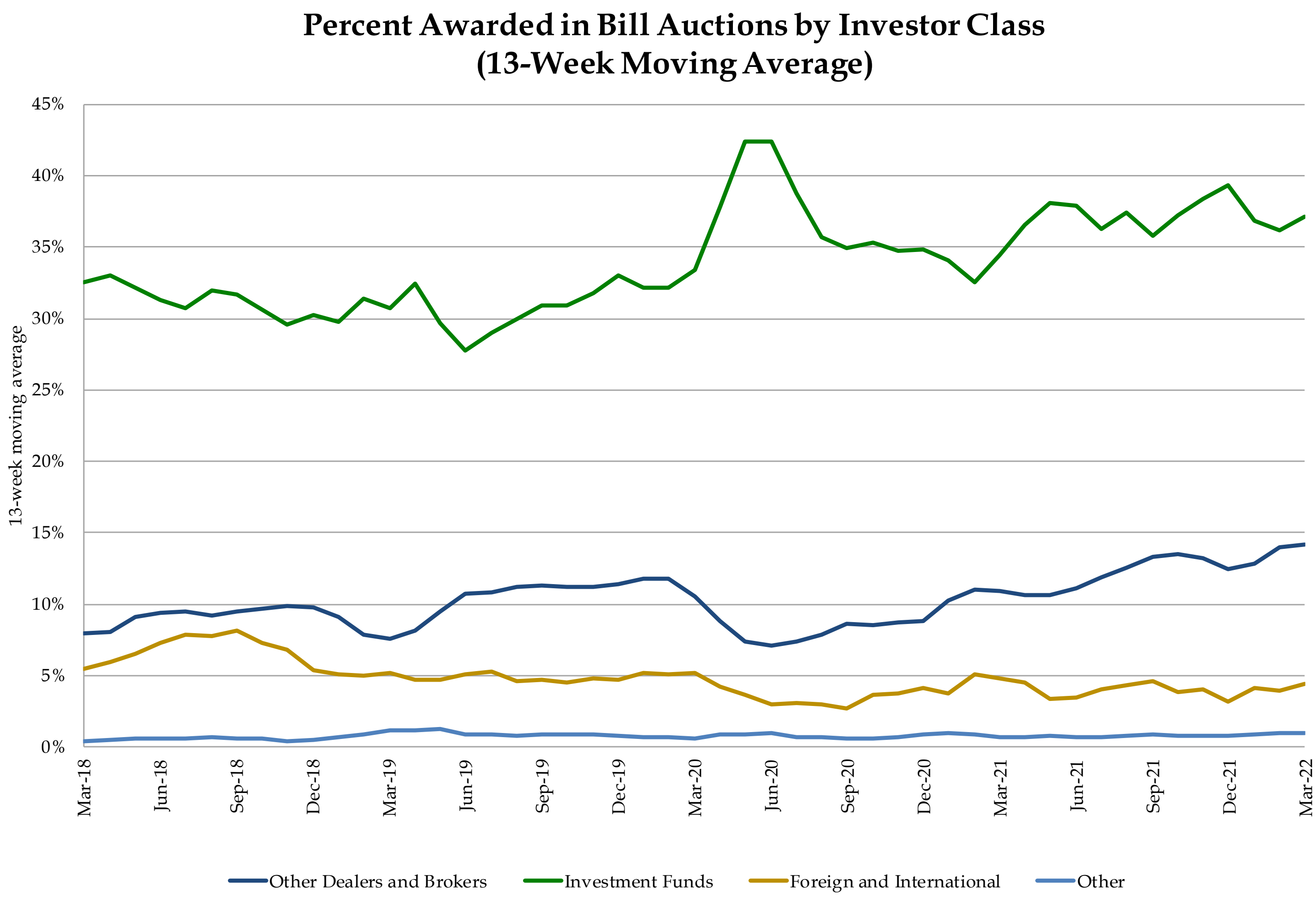


Bid-to-Cover Ratios for 7-, 10-, 20-, and 30-Year Nominal Securities (6-Month Moving Average)

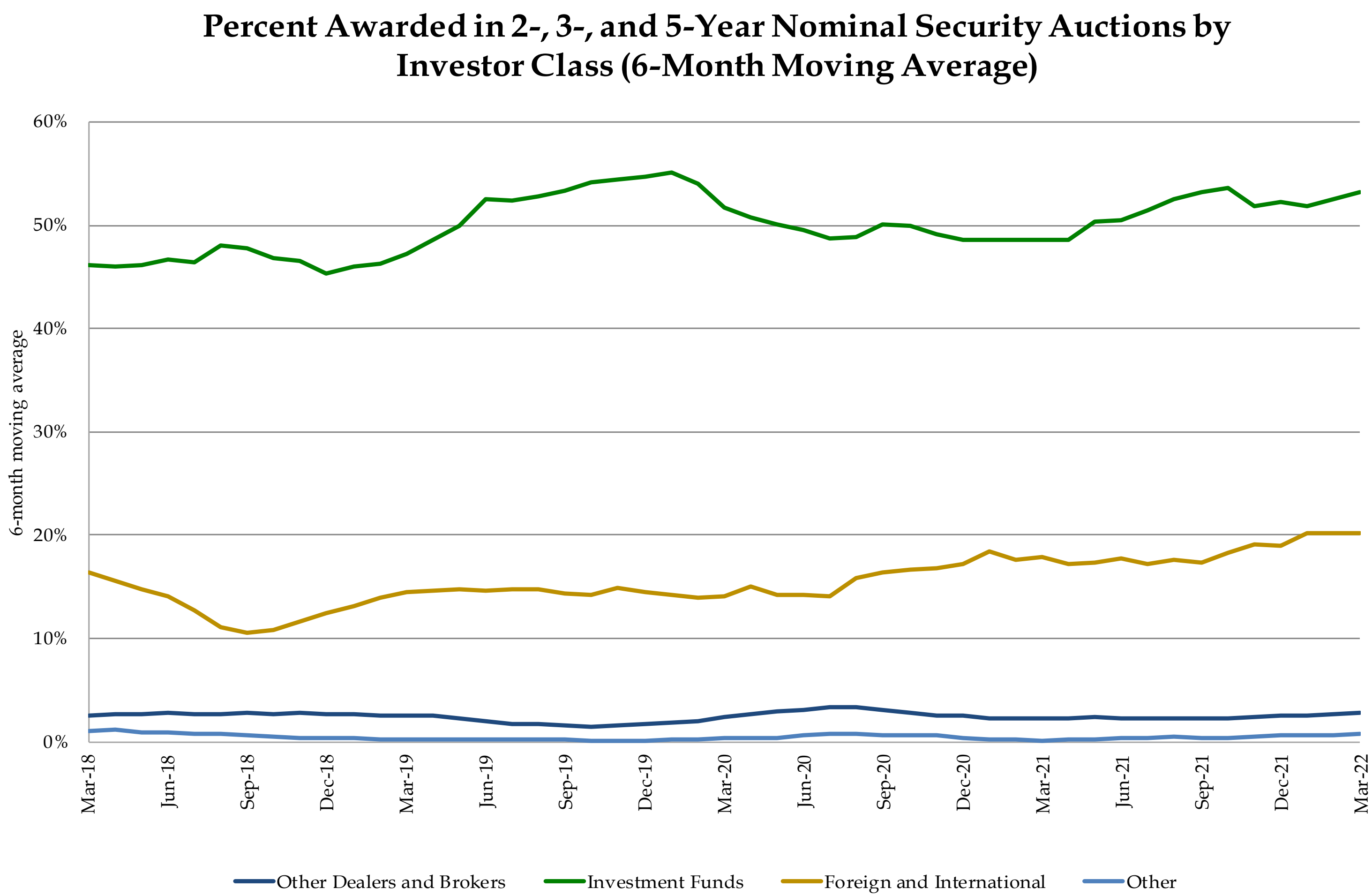




Bid-to-Cover Ratios for TIPS
Bid-to-Cover Ratio
5
4.5
4
3.5
3
2.5
2
1.5
Mar-17
Jun-17
Sep-17
Dec-17
Mar-18
May-18
Aug-18
Nov-18
Feb-19
May-19
Aug-19
Nov-19
Feb-20
May-20
Aug-20
Nov-20
Feb-21
May-21
Aug-21
Nov-21
Feb-22
5-Year
10-Year (6-month moving average)
30-Year

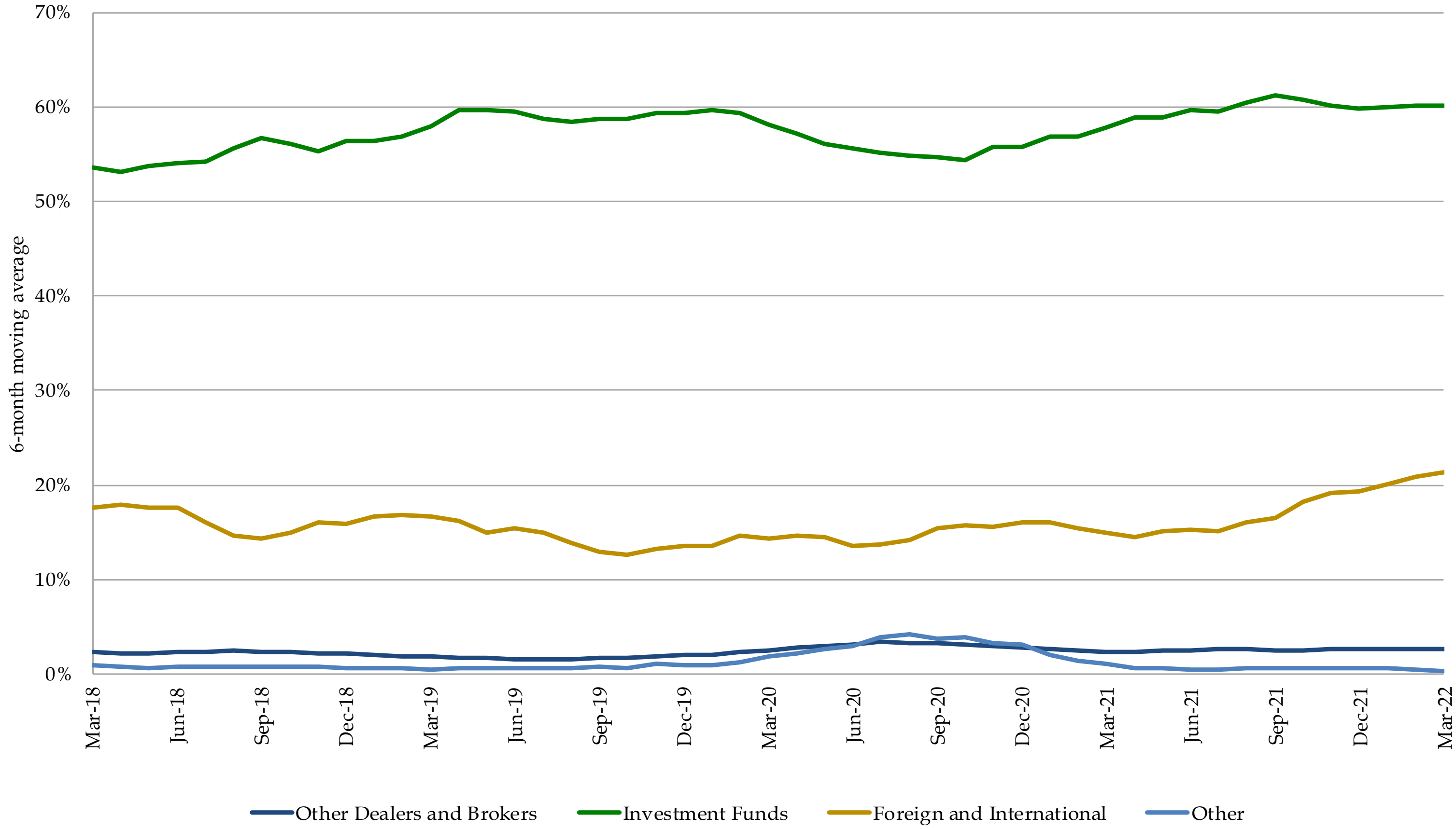


Excludes SOMA add-ons. The "Other" category includes categories that are each less than 5%, which include Depository Institutions, Individuals, Pension and Insurance.



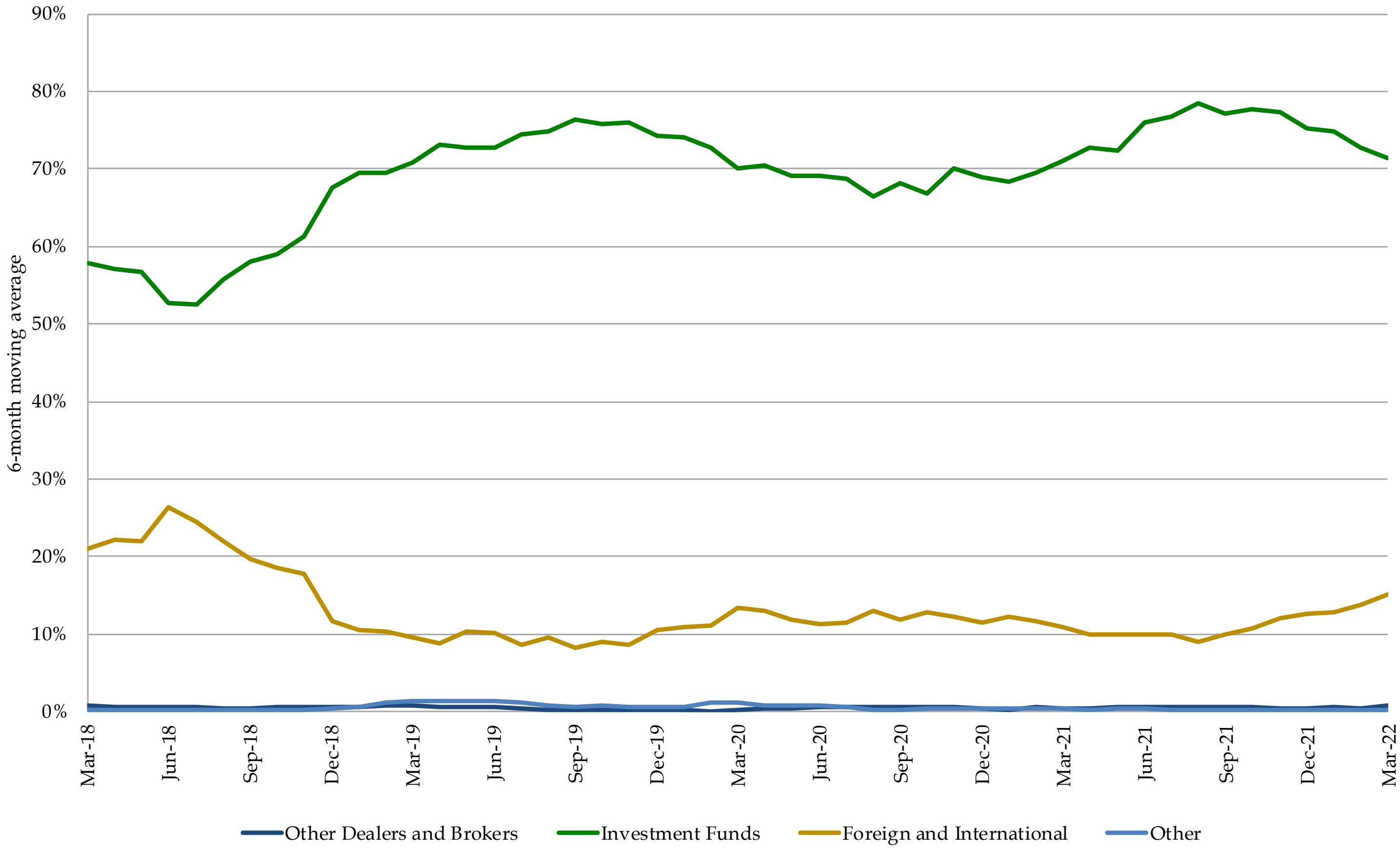
Excludes SOMA add-ons. The “Other” category includes categories that are each less than 5%, which include Depository Institutions, Individuals, Pension and Insurance.

Percent Awarded in 7-, 10-, 20-, 30-Year Nominal Security Auctions by Investor Class (6-Month Moving Average)



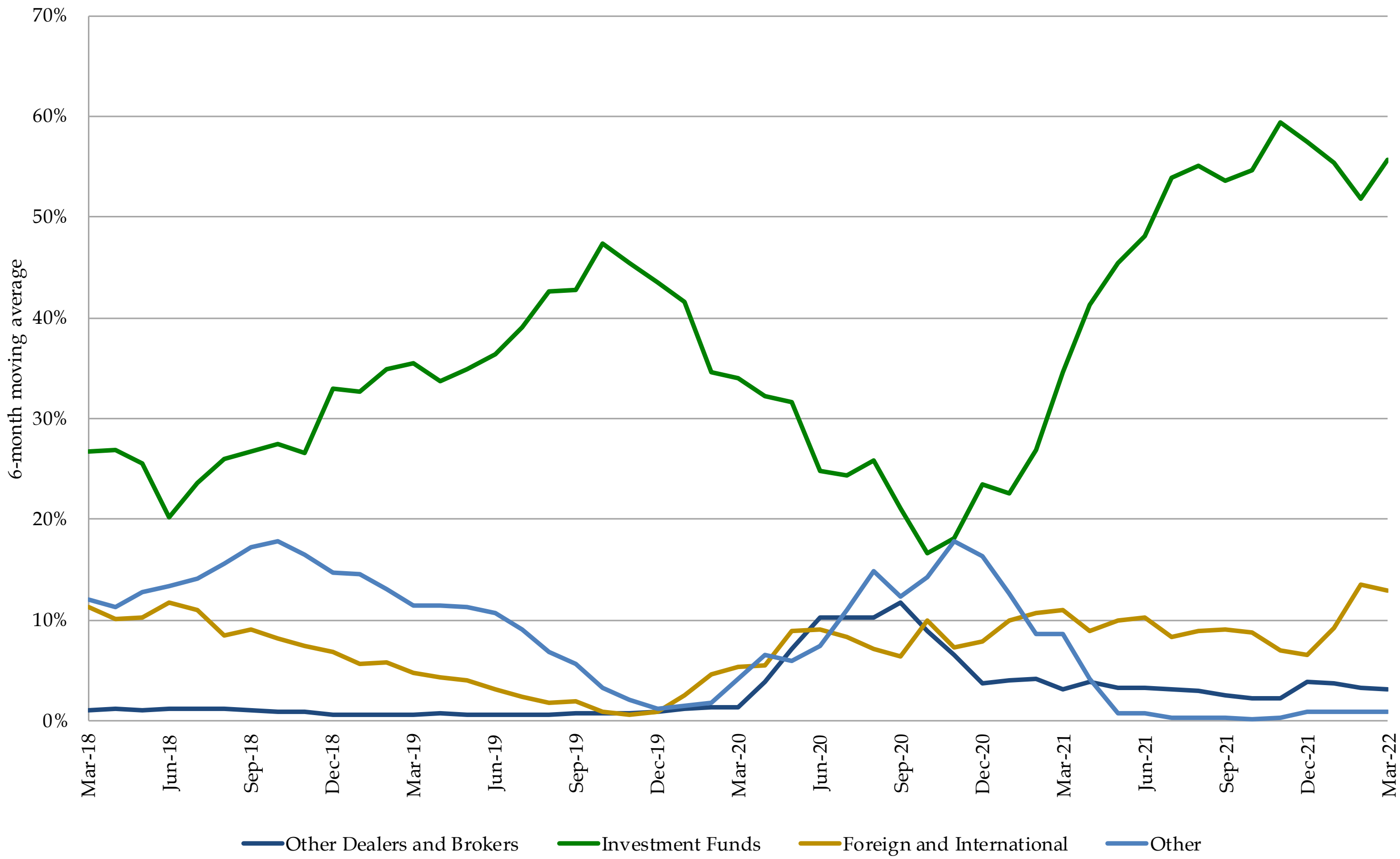
Excludes SOMA add-ons. The “Other” category includes categories that are each less than 5%, which include Depository Institutions, Individuals, Pension and Insurance.

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

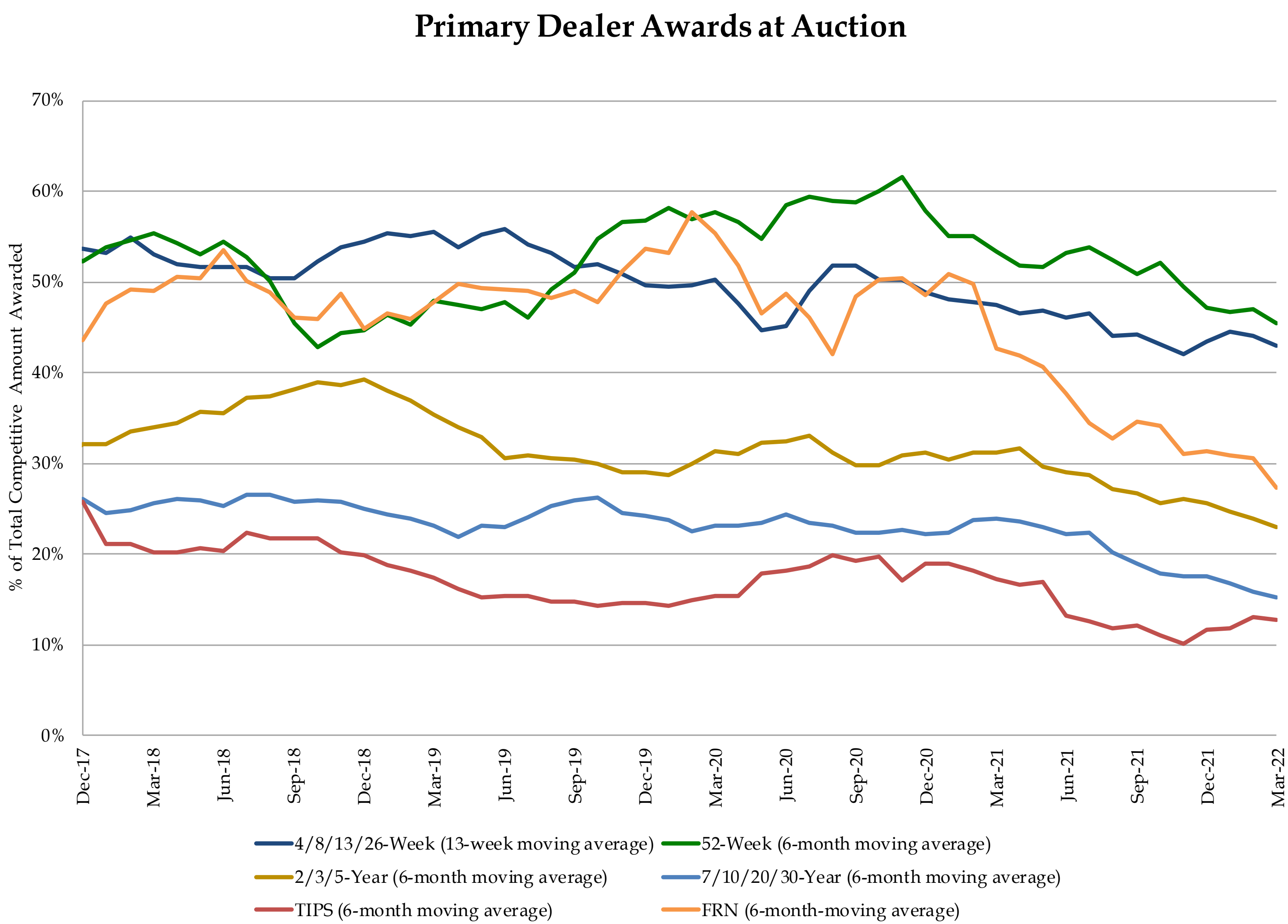


Excludes SOMA add-ons. The "Other" category includes categories that are each less than 5%, which include Depository Institutions, Individuals, Pension and Insurance.

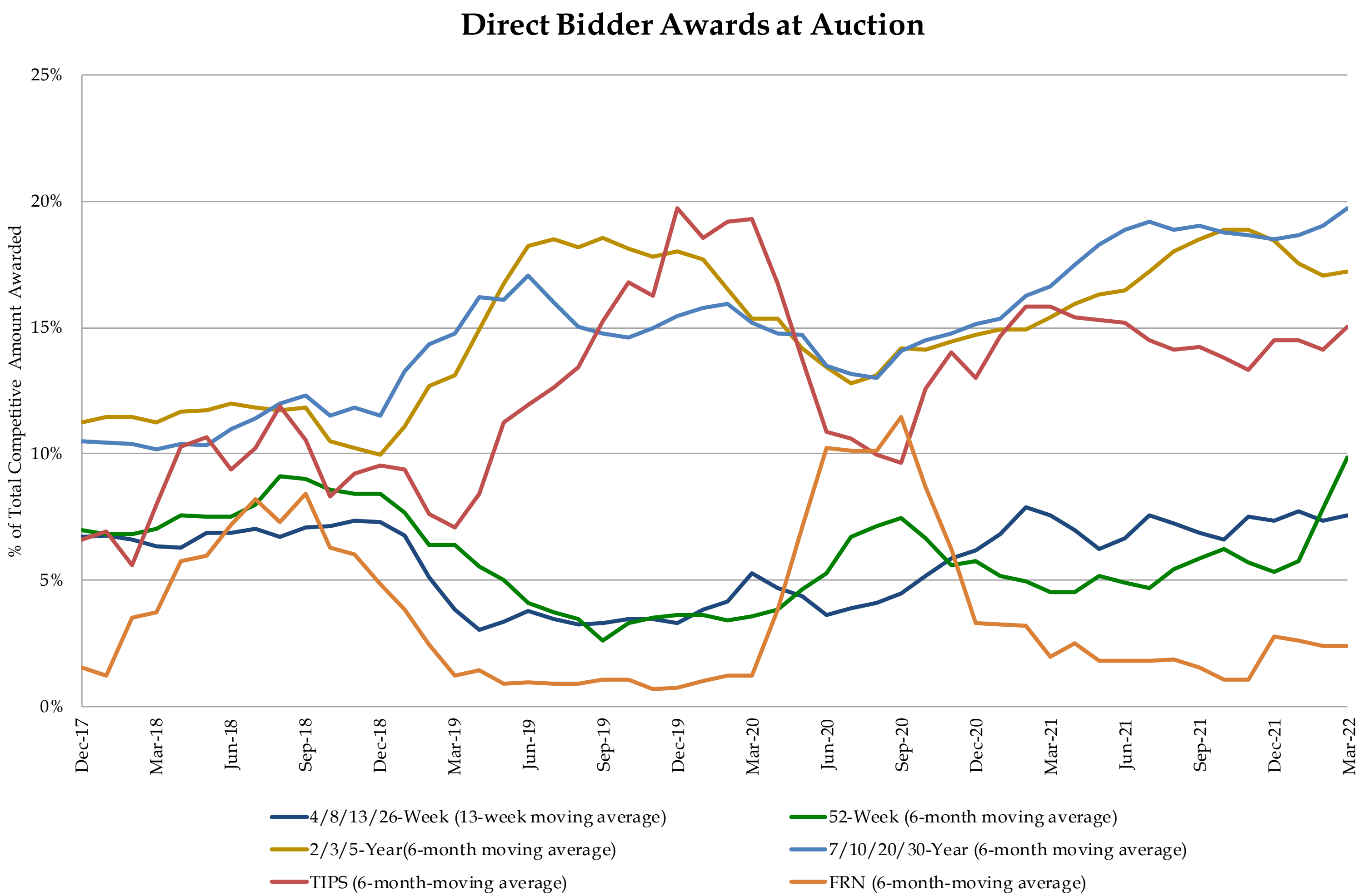
Percent Awarded in FRN Auctions by Investor Class
(6-Month Moving Average)



Excludes SOMA add-ons. The “Other” category includes categories that are each less than 5%, which include Depository Institutions, Individuals, Pension and Insurance.

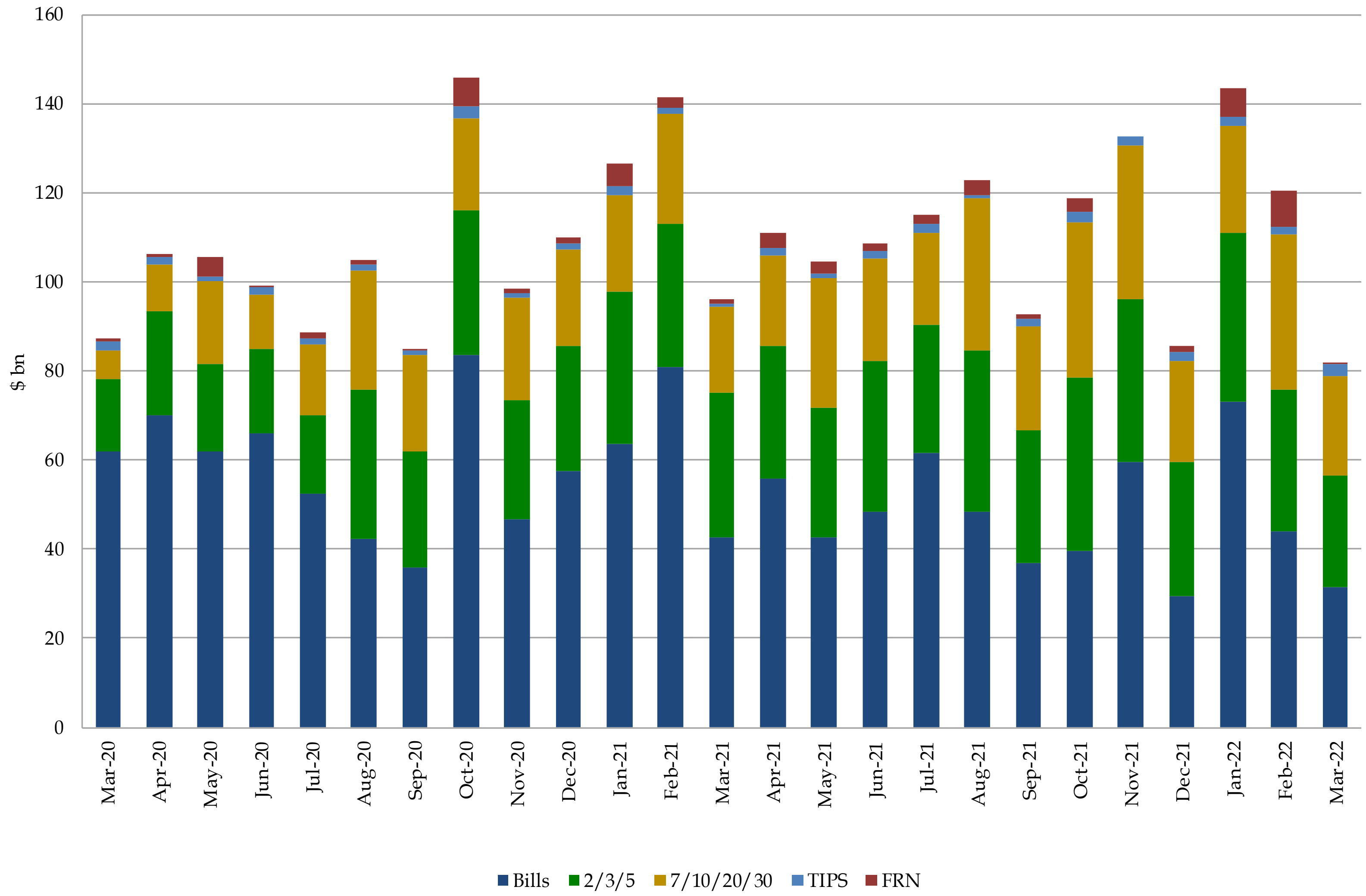


Competitive Amount Awarded excludes SOMA add-ons.



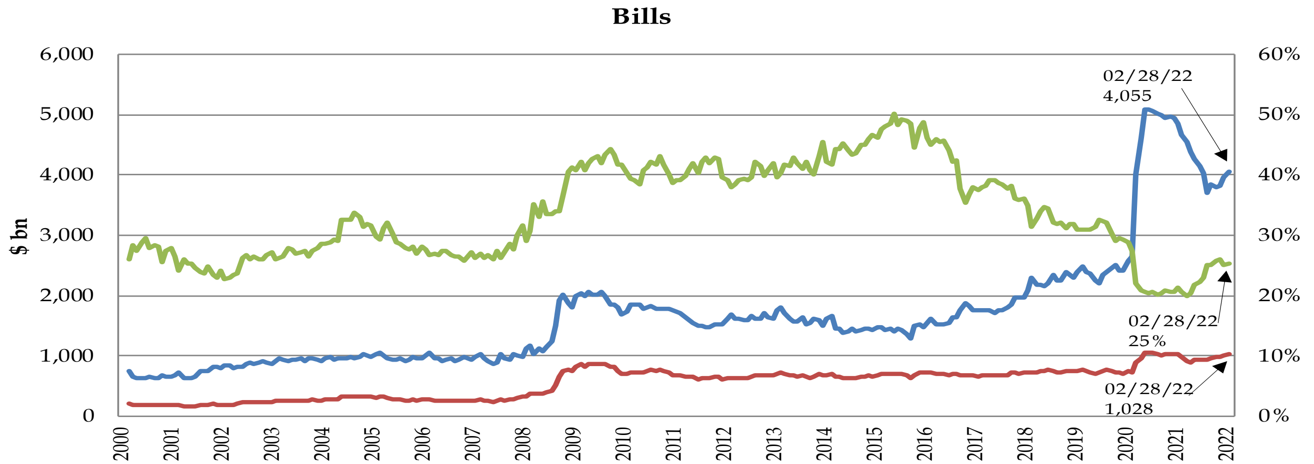
Competitive Amount Awarded excludes SOMA add-ons.

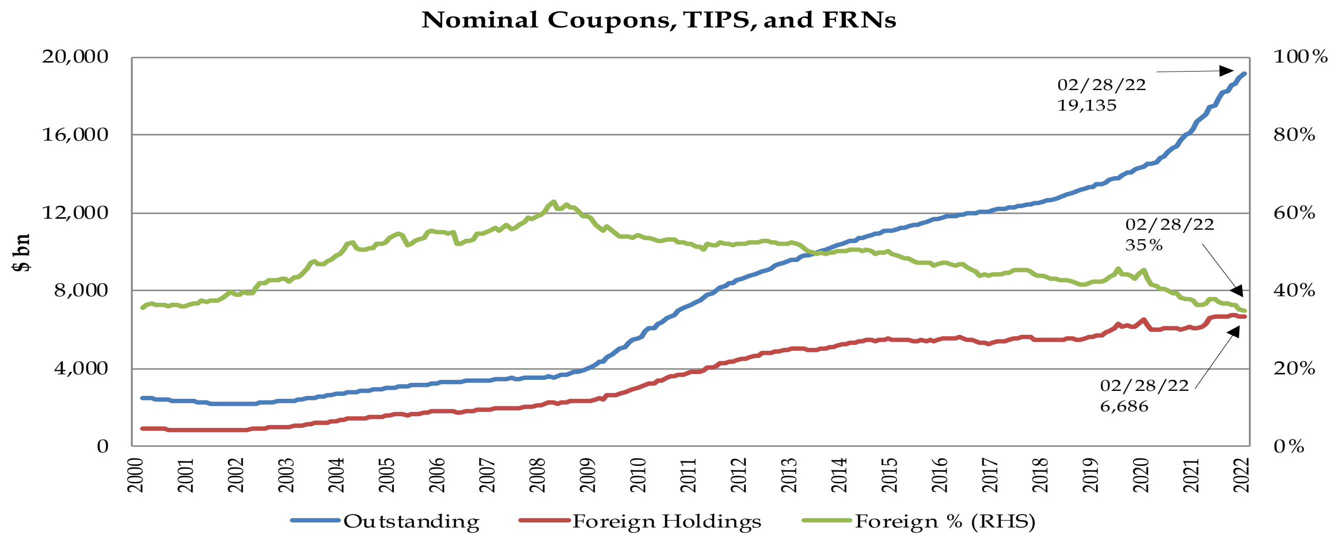
Total Foreign Awards of Treasuries at Auction, $ billions



Foreign includes both private sector and official institutions.

Total Foreign Holdings





Source: Treasury International Capital (TIC) System as of February 2022.
For more information on foreign participation data, including more details about the TIC data shown here, please refer to Treasury Presentation to TBAC "Brief Overview of Key Data Sources on Foreign Participation in the U.S. Treasury Securities Market" at the Treasury February 2019 Refunding.

Appendix

Projected Privately-Held Net Marketable Borrowing
Assuming Private Coupon Issuance & Total Bills Outstanding Remain Constant as of 03/31/2022*

Fiscal Year	Bills	2/3/5	7/10/20/30	TIPS	FRN	Historical/Projected Net Borrowing Capacity
2017	155	(66)	378	51	(0)	519
2018	438	197	493	45	23	1,196
2019	137	498	534	51	59	1,280
2020	2,652	538	724	46	55	4,015
2021	(1,315)	1,260	1,328	55	92	1,420
2022	215	789	1,082	59	42	2,187
2023	0	511	859	42	(42)	1,369
2024	0	241	899	65	(10)	1,196
2025	0	82	908	(1)	0	989
2026	0	(88)	904	17	0	833
2027	0	17	787	(1)	0	803
2028	0	0	462	(20)	0	442
2029	0	0	571	(14)	0	558
2030	0	0	608	2	0	610
2031	0	0	435	(10)	0	425

*Projections reflect only SOMA rollovers at auction of principal payments of Treasury securities. No adjustments are made for open-market outright purchases and subsequent rollovers.

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	1/11/2022	0.050	3.53	49.3	42.9	13.4	43.7	0.7	3.5	0.5
4-Week	1/18/2022	0.040	3.17	49.3	36.8	5.6	57.6	0.7	4.3	0.5
4-Week	1/25/2022	0.040	3.16	49.3	39.7	5.9	54.4	0.7	4.5	0.5
4-Week	2/1/2022	0.035	3.09	49.3	40.2	5.9	53.9	0.7	3.3	0.5
4-Week	2/8/2022	0.035	3.18	49.4	36.6	3.9	59.5	0.6	3.8	0.5
4-Week	2/15/2022	0.020	3.18	49.3	33.2	3.8	63.0	0.7	3.3	0.5
4-Week	2/22/2022	0.080	3.48	49.3	28.8	1.3	69.9	0.7	3.5	0.5
4-Week	3/1/2022	0.050	2.78	44.4	52.6	4.5	42.9	0.6	3.0	0.4
4-Week	3/8/2022	0.165	2.48	44.3	79.9	4.9	15.2	0.7	3.7	0.4
4-Week	3/15/2022	0.195	3.03	44.2	36.0	5.5	58.5	0.8	3.8	0.4
4-Week	3/22/2022	0.190	3.31	44.2	28.0	4.4	67.6	0.8	3.9	0.4
4-Week	3/29/2022	0.135	2.93	34.3	51.6	7.4	41.1	0.7	3.1	0.3
4-Week	4/5/2022	0.135	3.10	34.4	44.6	5.4	50.0	0.6	3.6	0.3
8-Week	1/11/2022	0.055	3.24	39.8	51.1	21.2	27.7	0.2	2.8	0.7
8-Week	1/18/2022	0.050	3.39	39.8	54.3	8.0	37.7	0.2	3.4	0.7
8-Week	1/25/2022	0.085	2.75	39.8	52.6	7.9	39.4	0.2	3.6	0.7
8-Week	2/1/2022	0.140	2.89	39.5	53.0	6.9	40.1	0.5	2.7	0.7
8-Week	2/8/2022	0.140	3.26	39.6	43.0	6.8	50.2	0.4	3.0	0.7
8-Week	2/15/2022	0.250	2.97	39.7	46.3	6.5	47.3	0.3	2.7	0.7
8-Week	2/22/2022	0.250	3.12	39.7	42.0	3.6	54.4	0.3	2.8	0.7
8-Week	3/1/2022	0.200	3.70	34.8	25.3	1.7	73.0	0.2	2.4	0.6
8-Week	3/8/2022	0.205	3.69	34.8	34.5	3.9	61.6	0.2	2.9	0.6
8-Week	3/15/2022	0.265	3.15	34.8	38.2	5.3	56.5	0.2	3.0	0.6
8-Week	3/22/2022	0.300	3.45	34.8	44.1	6.3	49.6	0.2	3.1	0.6
8-Week	3/29/2022	0.300	2.99	29.8	54.4	13.7	31.8	0.2	2.6	0.6
8-Week	4/5/2022	0.380	2.75	29.8	75.2	8.2	16.5	0.2	3.1	0.6

*Approximated using prices at settlement and includes both competitive and non-competitive awards.

Bills (cont.)										
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)*
13-Week	1/6/2022	0.090	2.86	59.5	44.2	19.4	36.4	0.5	7.5	1.9
13-Week	1/13/2022	0.120	2.96	58.9	41.6	4.4	54.0	1.1	6.8	1.8
13-Week	1/20/2022	0.170	2.56	59.0	50.4	5.8	43.9	1.0	7.4	1.9
13-Week	1/27/2022	0.190	2.81	58.4	39.5	5.5	54.9	1.6	7.3	1.9
13-Week	2/3/2022	0.240	2.84	59.1	54.8	7.9	37.3	0.9	8.3	1.9
13-Week	2/10/2022	0.290	3.00	59.2	45.0	12.2	42.8	0.8	6.5	1.8
13-Week	2/17/2022	0.440	3.06	59.0	37.3	9.8	52.9	1.0	7.6	1.9
13-Week	2/24/2022	0.380	3.07	59.1	33.0	6.0	61.1	0.9	6.1	1.8
13-Week	3/3/2022	0.360	2.85	59.1	38.3	4.8	56.9	0.9	8.0	1.9
13-Week	3/10/2022	0.380	2.99	59.3	33.9	4.0	62.1	0.7	5.4	1.8
13-Week	3/17/2022	0.450	2.77	59.2	42.4	3.4	54.3	0.8	5.7	1.8
13-Week	3/24/2022	0.480	2.60	55.9	55.7	7.9	36.4	1.1	2.2	1.6
13-Week	3/31/2022	0.605	2.65	55.6	48.0	7.5	44.5	1.4	8.5	1.8
26-Week	1/6/2022	0.220	3.21	49.6	39.2	16.0	44.8	1.4	6.3	3.1
26-Week	1/13/2022	0.275	2.90	49.9	54.0	5.7	40.3	1.1	5.8	3.1
26-Week	1/20/2022	0.365	2.70	50.0	50.4	6.0	43.6	1.0	6.3	3.2
26-Week	1/27/2022	0.380	3.07	49.6	43.1	10.0	46.9	1.4	6.2	3.2
26-Week	2/3/2022	0.500	2.74	50.1	54.7	11.3	34.0	0.9	7.0	3.2
26-Week	2/10/2022	0.580	3.13	50.1	44.4	11.0	44.5	0.9	5.5	3.1
26-Week	2/17/2022	0.770	2.99	50.0	30.9	13.1	56.1	1.0	6.5	3.2
26-Week	2/24/2022	0.710	2.75	50.1	43.6	17.3	39.1	0.9	5.2	3.1
26-Week	3/3/2022	0.670	3.12	50.2	35.0	10.6	54.4	0.8	6.8	3.1
26-Week	3/10/2022	0.710	3.21	50.3	29.6	3.5	66.9	0.7	4.6	3.0
26-Week	3/17/2022	0.820	3.08	50.2	31.9	4.1	64.0	0.8	4.8	3.1
26-Week	3/24/2022	0.870	3.17	47.0	41.8	4.8	53.4	1.0	1.8	2.7
26-Week	3/31/2022	1.050	3.00	46.7	36.2	10.7	53.1	1.3	7.2	3.1
52-Week	1/27/2022	0.630	2.98	33.5	46.9	9.3	43.7	0.5	4.1	4.2
52-Week	2/24/2022	1.145	2.81	33.7	45.1	20.1	34.9	0.3	3.4	4.1
52-Week	3/24/2022	1.590	3.29	33.4	35.5	17.8	46.7	0.6	1.3	3.9

*Approximated using prices at settlement and includes both competitive and non-competitive awards.

Bills (cont.)										
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)*
17-Week	1/11/2022	0.150	3.06	40.0	48.2	6.1	45.7	0.0	0.0	1.4
17-Week	1/18/2022	0.200	3.02	39.6	51.3	5.7	43.1	0.4	0.0	1.4
17-Week	1/25/2022	0.275	3.08	39.7	51.5	9.5	39.1	0.3	0.0	1.4
17-Week	2/1/2022	0.280	3.20	39.7	51.0	9.3	39.7	0.3	0.0	1.4
17-Week	2/8/2022	0.340	3.21	39.8	41.1	12.3	46.5	0.2	0.0	1.4
17-Week	2/15/2022	0.430	3.17	39.9	51.7	11.6	36.7	0.1	0.0	1.5
17-Week	2/22/2022	0.550	2.99	39.9	59.9	12.2	27.9	0.1	0.0	1.4
17-Week	3/1/2022	0.570	3.16	35.0	40.8	4.7	54.4	0.0	0.0	1.2
17-Week	3/8/2022	0.535	4.20	35.0	29.8	1.2	69.0	0.0	0.0	1.2
17-Week	3/15/2022	0.550	3.45	35.0	32.3	3.4	64.3	0.0	0.0	1.3
17-Week	3/22/2022	0.665	3.68	35.0	40.1	4.1	55.8	0.0	0.0	1.3
17-Week	3/29/2022	0.710	3.65	30.0	39.0	5.7	55.3	0.0	0.0	1.1
17-Week	4/5/2022	0.805	3.15	29.7	47.0	19.3	33.7	0.3	0.0	1.1

*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	1/31/2022	0.990	2.81	53.7	24.6	9.4	66.0	0.3	8.1	13.5
2-Year	2/28/2022	1.553	2.64	51.7	15.6	18.8	65.6	0.3	8.9	13.3
2-Year	3/31/2022	2.365	2.46	49.2	19.4	25.5	55.0	0.8	9.3	12.9
3-Year	1/18/2022	1.237	2.47	51.9	22.8	15.5	61.6	0.1	8.3	19.4
3-Year	2/15/2022	1.592	2.45	49.8	20.3	11.1	68.5	0.2	30.2	26.0
3-Year	3/15/2022	1.775	2.39	47.8	26.3	18.6	55.1	0.2	8.1	18.1
5-Year	1/31/2022	1.533	2.50	54.9	14.8	16.5	68.7	0.1	8.2	33.4
5-Year	2/28/2022	1.880	2.49	52.9	13.8	18.4	67.8	0.1	9.1	32.7
5-Year	3/31/2022	2.543	2.53	50.9	20.1	19.7	60.2	0.1	9.5	31.7
7-Year	1/31/2022	1.769	2.36	53.0	14.5	22.9	62.6	0.0	7.9	44.0
7-Year	2/28/2022	1.905	2.36	50.0	12.3	23.8	63.9	0.0	8.6	42.3
7-Year	3/31/2022	2.499	2.44	47.0	10.5	28.6	60.9	0.0	8.7	40.1
10-Year	1/18/2022	1.723	2.51	36.0	16.6	17.9	65.5	0.0	5.8	41.7
10-Year	2/15/2022	1.904	2.68	37.0	7.4	15.0	77.6	0.0	22.4	59.7
10-Year	3/15/2022	1.920	2.47	34.0	13.7	18.0	68.2	0.0	5.7	39.7
20-Year	1/31/2022	2.210	2.48	20.0	16.8	17.0	66.2	0.0	3.0	40.7
20-Year	2/28/2022	2.396	2.44	19.0	16.1	21.0	62.9	0.0	3.3	38.8
20-Year	3/31/2022	2.651	2.72	16.0	9.6	26.0	64.4	0.0	3.0	33.1
30-Year	1/18/2022	2.075	2.35	22.0	17.9	17.1	65.0	0.0	3.5	62.9
30-Year	2/15/2022	2.340	2.30	23.0	14.3	17.8	68.0	0.0	13.9	88.5
30-Year	3/15/2022	2.375	2.46	20.0	12.1	16.4	71.5	0.0	3.4	55.8
2-Year FRN	1/31/2022	(0.015)	3.34	26.0	24.5	0.0	75.5	0.0	3.9	0.01
2-Year FRN	2/25/2022	(0.050)	3.22	22.0	27.2	0.0	72.8	0.0	0.0	0.03
2-Year FRN	3/25/2022	(0.055)	3.75	21.9	23.8	0.0	76.2	0.1	0.0	0.03

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)**
10-Year TIPS	1/31/2022	(0.540)	2.30	16.0	15.0	15.7	69.3	0.0	2.4	20.1
10-Year TIPS	3/31/2022	(0.589)	2.43	14.0	10.6	21.5	67.9	0.0	2.6	18.2
30-Year TIPS	2/28/2022	0.195	2.17	9.0	20.3	9.9	69.9	0.0	1.5	34.2

*FRNs are reported on discount margin basis.
**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.

Please discuss Treasury market trading conditions since the beginning of the year. How have evolving monetary policy expectations and heightened geopolitical tensions affected Treasury market volatility and liquidity conditions? Has the change in liquidity conditions been consistent with change in volatility? How have different types of liquidity providers been affected by these conditions, and to what extent have they changed their liquidity provision in response?

Agenda

- Realized volatility in the Treasury market has gone up sharply in 2022
  - The rise in monetary policy uncertainty seems to be a big driver
  - Market expectations around the path of future inflation are very dispersed

- Treasury trading conditions have worsened on some metrics in 2022, but not on others
  - The deterioration in liquidity seems driven largely by higher levels of volatility
  - Funding markets are not showing any meaningful worsening in liquidity

- We do not currently see a meaningful market functioning problem in the Treasury market
  - Despite the worsening of some measures of liquidity, the market seems to be functioning normally
  - However, with the much higher bond volatility observed so far in 2022, Treasury trading conditions bear close watching.

Higher Treasury market volatility, and higher policy uncertainty

Summary of the section

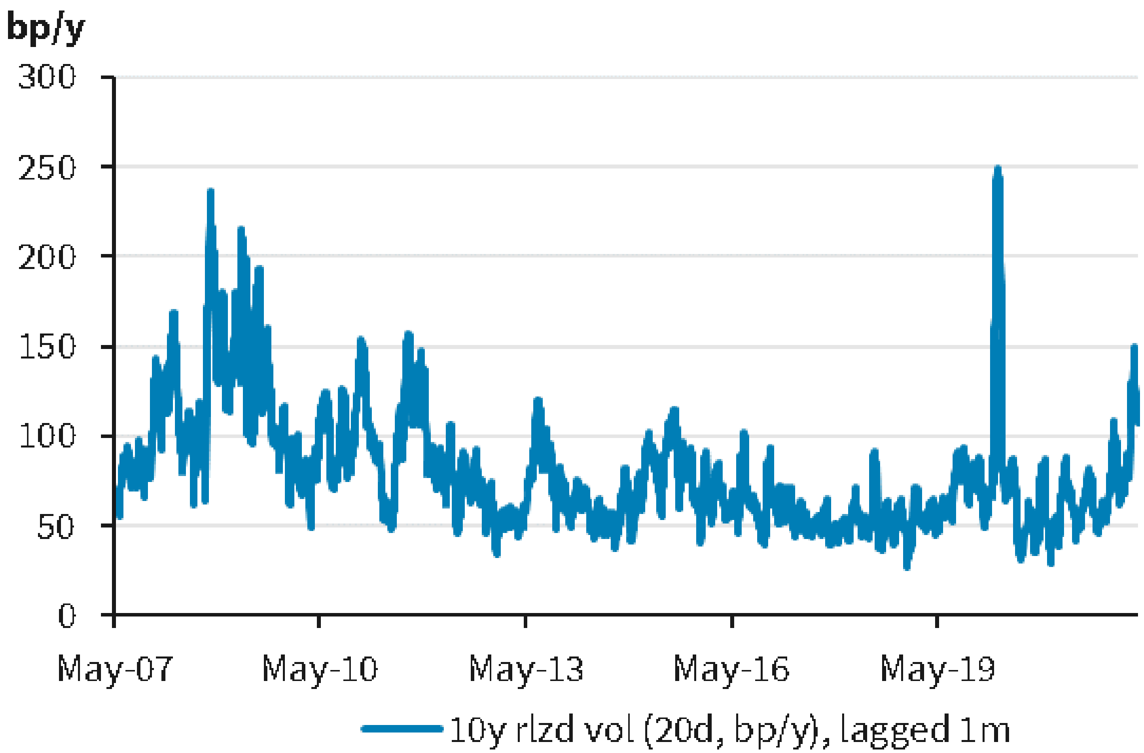
- Treasury volatility has been very high in recent months
  - 1m realized volatility has been higher than ex-ante 1m*10y implied volatility
  - Similarly, 1m*10y implied volatility has been higher than implied by ex-ante forward vol

- This volatility has been driven in part by economic factors
  - Economic data surprises are not much higher in 2022 than in past years
  - But the global economy has had to deal with considerable disruptions to production and supply chain problems
  - The Russia-Ukraine war has been a significant new supply side shock to the world economy
  - The result has been increased uncertainty about the path near- and medium-term inflation

- Monetary policy uncertainty has risen greatly over the last few months
  - The Fed's expected fed funds rate path has shifted greatly, and so has the market's
  - In both cases, the reason seems to be a sharp shift in the view on inflation
  - At the same time, expectations of future inflation are now far more dispersed than in the past

Realized volatility has been very high in recent months

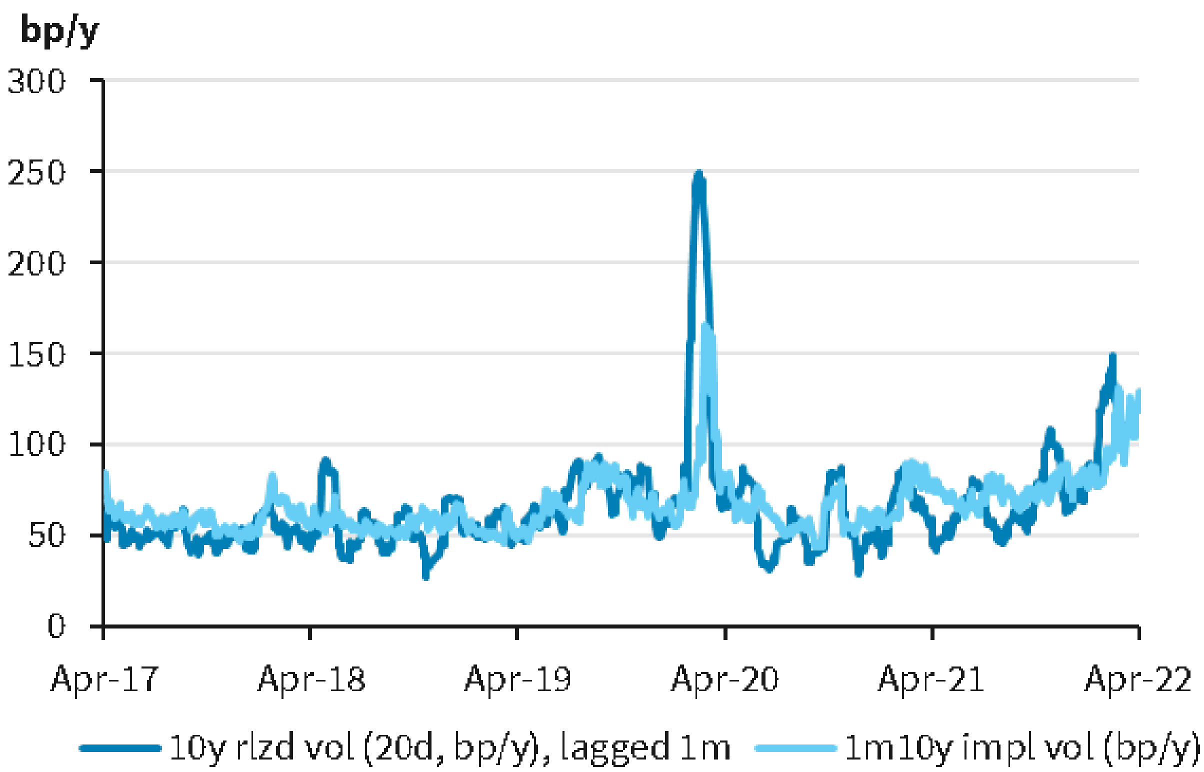
- Realized volatility of 10y treasury yields over 2022 has been higher than at any point over the last decade, with the exception of March 2020. The current level of volatility is also significantly higher than in 2007, pre the GFC



Source for all charts: Presenting Member Calculations

Realized volatility higher than ex-ante implied volatility

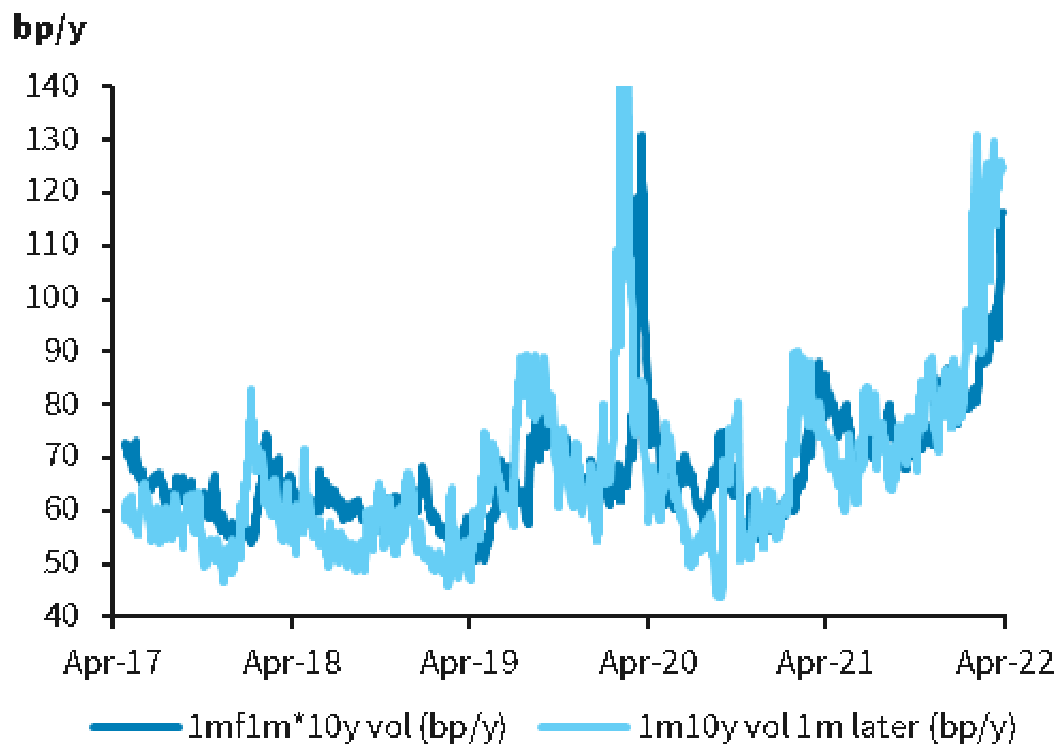
Realized 10y volatility over subsequent month higher than ex-ante 1m10y implied volatility



Source for all charts: Presenting Member Calculations

Implied volatility higher than ex-ante forward volatility

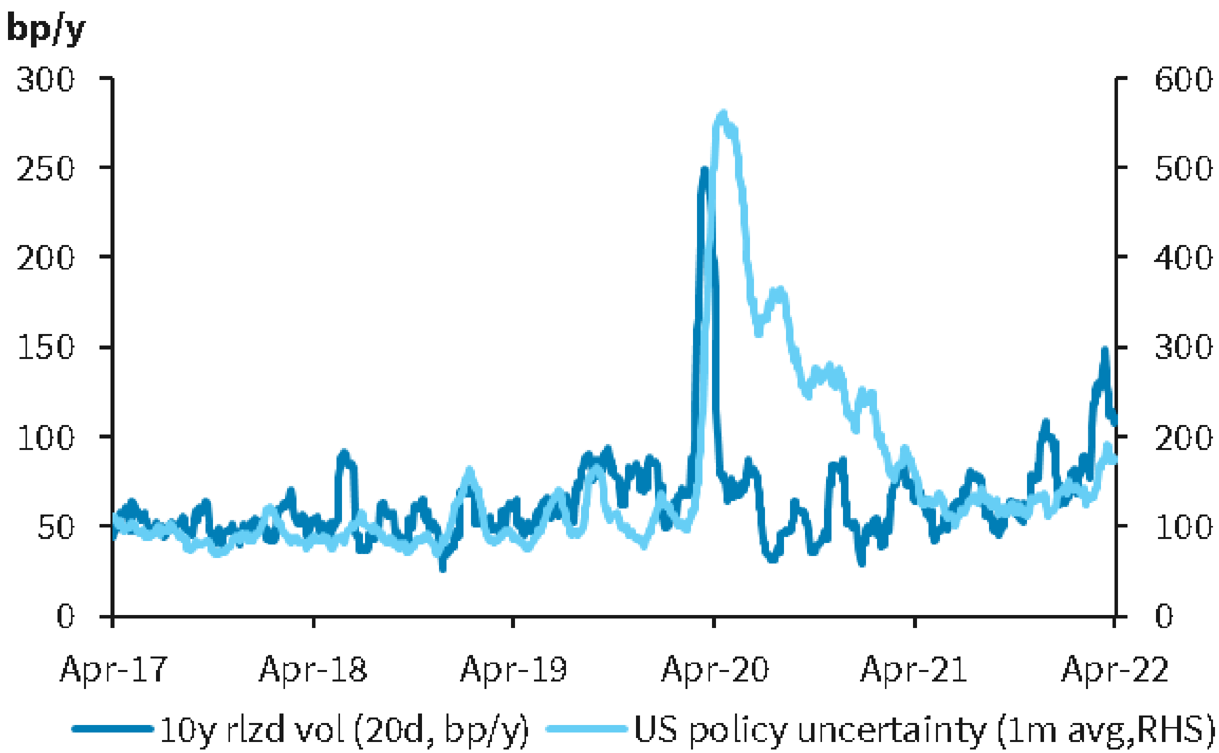
1m10y volatility after one month has been higher than implied by ex-ante forward vols



Source for all charts: Presenting Member Calculations

Policy uncertainty ‘tax’ has increased

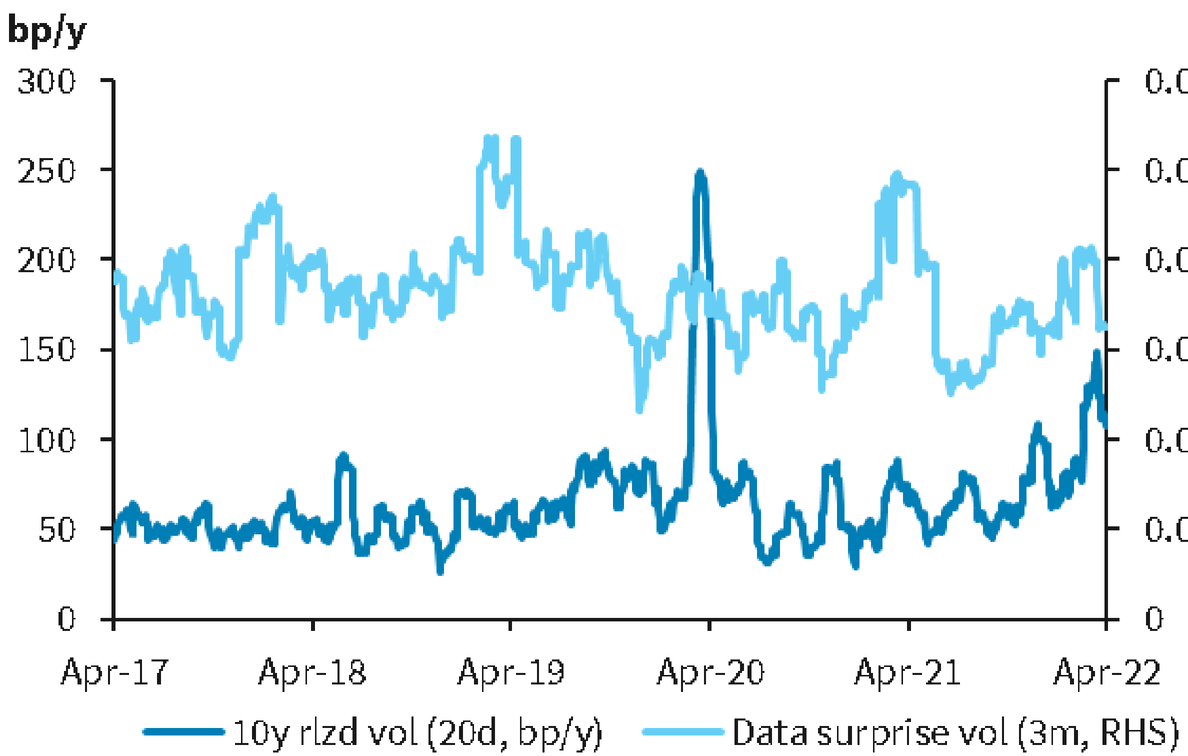
Policy uncertainty has gone up in recent months



Note: Policy uncertainty uses the Baker et al index, Source : Presenting Member Calculations, Bloomberg

Economic data surprises are not especially high

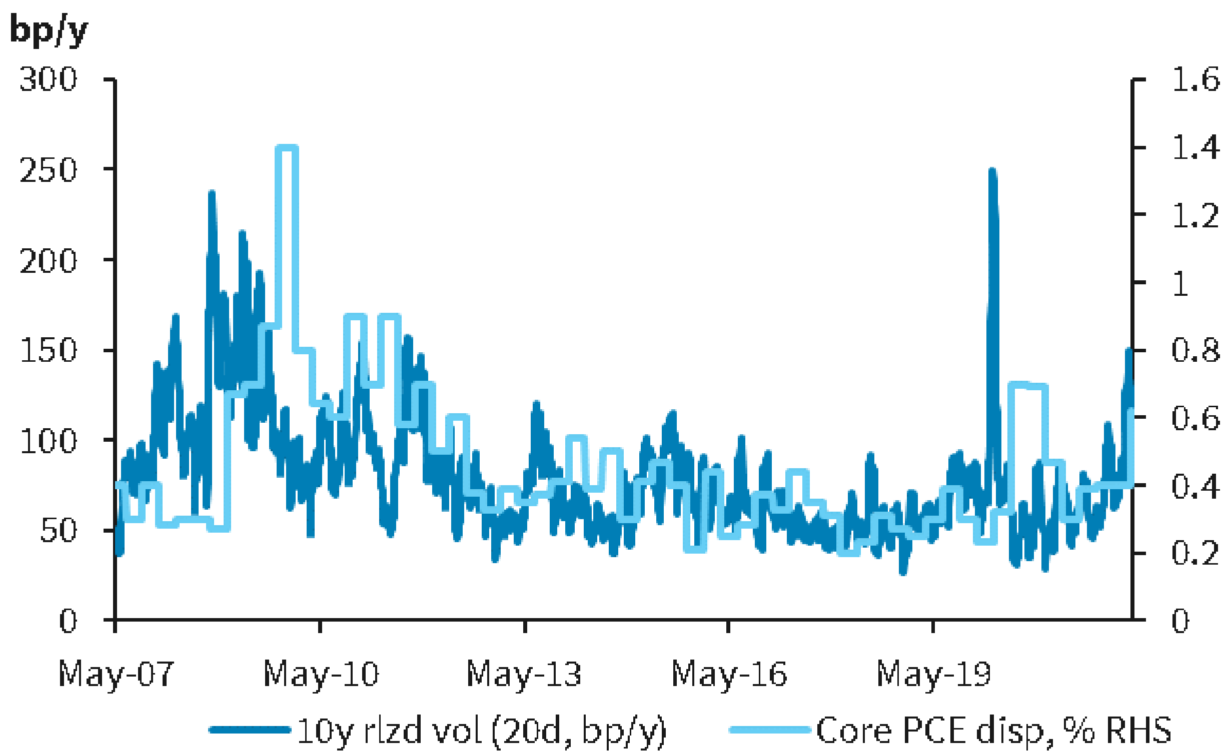
Data surprises are in line with recent years



Note: Data surprise based on the Bloomberg data surprise index. Source : Presenting Member Calculations, Bloomberg

There is greater uncertainty about future inflation

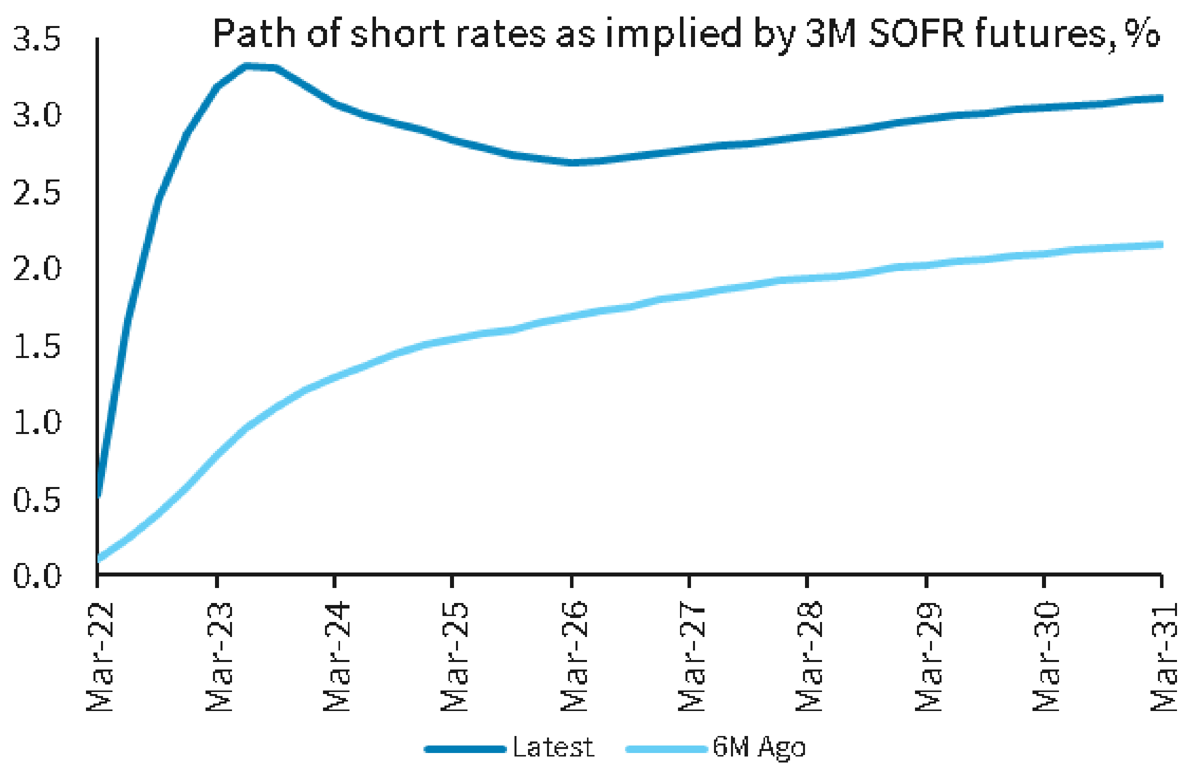
Realized volatility and dispersion around core PCE forecasts



Note: 4q forecast dispersion of 10y yield forecasts and Core PCE inflation from SPF. Source for both charts: Presenting Member Calculations, Federal Reserve

Market has significantly repriced the path of short rates

Investors now expect an overshoot

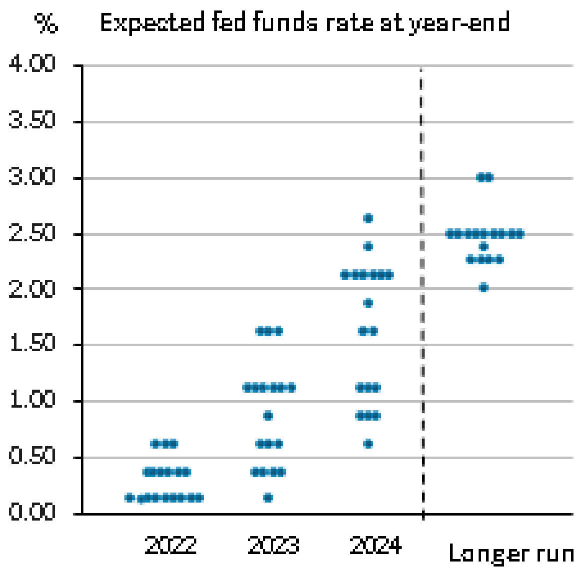


Source: Bloomberg, Presenting Member Calculations. Note: As of April 18, 2022

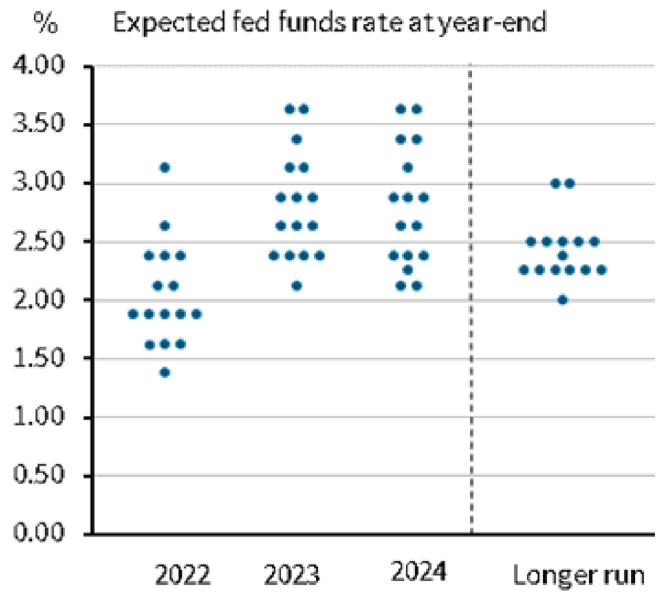
A massive shift in the Fed dot plot from a few months ago…

- FOMC shifted expectations of fed funds rate higher

Sep 2021 FOMC



March 2022 FOMC



Source: Federal Reserve, Presenting Member Calculations

…driven by a sharp change in the inflation forecast

Q4/Q4 % chng	2022	2023	2024	Longer run
Change in real GDP				
March projection	2.8	2.2	2.0	1.8
December projection	4.0	2.2	2.0	1.8
September projection	3.8	2.5	2.0	1.8
Unemployment rate				
March projection	3.5	3.5	3.6	4.0
December projection	3.5	3.5	3.5	4.0
September projection	3.8	3.5	3.5	4.0
PCE inflation				
March projection	4.3	2.7	2.3	2.0
December projection	2.6	2.3	2.1	2.0
September projection	2.2	2.2	2.1	2.0
Core PCE inflation				
March projection	4.1	2.6	2.3	
December projection	2.7	2.3	2.1	
September projection	2.3	2.2	2.1	
Fed funds rate				
March projection	1.9	2.8	2.8	2.4
December projection	0.9	1.6	2.1	2.5
September projection	0.3	1.0	1.8	2.5

Source: Federal Reserve, Presenting Member Calculations

Trading conditions

Summary of the section

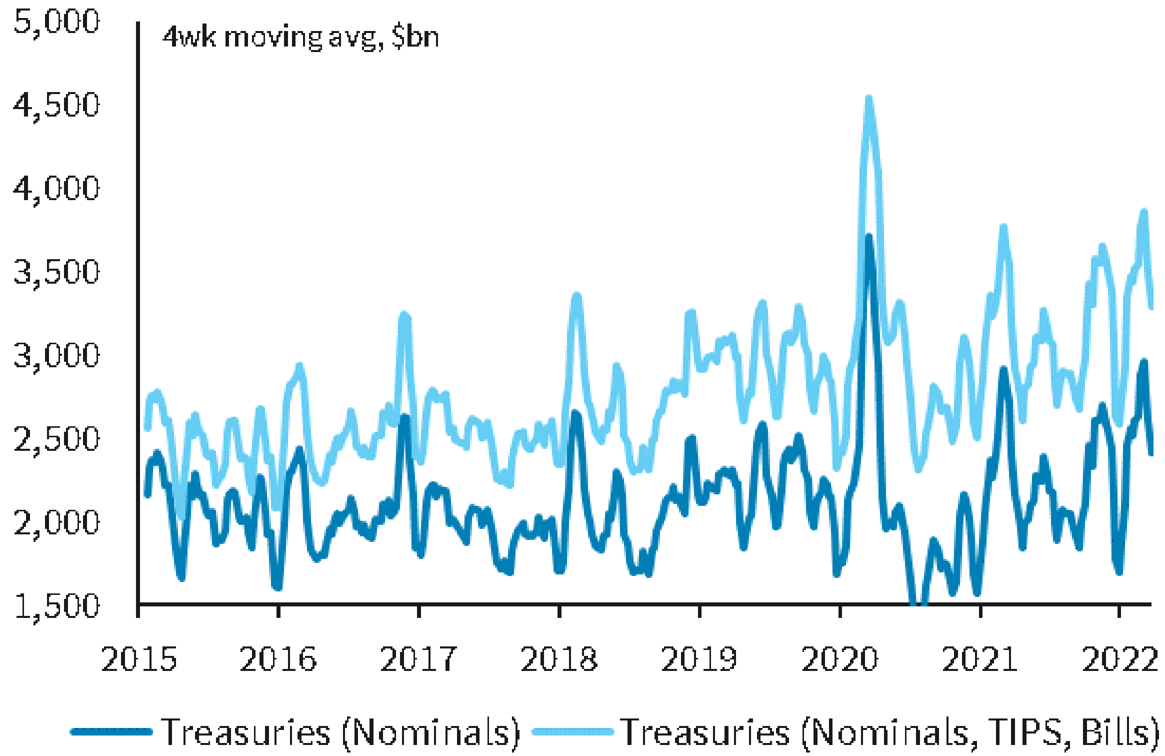
- Trading volumes haven’t changed much in 2022 from prior years
  - Primary dealer volumes have trended a little higher
  - But turnover has been steady, despite a sharp rise in outstanding Treasuries
  - Volumes have risen most in shorter maturities, consistent with monetary policy uncertainty

- On the other hand, market liquidity has worsened on some other metrics
  - Bid-ask spreads have widened across tenors, but especially in 7s and 20s
  - Even as outstanding Treasuries have increased, intermediation capacity has not

- This worsening of liquidity appears to be in line with higher volatility in rates
  - Wider bid-ask spreads may, in turn, be contributing to the volatility of rates

Treasury trading volumes have risen, as outstandings have grown

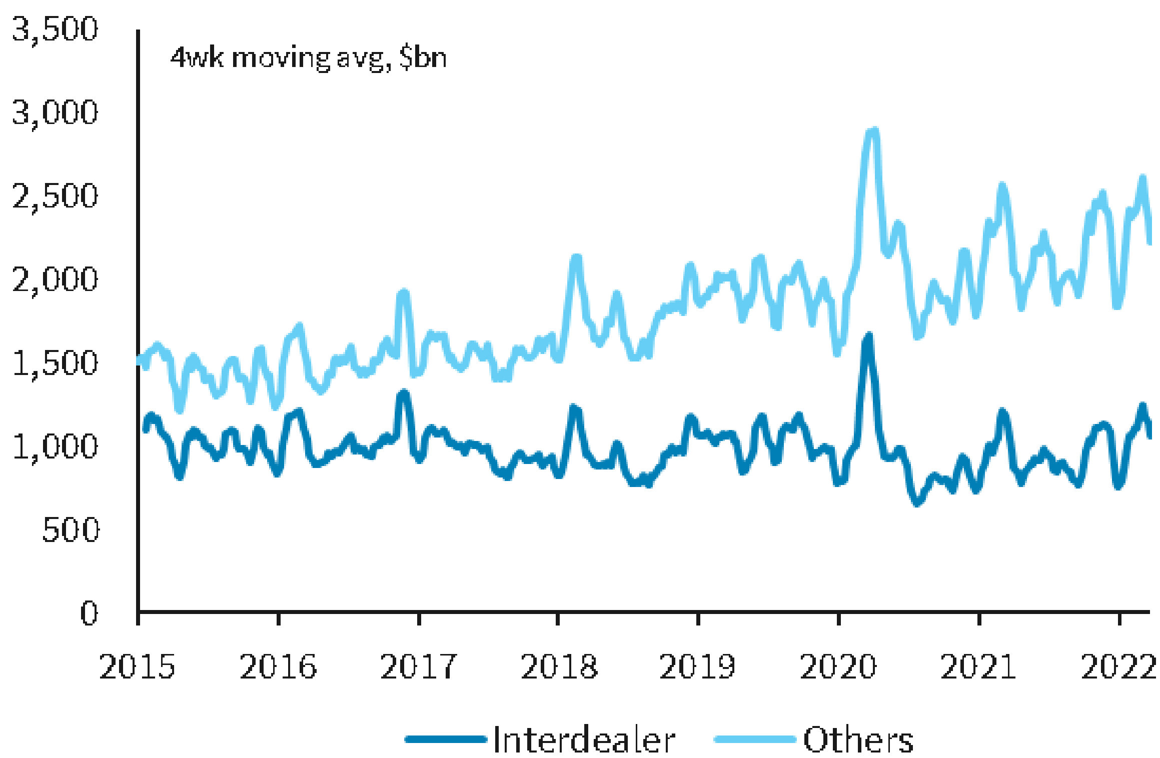
Aggregate primary dealer volumes



Note: Treasuries, TIPS and bills included in counterparty data, Source: NY Federal Reserve, Presenting Member Calculations

Dealer to customer transactions a bit higher in recent years

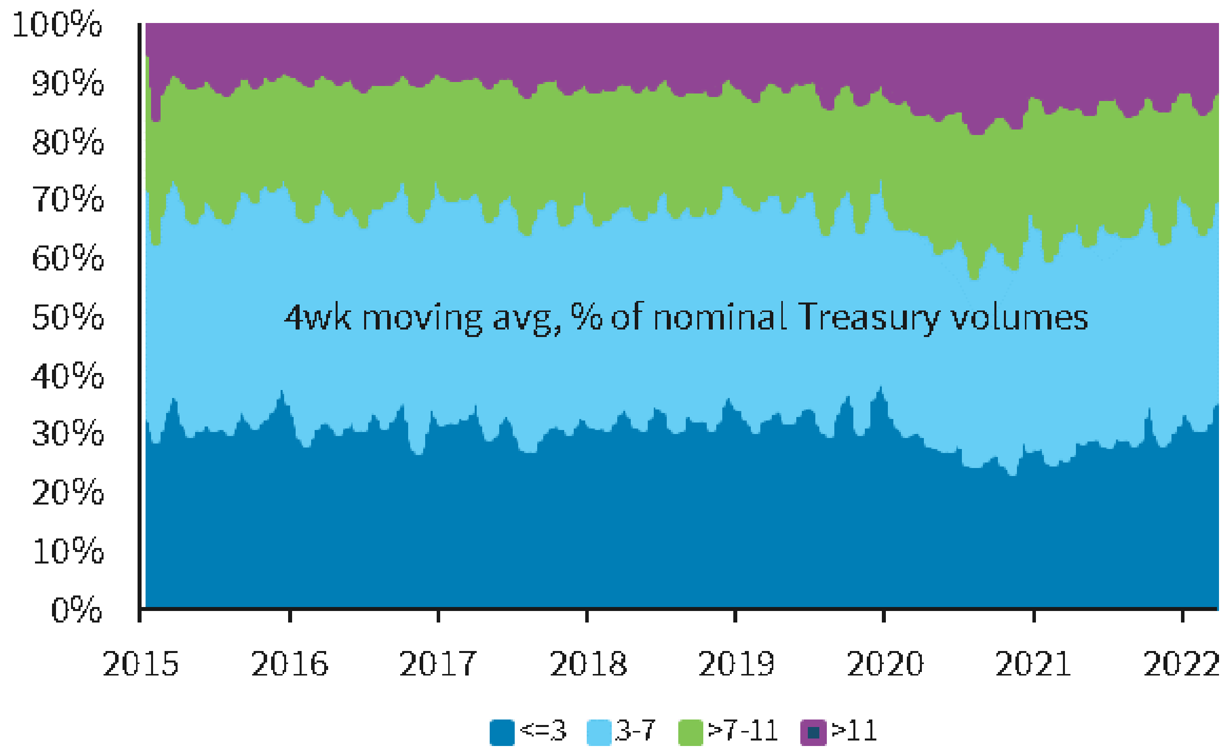
Dealer volumes with counterparty*



Note:Treasuries, TIPS and bills included in counterparty data *, Source: NY Federal Reserve, Presenting Member Calculations

Breakdown by tenors – 2022 looks similar to prior years

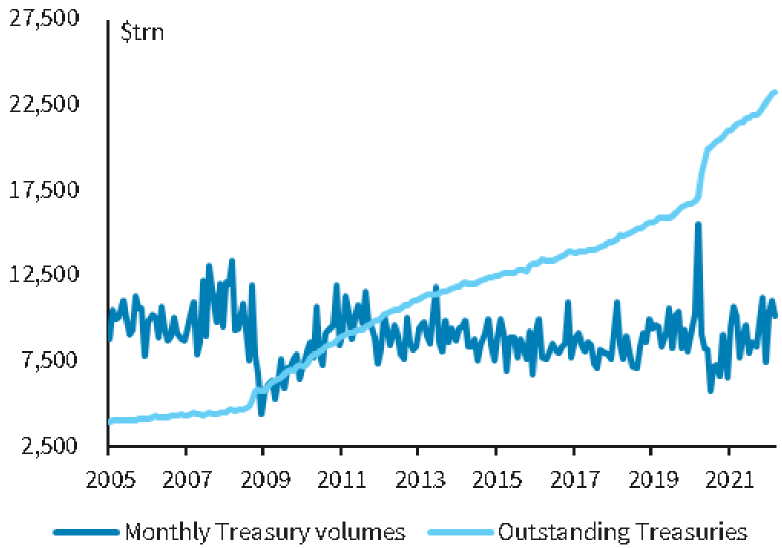
% of nominal Treasury volumes by tenor*

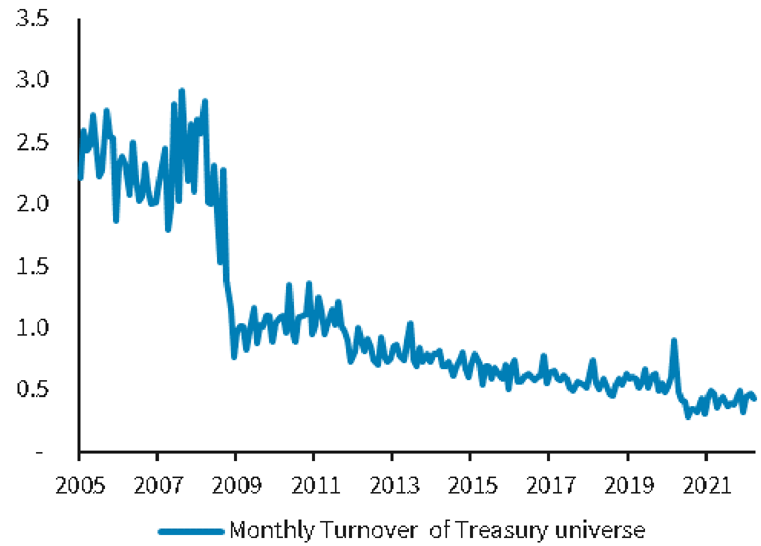


Note: Nominals only*, Source: NY Federal Reserve, Presenting Member Calculations

Turnover has dropped post Covid, but stabilized at lower levels

Average daily volumes as % of outstanding Treasuries

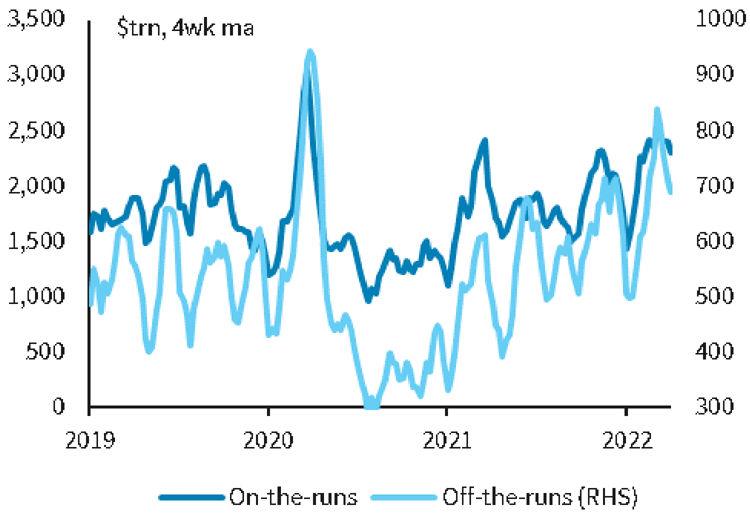




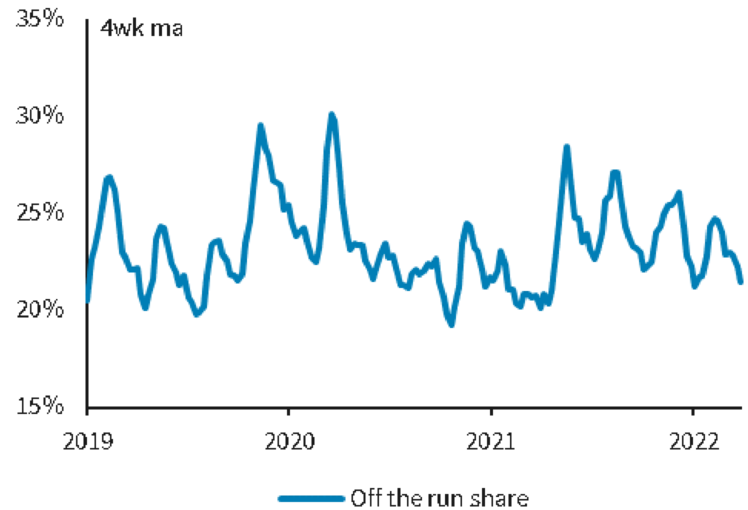
Note: Turnover = Monthly Treasury volumes / Outstanding Treasuries Source: US Treasury, Presenting Member Calculations

Off-the-run volumes have held up despite higher volatility

On-the-run vs off-the-runs volumes



Ratio vs Aggregate volumes

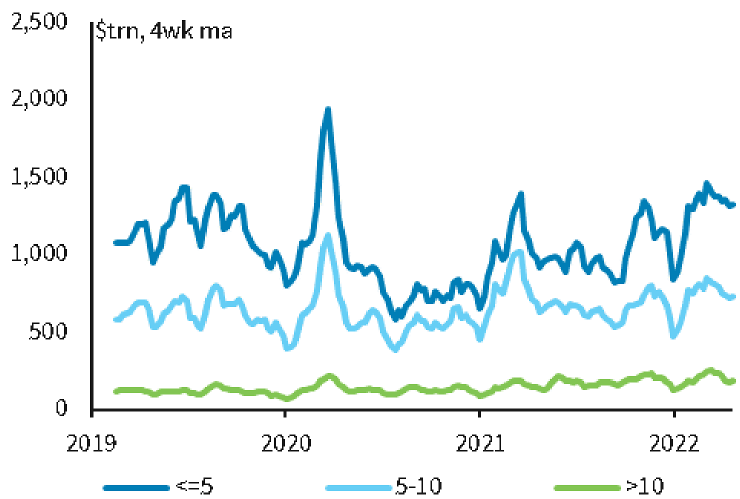


Note: Nominals only, Source: TRACE Treasury Aggregate Statistics

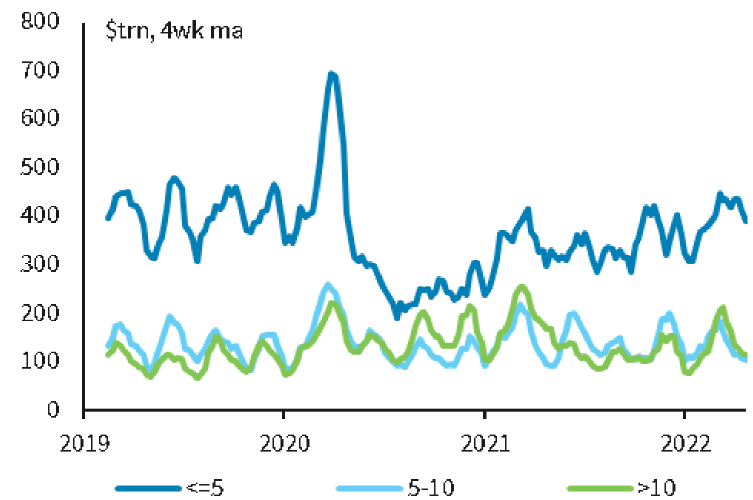
• Volumes have been elevated in shorter maturities

- Shorter maturities are more likely to react to greater monetary policy uncertainty

On-the-runs by tenor



Off-the-runs by tenor

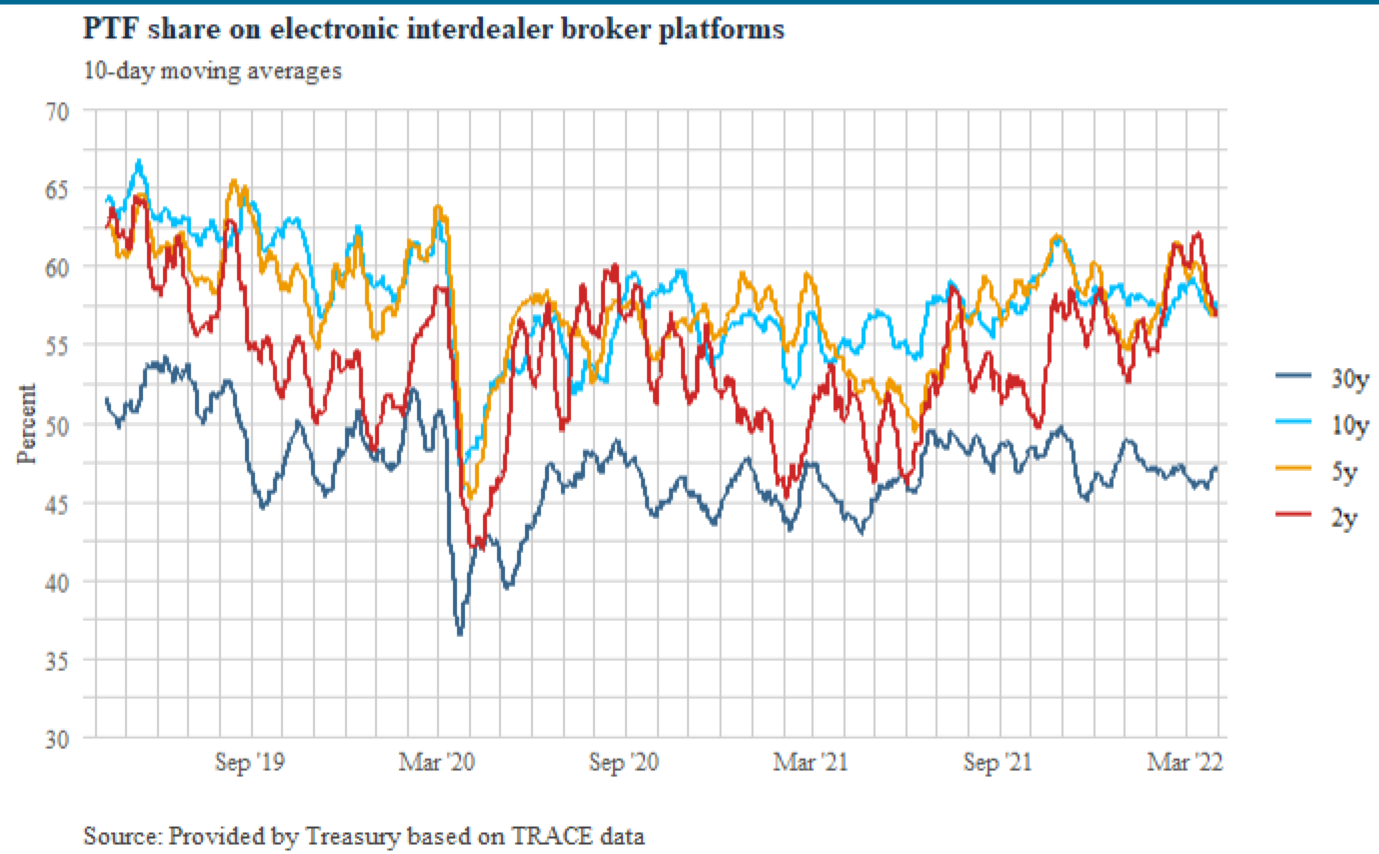


Note: Nominals only, Source: TRACE Treasury Aggregate Statistics

PTF share has been steady across tenors

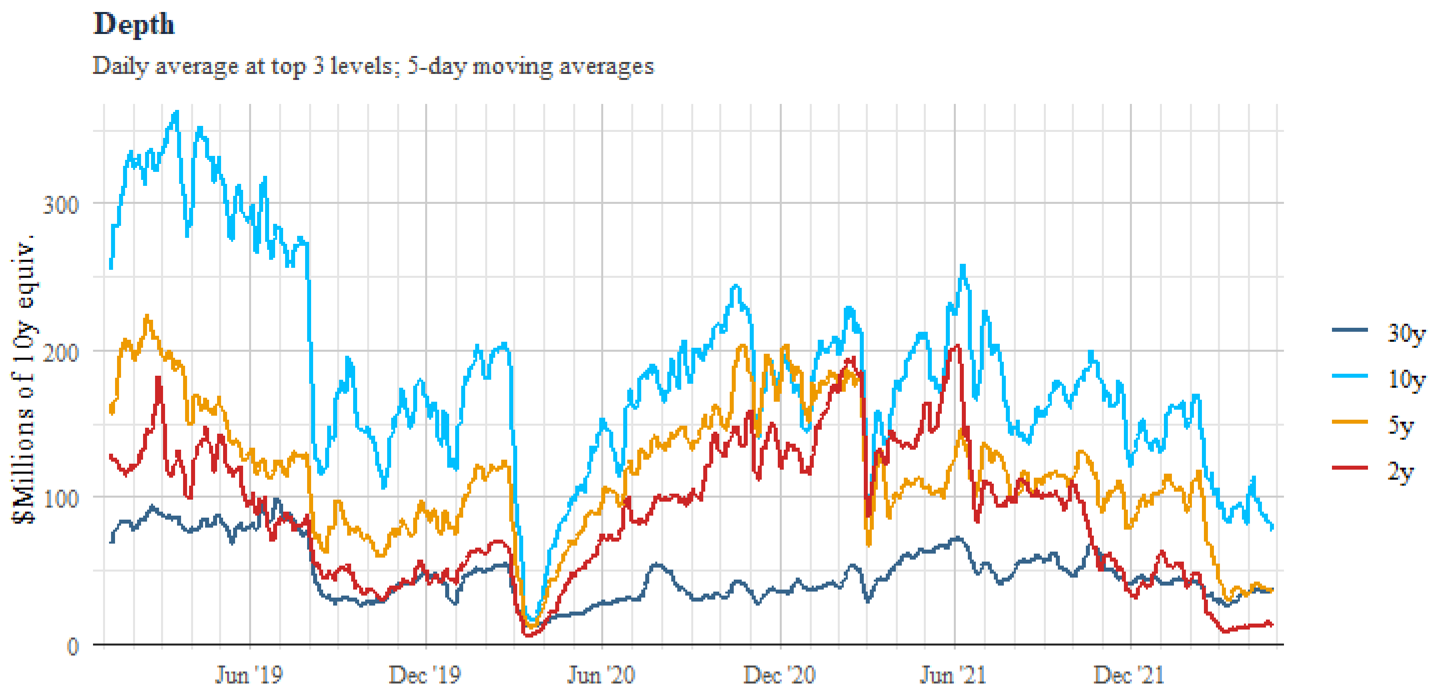
- PTF (principal trading firms) share of trading volumes in 2022 is in line with recent years

PTF share of trading volumes



However, market depth has declined in recent months

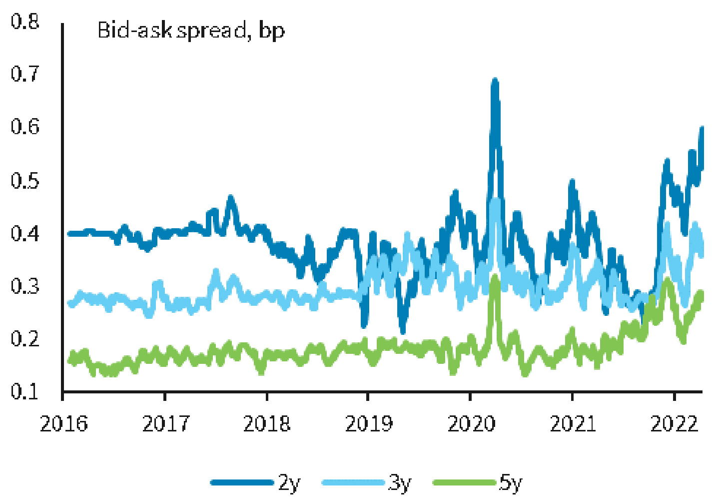
Measure of market depth across tenors



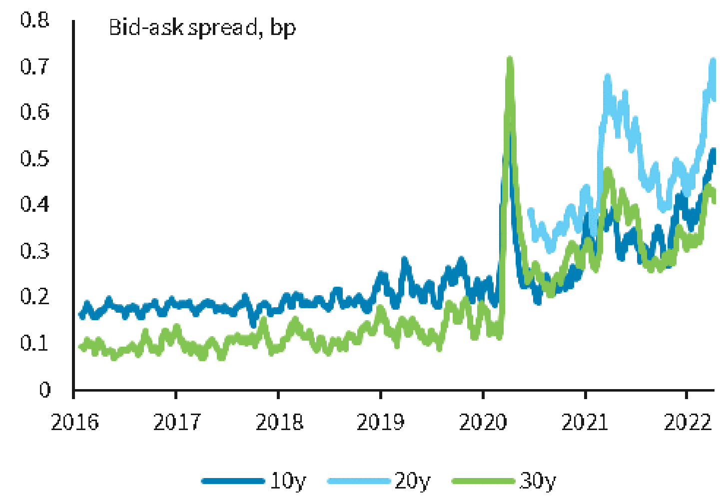
Source: BrokerTec

Bid-ask spreads have widened noticeably

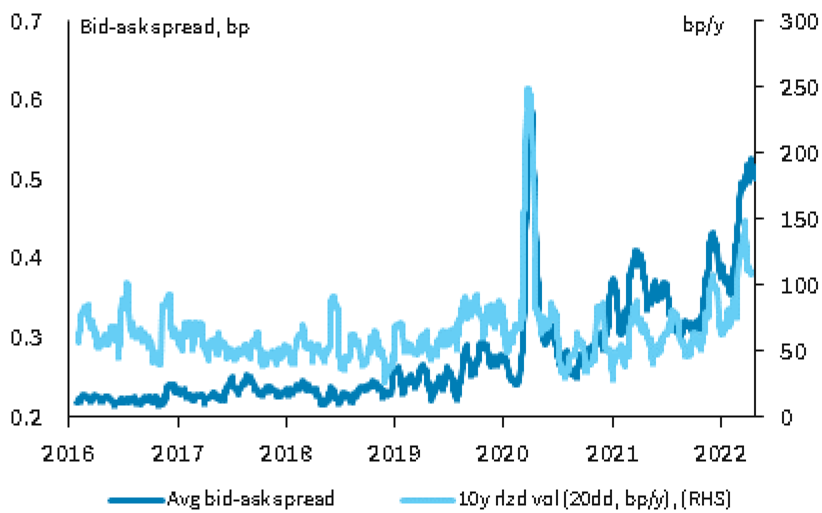
Front to intermediate on the run bid-ask spreads

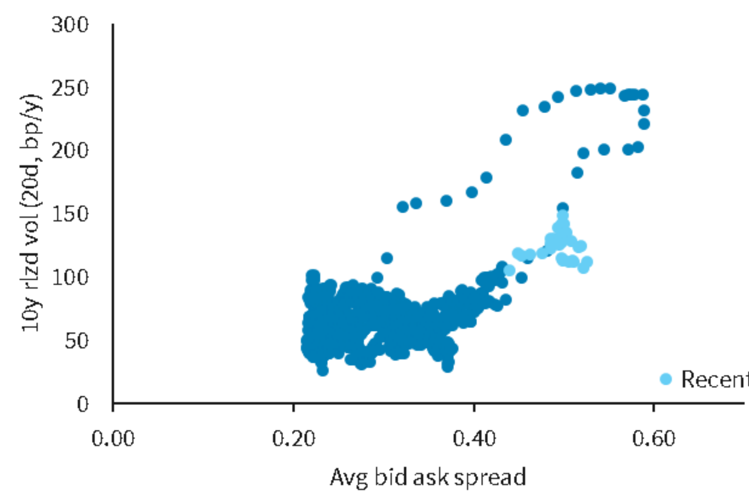


Long-end on the run bid-ask spreads



Bid ask spreads versus realized volatility

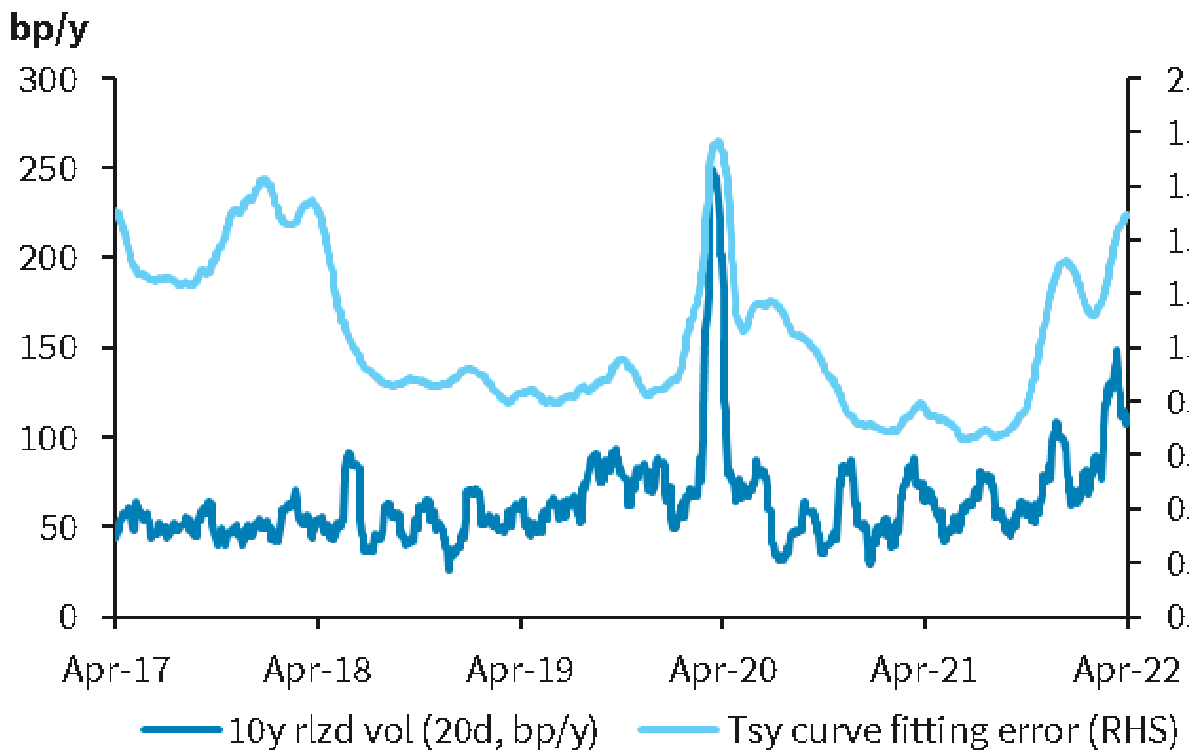




Note: Nominals only, 1m moving average shown, Source: NY Federal Reserve, Bloomberg, Presenting Member Calculations

Dispersion has risen in 2022 and is near March 2020 levels

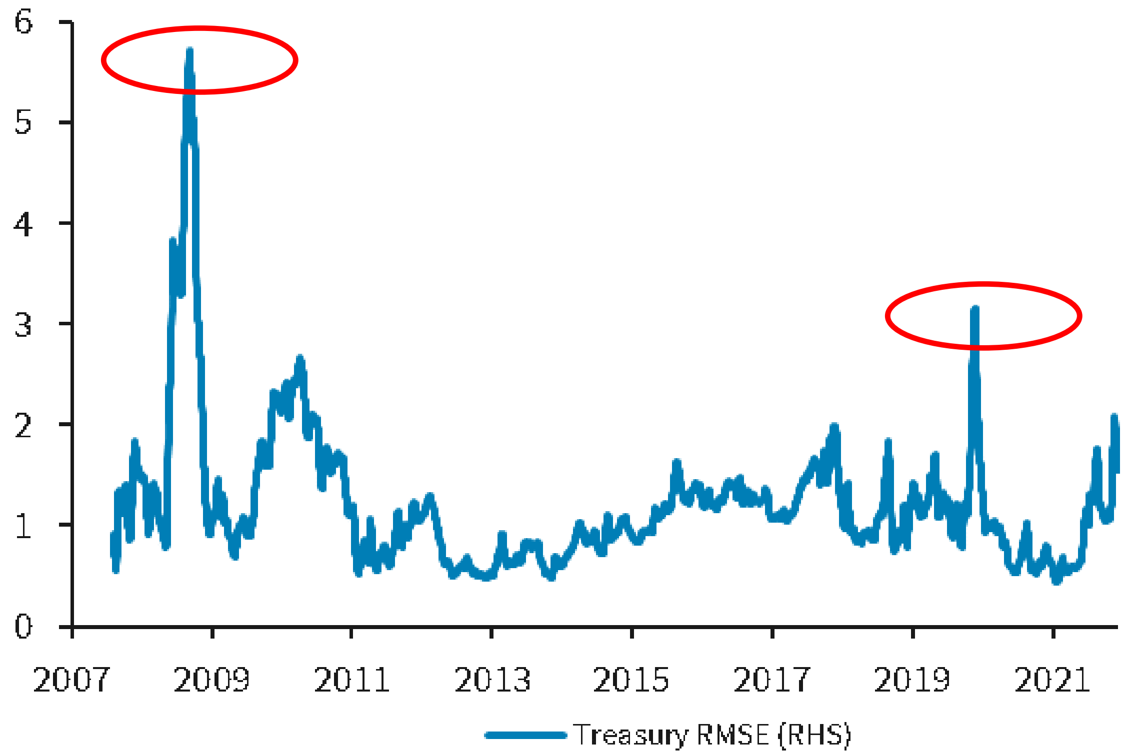
Bond volatility isn't always high when dispersion is elevated



Source: Presenting Member Calculations, Federal Reserve

Dispersion is not high by historical standards

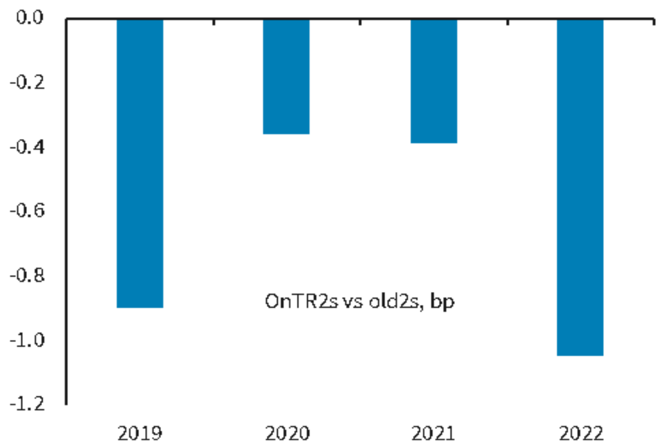
Dispersion in 2020 vs GFC



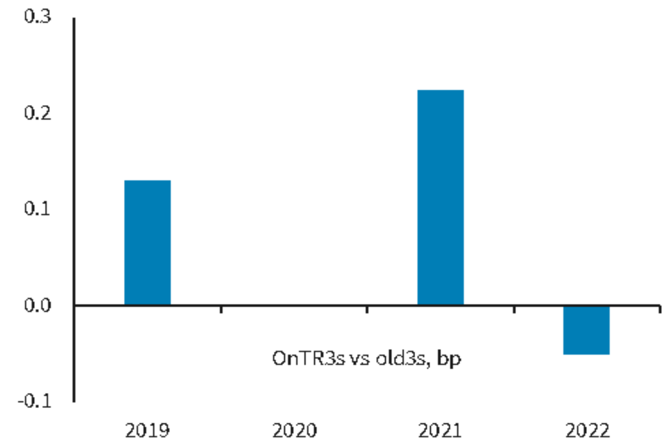
Source: Presenting Member Calculations, Federal Reserve

Liquidity premium has gone up across tenors

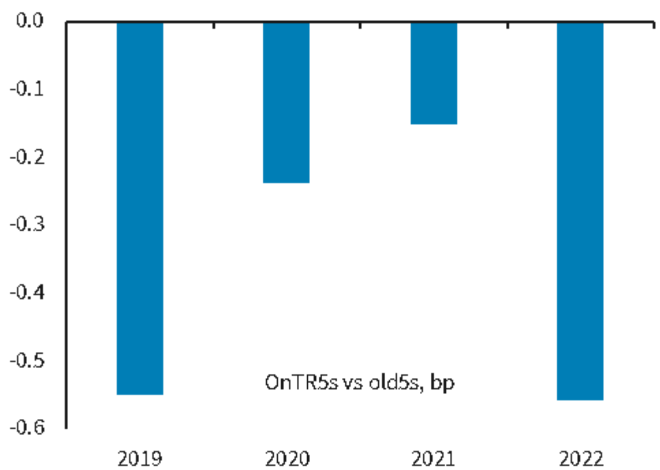
2y on-the-run liquidity premium



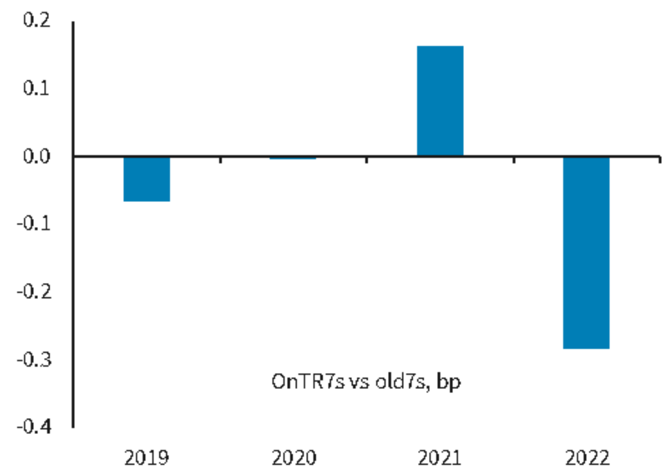
3y on-the-run liquidity premium



5y on-the-run liquidity premium



7y on-the-run liquidity premium

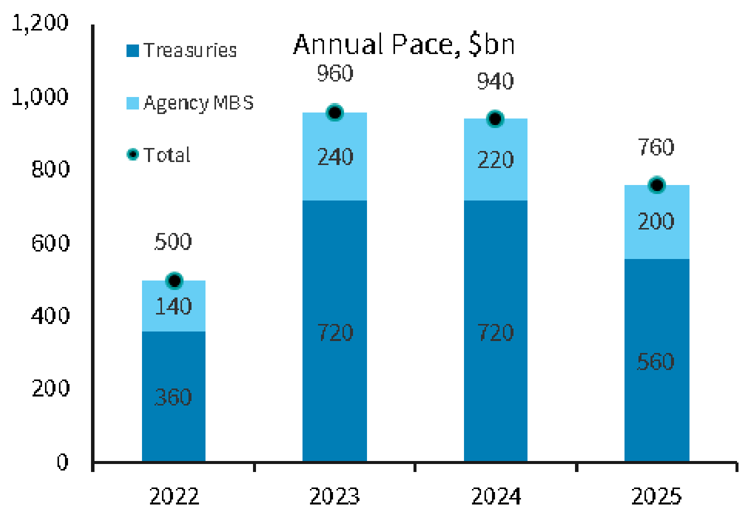


Liquidity premium estimated using swap curve, Source: Presenting Member Calculations

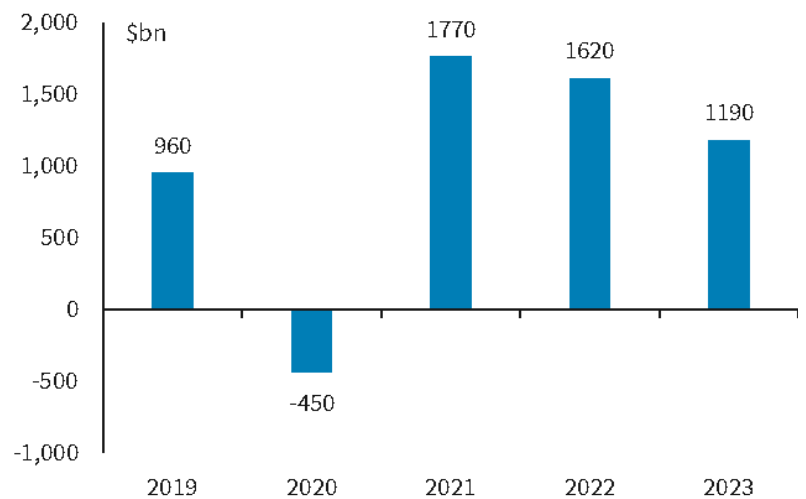
Upcoming balance sheet roll-off not a major factor for liquidity

- The Fed's portfolio could shrink by around $3trn by YE-25
- Despite balance sheet roll-off, net coupon supply to private sector is dropping next year

Pace of run-off



Coupon supply to private sector

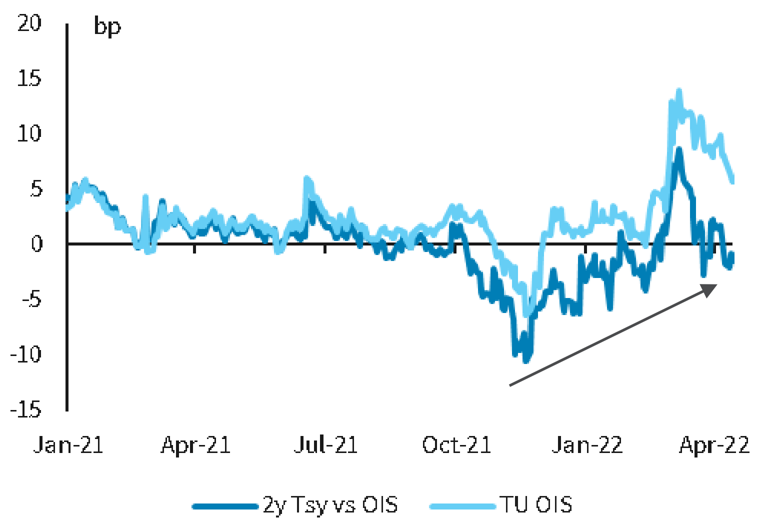


Source: NY Federal Reserve, Presenting Member Calculations

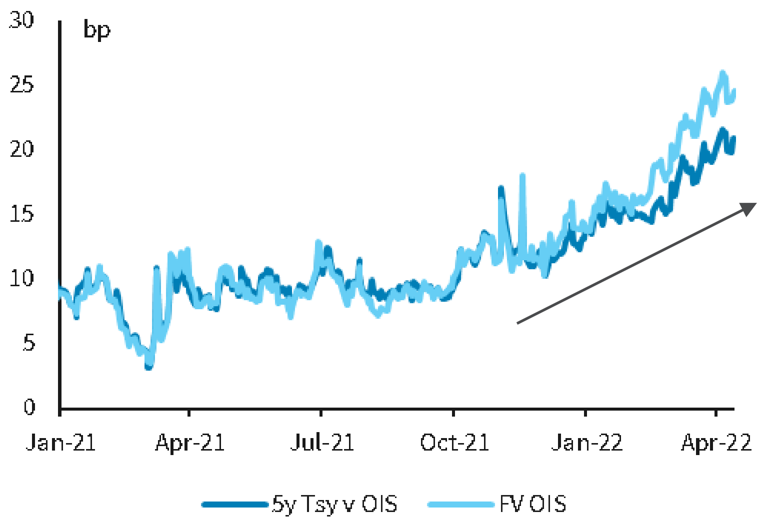
Markets have been preparing for the end of asset purchases for months

- Treasuries have been cheapening vs OIS since Q4’21
- Balance sheet roll-off is not a market functioning problem, it is simply an increase in coupon supply

On-the-run 2s and TU (vs OIS)



On-the-run 5s and FV (vs OIS)



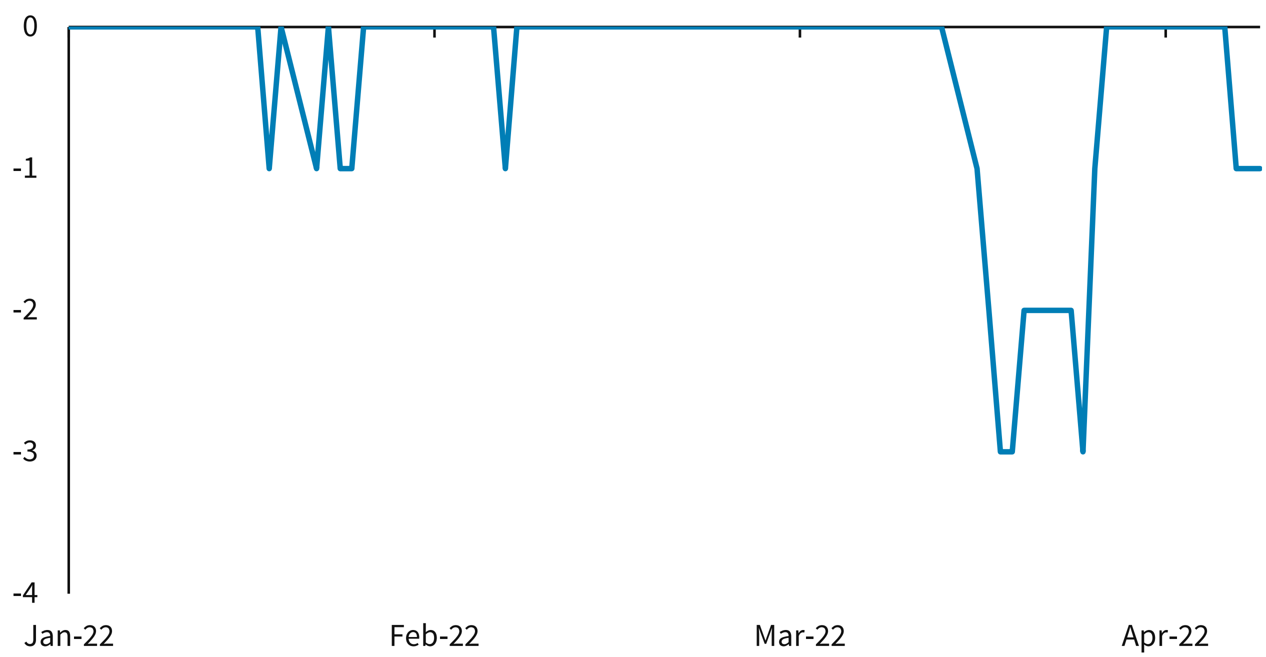
On-the-run vs OIS compared with TU futures invoice spread vs OIS, Source:, Bloomberg, Presenting Member Calculations

Funding market functioning is not a major concern

Investors need collateral, not cash

- Repo is trading below RRP floor because investor are awash in cash but need to borrow collateral

SOFR less RRP (bp)

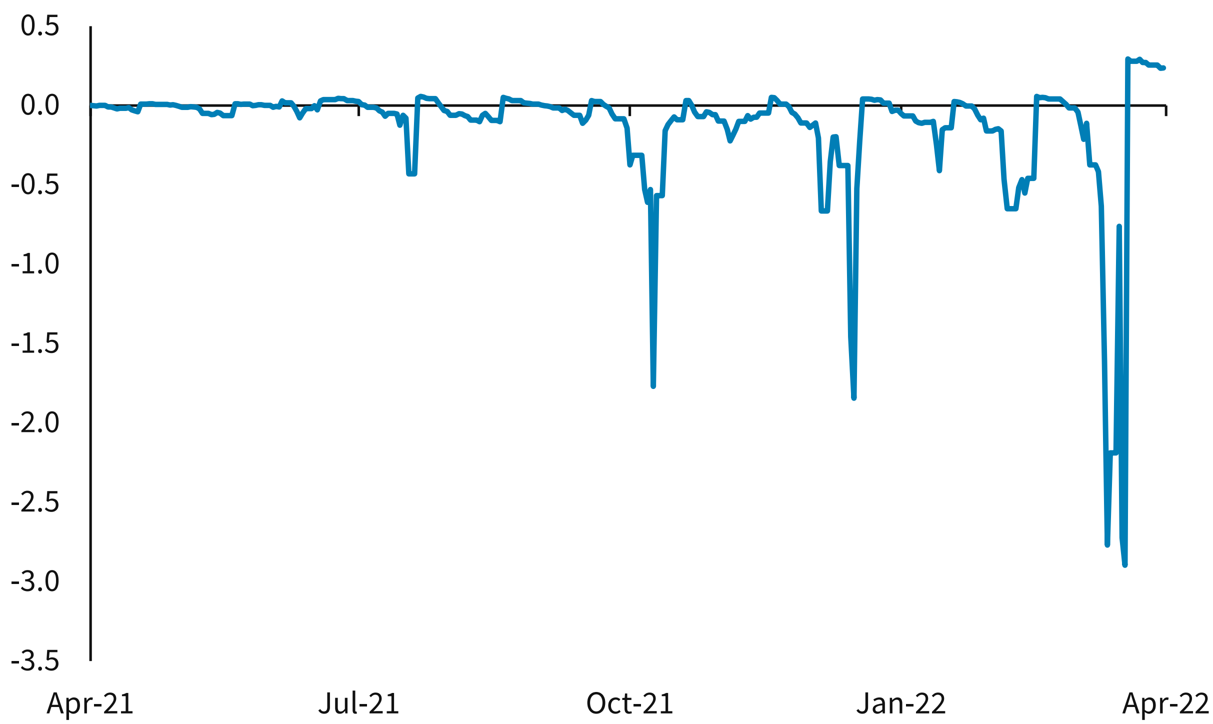


Source: Presenting Member Calculations, Federal Reserve

Deep short base in shorter tenors, and demand for collateral

- 2s do not normally trade rich in repo. Current richness is driven by an elevated short base driving a search for collateral, not cash

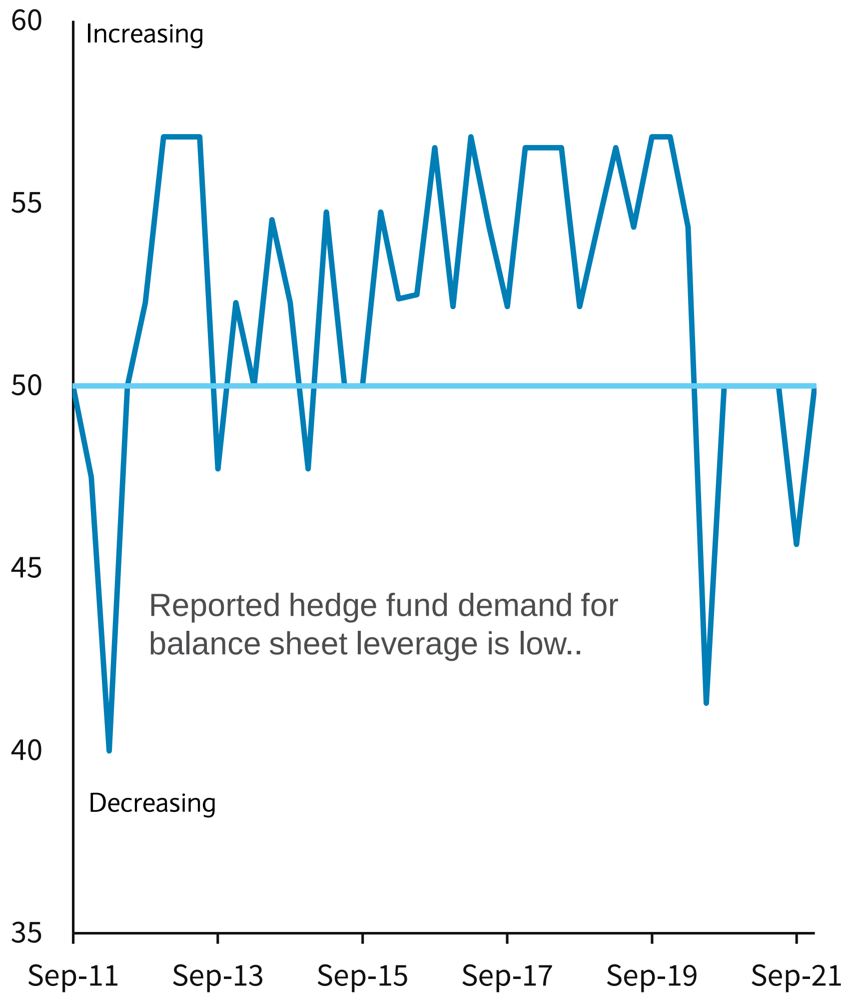
Treasury 2y OTR repo rate (%)



Source: Presenting Member Calculations, Federal Reserve

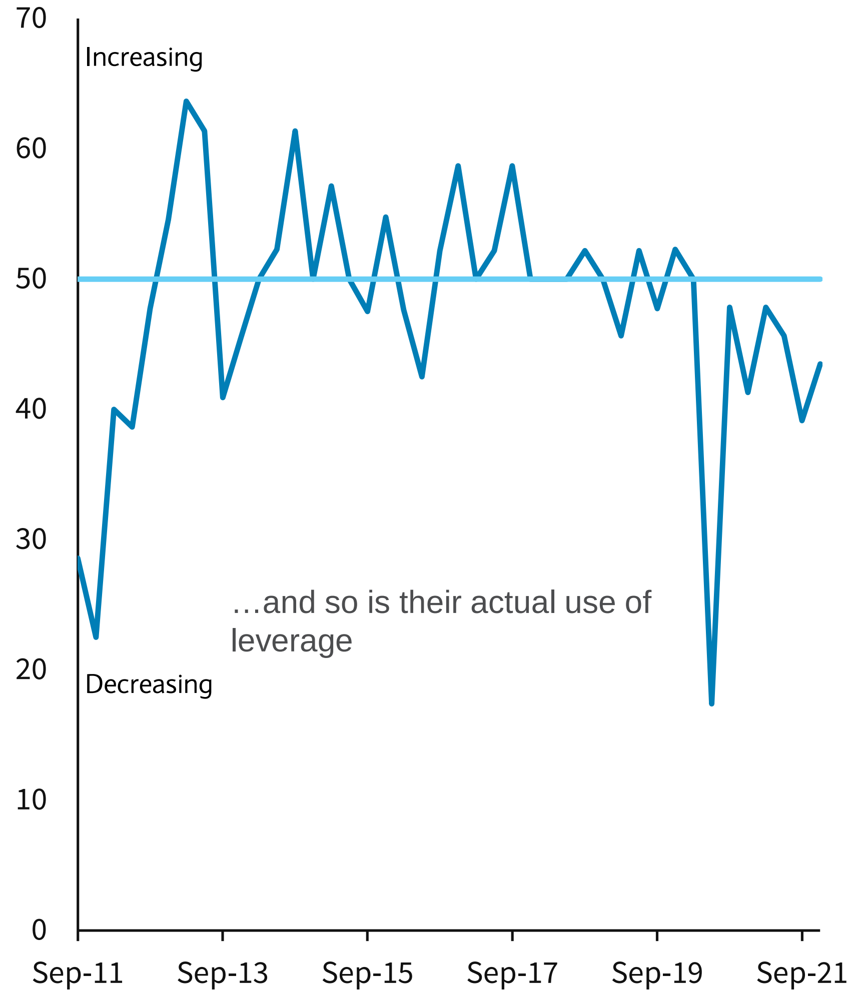
Levered investors’ demand for balance sheet is low

Change in demand for leverage



Note: Diffusion index. Source: Federal Reserve, Presenting Member Calculations

Change in leverage use

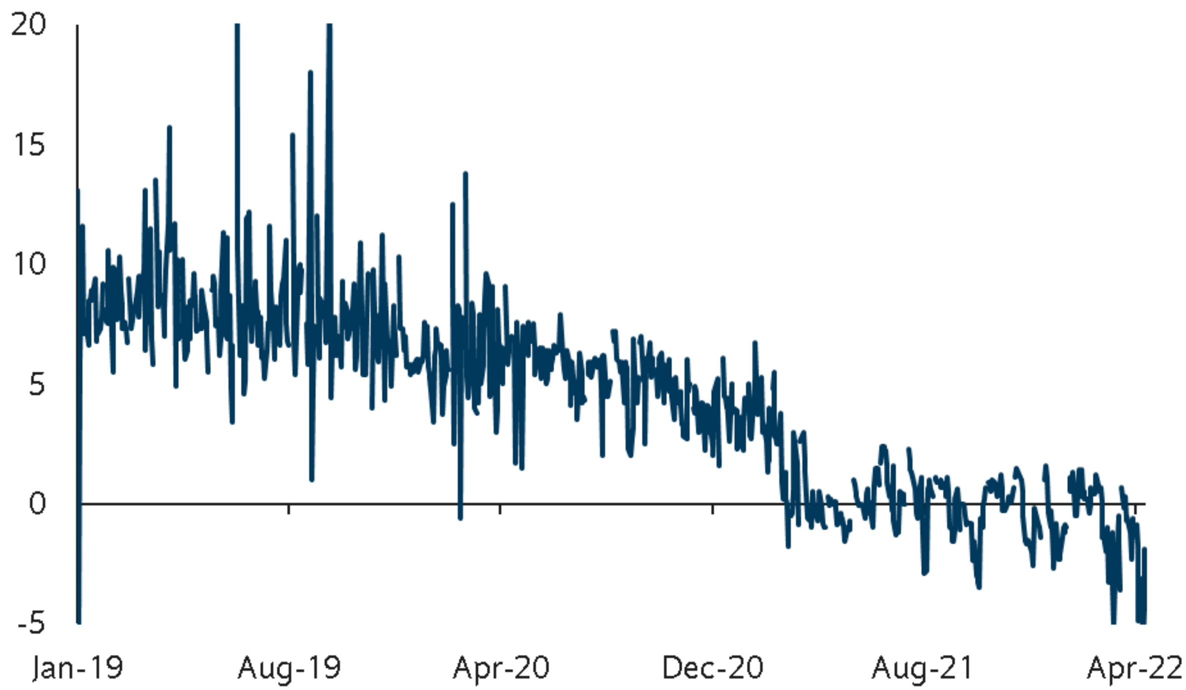


Note: Diffusion index. Source: Federal Reserve, Presenting Member Calculations

Balance sheet proxy shows no funding concerns

- Spread between overnight GCF and tri-party rates has evaporated. In other words, the spread between where dealers fund themselves and where levered investors borrow has shrunk dramatically.

GFC – triparty (bp)



Source: Presenting Member Calculations, Federal Reserve

Conclusion

Conclusion

- Realized volatility in the US Treasury market has risen in 2022
  - But much of the move is due to higher monetary policy and geopolitical uncertainty

- Most measures of traded volume do not suggest a significant worsening of trading conditions
    - PTFs' (and other liquidity providers) share of trading volumes is similar to past years
    - Bid-ask spreads have risen but are largely in line with the rise in policy uncertainty

- Funding markets show that investors are awash in cash, but need to borrow collateral
  - The spread between dealer funding costs and those of levered investors has dropped
  - Funding concerns are very low, and thus not a factor driving the rise in Treasury volatility

- But trading conditions and liquidity are admittedly hard to gauge precisely
  - And in prior periods of stress, intermediation demand has sometimes overwhelmed capacity
  - Treasury should remain vigilant, but we do not see an issue with market functioning at present

Potential 17-Week Bill Benchmark

Treasury has regularly been issuing the 17-week cash management bill since April 2020 and last refunding stated it would announce a decision on whether to change the 17-week to benchmark status at an upcoming refunding. Based on your recommendations for the appropriate level of bills outstanding in the medium- to long-term, should Treasury change the 17-week to benchmark status? What factors should Treasury consider before making a decision on the 17-week?

Treasury Borrowing Advisory Committee

May 3, 2022

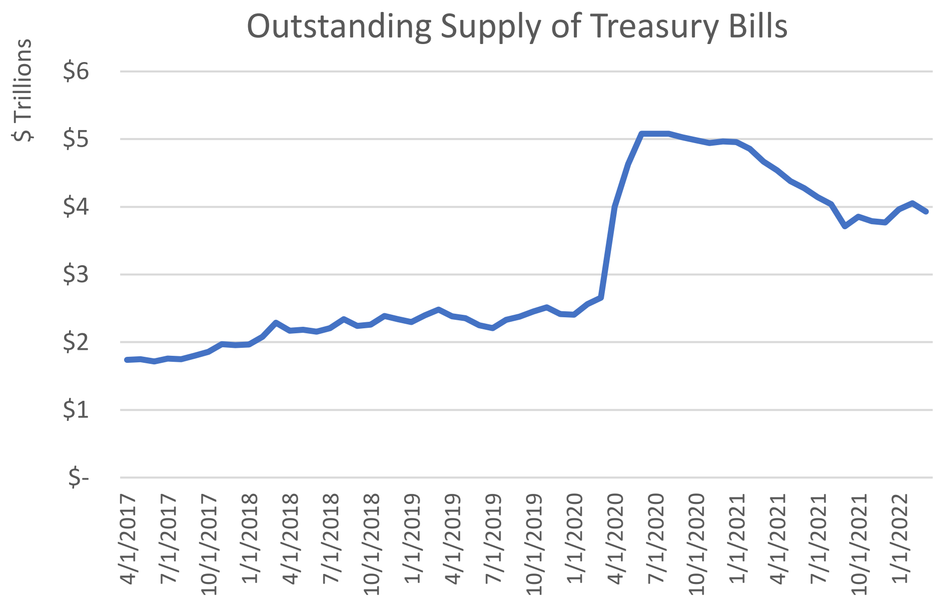
17-Week Benchmark Bill Factors

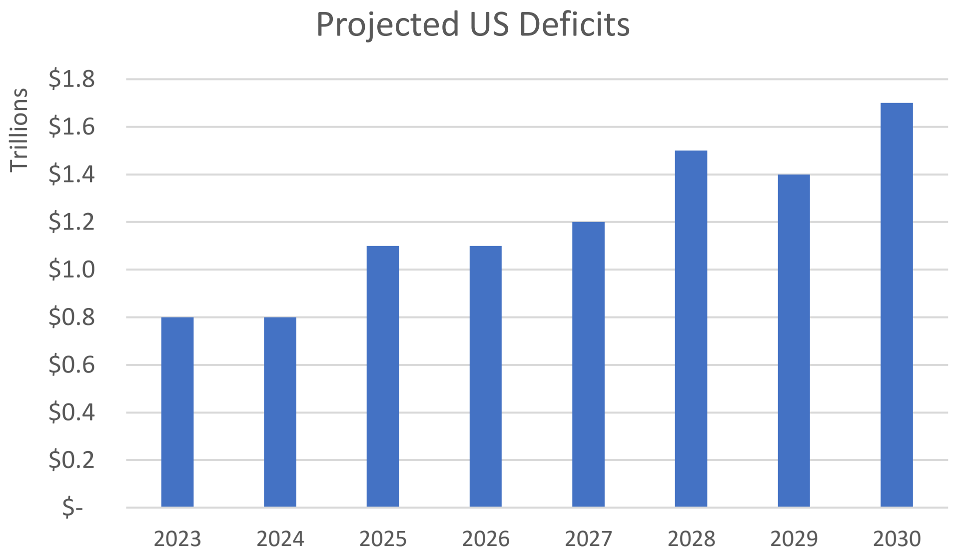
TBAC believes the following factors should be considered by the Treasury in making this determination.

- What is the anticipated trajectory of future Treasury bill issuance, and will that be supportive of another benchmark bill? If funding needs were to decline and Treasury bill issuance decreases, would an additional benchmark bill complicate Treasury's debt management?
- How has the recent demand for the 17-week cash management bill compared to benchmark bills?
- Will future investor demand continue to support the 17-week bill issuance?
- How would the 17-week bill satisfy the Treasury's goal of "regular and predictable" issuance and would this benchmark offering complement the current debt management process?

Issuance of Treasury Bills to Remain Robust

- After the onset of the pandemic and the resulting passage of the CARES act, Treasury bill supply surged $2.5 trillion to $5.1 trillion in just 3 months.
- Treasury bills as a percentage of total marketable debt increased to 25% during this period but has since declined as the Treasury has rebalanced its debt. Bills now represent 17% of the Treasury's marketable debt which currently falls in the middle of the recommended target range of 15%-20%.
- Bill supply is expected to decline further in the second quarter before rebounding in the second half of the year and finishing above $4 trillion by year end.
- With projected deficits expected to average over $1 trillion for the next 8 years, Treasury bills would need to increase by over $1 trillion to remain within the 15-20% of marketable debt. This $1 trillion allocated across all bills including the 17-week CMB would represent a roughly 25% increase in outstanding bill supply.
- Without the 17-week CMB, benchmark bills would need to increase by over 40% likely requiring auction sizes for the 13 and 26-week to grow considerably. Conversely, if funding needs declined, Treasury would have the flexibility to reduce the relatively high current auction sizes even with an additional benchmark bill.

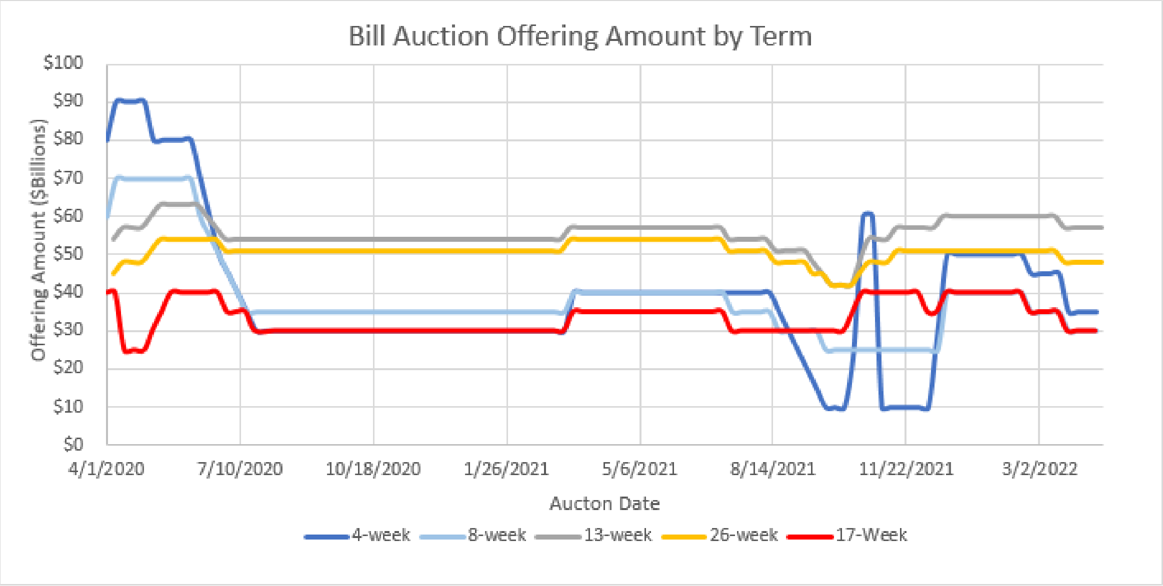


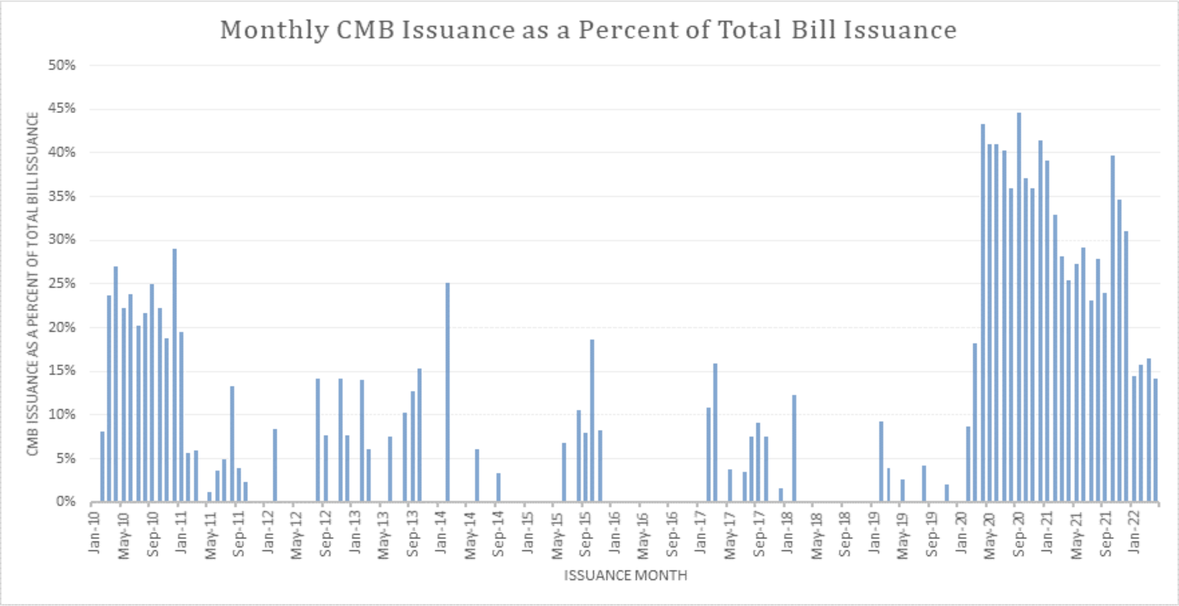


Sources: Bloomberg, CRFB (Deficit Projection)

17-Week Treasury Bills have been Consistently Issued over the Past 2 Years

- In April 2020 the Treasury began regular issuance of its 17-week bill (or approximately 4-month bill) to accommodate the funding needed to support the federal government's response to the pandemic. The 17-week cash management bill (CMB) has had a stable and predictable issuance pattern over the past 2 years. Weekly issuance sizes of the 17-week CMB have remained between $30 and $40 billion since the spring of 2020.
- CMBs have historically been utilized by the Treasury for targeted, short-term cash management needs such as around tax receipt dates and debt ceiling management.
- In the months following the passage of the CARES Act, Treasury heavily utilized cash management bills to help fund the fiscal stimulus plan. CMBs surged to over 40% of monthly bill issuance during this period.
- CMBs as percent of bill issuance has declined to roughly 15% as Treasury has adjusted longer dated debt. The 17-week bill remains the only regular CMB issue.

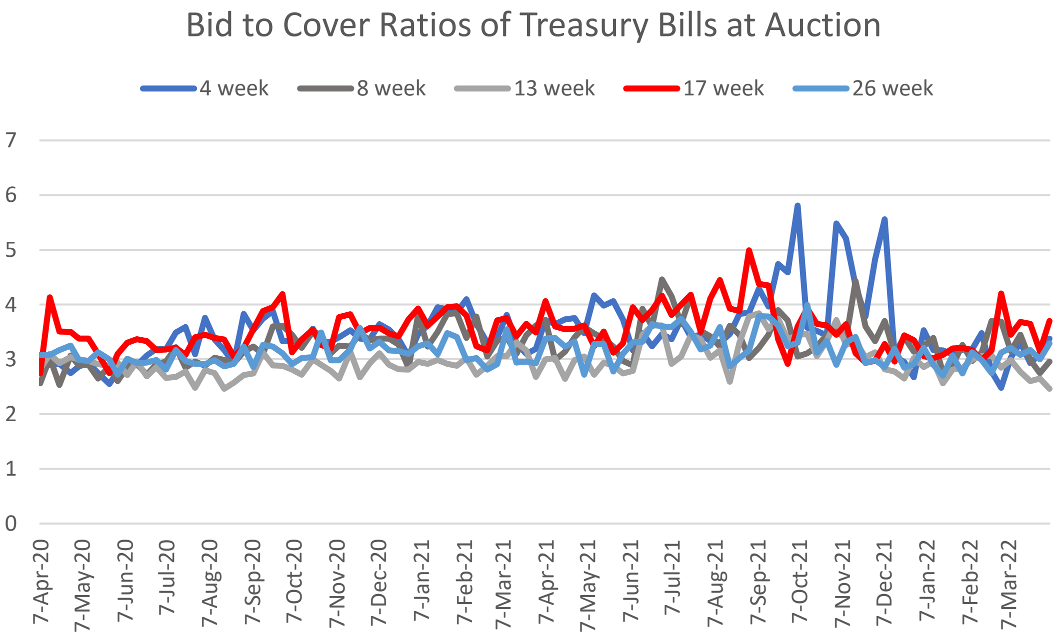


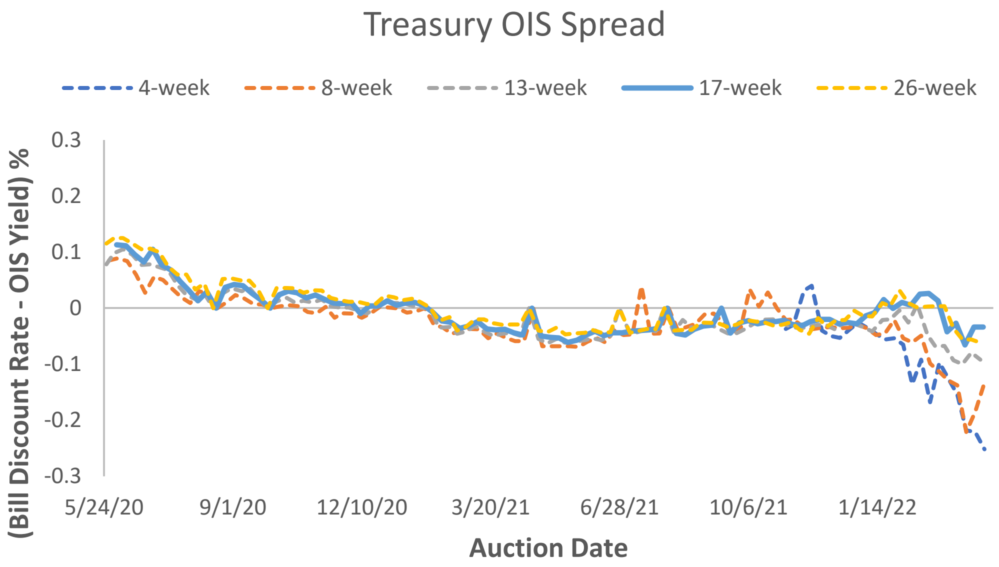


Source: Treasury Direct

Investor Demand for 17-Week Treasury Bills Remains Strong

- Over the past two years, during a period of unprecedented bill issuance, demand for the 17-week Treasury bill has remained strong even as bills as a percentage of total marketable debt rose to over 25% in 2020.
- Bid-to-cover ratios, a proxy of investor demand, for the 17-week bill have been in line with the Treasury's benchmark bills. If fact, the 17-week bill has had a higher bid-to-cover ratio on average since April 2020 (at 3.5 times) than any of the Treasury's benchmark bills.
- Additionally, the spread to OIS for the 17-week Treasury bill has been consistent with benchmark bills, improving throughout the year as demand for bills has increased. The recent move lower highlights the desire for investors to remain short ahead of further Fed rate hikes with the 4-week and 8-week spreads improving the most.

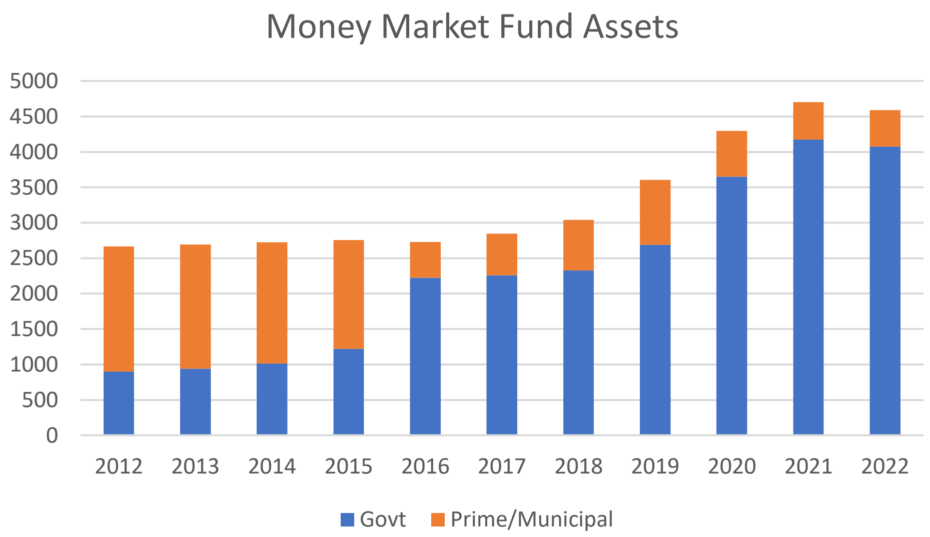


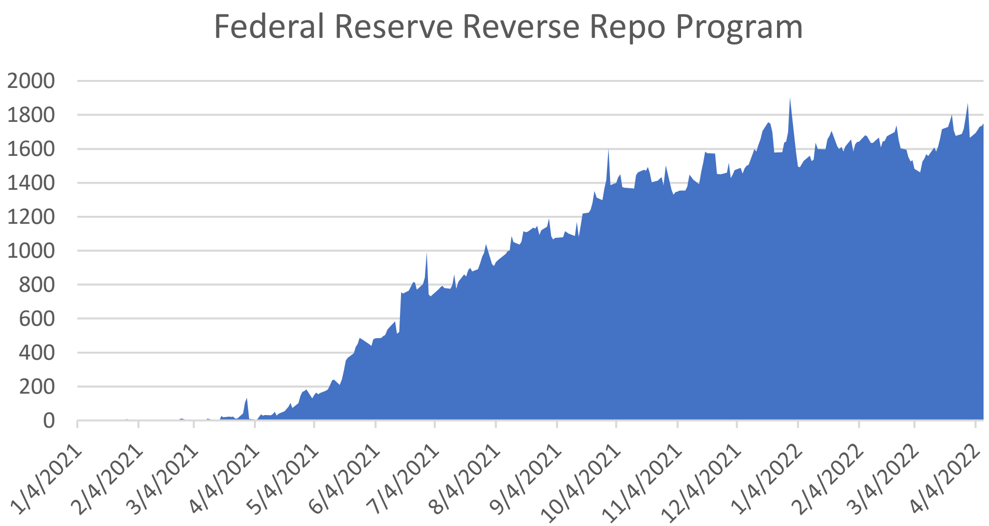


Sources: Bloomberg, Treasury Direct

Future Demand For Treasury Bills Expected to Remain Elevated

- Money Market Funds(MMFs), who on Feb 28th 2022 accounted for approximately 30% of Treasury bill holders, have seen significant inflows in recent years with assets up 50% since the end of 2018. As the Federal Reserve raises short term rates, MMFs are likely to see continued inflows with yields that may be attractive to investors versus other short term investment options.
- Not only have overall MMF assets increased but the composition of assets continues to trend overwhelming into government MMFs since the last round of money market reforms were implemented in 2016. As of March 31, 2022, 89% of money market assets were in government MMFs up from only 34% at the end of 2012.
- In the past year, government MMFs have increased their utilization of the Federal Reserve's Overnight Reverse Repurchase Agreement Facility (RRP) as other eligible options outside of this program are in high demand and therefore lower yielding. A decrease in Treasury bill supply of over $1 trillion between January 2021 to September 2021 was one of the catalysts for this shift.
- MMFs and government sponsored enterprises (GSEs) have accounted for more than 95% of the RRP's participation which has totaled over $1.7 trillion as of April 4, 2022. These assets invested in the RRP represent potential demand for Treasury bills.





Money Market Fund Assets Through 3/30/22

Sources: Investment Company Institute (ICI), Bloomberg

The 17-Week Bill Fits within an Attractive Profile for Investors and the Treasury

- The current 17-week bill fits well within the weekly schedule. Treasury has been auctioning the 17-week bill on Wednesdays with settlement and maturity of these bills on Tuesdays. These consistent Tuesday/Thursday settlements align with maturities which offers investors multiple options for maturing bills.
- Many Treasury bill investors prefer shorter duration securities to manage their portfolios. MMFs, for example, are required to limit their weighted average maturity(WAM) of their portfolios to no more than 60 days and therefore can only marginally invest in longer dated issues. Additionally, investors tend to manage to a shorter WAM in a rising rate environment to more quickly capture the effects of rate hikes. The 17-week bill can therefore be an attractive complement to the current benchmark 4-week, 8-week, 13-week, 26-week and 52-week bills.
- From a debt management standpoint, having a 17-week benchmark could diversify the distribution of bill maturities, thereby creating more tools to manage rollover risk.

Bills	Monday	Tuesday	Wednesday	Thursday	Friday
4-Week		**Issued/Maturity**		**Auction**	
8-Week		**Issued/Maturity**		**Auction**	
13-Week	**Auction**			**Issued/Maturity**	
17-Week		**Issued/Maturity**	**Auction**		
26-Week	**Auction**			**Issued/Maturity**	
52-Week*		**Auction**		**Issued/Maturity**	

* 52-Week Bill issued once every four weeks

Source: Treasury Direct

TBAC Recommendation

Based on the projected growth in total Treasury bill issuance, the strong expected future demand from investors for Treasury bills and the compatibility of the 17-week bill issuance patterns and maturities for both investors and the Treasury, the TBAC recommends that the Treasury move the 17-week bill to a benchmark status. By moving the 17-week from a cash management bill to a benchmark bill, the Treasury would reinforce their goal of "regular and predictable" issuance by signaling to the market that the Treasury expects to continue to offer these bills as part of its regular debt management process.