

US Rates Watch

Follow the money: cash & collateral trends October 31 update

Money map: Banks fight reserve drain w/ borrowing & TDs

Month-end is likely to be uneventful but SOFR is trending higher leading into the large Treasury settlement date. ON RRP continues to see large and significant reductions in take-up, while TGA and reserve balances trend higher. Despite deposit outflows, banks have been offsetting the decline by issuing large time deposits and increasing borrowing.

Cash: ON RRP takes more than brunt of QT decline

Fed balance sheet data for the week ending Oct 25, showed an \$18b decline in securities holdings from QT in addition to a \$5b decline in FDIC bank loans (Exhibit 1). On the liability side, reserve balances grew \$14b (Exhibit 2), TGA grew \$7b, and foreign RRP grew \$4b. As a result, the increase in Fed liabilities and decline in Fed assets came entirely out of Fed ON RRP take-up, which declined \$50b (Exhibit 3). The decline in the ON RRP has been significant, with take-up \$1.2tn lower YTD. We expect this trend of ON RRP taking the brunt of QT to continue until ON RRP has been drained to \$0 or QT ends.

Cash: MMFs continue to see inflows, esp gov't inst'l MMFs

Over the week ending Oct 27, MMF AUM increased \$31b according to Crane Data (Exhibit 4). The increase was primarily into gov't institutional funds, with some inflows continuing into retail prime and gov't funds. We expect MMF inflows to continue but slow and potentially reverse as the curve steepens (Exhibit 6).

Cash: Banks offset small deposit outflows with large TDs

Bank balance sheet data, which is lagged an additional week compared to Fed balance sheet data, shows banking system assets declining \$115b on the week ending Oct 18, potentially due to the California delayed tax payment date (Exhibit 7). Domestic banks saw \$117b in deposit outflows, driven by large banks. Retail deposit outflows were partially offset by an increase in large time deposits. Banks appear to be pushing back on retail deposit outflows by issuing CDs/TDs.

31 October 2023

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Abbreviations:

BTFP: bank term funding program
ME: month-end
CB: Central bank
DW: discount window
FHLB: Federal Home Loan Banks
FIMA: Foreign and international monetary authorities
Gov't: government
GSE: Government sponsored enterprises
Inst'l: institutional
MMF: Money market funds
ON RRP: Overnight reverse repo facility
P&I: principal & interest
TGA: Treasury General Account
w/w: week on week
DL: debt limit
WTD: week to date
DN: Discount Note
PD: Primary Dealer
UST: US Treasury
FRN: Floating rate note
FF: Fed funds

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Timestamp: 31 October 2023 07:48AM EDT

Cash bottom line: Fed RRP take-up continues to decline at a record pace with reserves proving resilient. Bank balance sheet data showed significant domestic retail deposit outflows around the California delayed tax payment date but banks offset these outflows via large time deposits. MMF AUM continues to increase, primarily for government inst'l MMFs, but MMF Fed RRP take-up continues to decline. This aligns with the extension of MMF WAMs and their shift into the wave of Treasury bill supply.

Collateral: Issuance likely to ramp higher after refunding

UST issuance has increased \$289b in October, \$204b from Treasury bill issuance (Exhibit 8). Treasury has been increasing bill auction sizes, but we expect coupon auction sizes to be ramped up after tomorrow's quarterly refunding meeting. See our recent refunding preview here: [Nov refunding preview](#).

FHLB debt has increased \$23b in October MTD, driven by a pickup in issuance last week (Exhibit 9). The increase in debt issuance appears to have been driven by FHLB advance demand. We expect issuance to slow down around month-end / Fed meeting but will likely continue to increase later in the week as banks continue to borrow.

CP issuance: Data from the Federal Reserve shows that on the week ending Oct 25 CP outstanding increased \$1b for financial CP but declined \$3b for non-fin CP (Exhibit 11).

Collateral bottom line: UST issuance continues with coupon auction sizes likely to ramp up starting in November and bill supply continuing to increase. At the same time banks are starting to pick up their borrowing via FHLB advances which has finally reversed some of the decline in FHLB debt.

Funding: less cash & more collateral=higher funding levels

To translate cash / collateral dynamics into funding markets we examine dealer holdings, repo volumes, & realized funding levels.

Dealer holdings, which are lagged, show a \$17b decline in Treasury holdings on the week ending Oct 18 (Exhibit 12, Exhibit 13), primarily from declines in Treasury bill holdings. As UST auction sizes grow, dealers will likely need to take down more and more of each auction and as a result USTs are likely to cheapen and repo rates and volumes could move higher.

Repo volumes: SOFR volumes increased \$100b on the week ending October 27 (Exhibit 15). At the same time, the rate on O/N SOFR has picked up 1bps to 5.31% as we approach month-end and a ~\$60b UST settlement on month-end. Consistent with recent month-ends, SOFR will likely remain elevated a few days following month-end, driven by the bilateral component, but we expect it to continue to return to the rate on ON RRP as long as ON RRP take-up remains elevated. Sponsored repo volumes increased \$39b on the week ending Oct 27, with bilateral increasing \$23b (Exhibit 16).

Funding bottom line: dealer UST holdings declined on the week ending Oct 18, driven by bill holdings. Repo rates have started to print above the ON RRP as we approach month-end and a large settlement date.

Key takeaway: ON RRP take-up continues to take the brunt of QT while reserve balances remain resilient. Banks have been offsetting retail deposit outflows with issuing large time deposits and recently higher borrowing via FHLB advances. UST issuance continues to ramp up, with coupon auction sizes likely to ramp up again beginning in November following tomorrow's quarterly refunding meeting. SOFR volumes and the rate has risen leading into month-end, driven by bilateral repo transactions. SOFR could stay sticky following month-end settlements but is likely to return to the rate on ON RRP until ON RRP take-up has declined closer to \$0. We expect the trends we've been seeing in ON RRP and reserves to continue, especially as the Treasury continues to issue a significant amount of bills.

Exhibit 1: Fed balance sheet, selected assets & liabilities (\$bn, Wednesday comparison data)

Cash in banking system exceeded Fed balance sheet growth due to lower ON RRP

Assets								Liabilities						
Dates	Securities	Repo	Discount Window	BTFP	FDIC bank credit extension	FX Swaps	Other	Currency	Foreign RRP	ON RRP	TGA	Reserves	Other	Total
12/28/2022	8,145	0	5	0	0	0	451	2,307	334	2,293	410	2,980	277	8,601
10/18/2023	7,395	0	3	109	53	0	423	2,324	298	1,151	841	3,250	119	7,984
10/25/2023	7,377	0	3	109	48	0	420	2,323	302	1,101	848	3,264	121	7,959
WoW Change	-18	0	0	0	-5	0	-3	-1	4	-50	7	14	2	-25
YTD Change	-767	0	-1	109	48	0	-31	16	-32	-1,192	438	284	-156	-642

Source: BofA Global Research, Federal Reserve

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Exhibit 2: Fed reserve balances outstanding (\$bn)

Change in reserve balance from prior week was +\$13.74bn as of Oct 25



Source: Federal Reserve

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Exhibit 3: ON RRP take-up (\$bn)

ON RRP take-up decreased \$50bn from prior week as of Oct 25



Source: FRBNY

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Exhibit 4: Daily Crane MMF AUM (\$bn)

MMF AUM increased \$31b WoW as of Oct 27, with inflows primarily into gov't institutional funds

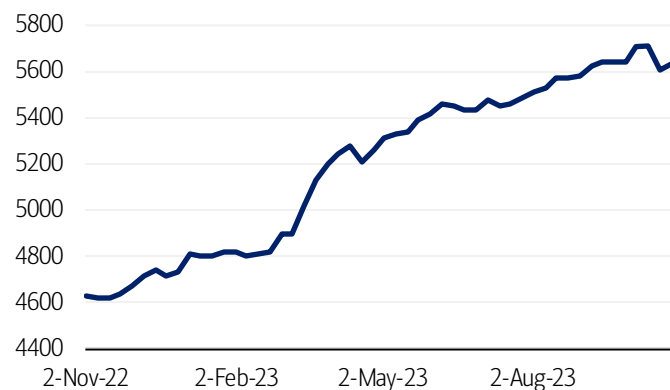
Dates	Total	Prime	Gov't	Tax exempt	Retail	Institutional	Prime Institutional	Gov't Institutional	Prime Retail	Gov't Retail
12/30/2022	5,073	1,077	3,996	0	1,584	3,489	655	2,834	421	1,163
10/20/2023	5,980	1,269	4,584	127	2,120	3,734	617	3,117	652	1,468
10/27/2023	6,011	1,271	4,611	128	2,126	3,756	616	3,141	656	1,471
WoW change	31	2	27	1	7	22	-2	24	4	3
YTD Change	938	195	615	128	543	267	-40	307	235	308

Source: Crane Data

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Exhibit 5: MMF AUM (\$bn)

MMFs saw \$24.87bn in flows from prior week as of Oct 25

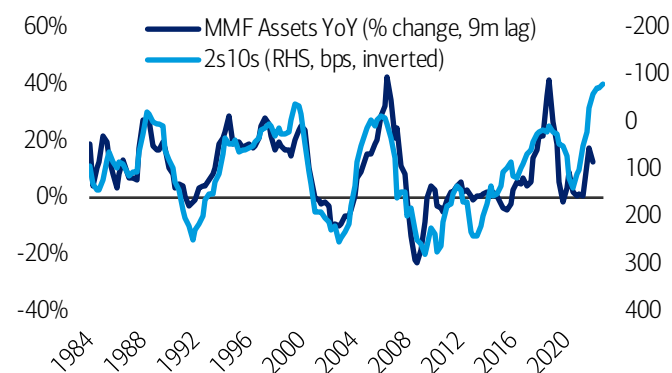


Source: ICI, Bloomberg

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Exhibit 6: MMF assets and 2s10s curve

MMF assets are typically negatively correlated to the yield curve with a lag



Source: BofA Global Research, Federal Reserve, Haver

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Exhibit 7: US Commercial Bank balance sheets, selected assets & liabilities (\$bn)

Domestic banks saw cash increase \$109bn on the week deposit outflows

		Total	Assets						Liabilities					
			Cash	UST & Agy	MBS	Repo & FF	Loans & Leases	Other	Deposits	Large	Small	Borrowings	Net due to related foreign offices	Other
All Banks	10/18/2023	22868	3343	1516	2509	588	12196	2716	17224	2218	15006	2359	295	2990
	1w Chg	-115	-85	-7	-8	-23	-12	20	-129	27	-156	-14	33	-5
	1m Chg	122	106	-4	-53	2	16	54	-14	59	-73	78	43	17253
	YTD Chg	-108	247	-138	-265	-12	91	-31	-720	566	-1286	506	25	18026
Domestic Banks	10/18/2023	19810	2039	1409	2483	247	11160	2472	15963	1415	14548	1352	-334	2829
	1w Chg	-118	-109	-3	-7	-3	-8	14	-117	29	-145	1	6	-8
	1m Chg	87	91	3	-51	-2	8	37	14	59	-45	42	19	15960
	YTD Chg	-193	168	-138	-255	-66	113	-15	-668	600	-1268	368	5	16732
Large Banks	10/18/2023	13284	1601	1114	1907	210	6737	1715	10692	773	9919	920	-362	2035
	1w Chg	-108	-98	-3	-6	-4	-9	12	-101	26	-127	-3	5	-10
	1m Chg	73	73	-4	-29	-3	-2	38	-2	50	-52	46	19	10704
	YTD Chg	-141	129	-107	-71	-58	-31	-3	-538	386	-924	326	14	11288
Small Banks	10/18/2023	6526	438	295	577	37	4422	757	5271	642	4629	432	28	794
	1w Chg	-10	-11	0	-2	1	1	2	-16	2	-18	3	1	1
	1m Chg	13	18	8	-22	1	10	-1	16	8	7	-3	0	5256
	YTD Chg	-52	39	-31	-183	-8	143	-12	-130	214	-343	42	-9	5445
Foreign Banks	10/18/2023	3058	1305	106	26	341	1036	244	1261	803	459	1007	628	161
	1w Chg	3	24	-3	-1	-19	-5	6	-12	-1	-11	-15	27	4
	1m Chg	35	15	-7	-2	3	8	18	-28	1	-28	36	24	1292
	YTD Chg	85	79	0	-10	54	-21	-16	-52	-33	-19	137	20	1293

Source: Federal Reserve H8

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Exhibit 8: Treasury bill and coupon issuance (\$000s)

Treasury issuance grew \$289b in October

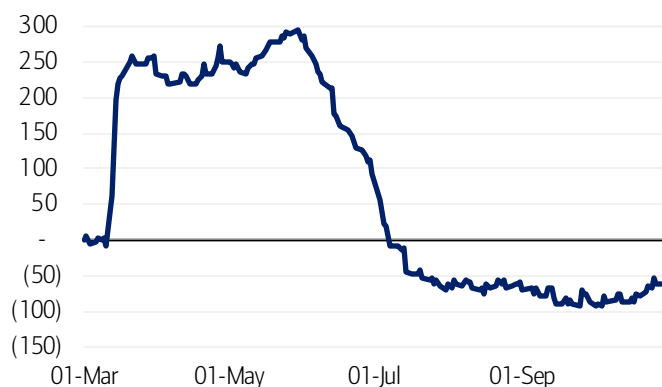
	Net total	Net bills	Net coupons	Gross new issue	Gross bill issue	Gross coupon issue	Gross maturing	Gross bill maturing	Gross coupon maturing
MTD	289,304	204,212	85,092	2,336,000	2,033,000	303,000	2,046,696	1,828,788	217,908
YTD	2,649,641	1,819,617	830,024	17,506,025	14,663,025	2,843,000	14,856,384	12,843,408	2,012,976
FYTD	323,860	204,212	119,648	2,483,000	2,033,000	450,000	2,159,140	1,828,788	330,352

Source: BofA Global Research, Haver Analytics

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Exhibit 9: Cumulative growth in FHLB debt since March 1 (\$bn)

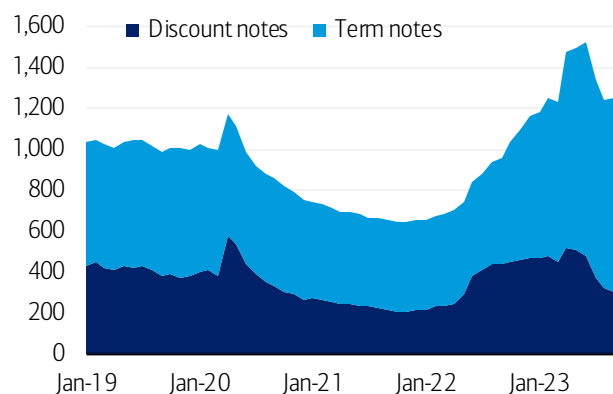
Daily FHLB cumulative debt is roughly \$87.5688bn lower since March 1



Source: Bloomberg, FHLB Office of Finance. Note: we use estimates of daily net issuance
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Exhibit 10: FHLB debt issuance (\$bn)

Higher FHLB debt issuance leading to more MMF investment

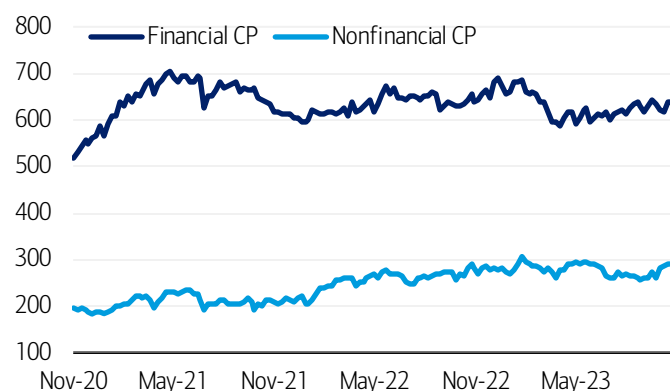


Source: BofA Global Research, FHLB Office of Finance

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Exhibit 11: Commercial paper (\$bn)

Financial CP is \$1b higher WoW, nonfin is \$3b lower WoW as of Oct 25



Source: Bloomberg

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Exhibit 12: Primary dealer holdings (\$mn)

PD holdings of UST has declined roughly \$3b over the week ending Sept 20, with declines across US Treasury types

	Total	US Treasuries					Agency ex MBS	MBS	Corporates	Commercial Paper	State & Munis	ABS	Variable Rate Notes
			Bills	Coupons	FRNs	TIPS							
10/18/2023	338,524	193,839	49,710	129,304	3,717	15,709	14,432	84,511	19,648	9,834	14,282	8,419	3,393
Chg MoM	-24,706	-17,320	-14,432	63	-707	2,357	-2,563	-5,309	289	625	547	-216	-134
Chg since DL	-46,187	-49,349	-37,543	545	-1,678	-6,072	-2,095	3,666	1,506	264	-595	1,300	-620
Chg YTD	79,967	44,030	21,080	31,451	-3,185	-715	1,181	12,224	14,213	6,294	3,072	2,599	2,648

Source: BofA Global Research, Bloomberg

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Exhibit 13: US Treasuries as a % of overall PD holdings

USTs as a % of PD holdings has declined slightly vs the prior week of data

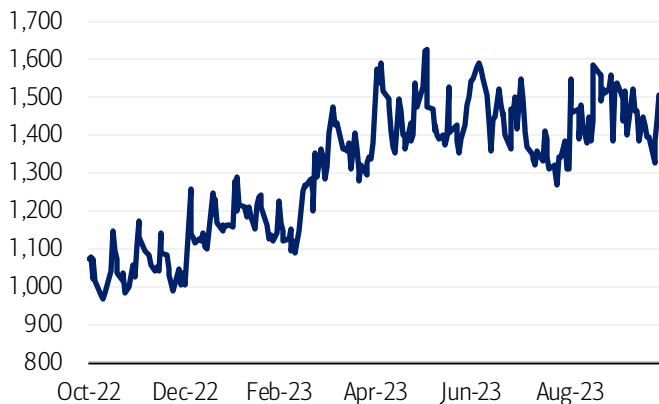


Source: BofA Global Research, Bloomberg

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Exhibit 15: SOFR volumes (\$mn)

SOFR volumes increased \$100b on the week ending Oct 27



Source: FRBNY

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Exhibit 14: PD UST holdings by security type (\$mn)

PD holdings of bills are still higher than avg but declining

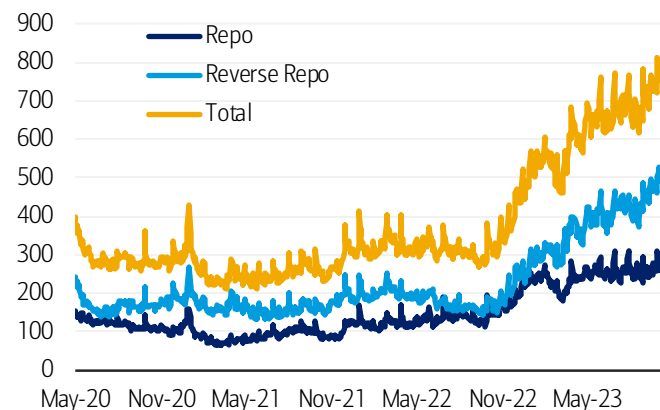
	Bills	Coupons	FRNs	TIPS	Total
9/20/2023	64,142	129,241	4,424	13,352	211,159
10/18/2023	49,710	124,703	3,717	15,709	193,839
MoM Change	(14,432)	(4,538)	(707)	2,357	(17,320)
Level Z-score	0.72	0.47	(0.76)	1.26	0.64

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Exhibit 16: Sponsored Repo Volumes (\$bn)

Sponsored repo volumes rose \$39b on the week ending Oct 27



Source: OFR

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Appendix

Exhibit 17: Daily FHLB debt issuance estimates (\$mn)

We estimate daily issuance from Bloomberg and FHLB Office of Finance website. Data is subject to revisions

	O/N	Term DN	Auction	Maturing DN	FRNs	Callable	Bullets	Maturing	Called	Total
10/2/2023	17,963	1,035	-	(25,184)	1,601	75	194	(2,427)	-	(6,744)
10/3/2023	22,405	3,235	4,425	(19,218)	1,000	-	355	(8,921)	-	3,281
10/4/2023	21,342	824	-	(27,164)	2,100	1,050	135	(1,769)	-	(3,483)
10/5/2023	23,645	4,989	4,815	(22,834)	2,545	15	-	(185)	-	12,990
10/6/2023	20,731	2,412	-	(27,834)	2,700	15	1,557	(7,512)	(15)	(7,946)
10/10/2023	21,515	3,666	1,725	(24,268)	2,550	1,486	-	(3,530)	(15)	3,129
10/11/2023	32,858	4,103	-	(30,414)	2,350	125	150	(526)	-	8,647
10/12/2023	17,435	1,948	905	(23,903)	3,430	3	215	(1,220)	-	(1,186)
10/13/2023	21,101	2,674	-	(37,889)	3,972	1,525	395	(2,285)	-	(10,508)
10/16/2023	21,800	1,731	-	(25,012)	3,030	95	255	(615)	-	1,284
10/17/2023	20,208	1,333	2,895	(21,690)	500	280	150	(100)	(15)	3,561
10/18/2023	18,100	3,072	-	(30,662)	3,177	2,074	265	(35)	-	(4,010)
10/19/2023	18,347	1,917	4,655	(19,125)	3,652	1,025	670	(1,260)	-	9,880
10/20/2023	19,030	3,958	-	(27,129)	2,600	1,055	75	(1,775)	(610)	(2,796)
10/23/2023	19,582	3,447	-	(20,820)	8,045	83	190	(3,619)	-	6,908
10/24/2023	18,826	3,092	6,415	(20,642)	3,455	87	25	(3,396)	-	7,863
10/25/2023	18,415	4,081	-	(28,573)	4,250	153	-	(105)	(113)	(1,891)
10/26/2023	18,657	5,421	2,795	(20,610)	10,260	194	153	(3,500)	(275)	13,094
10/27/2023	15,659	1,998	-	(26,323)	4,500	203	160	(4,395)	(625)	(8,823)

Source: Bloomberg, FHLB Office of Finance. Note: We use estimates of daily FHLB debt issuance

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