

# US Rates Watch

## Follow the money: cash & collateral trends Nov 21 update

### Cash / collateral shift suggests higher funding over time

As collateral continues to come into the system and cash is drained via QT, upward pressure in funding is likely to become more persistent. We are already seeing increased signs of this with SOFR averaging 2bps above ON RRP in Nov vs only 1bp in Oct and upward pressure in the 75<sup>th</sup> percentile.

### Money map: ON RRP & TGA outflows move into reserves

Banks continue to draw in cash with reserve balances now \$168b higher than the level at the start of QT in June '22. Banks are offsetting deposit outflows with higher borrowing and issuing large time deposits. FHLB supply continues to trend lower due to lower advances and financial CP is still well below levels ahead of the March bank stress events. In funding markets, SOFR was steady around 5.32% last week but upcoming UST settlements and mixed auction demand could drive dealer holdings higher, which in turn may put upward pressure on SOFR.

### Cash: reserve balances see significant increase

Fed balance sheet data for the week ending Nov 15, showed a \$30b decline in Fed securities from QT and a \$16b decline from other Fed assets (Exhibit 1). On the liability side, reserve balances grew \$123b, the largest WoW increase since March '23 (Exhibit 2). Offsetting this increase was a \$80b decline in ON RRP and a \$93b decline in the TGA (Exhibit 3). The increase in reserves continues to surprise to the upside as banks offset deposit outflows by issuing large time deposits and borrowing to maintain their liquidity, while they continue to see lower "other" deposits (likely retail / small deposits).

### Cash: MMF inflows moved into retail funds

Over the week ending Nov 17, MMF AUM increased \$15b according to Crane Data (Exhibit 4). The inflows were into prime and gov't retail MMFs while institutional funds were roughly flat. We expect MMF inflows to continue but slow and potentially reverse as the curve steepens (Exhibit 6).

### Cash: Large domestic banks reduced cash holdings

Bank balance sheet data, which is lagged an additional week compared to Fed balance sheet data, shows banking system assets declined \$13b on the week ending Nov 8, driven by large domestic banks (Exhibit 7). Large domestic banks saw \$63b in deposit outflows and reduced borrowing by \$16b which drove a \$37b decline in cash holdings. At the same time, small domestic banks are flat on the week with deposit inflows mostly offsetting the decline in their borrowing. Foreign banks are up \$47b on the week with a \$71b increase in their cash holdings from deposit inflows and higher borrowings.

...More detail on cash & collateral dynamics on page 2...

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#### Abbreviations:

BTFFP: 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: 21 November 2023 07:00AM EST

**Cash bottom line:** Reserve balances continue to move higher, offset by lower ON RRP and TGA. MMF inflows went into retail MMFs while inst'l funds were roughly flat. The week prior, large domestic banks saw deposit outflows and a reduction in borrowings lead to a reduction in cash holdings. The large increase in reserve balances last week implies banks likely replaced that reduction in cash holdings either from deposit inflows or an increase in borrowing.

## **Collateral: UST issuance moving higher, FHLB lower**

**UST issuance** has grown \$171b MTD, \$161b from T-bills (Exhibit 8). We forecast \$358b in net new UST supply to the public in November with \$109b in issuance from coupons and \$249b in issuance from bills.

**FHLB debt** declined \$8b on the week ending Nov 17 (Exhibit 9) according to our estimates. As we recently noted in our [FHLB supply outlook](#), FHLB supply is likely to be limited going forward as banks diversify their borrowing away from FHLB advances.

**CP issuance:** Data from the Federal Reserve shows that on the week ending Nov 15 CP outstanding increased \$11b for financial CP but declined \$5b for non-fin CP (Exhibit 11).

**Collateral bottom line:** UST issuance continues to trend higher. FHLB debt issuance declined further on the week. CP issuance increased but remains well below levels pre-bank stress events as banks have diversified their sources of funding.

## **Funding: SOFR steady but upward pressure to continue**

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

**Dealer holdings**, which are lagged, show an \$4b decline in Treasury holdings on the week ending Nov 8 (Exhibit 12, Exhibit 13), primarily from a \$10b decline in T-bill holdings. Demand for T-bills from real money investors, such as MMFs, remains robust. 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. Yesterday's 6m bill auction saw very higher dealer take-down and a large tail implying weakening demand for bills. MMFs likely prefer to stay shorter on the bill curve given uncertainty around cuts currently priced in.

**Repo volumes:** SOFR volumes increased \$118b on the week ending Nov 17th (Exhibit 15), a reversal of the \$110b decline the prior week. Sponsored volumes, which are reflected in SOFR, increased \$78b on the week with \$71b coming from bilateral repo transactions (Exhibit 16). The rate on SOFR was steady last week at 5.32% but the 75<sup>th</sup> percentile was elevated most of the week at 5.39% before declining 1bp on Friday. Treasury settlements over the next 2 weeks and month-end will likely drive SOFR higher.

**Funding bottom line:** repo volumes moved higher, primarily for sponsored bilateral repo. SOFR held steady at 5.32% but we upward pressure is being seen in the 75<sup>th</sup> percentile. The higher funding rate is likely a result of the cash / collateral shift as collateral continues to come into the system while cash is drained via QT. We expect upward pressure in funding to become more persistent especially around large settlement dates.

**Key takeaway:** Reserve balances continued to move higher, offset by lower ON RRP & TGA. Treasury collateral continues to come into the system and increased dealer take-down can put further upward pressure on repo and drive volumes higher. FHLB debt continues to move lower as banks diversify borrowing away from FHLB advances. Still, banks continue to maintain high cash holdings via other borrowing and offsetting deposit outflows.

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

Cash in banking system increased despite Fed balance sheet decline due to lower ON RRP &amp; TGA

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	452	2,307	334	2,293	410	2,980	277	8,601
11/8/2023	7,338	0	2	113	35	0	423	2,326	319	1,024	763	3,360	117	7,911
11/15/2023	7,308	0	2	113	35	0	407	2,327	324	944	670	3,483	117	7,866
WoW Change	-30	0	0	0	0	0	-16	1	4	-80	-93	123	0	-46
YTD Change	-837	0	-2	113	35	0	-45	20	-10	-1,349	260	504	-160	-736

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 \$122.9bn as of Nov 15



Source: Bloomberg

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

ON RRP take-up decreased \$96.92bn from prior week as of Nov 17



Source: Bloomberg

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

MMF AUM increased \$15b WoW as of Nov 17, with inflows primarily retail funds

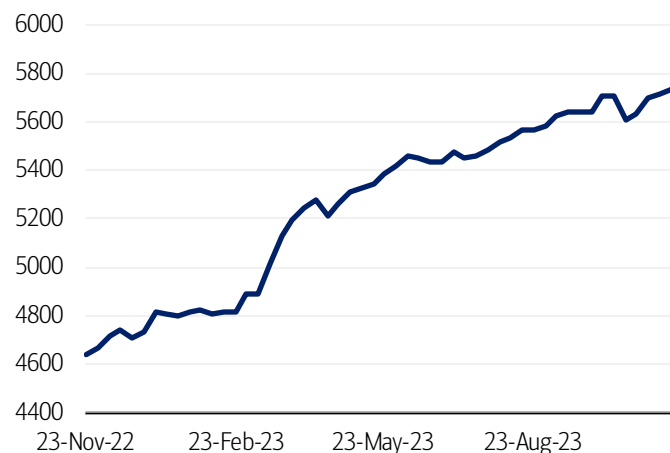
Dates	Total	Prime	Gov't	Tax exempt	Retail	Institutional	Prime Institutional	Gov't Institutional	Prime Retail	Gov't Retail
12/30/2022	5,073	1,077	3,996	0	1,584	3,489	655	2,834	421	1,163
11/10/2023	6,110	1,298	4,680	131	2,155	3,824	630	3,193	668	1,487
11/17/2023	6,124	1,302	4,692	131	2,172	3,822	630	3,192	673	1,499
WoW change	15	4	11	-1	17	-2	-1	-1	5	12
YTD Change	1,051	226	695	131	588	333	-26	358	252	337

Source: Crane Data

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**Exhibit 5: MMF AUM (\$bn)**

MMFs saw \$21.91bn in flows from prior week as of Nov 15

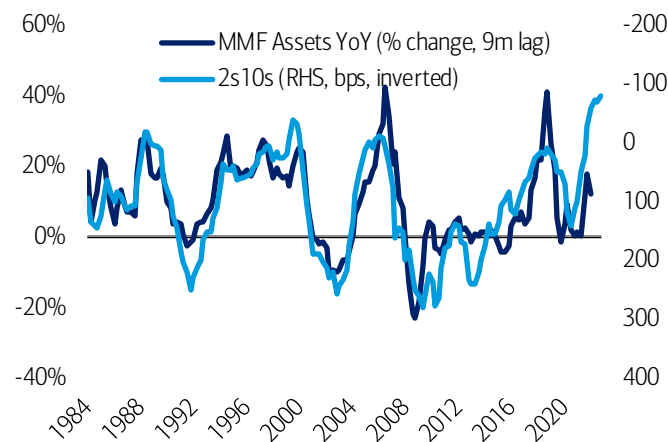


Source: ICI, Bloomberg

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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)**

Large domestic banks saw cash holdings decline on the week ending Nov 8 due to deposit outflows and lower borrowing

		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	11/8/2023	22976	3442	1547	2520	587	12221	2660	17317	2246	15070	2328	362	2969
	1w Chg	-13	37	6	2	-23	-20	-15	-41	15	-56	-1	32	-3
	1m Chg	-4	23	25	4	-24	1	-34	-37	56	-93	-45	100	17331
	YTD Chg	1	345	-106	-254	-14	117	-87	-628	595	-1222	475	93	18005
Domestic Banks	11/8/2023	19870	2083	1440	2493	250	11181	2422	16042	1434	14608	1338	-321	2812
	1w Chg	-60	-33	7	2	-7	-24	-5	-57	4	-62	-28	22	3
	1m Chg	-56	-56	28	4	0	2	-34	-38	47	-85	-14	18	16057
	YTD Chg	-133	212	-108	-245	-63	134	-65	-589	618	-1207	354	17	16716
Large Banks	11/8/2023	13339	1638	1145	1922	212	6750	1672	10742	785	9956	926	-350	2022
	1w Chg	-60	-37	6	2	-8	-21	-3	-63	2	-64	-16	21	-3
	1m Chg	-51	-51	29	10	-2	-7	-29	-51	39	-90	3	17	10772
	YTD Chg	-86	166	-76	-57	-56	-17	-46	-489	398	-887	332	26	11275
Small Banks	11/8/2023	6531	445	295	572	38	4431	750	5300	648	4652	412	29	790
	1w Chg	0	4	1	0	0	-4	-1	5	3	3	-12	1	6
	1m Chg	-5	-4	-1	-6	2	10	-5	13	8	5	-17	1	5285
	YTD Chg	-47	46	-32	-188	-7	152	-19	-100	220	-320	22	-9	5441
Foreign Banks	11/8/2023	3106	1359	107	27	336	1039	237	1275	813	462	990	683	157
	1w Chg	47	71	-1	0	-16	4	-11	16	10	6	27	10	-6
	1m Chg	51	79	-2	0	-24	-1	0	1	9	-8	-32	82	1273
	YTD Chg	133	133	1	-10	49	-18	-23	-39	-23	-15	121	75	1289

Source: Federal Reserve H8

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

Treasury issuance has grown \$171b MTD in November, \$161b from bills

	Net total	Net bills	Net coupons	Gross new issue	Gross bill issue	Gross coupon issue	Gross maturing	Gross bill maturing	Gross coupon maturing
MTD	170,926	161,100	9,826	1,518,000	1,406,000	112,000	1,347,074	1,244,900	102,174
YTD	2,820,567	1,980,717	839,850	19,024,025	16,069,025	2,955,000	16,203,458	14,088,308	2,115,150
FYTD	494,786	365,312	129,474	4,001,000	3,439,000	562,000	3,506,214	3,073,688	432,526

Source: BofA Global Research, Haver Analytics

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

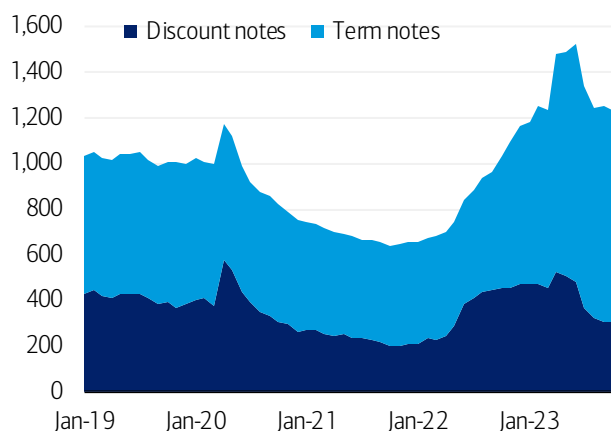
Daily FHLB cumulative debt is below levels seen ahead of bank stress



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

OF data shows FHLB debt steady following bank stress

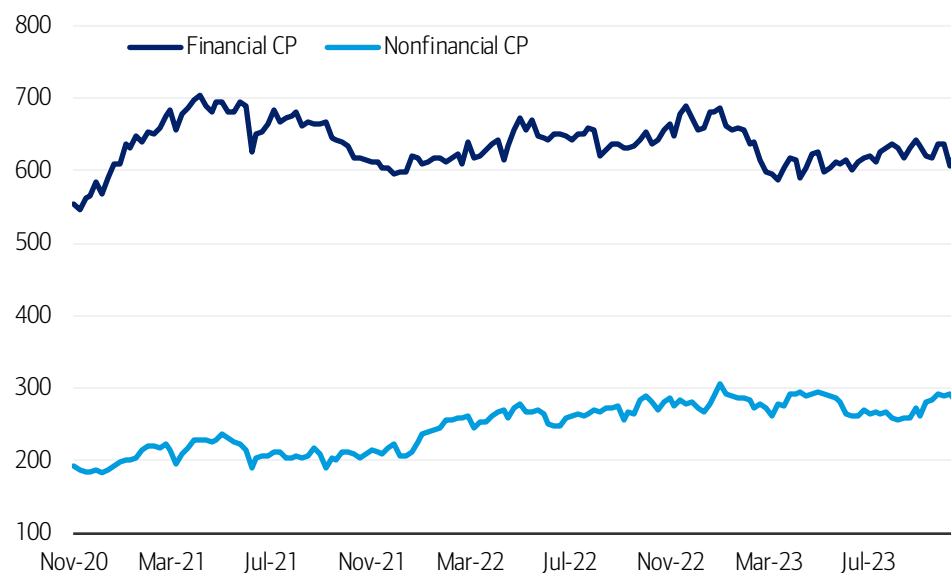


Source: BofA Global Research, FHLB Office of Finance

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**Exhibit 11: Commercial paper (\$bn)**

Financial CP is \$11b higher WoW, nonfin is \$5b lower WoW as of Nov 15



Source: Bloomberg

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**Exhibit 12: Primary dealer holdings (\$mn)**

PD holdings are \$2b lower WoW, primarily from lower USTT-bill holdings

	Total	US Treasuries					Agency ex MBS	MBS	Corporates	Commercial Paper	State & Munis	ABS	Variable Rate Notes
		Bills	Coupons	FRNs	TIPS								
11/8/2023	354,799	207,923	47,556	129,304	4,210	16,493	14,167	86,820	22,427	11,476	12,083	9,522	1,857
Chg WoW	-1,510	-4,070	-9,573	-1,965	-1,615	-1,277	-2,537	954	2,416	1,739	217	839	671
Chg MoM	2,272	1,311	-17,415	7,984	-983	1,365	312	-445	4,545	3,335	-2,118	325	-1,658
Chg since DL	-29,912	-35,265	-39,697	545	-1,185	-5,288	-2,360	5,975	4,285	1,906	-2,794	2,403	-2,156

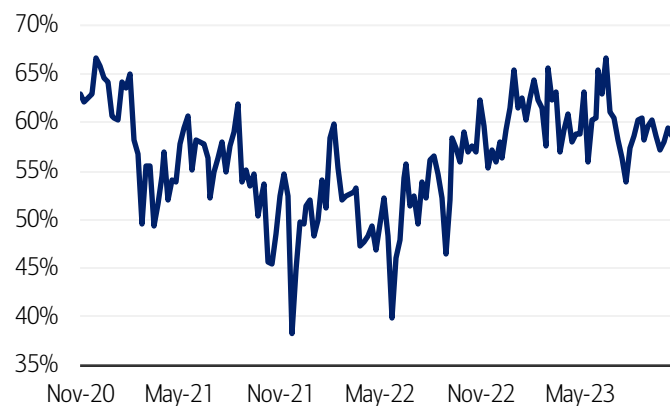
Source: BofA Global Research, Bloomberg

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

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

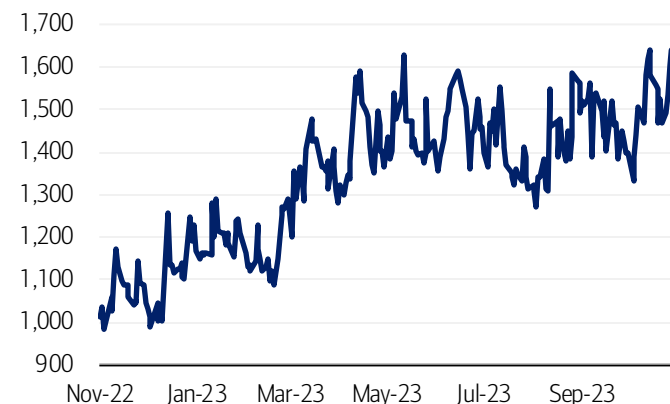


Source: BofA Global Research, Bloomberg

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**Exhibit 15: SOFR volumes (\$bn)**

SOFR volumes increased \$118bn from prior week as of Nov 17



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

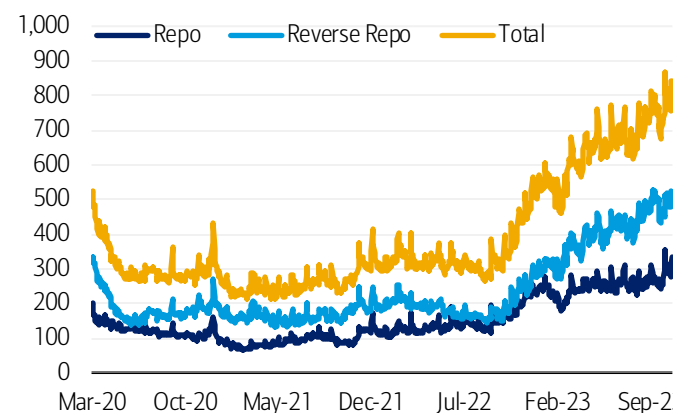
	Bills	Coupons	FRNs	TIPS	Total
10/11/2023	64,971	121,320	5,193	15,128	206,612
11/8/2023	47,556	139,664	4,210	16,493	207,923
MoM Change	(17,415)	18,344	(983)	1,365	1,311
Level Z-score	0.29	0.36	(0.85)	1.12	0.45

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**Exhibit 16: Sponsored Repo Volumes (\$bn)**

Sponsored repo volumes have risen \$315 YTD



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	231	(2,427)	-	(6,707)
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	1,562	(7,512)	(15)	(7,941)
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	198	(3,619)	-	6,916
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)
10/30/2023	15,950	2,182	-	(19,852)	17,186	1,074	429	(4,932)	-	12,037
10/31/2023	8,350	2,665	6,890	(22,199)	-	-	-	-	-	(4,293)
11/1/2023	17,154	2,628	-	(20,411)	2,305	50	80	(5,916)	-	(4,110)
11/2/2023	18,550	1,273	5,995	(21,039)	4,060	15	-	(1,256)	-	7,599
11/3/2023	17,400	2,923	-	(25,877)	2,058	60	189	(6,661)	-	(9,908)
11/6/2023	18,077	2,108	-	(22,131)	545	156	80	(1,880)	-	(3,045)
11/7/2023	18,516	2,082	3,035	(20,126)	135	90	225	(1,200)	-	2,757
11/8/2023	14,930	2,162	-	(24,276)	800	1,063	150	(1,255)	-	(6,426)
11/9/2023	17,023	3,842	3,150	(15,886)	-	-	5	(3,452)	-	4,682
11/10/2023	17,288	2,290	-	(21,158)	2,000	1,002	-	(5,273)	-	(3,851)
11/13/2023	16,141	4,361	-	(21,843)	1,555	150	95	(2,500)	(25)	(2,066)
11/14/2023	17,763	3,150	2,890	(17,941)	1,000	610	139	(6,025)	-	1,586
11/15/2023	16,297	3,233	-	(27,163)	1,000	197	1,560	(3,078)	(15)	(7,969)
11/16/2023	17,275	4,277	4,330	(17,983)	-	2,104	264	(1,235)	(55)	8,978
11/17/2023	14,741	3,588	-	(24,977)	7,000	1,035	1,400	(10,862)	(570)	(8,645)

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

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