

US Rates Watch

Follow the money: cash & collateral trends Jan 3 update

Money map: year-end dynamics relatively benign

Year-end saw upward pressure in repo likely driven by reduced dealer intermediation capacity & exacerbated by large end-month UST settlements. Reduced dealer intermediation capacity is evidenced by the \$189b year-end spike in ON RRP use & higher sponsored repo volumes. The year-end repo spike is likely to be short lived as year-end dynamics fade & ON RRP cash re-enters private repo markets. Reserves declined leading into year-end as RRP take-up increased; reserves should rebuild as RRP take-up has already declined significantly following year-end. Prior to year-end some banks appeared willing to lend in repo and invest in securities with higher confidence in Fed cuts, deposit stability and more repo transactions happening above IORB.

Cash: higher RRP take-up drained cash from reserves

Fed balance sheet data (Exhibit 1) for the week ending Dec 27, showed a \$14b decline in security holdings from QT but a \$4b increase in BTFP borrowing which now totals \$136b. Bank borrowing from the facility has continued to slowly trend higher but it is not a clear signal of broader bank liquidity stress. We believe higher BTFP use represents banks increasing their liquidity buffer due to recent shifts in regulatory guidance (lower FHLB reliance) & front loading of activity ahead of BTFP new loan expiration in March '24. On the liability side, the Fed's RRP facilities grew \$42b leading into year-end (Exhibit 3) which appeared to drain \$43b from reserves (Exhibit 2), while TGA declined \$20b, absorbing most of the impact of QT.

Cash: year-end drove inflows into gov't MMFs

Over the week ending Dec 29 MMF AUM increased \$37b according to Crane Data (Exhibit 4). The inflows were split between retail and institutional MMFs but prime funds saw net outflows. Year-end dynamics and elevated front-end rates likely drove the inflows into gov't MMFs. We notably saw a reduction in prime fund WAM which has declined by nearly 2 days since peaking in the 1H of December (Exhibit 7). This has likely been driven by Fed cuts getting priced in and MMFs wanting to reduce exposure further out the curve. We expect ongoing MMF inflows with an inverted yield curve.

Cash: Banks see deposit inflows, higher repo lending

Bank balance sheet data, which is lagged an additional week compared to Fed balance sheet data, shows banking system assets declined \$11b on the week ending Dec 20, with domestic bank assets up \$42b but foreign bank assets down \$53b (Exhibit 8). On the asset side, domestic bank cash holdings declined \$32b but was more than offset by an increase in security holdings, repo & FF, and loans and leases. On the liability side, domestic banks saw \$65b in deposit inflows and increased borrowing by \$18b. At the same time, foreign banks saw \$4b in deposit outflows and reduced borrowing from their foreign parent by \$59b. Overall, banks appear to be more comfortable in investing in securities and other assets rather than just holding cash likely driven by expectations for Fed cuts & increased deposit stability in 2024.

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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
YE: Year-end

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Refer to important disclosures on page 8 to 10.

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Timestamp: 03 January 2024 09:42AM EST

Cash bottom line: Reserve balances declined leading into year-end driven by MMFs moving cash into ON RRP as a part of typical year-end dynamics, including reduced dealer balance sheet intermediation. The week prior, domestic banks saw strong deposit inflows and higher borrowing which was invested into securities holdings, repo, and loans & leases. Banks appear more willing to reduce cash holdings as Fed cuts get priced in & deposit stability confidence increases. Banks who are willing to lower cash holdings & invest in repo could slow expected upward pressure in SOFR.

Collateral: FHLB & CP issuance lower into YE; UST higher

UST issuance increased \$193b in December and the \$110b in coupon settlements around year-end contributed to higher repo rates and volumes in the last week. Going forward we forecast \$126b in net UST paydowns in January (\$132b paydown from bills) but risks skew to higher bill supply. UST is currently on track to issue \$40b in net new bill supply in Jan, likely due to higher financing needs / larger deficit. We see risks of higher bill issuance vs our forecasts due to a worse fiscal picture in January.

FHLB debt declined \$38b in December, according to data from the FHLB's Office of Finance. On net, FHLB debt is now over \$90b lower than levels seen ahead of the March bank stress. This trend is likely to continue as bank demand for borrowing from FHLB declines due to regulatory guidance and Fed cuts getting priced in.

CP issuance: Data from the Federal Reserve shows that on the week ending Dec 27 CP outstanding declined \$17.8b, a \$10.4b decline for financial CP and \$7.4b decline for non-fin CP (Exhibit 12). Issuers likely wanted to reduce debt outstanding & total balance sheet sizes heading into year-end.

Collateral bottom line: FHLB debt and CP outstanding declined leading into year-end but UST issuance increased \$110b from coupon settlements in the last week, putting upward pressure on SOFR. Repo is likely to remain elevated for the next few days especially given the \$64b in UST settlements yesterday but then to move lower later in the week as GSE cash comes back into the system.

Funding: SOFR higher with year-end dynamics

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

Dealer holdings, which are 1-week lagged, show a \$25b decline in Treasury holdings on the week ending Dec 20 (Exhibit 13), due to a \$32b reduction in bill holdings. Recall, dealers need to finance their Treasury holdings in repo, the \$110b in UST coupon issuance in the last week likely drove the upward pressure in SOFR and repo volumes.

Repo volumes: SOFR volumes peaked on Dec 28th but declined on year-end (Exhibit 16), consistent with the move in the rate which trended upward over the week until falling on Friday. Yesterday's \$64b coupon settlement likely contributed to higher SOFR repo and volumes, which will likely drop off as year-end dynamics fade and GSE cash re-enters the market later in the week. Sponsored volumes, which also peaked on Thursday, are \$115b higher on the week with bilateral repo transactions driving the move (Exhibit 17).

Funding bottom line: repo volumes and rate increased leading into year-end and are likely to remain elevated due to UST settlements yesterday. We expect to see SOFR generally trend lower later in the week as dealer intermediation capacity improves & cash leaves ON RRP to come back into private repo markets.

Key takeaway: year-end saw upward pressure on repo largely driven by reduced dealer intermediation on year-end & exacerbated by large UST settlements. We expect to see repo market settle as dealer intermediation capacity improves & ON RRP cash returns to private repo markets. Reserves declined leading into year-end as RRP take-up increased, this trend is likely to reverse rapidly this week as RRP take-up has already declined significantly following year-end. Banks appear to be more willing to lend in repo and

invest in securities now that Fed cuts are starting to get priced in, bank deposits stability may have increased, and more repo trades are happening at rates above IORB.

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

BTFP continues to trend higher. Reserves drained while ON RRP increased leading into year-end

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
12/20/2023	7,238	0		2	131	0	0	403	2,336	345	779	733	3,477	105	7,775
12/27/2023	7,225	0		2	136	0	1	399	2,345	347	819	713	3,434	106	7,764
WoW Change	-14	0		0	4	0	1	-4	9	2	40	-20	-43	1	-11
YTD Change	-920	0		-2	136	0	1	-53	37	13	-1,474	303	454	-171	-838

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 -\$43.08bn as of Dec 27



Source: Federal Reserve

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

ON RRP take-up decreased \$67.39bn from prior week as of Jan 2



Source: FRBNY

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

MMF AUM grew \$37b WoW as of Dec 29, with inflows split equally between retail and institutional MMFs

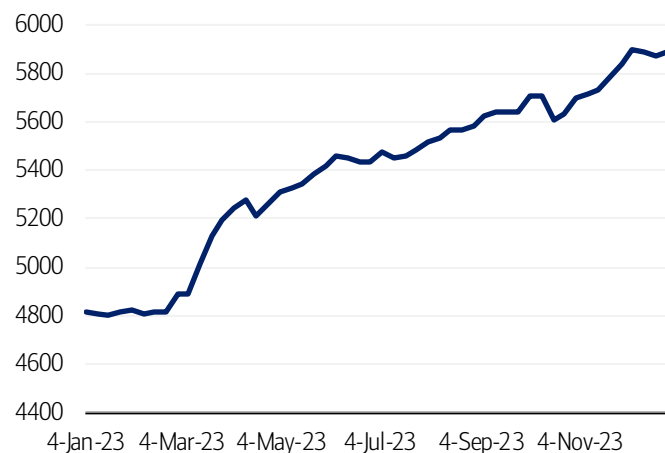
Dates	Total	Prime	Gov't	Tax exempt	Retail	Institutional	Prime Institutional	Gov't Institutional	Prime Retail	Gov't Retail
12/30/2022	5,073	1,077	3,996	0	1,584	3,489	655	2,834	421	1,163
12/22/2023	6,263	1,309	4,826	129	2,215	3,920	622	3,298	687	1,527
12/29/2023	6,300	1,308	4,862	131	2,232	3,937	616	3,322	692	1,540
WoW change	37	-2	36	2	17	17	-6	23	4	13
YTD Change	1,227	231	865	131	648	448	-40	488	271	377

Source: Crane Data

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Exhibit 5: MMF AUM (\$bn)

MMFs saw \$16.35bn in flows from prior week as of Dec 27

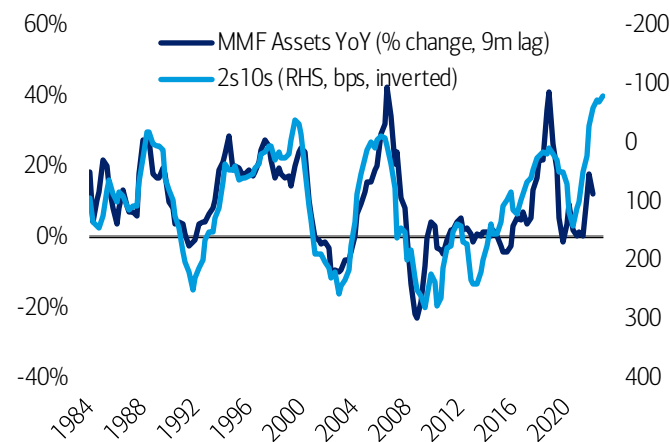


Source: ICI, Bloomberg

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Exhibit 6: MMF assets and 2s10s curve

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

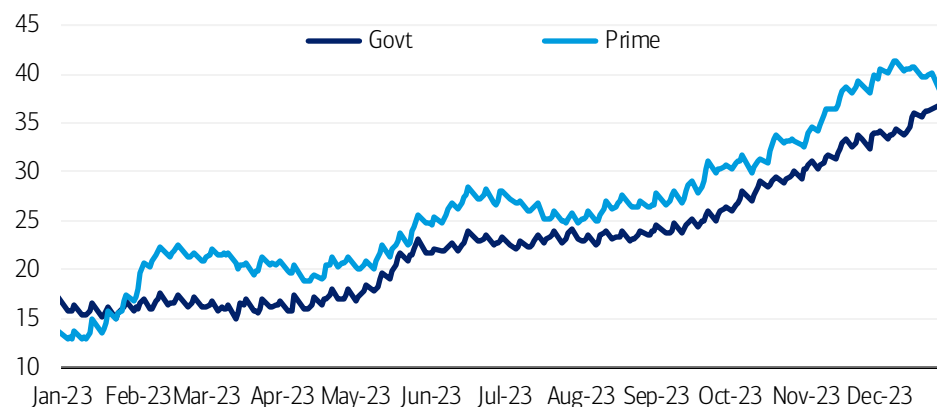


Source: BofA Global Research, Federal Reserve, Haver

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Exhibit 7: MMF WAM (Days)

Prime fund WAM shortened from peak of 41.24 days to 38.28 while gov't MMF WAMs continue to extend



Source: BofA Global Research, iMoneyNet

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Exhibit 8: US Commercial Bank balance sheets, selected assets & liabilities (\$bn)

Domestic bank assets increased due to deposit inflows which went into UST & Agy securities, repo & FF, and loans & leases

		Total	Assets						Liabilities					
			Cash	UST & Agy	MBS	Repo & FF	Loans & Leases	Other	Deposits	Large	Small	Borrowings	Net due to related foreign offices	Other
All	12/20/2023	23315	3512	1591	2509	656	12366	2681	17590	2279	15312	2364	334	3027
Banks	1w Chg	-11	-99	28	-2	27	50	-14	61	12	49	38	-55	-54
	1m Chg	216	15	64	8	58	96	-26	227	27	201	25	-27	17354
	YTD Chg	339	416	-62	-265	55	262	-66	-354	627	-981	510	65	18063
Domestic	12/20/2023	20225	2256	1480	2480	278	11276	2455	16310	1472	14839	1350	-298	2862
Banks	1w Chg	42	-32	29	2	22	34	-13	65	6	59	18	4	-45
	1m Chg	258	110	62	7	24	74	-20	240	30	209	-3	16	16076
	YTD Chg	222	385	-67	-258	-35	228	-32	-320	656	-977	367	40	16766
Large	12/20/2023	13627	1783	1186	1905	248	6807	1698	10972	809	10163	931	-328	2053
Banks	1w Chg	26	-40	29	2	24	22	-11	53	3	50	16	-1	-43
	1m Chg	203	84	60	-4	31	51	-18	200	18	183	-3	14	10763
	YTD Chg	202	312	-35	-73	-20	40	-20	-259	422	-680	337	48	11306
Small	12/20/2023	6598	472	294	575	30	4468	758	5339	663	4676	420	30	809
Banks	1w Chg	16	8	0	0	-1	12	-2	12	3	8	2	4	-2
	1m Chg	54	27	2	11	-7	24	-2	39	12	27	0	2	5313
	YTD Chg	20	74	-32	-185	-15	189	-11	-62	235	-296	30	-7	5460

Exhibit 8: US Commercial Bank balance sheets, selected assets & liabilities (\$bn)

Domestic bank assets increased due to deposit inflows which went into UST & Agy securities, repo & FF, and loans & leases

		Total	Assets							Liabilities						
Foreign	12/20/2023	3090	1257	111	29	378	1091	226		1280	807	473	1013	633	164	
Banks	1w Chg	-53	-67	-1	-3	4	16	-1		-4	5	-9	19	-59	-9	
	1m Chg	-42	-95	2	1	34	22	-6		-12	-3	-9	28	-43	1278	
	YTD Chg	118	31	5	-7	91	34	-34		-33	-29	-4	144	24	1296	

Source: Federal Reserve H8

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Exhibit 9: Treasury bill and coupon issuance (\$000s)

Treasury issuance has increased \$9b MTD in January, due to bill issuance. We see risk of positive bill issuance in Jan due to higher than expected deficit need

	Net total	Net bills	Net coupons	Gross new issue	Gross bill issue	Gross coupon issue	Gross maturing	Gross bill maturing	Gross coupon maturing
MTD	9,057	9,057	-	213,000	213,000	-	203,943	203,943	-
YTD	9,057	9,057	-	213,000	213,000	-	203,943	203,943	-
FYTD	849,242	447,488	401,754	7,413,000	6,324,000	1,089,000	6,563,758	5,876,512	687,246

Source: BofA Global Research, Haver Analytics

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Exhibit 10: Cumulative growth in FHLB debt since March 1 (\$bn)

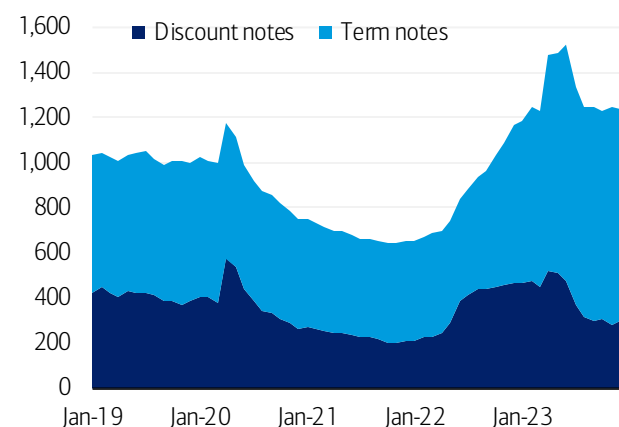
Daily FHLB cumulative debt is roughly \$91 bn lower since March 1



Source: Bloomberg, FHLB Office of Finance. Note: we use estimates of daily net issuance
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Exhibit 11: FHLB debt issuance (\$bn)

FHLBs paid down \$38b in December '23

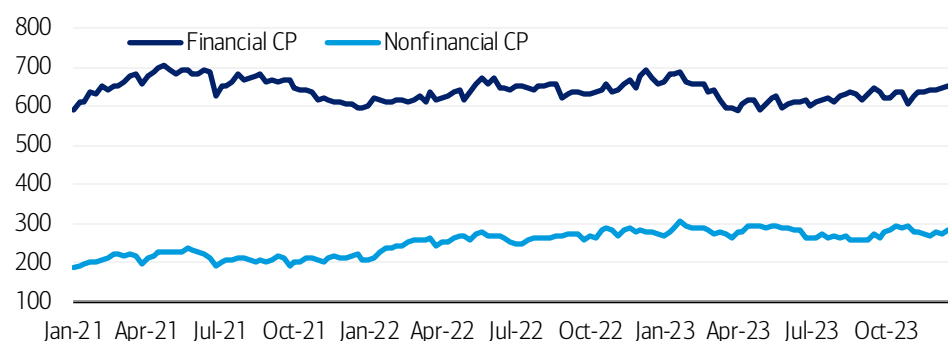


Source: BofA Global Research, FHLB Office of Finance

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Exhibit 12: Commercial paper (\$bn)

Financial CP is \$10b lower WoW, nonfin is \$7b lower WoW as of Dec 27



Source: Bloomberg

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Exhibit 13: Primary dealer holdings (\$mn)

PD holdings of UST is \$25b lower WoW driven by lower T-bill holdings. Data as of Dec 20

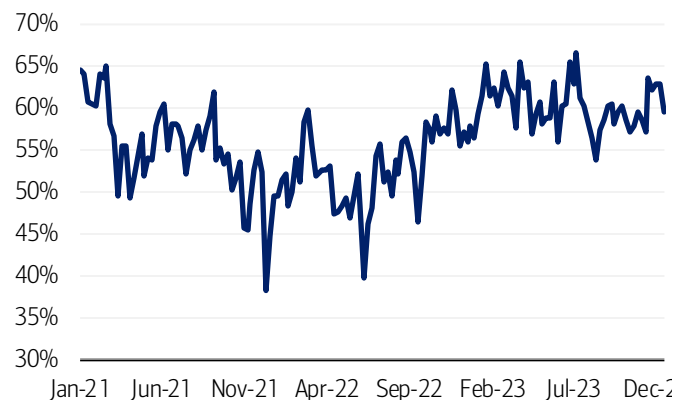
	Total	US Treasuries					Agency ex MBS	MBS	Corporates	Commercial Paper	State & Munis	ABS	Variable Rate Notes
		Bills	Coupons	FRNs	TIPS								
12/20/2023	376,286	223,920	51,794	151,104	4,366	16,656	14,219	96,650	15,462	5,894	14,470	7,657	3,908
Chg WoW	-25,190	-28,448	-32,421	3,075	-991	1,889	968	7,758	-2,730	-1,901	-948	-937	-853
Chg MoM	-25,656	-31,346	-50,077	22,759	-3,786	-242	-798	8,109	-2,768	-3,820	912	-934	1,169
Chg since DL	-8,425	-19,268	-35,459	22,345	-1,029	-5,125	-2,308	15,805	-2,680	-3,676	-407	538	-105

Source: BofA Global Research, Bloomberg

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Exhibit 14: PD UST holdings as a % of total holdings

Latest level 60% as of Dec 20



Source: BofA Global Research, Bloomberg

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Exhibit 15: PD UST holdings by security type (\$mn)

PD holdings of bills are still higher than avg but declining

	Bills	Coupons	FRNs	TIPS	Total
11/22/2023	101,871	128,345	8,152	16,898	255,266
12/20/2023	51,794	151,104	4,366	16,656	223,920
MoM Change	(50,077)	22,759	(3,786)	(242)	(31,346)
Level Z-score	0.41	0.59	(0.82)	1.12	0.70

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Exhibit 16: SOFR volumes (\$bn)

SOFR volumes decreased -\$18bn from prior week as of Dec 29

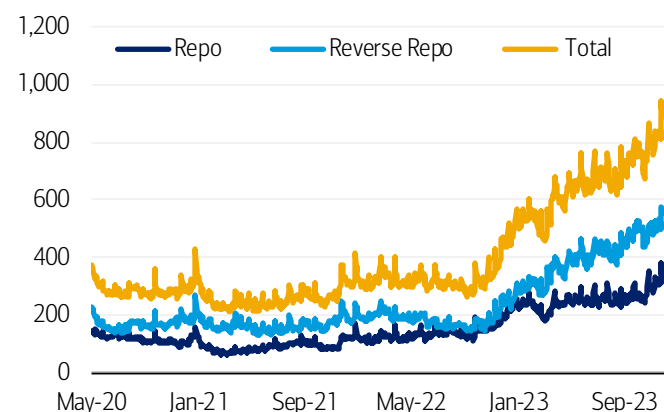


Source: FRBNY

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Exhibit 17: Sponsored Repo Volumes (\$bn)

Sponsored repo volumes rose \$589 in 2023



Source: OFR

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Appendix

Exhibit 18: 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
12/1/2023	18,944	1,433	-	(18,581)	1,000	25	9	(4,330)	-	(1,500)
12/4/2023	18,659	1,203	-	(21,129)	-	55	100	(5,500)	-	(6,612)
12/5/2023	19,986	1,753	4,345	(21,121)	305	85	50	(2,284)	(223)	2,896
12/6/2023	15,677	989	-	(23,941)	-	2,830	70	(1,223)	-	(5,598)
12/7/2023	16,366	1,490	2,455	(17,114)	700	35	102	(548)	(55)	3,431
12/8/2023	13,541	3,173	-	(22,424)	3,000	5,170	340	(9,723)	(3,010)	(9,933)
12/11/2023	13,448	1,710	-	(16,958)	1,500	5,830	430	(4,640)	(15)	1,304
12/12/2023	14,605	2,955	2,680	(16,479)	-	4,518	171	(152)	(355)	7,943
12/13/2023	14,977	2,253	-	(19,730)	1,000	1,018	69	(2,175)	(1,755)	(4,343)
12/14/2023	18,215	3,485	3,055	(17,743)	1,625	1,348	20	(5,217)	(630)	4,159
12/15/2023	14,387	2,395	-	(27,064)	520	3,220	90	(2,772)	(220)	(9,444)
12/18/2023	13,556	1,911	-	(16,935)	50	1,755	455	(1,470)	(750)	(1,429)
12/19/2023	15,121	3,579	2,130	(17,409)	-	395	1,560	(513)	(300)	4,562
12/20/2023	15,050	2,861	-	(22,056)	740	517	530	(436)	(360)	(3,154)
12/21/2023	15,684	3,250	1,755	(17,256)	980	319	-	(2,527)	(45)	2,160
12/22/2023	15,312	2,441	-	(23,796)	1,075	644	57	(4,482)	(365)	(9,113)
12/26/2023	19,548	2,919	2,300	(16,919)	3,222	195	60	(3,025)	(2,345)	5,955
12/27/2023	22,690	10,971	-	(28,030)	-	491	147	(2,201)	(2,582)	1,486
12/28/2023	11,450	3,838	2,055	(24,273)	423	250	392	(1,581)	(869)	(8,315)
12/29/2023	11,575	2,228	-	(27,983)	1,900	180	30	(3,165)	(720)	(15,955)

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

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