

US Rates Watch

Follow the money: cash & collateral trends
September 26 update**Money map: reserves drop; UST & CP issuance picks up**

The latest Fed balance sheet data showed the largest drop in reserve balances since the April tax date, likely driven by the mid-month Treasury settlements, corporate tax date, and a sudden drop in the FDIC credit extension program. Cash overall is lower on the week while collateral continues to increase. Funding pressures have normalized since mid-month but we could see these pressures show up more frequently and more severely as these trends continue. More detail on cash & collateral dynamics below.

Cash: Fed B/S shows surprise FDIC loan decline

Fed balance sheet data for the week ending Sep 20, showed a \$26b decline in securities holdings from QT in addition to a \$48b decline in FDIC bank loans (Exhibit 1). The large drop in Fed securities is unsurprising due to mid-month maturities, but the drop in FDIC bank credit stands in opposition to the relatively small declines we've seen over recent months. A footnote in the daily Treasury statement from Sept 15 states the Federal Financing Bank withdrew \$49b in connection with an intragovernmental transaction with the FDIC in exchange for cash from the Purchase Money Note issued to the FDIC by JP Morgan¹. It appears the Purchase Money Note held by the FDIC has been sold to the Federal Financing Bank and does not reflect the repayment of the loan by JP Morgan.

Cash: reserves lower with corp tax date & FDIC loan

On the liability side of the Fed's balance sheet, a combination of the drop in FDIC bank loans, Treasury issuance, and the Sept 15 corporate tax date led to the largest one week drop in reserves since the April tax date earlier this year (Exhibit 2). ON RRP also declined (Exhibit 3), though to a much lesser extent but foreign RRP surprised higher. The \$28b increase in foreign RRP contrasts with the steadiness in the foreign custody holdings which were little changed on the week. We believe the driver of the increase in foreign RRP was FX reserve liquidity building, especially as the Japan MOF's intervention risk is rising. The \$128b increase in the TGA was driven by the corporate tax date and mid-month Treasury settlements.

Cash: MMF AUM recovers from tax date outflows

Over the week ending Sept 20, MMF AUM declined \$7b according to ICI, but increased later in the week according to Crane Data (Exhibit 5, Exhibit 4). The increase, according to Crane data, shows MMFs have nearly fully replaced the outflows leading into the Sept 15 corporate tax-date. Most inflows continue to move into gov't institutional funds, though, to a lesser extent, inflows are also moving into prime and retail funds.

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[See Team Page for List of Analysts](#)**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

¹ <https://fsapps.fiscal.treasury.gov/dts/files/23091500.pdf>; As part of JPM's purchase of certain assets and liabilities of First Republic Bank, they also issued a \$50b 5-year Purchase Money Note to the FDIC receivership, which is prepayable upon notice.

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Cash: Bank bal sheets saw cash decline due to deposits

Bank balance sheet data, which is lagged an additional week compared to Fed balance sheet data, shows banking system assets were little changed on the week ending Sep 13 (Exhibit 6). Domestic banks saw cash holdings decline \$5b driven by deposit outflows but an increase in borrowings partially offset this decline. At the same time, bank securities holdings increased for large domestic banks and loan & leases were up for small domestic banks.

Cash bottom line: Fed balance sheet data saw a large drop in reserves and ON RRP. The drop in reserves was mostly driven by the corporate tax date and QT but also to a surprise decline in the FDIC bank credit extension. Until last week, reserve balances were relatively little changed since the start of the Fed's QT in June 2022. MMF AUM has recovered since the outflows surrounding the corporate tax date but MMFs continue to keep inflows mostly out of the Fed's ON RRP.

Collateral: UST build continues, FHLB debt keeps falling

UST issuance has increased \$253b MTD, including \$64b from coupons on Sep 15 (Exhibit 7). Treasury has maintained bill auction sizes, including the 42-day CMB, since they reached their peak in mid-August but net settlements continue to decline as bills maturing has increased (Exhibit 8). Compared to last week, due to larger maturities, this week's net new bill settlements will be \$8b lower. Bill auction takedown by indirect bidders, which include MMFs, have been lower this week relative to the prior three months which has coincided with the cheapening we have seen MTD.

FHLB debt declined \$11b on the week ending Sept 20 (Exhibit 9). We also saw a decline in Fed funds volumes alongside the FHLB paydowns, implying that FHLBs have less excess cash on hand to invest in the FF market. We have been surprised by the FHLB debt paydown and would not be surprised if regulatory guidance is discouraging banks from using the FHLB system to meet liquidity needs.

CP issuance: Data from the Federal Reserve shows that CP outstanding increased on the week ending Sep 20, with a \$13b increase in financial CP and a \$14b increase in non-financial CP (Exhibit 11). We believe banks are competing for funding via issuance of CP & CD which should cheapen front-end rates. Banks may be choosing to compete for liquidity more via CP & CDs issuance rather than FHLB advances. We are not sure why banks are choosing these more costly liquidity sources, but regulatory guidance may be a factor.

Collateral bottom line: UST issuance continues with bill auction sizes steady but MMF take-down as a % of offering declining relative to prior auctions. This appears to also be reflected in the cheapening we have seen in bills vs OIS in recent weeks. CP issuance moved higher, likely reflecting banks trying to replace deposit outflows following the corporate tax date. Regulatory guidance may be a factor in CP / CD issuance vs FHLB.

Funding: Dealer bal sheets show a decline in bill holdings

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

Dealer holdings, which are lagged, show a decline in Treasury holdings on the week ending Sep 13 (Exhibit 12, Exhibit 13), driven by a reduction in bill holdings. Despite this, dealer take-down of bills has been higher as a % of offering in recent weeks relative to the prior 3-month average in for bills of the same tenor (Exhibit 8). As UST issuance continues and dealers need to take down more and more of each auction, USTs are likely to cheapen and repo rates could move higher.

Repo volumes: SOFR volumes have declined from their mid-month peak despite GSE cash coming back into the system. Repo volumes were initially driven higher by mid-month Treasury settlements (Exhibit 15), but have since declined, driven by bilateral repo volumes. The spike in repo volumes coincided with a 1bp increase in SOFR, which has

since returned to flat vs the Fed's ON RRP. At the same time, sponsored repo volumes have declined \$10b WoW (Exhibit 16). Converse to SOFR volumes, the decline in sponsored repo volumes since Sept 15 was driven by GC repo, not bilateral.

Funding bottom line: dealer UST holdings declined due to lower bills despite higher-than-average takedown at recent bill auctions. In line with dealers holding less UST, repo volumes also declined, driven by bilateral repo. GC repo volumes have recently picked up, likely due to GSE cash coming back into the system ahead of principal and interest payments.

Key takeaway: repo rates and volumes have normalized after picking up on the mid-month UST settlement date which coincided with the corporate tax date. Reserves have seen their largest one week drop since the April tax date, likely due to the Sept corporate tax date, UST settlements, and a surprise drop in the Fed's FDIC bank credit extension program. Until the latest data print, bank reserve balances seemed surprisingly resilient against QT, likely because they are paying up for large deposits. If banks are determined to keep reserves steady, this could imply a higher minimum level of liquidity which would put upward pressure on funding rates sooner than we initially forecasted. We discussed this topic in more detail in [Fed QT: banks fighting to keep liquidity](#).

Looking further out, we expect Fed QT to continue to drain cash from the system alongside a higher TGA from debt issuance. ON RRP take-up will continue to decline from this & reserves should modestly fall. The drain in cash and increase in collateral will continue to put upward pressure on repo rates & volumes. We expect greater funding pressure in coming months & quarters as collateral slowly overwhelms cash.

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
9/13/2023	7,484	0	3	108	133	0	421	2,330	289	1,546	537	3,311	136	8,149
9/20/2023	7,458	0	3	108	85	0	421	2,325	318	1,487	662	3,144	139	8,075
WoW Change	-26	0	0	0	-48	0	0	-5	28	-59	124	-166	3	-75
YTD Change	-687	0	-2	108	85	0	-30	18	-16	-806	252	165	-138	-526

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 -\$166.12bn



Source: Federal Reserve. Note: data as of Sept 20

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

ON RRP take-up declined \$59bn on the week ending Sept 20



Source: FRBNY

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

MMF AUM increased \$21b WoW as of Sep 22, with inflows primarily into gov't institutional funds

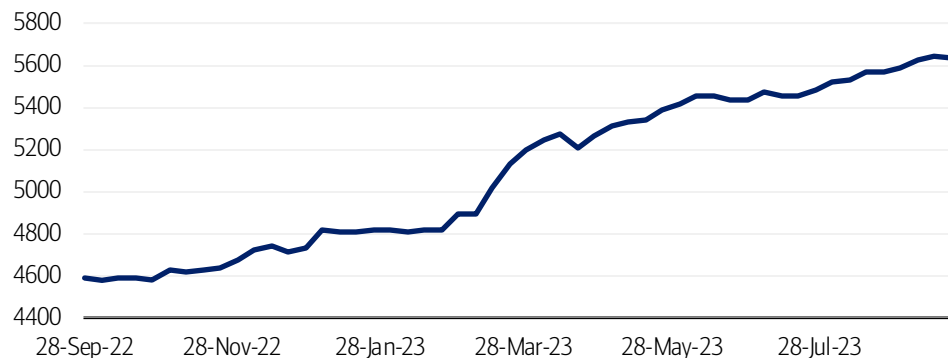
Dates	Total	Prime	Gov't	Tax exempt	Retail	Institutional	Prime Institutional	Gov't Institutional	Prime Retail	Gov't Retail
12/30/2022	5,073	1,077	3,996	0	1,584	3,489	655	2,834	421	1,163
9/15/2023	5,998	1,249	4,626	123	2,058	3,817	626	3,191	623	1,435
9/22/2023	6,019	1,256	4,642	122	2,067	3,831	628	3,203	628	1,439
WoW change	21	7	16	-2	9	14	1	12	6	3
YTD Change	946	179	645	122	483	341	-28	369	207	276

Source: Crane Data

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Exhibit 5: MMF AUM (\$bn)

MMFs saw -\$7.03bn in flows from prior week



Source: ICI, Bloomberg

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Exhibit 6: US Commercial Bank balance sheets, selected assets & liabilities (\$bn)

Domestic banks saw cash increase largely due to deposit inflows and higher borrowing

		Total	Assets						Liabilities			
			Cash	UST & Agy	MBS	Repo & FF	Loans & Leases	Other	Deposits	Borrowings	Net due to related foreign offices	Other
All Banks	9/13/2023	22908	3412	1499	2567	598	12166	2665	17318	2289	311	2990
	1w Chg	3	24	5	-5	3	-1	-22	-17	18	1	1
	1m Chg	86	104	1	3	-6	34	-49	12	61	11	2
	YTD Chg	-69	315	-154	-206	-3	62	-83	-627	435	41	83
Domestic Banks	9/13/2023	19843	2080	1390	2540	252	11145	2436	16036	1302	-324	2828
	1w Chg	-16	-5	7	-7	2	2	-15	-41	13	2	10
	1m Chg	65	72	-1	0	7	35	-48	7	42	10	6
	YTD Chg	-160	209	-157	-197	-61	98	-52	-595	319	15	102
Large Banks	9/13/2023	13300	1613	1104	1941	217	6745	1680	10760	864	-355	2031
	1w Chg	-12	1	8	-8	3	-1	-14	-36	18	-2	8
	1m Chg	56	65	2	4	10	18	-44	-10	52	8	6
	YTD Chg	-125	142	-117	-37	-51	-23	-38	-471	270	21	54
Small Banks	9/13/2023	6543	467	286	599	35	4399	757	5276	439	31	797
	1w Chg	-4	-6	-1	0	-1	4	0	-5	-6	3	3
	1m Chg	10	7	-3	-4	-3	17	-4	17	-10	2	1
	YTD Chg	-35	67	-40	-159	-10	121	-14	-125	48	-6	47
Foreign Banks	9/13/2023	3066	1332	109	27	346	1022	229	1283	987	635	161
	1w Chg	19	29	-2	2	1	-3	-7	24	5	0	-9
	1m Chg	21	32	1	2	-13	-1	-1	5	19	1	-5
	YTD Chg	91	106	3	-9	58	-36	-31	-32	116	26	-19

Source: Federal Reserve H8

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Exhibit 7: Treasury bill and coupon issuance (\$000s)

Treasury issuance has grown \$253b in Sept as of Sept 26, primarily 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	253,047	189,183	63,864	1,514,000	1,415,000	99,000	1,260,953	1,225,817	35,136
YTD	2,268,766	1,597,390	671,376	14,793,025	12,439,025	2,354,000	12,524,259	10,841,635	1,682,624
FYTD	2,642,016	1,670,539	971,477	18,725,025	15,705,025	3,020,000	16,083,009	14,034,486	2,048,523

Source: BofA Global Research, Haver Analytics

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Exhibit 8: Treasury bill auctions

Treasury bill auction data are showing indirect bidders are taking down less of the recent auctions than the auctions of the same tenor over the last 3 months

	Tenor	Auction Date	Maturity Date	Offering amount (\$mn)	High rate	Bid to Cover ratio	% Direct bidders	% Indirect bidders	% Primary Dealers
Upcoming bill auctions	42-Day	9/26/2023	11/9/2023	60,000					
This week's bill auctions	13-Week	9/25/2023	12/28/2023	69,000	5.33%	2.77	5.57%	51.81%	42.62%
	26-Week	9/25/2023	3/28/2024	62,000	5.32%	2.91	5.14%	58.87%	35.99%
Last week's bill auctions	4-Week	9/21/2023	10/24/2023	80,000	5.28%	2.8	4.75%	53.12%	42.13%
	8-Week	9/21/2023	11/21/2023	70,000	5.30%	2.58	5.29%	45.87%	48.83%
	17-Week	9/20/2023	1/23/2024	50,000	5.34%	2.83	4.72%	48.66%	46.63%
	42-Day	9/19/2023	11/2/2023	60,000	5.29%	3.1	3.09%	53.29%	43.62%
	13-Week	9/18/2023	12/21/2023	69,000	5.32%	2.86	5.59%	52.44%	41.97%
	26-Week	9/18/2023	3/21/2024	62,000	5.30%	3.05	5.06%	60.50%	34.44%

Source: BofA Global Research, US Treasury. Note: green highlight represents higher than the avg over the last 3 months, red highlight is lower than the avg over the last 3 months

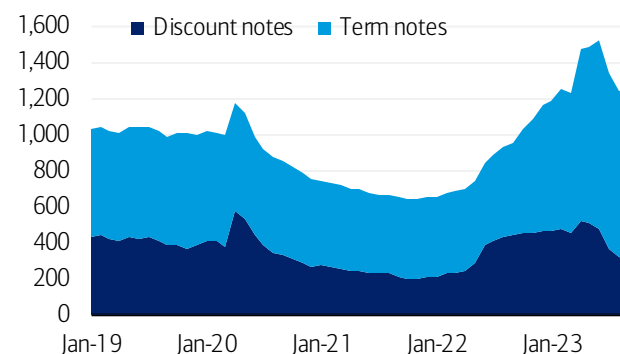
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Exhibit 9: Cumulative growth in FHLB debt since March 1 (\$bn)

Daily FHLB cumulative debt is roughly \$90bn lower since March 1

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

FHLB debt net new issuance was relatively flat in August

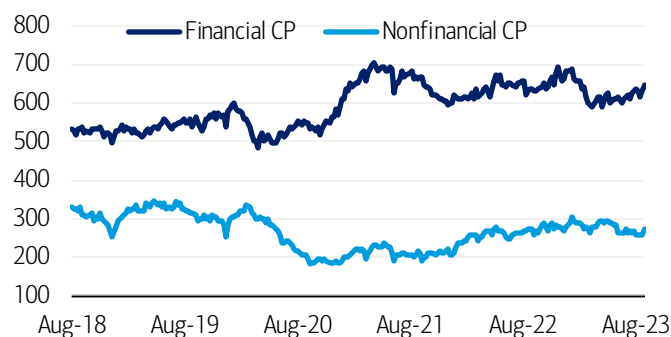


Source: BofA Global Research, FHLB Office of Finance

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Exhibit 11: Commercial paper (\$bn)

Financial CP is \$13b higher WoW, nonfin is \$14b higher WoW as of Sept 20



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 13, driven by a reduction in bill holdings

	Total	US Treasuries					Agency ex MBS	MBS	Corporates	Commercial Paper	State & Munis	ABS	Variable Rate Notes
		Bills	Coupons	FRNs	TIPS								
9/13/2023	355,124	214,478	64,896	129,304	5,450	12,868	16,137	79,618	20,827	9,172	12,552	8,903	2,609
1w Chg	-4,816	-2,514	-4,717	0	56	187	524	-10,088	2,868	860	2,415	433	1,546
1m Chg	36,710	43,043	13,178	24,905	4,452	-1,452	915	-6,641	3,193	1,405	-2,159	332	-1,973
YTD Chg	96,567	64,669	36,266	31,451	-1,452	-3,556	2,886	7,331	15,392	5,632	1,342	3,083	1,864

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 is steady at 60% since the prior week of data

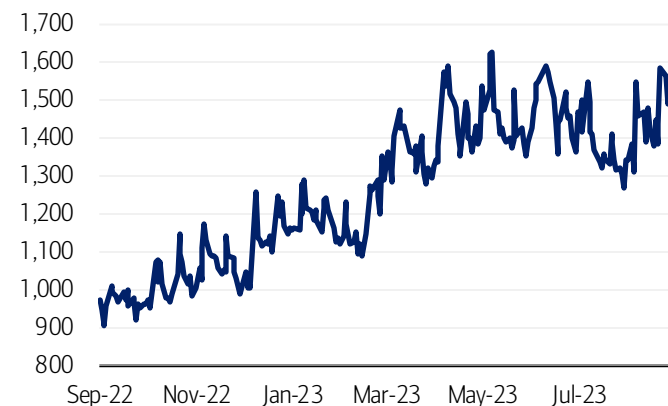


Source: BofA Global Research, Bloomberg

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Exhibit 15: SOFR volumes (\$bn)

SOFR volumes declined \$75bn from prior week as of Sept 22

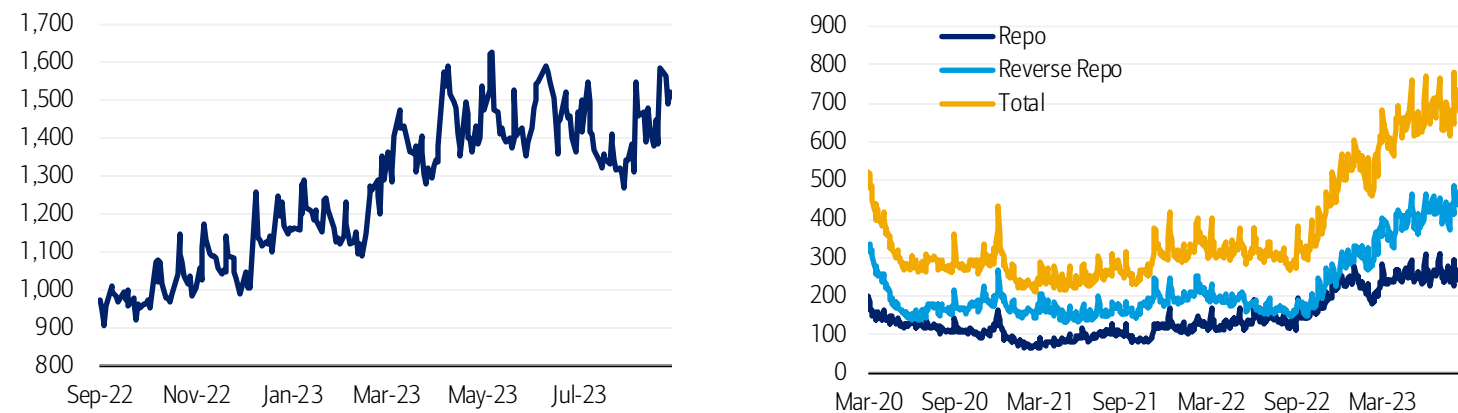


Source: FRBNY

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Exhibit 16: Sponsored Repo Volumes (\$bn)

Sponsored repo volumes declined \$10b WoW as of Sept 22



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
9/1/2023	16,950	5,880	-	(30,902)	600	53	31	(2,736)	(27)	(10,152)
9/5/2023	18,776	3,306	1,220	(18,680)	850	118	52	(4,366)	-	1,276
9/6/2023	20,155	1,847	-	(26,429)	6,325	25	10	(9,335)	-	(7,402)
9/7/2023	19,779	2,854	4,230	(22,391)	2,500	15	114	(155)	-	6,946
9/8/2023	19,932	1,882	-	(25,153)	2,653	40	50	(9,103)	(15)	(9,714)
9/11/2023	18,093	3,014	-	(22,777)	2,675	122	155	(1,072)	-	210
9/12/2023	16,750	8,294	1,995	(20,439)	1,350	1,065	100	(15)	-	9,100
9/13/2023	27,475	2,459	-	(26,167)	-	222	380	(2,245)	(100)	2,024
9/14/2023	15,830	3,469	4,600	(18,780)	-	65	74	(19,135)	(63)	(13,940)
9/15/2023	17,630	14,275	-	(40,434)	-	30	170	(761)	(1,240)	(10,330)
9/18/2023	17,046	5,399	-	(22,643)	2,885	483	252	(2,281)	-	1,142
9/19/2023	20,850	6,776	7,105	(26,873)	2,885	330	177	(3,255)	-	7,995
9/20/2023	17,199	7,020	-	(26,700)	1,050	110	100	(7,716)	(325)	(9,262)
9/21/2023	18,482	2,861	7,200	(20,563)	-	22	858	(2,662)	-	6,198
9/22/2023	16,149	2,945	-	(30,291)	1,862	4,035	845	(1,275)	(25)	(5,756)

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

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