

## US Rates Watch

# Follow the money: FHLBs, MMF, & Fed August 7 update

### Money map: FHLBs, MMF, & Fed

Banking system stress has moderated as shown through pay down in FHLB funding. FHLB debt is now below pre-March stress levels as banks paydown precautionary funding. At the same time, banks continue to increase borrowing very slowly from the Fed's BTFP, implying some banks still prefer to rely on official sector financing.

### FHLB debt is now below levels seen pre bank stress

According to our estimates, FHLB debt outstanding is now \$63bn lower than the level on March 1, before bank stress began (Exhibit 1). Official data from the FHLB Office of Finance shows \$95b in paydowns in July: \$47b in term notes & \$49b in discount notes. According to our most recent tracking since end July, FHLB paydowns have slowed and even registered a small net increase of \$435mn. Bank paydowns of precautionary funding have likely driven FHLB debt paydowns in recent weeks. We have also seen this reflected in a decline in Fed funds volumes over the same period (Exhibit 5).

### Money market fund AUM hits new record high

According to Crane data, MMF AUM increased \$7b on the week ending Thursday, Aug 3 (Exhibit 8). Inflows were primarily into gov't institutional funds. MMF AUM is \$644b higher since before bank stress began on March 9 and \$84b higher since the debt limit resolution on June 3. MMFs continue to attract inflows and have hit a historical record in AUM according to data from ICI (Exhibit 6)

### The decline in ON RRP take-up has recently plateaued

ON RRP take-up has declined \$348b since the debt limit resolution but has increased \$64b in the last week (Exhibit 10). This implies ~85% of the \$412b in TGA refill and \$157b in QT redemptions has come out of ON RRP since June 2 (Exhibit 9). Going forward, we continue to expect 90% of the TGA refill and Fed QT to drain from ON RRP.

### Decline in TGA contributed to higher RRP and reserves

Bank balance sheet data for the week ending Jul 26, showed a decline in domestic bank assets and an increase for foreign banks (Exhibit 12). The decline was driven by large domestic banks who saw deposit outflows and a decline in borrowing.

Fed balance sheet data for the week ending Aug 2, shows 95% of the growth in TGA and decline in Fed assets from QT have come out of domestic and foreign RRP since the debt limit resolution (Exhibit 14). In relation to the prior week, TGA declined \$89b which contributed to inflows into reserves and ON RRP. At the same time, the BTFP grew another \$1b billion as banks are still actively borrowing from the Fed's emergency lending program. On net, the Fed's balance sheet is \$27b lower WoW.

07 August 2023

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#### Abbreviations:

BTFP: bank term funding program  
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

Trading ideas and investment strategies discussed herein may give rise to significant risk and are not suitable for all investors. Investors should have experience in relevant markets and the financial resources to absorb any losses arising from applying these ideas or strategies.

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**Refer to important disclosures on page 8 to 10.**

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Timestamp: 07 August 2023 11:54AM EDT

**Exhibit 1: Data on FHLB issuance + ON RRP / MMF flows (\$bn)**

FHLB net issuance is offset by ON RRP decline &amp; MMF inflows; funding markets are working

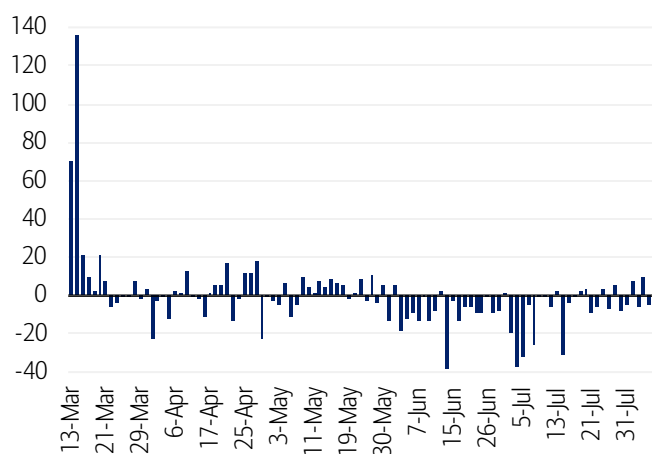
FHLBs	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul
Total	-0.72	-1.15	-5.51	2.19	-31.26	-3.89	-1.16	2.20	3.20	-8.76
DN outstanding	21.79	20.58	19.34	25.08	23.58	24.48	22.91	26.47	28.05	25.74
Money Markets	10-Jul	11-Jul	12-Jul	13-Jul	14-Jul	17-Jul	18-Jul	19-Jul	20-Jul	21-Jul
ON RRP Total	1,811.98	1,775.80	1,820.15	1,767.43	1,740.78	1,728.32	1,716.86	1,732.80	1,721.00	1,770.75
ON RRP Change (d/d)	-10.32	-36.18	44.35	-52.71	-26.66	-12.46	-11.46	15.94	-11.80	49.75
MMF Flows	4.05	16.58	-4.81	22.96	-38.68	13.00	22.42	-10.02	17.14	
MMF Inflow - RRP Change	14.37	52.76	-49.16	75.67	-12.02	25.46	33.88	-25.97	28.95	

Source: BofA Global Research, Bloomberg, FHLB Office of Finance, Crane Data

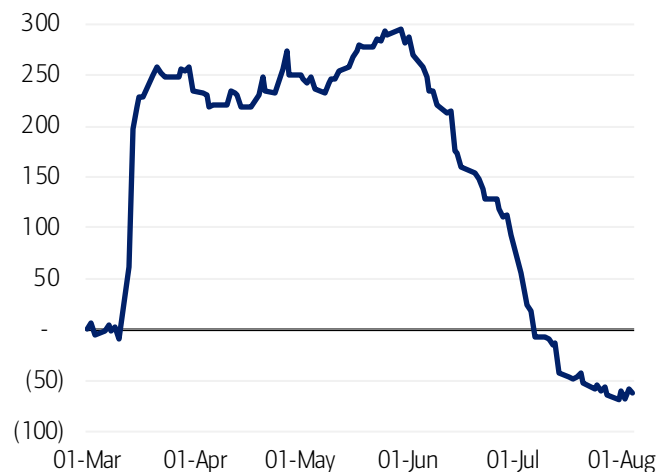
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**Exhibit 2: Daily net FHLB debt issuance (\$bn)**

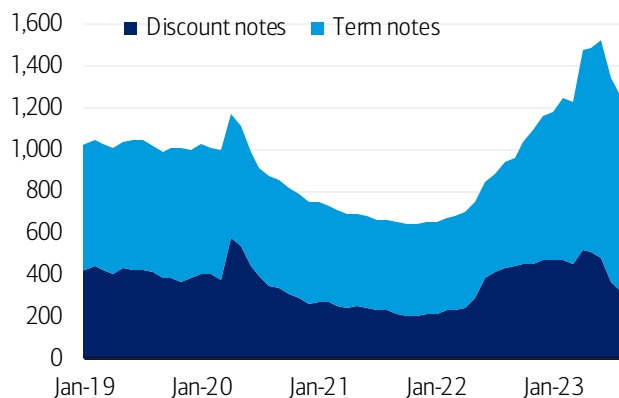
FHLB daily debt issuance has slowed

Source: Bloomberg, FHLB Office of Finance. Note: we use estimates of daily net issuance  
BofA GLOBAL RESEARCH**Exhibit 3: Cumulative growth in FHLB debt since March 1 (\$bn)**

Daily FHLB cumulative debt is now \$63bn lower than the level on Mar 1

Source: Bloomberg, FHLB Office of Finance. Note: we use estimates of daily net issuance  
BofA GLOBAL RESEARCH**Exhibit 4: FHLB debt issuance (\$bn)**

Higher FHLB debt issuance leading to more MMF investment

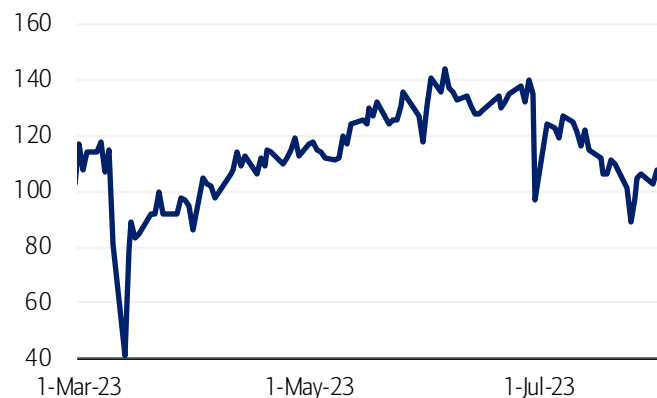


Source: BofA Global Research, FHLB Office of Finance

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**Exhibit 5: Fed funds volumes (\$bn)**

Fed funds volumes increased \$2bn from prior day

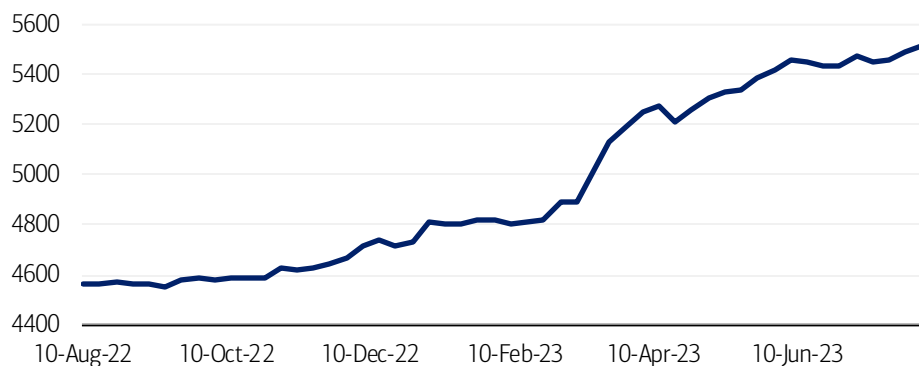


Source: FRBNY

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**Exhibit 6: MMF AUM (\$bn)**

MMFs saw \$28.96bn in flows from prior week



Source: ICI, Bloomberg

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**Exhibit 7: ICI Money Market Fund AUM (\$bn)**

MMF aum rose \$117bn from prior week

Dates	Total	Prime	Gov't	Tax exempt	Retail	Institutional	Prime Institutional	Gov't Institutional	Tax-exempt Institutional	Prime Retail	Gov't Retail	Tax-exempt Retail
7/26/2023	5,487	854	4,522	111	2,033	3,453	275	3,168	11	579	1,354	101
8/2/2023	5,516	857	4,545	114	2,051	3,465	274	3,180	11	583	1,365	103
WoW Change	29	4	23	3	17	12	-1	12	0	4	11	2
Change since 3/8	622	63	561	-2	224	398	5	395	-2	58	167	0

Source: ICI, Bloomberg

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**Exhibit 8: Daily Crane MMF AUM (\$bn)**

MMF AUM increased \$4b WoW, with outflows from gov't and tax exempt funds

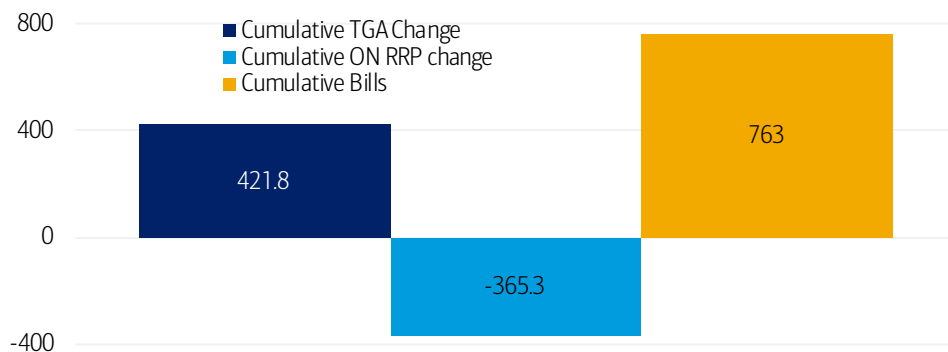
Dates	Total	Prime	Gov't	Tax exempt	Retail	Institutional	Prime Institutional	Gov't Institutional	Prime Retail	Gov't Retail
7/27/2023	5,891	1,234	4,538	118	1,975	3,798	653	3,145	582	1,393
7/28/2023	5,865	1,232	4,515	119	1,974	3,772	650	3,123	582	1,392
7/31/2023	5,881	1,229	4,533	119	1,977	3,785	647	3,138	582	1,395
8/1/2023	5,923	1,228	4,575	120	1,986	3,817	644	3,174	584	1,401
8/2/2023	5,917	1,228	4,568	121	1,987	3,809	642	3,166	586	1,401
8/3/2023	5,924	1,225	4,577	122	1,990	3,812	638	3,174	587	1,403
DoD Change	7	-3	9	1	3	4	-4	7	1	2
WoW change	33	-9	39	3	15	15	-14	29	5	10

Source: Crane Data

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**Exhibit 9: Cumulative change in bills and TGA vs ON RRP**

\$652b in bill issuance has in part rebuilt \$515b into the TGA, which has drained \$421b from ON RRP



Source: BofA Global Research, Bloomberg, Haver Analytics

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**Exhibit 10: ON RRP take-up (\$bn)**

ON RRP take-up increased \$63.58bn from prior day

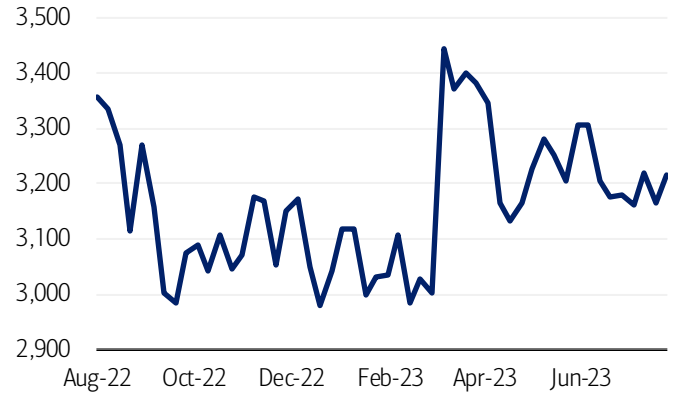


Source: FRBNY

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**Exhibit 11: Fed reserve balances outstanding (\$bn)**

Change in reserve balance from prior week was \$50.63bn



Source: Federal Reserve

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**Exhibit 12: US Commercial Bank balance sheets, selected assets & liabilities (\$bn)**

Domestic banks saw deposit outflows but foreign banks saw inflows

		Total	Assets						Liabilities			
			Cash	UST & Agy	MBS	Repo & FF	Loans & Leases	Other	Deposits	Borrowings	Net due to related foreign offices	Other
All Banks	7/26/2023	22752	3247	1507	2577	605	12107	2710	17205	2258	312	2978
	1w Chg	-69	-60	0	-7	14	18	-35	-30	-43	10	-6
	1m Chg	-99	-30	-12	-18	-12	-16	-11	-55	-73	47	-17
	YTD Chg	-223	151	-146	-196	4	2	-39	-741	404	42	72
Domestic Banks	7/26/2023	19680	1933	1396	2551	236	11084	2480	15912	1266	-310	2812
	1w Chg	-79	-48	0	-7	-2	17	-38	-38	-29	4	-16
	1m Chg	-85	-24	-6	-16	-27	-16	4	-70	-62	51	-4
	YTD Chg	-321	64	-151	-186	-77	37	-9	-719	283	28	86
Large Banks	7/26/2023	13191	1479	1105	1948	205	6733	1722	10709	802	-344	2024
	1w Chg	-81	-51	0	-3	-3	13	-37	-46	-21	4	-19
	1m Chg	-83	-34	-5	-7	-24	-17	4	-95	-31	52	-8
	YTD Chg	-154	38	-124	-16	-64	-11	21	-469	206	32	76
Small Banks	7/26/2023	6489	454	291	603	31	4351	758	5203	465	33	788
	1w Chg	3	4	0	-4	1	4	-2	8	-8	0	3
	1m Chg	-2	10	-1	-8	-4	1	0	25	-31	0	4
	YTD Chg	-167	26	-27	-169	-14	48	-30	-250	76	-3	10
Foreign Banks	7/26/2023	3073	1314	111	26	369	1023	230	1293	992	622	166
	1w Chg	10	-12	0	0	16	2	3	7	-14	6	10
	1m Chg	-13	-6	-6	-3	16	0	-14	15	-11	-5	-13
	YTD Chg	98	87	5	-11	82	-35	-30	-22	121	13	-14

Source: Federal Reserve H8

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**Exhibit 13: Fed balance sheet, selected assets & liabilities (\$bn, Wednesday comparison data)**

TGA dropped \$89b last week, likely due to normal start of month outflows. Those outflows moved into reserves and ON RRP

Dates	Assets					CB Liquidity Swaps	Liabilities					Total
	Securities	Repo	Discount Window	BTFP	FDIC bank credit extension		Currency	Foreign RRP	ON RRP	TGA	Reserves	
3/8/2023	7,948	0		5	0	0	2,308	367	2,193	312	3,004	8,392
5/31/2023	7,725	0		4	94	188	2,344	361	2,255	49	3,206	8,436
8/2/2023	7,568	0		2	106	148	2,333	302	1,770	461	3,217	8,257
Change from 3/8-8/2	-380	0		-3	106	148	25	-65	-423	149	214	-135
Change from 5/31-8/2	-157	0		-2	12	-40	-11	-59	-485	412	12	-179
Change from 7/26-8/2	-33	0		0	1	-4	0	-15	20	-89	51	-37

Source: BofA Global Research, Federal Reserve

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**Exhibit 14: Fed balance sheet, selected assets & liabilities (\$bn, Wednesday comparison data)**

H41 data shows 92% of the increase in TGA and decline in assets from QT has drained from foreign and domestic Fed RRP

Dates	Assets						Liabilities					Total
	Securities	Repo	Discount Window	BTFP	FDIC bank credit extension	CB Liquidity Swaps	Currency	Foreign RRP	ON RRP	TGA	Reserves	
3/8/2023	7,948	0		5	0	0	2,308	367	2,193	312	3,004	8,392
5/31/2023	7,725	0		4	94	188	2,344	361	2,255	49	3,206	8,436
8/2/2023	7,568	0		2	106	148	2,333	302	1,770	461	3,217	8,257
Change from 3/8-8/2	-380	0		-3	106	148	25	-65	-423	149	214	-135
Change from 5/31-8/2	-157	0		-2	12	-40	-11	-59	-485	412	12	-179

Source: BofA Global Research, Federal Reserve

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# Appendix

## Exhibit 15: 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
3/1/2023	14,450	6,550	-	(21,685)	1,500	1,317	603	(2,794)	-	(59)
3/2/2023	17,964	4,656	5,650	(17,127)	530	114	789	(6,685)	(15)	5,876
3/3/2023	14,476	3,414	-	(30,161)	1,000	120	2,035	(1,949)	-	(11,065)
3/6/2023	14,930	4,704	-	(18,998)	3,790	754	1,023	(2,335)	-	3,868
3/7/2023	14,439	3,751	4,915	(17,260)	-	170	284	(1,000)	-	5,298
3/8/2023	13,485	7,293	-	(31,073)	-	5,095	212	-	-	(4,989)
3/9/2023	15,250	3,552	3,360	(16,869)	-	585	1,135	(3,980)	-	3,032
3/10/2023	16,799	3,740	-	(28,651)	2,000	547	58	(5,206)	-	(10,714)
3/13/2023	67,500	23,039	-	(22,798)	2,810	2,035	347	(2,750)	-	70,183
3/14/2023	50,200	61,770	6,445	(71,183)	91,819	495	-	(3,450)	-	136,096
3/15/2023	24,100	40,529	-	(65,448)	21,052	1,685	677	(1,889)	-	20,705
3/16/2023	14,600	9,988	3,500	(29,369)	10,850	636	132	(830)	-	9,507
3/17/2023	11,585	7,880	-	(24,676)	11,500	175	39	(4,583)	-	1,920
3/20/2023	12,400	7,341	-	(16,852)	21,712	413	31	(3,650)	-	21,395
3/21/2023	9,604	5,301	3,675	(15,224)	7,312	227	31	(3,545)	-	7,381
3/22/2023	11,250	5,916	-	(24,402)	2,500	237	32	(1,000)	-	(5,468)
3/23/2023	9,780	3,456	5,115	(16,546)	-	105	81	(6,400)	-	(4,409)
3/24/2023	18,355	1,650	-	(23,633)	4,900	30	74	(1,580)	-	(204)
3/27/2023	24,070	1,464	-	(33,130)	9,150	4,188	295	(6,323)	-	(285)
3/28/2023	19,223	4,277	280	(23,576)	2,200	8,744	75	(3,247)	(60)	7,917
3/29/2023	17,095	1,957	-	(29,865)	1,000	9,924	162	(1,881)	(30)	(1,639)
3/30/2023	15,250	4,213	4,700	(20,936)	-	3,498	129	(3,202)	(210)	3,442
3/31/2023	8,000	964	-	(32,122)	-	-	-	-	-	(23,158)
4/3/2023	9,620	2,421	-	(16,456)	-	7,642	96	(6,175)	(110)	(2,962)
4/4/2023	11,440	1,453	4,120	(12,553)	-	15	20	(5,681)	-	(1,186)
4/5/2023	9,800	2,712	-	(23,492)	-	492	144	(2,172)	-	(12,516)
4/6/2023	9,300	3,140	4,275	(12,694)	-	1,030	44	(3,011)	(10)	2,073
4/10/2023	9,600	6,010	-	(19,286)	-	5,213	520	(1,485)	-	572
4/11/2023	9,600	7,455	5,255	(11,553)	-	2,350	258	(200)	-	13,166
4/12/2023	16,155	5,059	-	(23,974)	50	1,723	149	(330)	-	(1,168)
4/13/2023	2,750	3,625	2,935	(10,918)	-	751	126	(1,100)	(190)	(2,021)
4/14/2023	11,041	3,882	-	(24,032)	378	1,040	55	(3,690)	-	(11,327)
4/17/2023	11,896	5,142	-	(19,320)	-	3,605	428	(1,400)	(120)	231
4/18/2023	13,127	4,043	3,935	(16,850)	500	2,502	151	(1,722)	-	5,686
4/19/2023	16,014	8,047	-	(25,694)	1,000	5,460	187	-	-	5,014
4/20/2023	18,737	6,788	7,240	(22,421)	1,000	6,882	460	(1,317)	-	17,368
4/21/2023	15,984	2,654	-	(30,101)	2,000	3,137	84	(7,225)	(170)	(13,637)
4/24/2023	17,600	5,499	-	(23,041)	-	4,645	30	(6,005)	(434)	(1,706)
4/25/2023	15,850	6,807	11,335	(19,746)	2,550	1,253	130	(6,713)	-	11,466
4/26/2023	26,838	6,482	-	(27,442)	-	5,780	224	-	(335)	11,548
4/27/2023	19,800	6,206	7,000	(21,528)	6,480	4,140	80	(3,600)	(620)	17,958
4/28/2023	15,512	3,584	-	(44,794)	911	3,430	80	(1,424)	(130)	(22,831)
5/1/2023	18,904	2,879	-	(27,040)	11,497	1,047	148	(7,853)	-	(419)
5/2/2023	19,801	4,857	3,185	(24,907)	-	57	165	(6,105)	-	(2,946)
5/3/2023	23,273	4,378	-	(38,071)	5,913	5,208	261	(6,020)	-	(5,059)
5/4/2023	23,721	5,373	6,930	(31,128)	5,950	1,955	255	(6,989)	-	6,067
5/5/2023	18,400	2,790	-	(31,772)	1,677	55	124	(2,072)	-	(10,798)
5/8/2023	18,857	6,822	-	(31,657)	3,655	832	210	(3,275)	(15)	(4,572)
5/9/2023	20,018	4,320	7,200	(23,834)	4,505	110	370	(2,650)	(40)	9,999
5/10/2023	21,769	2,506	-	(29,880)	9,708	1,521	239	(1,417)	(80)	4,367
5/11/2023	19,532	2,132	5,050	(26,533)	1,400	80	115	(1,540)	(15)	221
5/12/2023	18,555	5,628	-	(30,524)	7,825	6,165	20	(130)	-	7,539
5/15/2023	18,014	7,593	-	(24,965)	3,000	411	138	(100)	-	4,091
5/16/2023	16,384	10,516	7,595	(29,449)	2,905	315	115	(100)	(45)	8,236
5/17/2023	15,800	6,278	-	(24,935)	10,720	143	60	(1,545)	-	6,521
5/18/2023	13,206	4,494	6,110	(19,859)	2,054	1,105	186	(1,938)	-	5,357
5/19/2023	11,776	2,766	-	(26,366)	9,824	1,380	145	(850)	(25)	(1,350)
5/22/2023	11,935	6,178	-	(16,931)	1,400	3,405	20	(5,570)	(20)	417
5/23/2023	13,825	7,034	7,085	(16,926)	2,845	298	220	(6,100)	(85)	8,195

**Exhibit 15: 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
5/24/2023	16,049	9,590	-	(24,231)	-	287	33	(4,780)	(238)	(3,291)
5/25/2023	15,050	8,877	8,605	(26,328)	6,257	135	88	(2,478)	(3)	10,203
5/26/2023	14,857	2,792	-	(26,090)	12,890	155	70	(8,010)	(420)	(3,757)
5/30/2023	17,144	9,610	2,020	(24,663)	397	2,039	258	(811)	-	5,995
5/31/2023	11,178	5,373	-	(29,638)	-	-	-	-	-	(13,087)
6/1/2023	14,922	6,811	2,260	(24,577)	5,396	915	1,189	(1,475)	(15)	5,426
6/2/2023	17,653	1,818	-	(28,221)	-	305	-	(9,579)	(15)	(18,038)
6/5/2023	19,670	462	-	(28,507)	921	31	251	(4,640)	-	(11,811)
6/6/2023	16,983	770	1,725	(27,463)	-	120	50	(1,562)	(29)	(9,406)
6/7/2023	15,315	2,005	-	(28,488)	-	245	45	(2,265)	(45)	(13,188)
6/8/2023	17,823	3,135	1,300	(23,002)	-	20	260	(32)	-	(496)
6/9/2023	17,431	2,386	-	(25,225)	-	20	135	(7,942)	-	(13,196)
6/12/2023	21,127	1,240	-	(32,701)	800	270	1,145	(415)	-	(8,535)
6/13/2023	18,671	1,951	2,235	(24,361)	-	5,260	50	(1,880)	-	1,927
6/14/2023	19,374	4,696	-	(24,379)	250	428	105	(39,009)	-	(38,535)
6/15/2023	18,833	3,083	650	(25,585)	-	1,349	70	(946)	-	(2,545)
6/16/2023	19,002	743	-	(29,802)	-	50	25	(3,742)	(70)	(13,794)
6/20/2023	19,087	2,952	960	(28,032)	-	1,210	31	(2,650)	-	(6,443)
6/21/2023	18,100	4,070	-	(29,290)	-	1,251	785	(1,185)	-	(6,270)
6/22/2023	16,145	3,101	655	(22,357)	270	300	33	(7,577)	(50)	(9,479)
6/23/2023	16,909	1,108	-	(26,673)	-	1,533	62	(2,410)	-	(9,470)
6/26/2023	18,864	2,297	-	(22,675)	520	797	12	(345)	-	(530)
6/27/2023	18,578	1,838	1,555	(22,839)	-	338	197	(8,130)	(280)	(8,743)
6/28/2023	17,274	2,759	-	(24,193)	-	555	61	(3,780)	(615)	(7,939)
6/29/2023	18,550	2,202	700	(19,653)	500	310	200	(1,014)	(90)	1,705
6/30/2023	11,934	3,046	-	(30,171)	-	500	73	(5,237)	(110)	(19,966)
7/3/2023	14,953	346	900	(40,698)	1,050	1,314	102	(15,020)	(50)	(37,104)
7/5/2023	17,558	1,166	-	(45,838)	500	15	125	(5,484)	-	(31,958)
7/6/2023	15,330	1,115	925	(19,984)	500	-	105	(2,870)	-	(4,879)
7/7/2023	17,447	2,627	-	(45,887)	-	30	222	(450)	-	(26,011)
7/10/2023	18,791	868	-	(20,859)	1,000	80	1,073	(1,650)	-	(699)
7/11/2023	18,266	843	995	(21,480)	-	55	518	(250)	-	(1,054)
7/12/2023	18,116	922	-	(23,397)	-	191	115	(1,455)	-	(5,507)
7/13/2023	21,184	955	1,840	(20,796)	-	1,085	15	(2,090)	-	2,193
7/14/2023	19,334	2,022	-	(28,033)	1,000	58	1,170	(26,469)	(343)	(31,260)
7/17/2023	18,691	2,095	-	(22,972)	-	3,698	-	(5,400)	-	(3,888)
7/18/2023	18,350	2,090	2,350	(20,711)	-	33	86	(3,359)	-	(1,161)
7/19/2023	18,804	7,592	-	(24,094)	-	61	16	(176)	-	2,204
7/20/2023	20,837	3,280	1,655	(20,851)	610	1,593	75	(3,995)	-	3,203
7/21/2023	20,550	2,956	-	(30,909)	2,101	30	100	(3,586)	-	(8,758)
7/24/2023	21,129	2,225	-	(26,277)	1,441	540	114	(4,660)	-	(5,489)
7/25/2023	22,254	2,647	6,065	(31,151)	3,850	205	-	(535)	-	3,335
7/26/2023	22,467	1,292	-	(31,339)	3,750	532	145	(3,604)	-	(6,757)
7/27/2023	21,962	4,784	3,195	(28,375)	2,070	5,035	240	(3,543)	-	5,368
7/28/2023	20,385	1,982	-	(31,150)	1,050	595	383	(1,357)	-	(8,112)
7/31/2023	17,350	2,909	-	(25,569)	-	-	-	-	-	(5,310)
8/1/2023	26,022	5,900	2,685	(23,791)	-	355	378	(3,887)	-	7,661
8/2/2023	23,038	2,049	-	(34,357)	3,895	77	133	(1,215)	-	(6,381)
8/3/2023	23,669	6,613	4,245	(25,599)	2,660	20	70	(2,288)	(15)	9,375
8/4/2023	22,997	5,471	-	(32,987)	-	15	82	(489)	-	(4,910)

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

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