

US Rates Watch

Follow the money: FHLBs, MMF, & Fed April 21 update

Money map: FHLBs, MMF, & Fed

We provide our real-time assessment of how funds are flowing in the system using daily & weekly data across FHLBs, MMF and Fed. We provide an in-depth description of how funding movements and borrowing from the Fed and FHLB impact the balance sheets of the banking sector and MMFs in the report: [Funding map: T-tables for Fed, banks, MMF.](#)

Key takeaway: banking system stress remains elevated but is showing modest signs of improvement. Fed H.4.1 showed money moving from ON RRP and reserves to TGA, in line with expected Tax Day related flows. FHLB debt issuance and Fed bank lending has picked up, likely due to banks facing deposit outflows from the Tax Day.

FHLB activity: FHLB debt issuance grew \$16b on Thursday, April 20th (Exhibit 2), the largest increase since March 17. The increase in debt issuance was likely due to banks borrowing advances as they faced tax-day related outflows, in line with the increase in Fed borrowing we saw in the H.4.1, discussed more below.

Money market funds: According to ICI data, MMF AUM declined \$69b the week of April 19th, the largest 1w decline in 2 years (Exhibit 5, Exhibit 6). The decline was primarily in government institutional funds, likely due to investors withdrawing some of their recent inflows for corporate tax payments.

ON RRP: take-up declined \$17bn on Thursday (Exhibit 8). This may have been driven by the recent pickup in FHLB debt issuance and MMF outflows (Exhibit 10).

We expect MMF take-up at the ON RRP to increase heading into the X-date as MMFs typically want to avoid bills maturing following projected X-dates. Some gov't MMFs are Treasury-only & cannot invest at Fed RRP, contributing to richening in short-dated bills.

Tax receipt data: the April 19th Treasury statement showed the TGA grew another \$12b following Tax Day. The inflows from individual tax receipts are still well below '22, but that spread is narrowing (Exhibit 13).

Fed data: Fed H.4.1 for the week ending April 19 showed a \$183b drop in reserves and a \$179b increase in TGA. The shift from reserves to TGA was due to the April 18th Tax Day. The decline in the ON RRP was less severe, though MMF AUM declined \$69b over the same period, as institutional clients likely withdrew some of the cash they've recently moved into MMFs for corporate tax payments.

Notably, Fed emergency liquidity lending also ticked up \$2b after several weeks of declines, again likely driven by banks facing deposit outflows due to the April tax date.

Note: after today's publication "Follow the Money" will shift to a weekly timeline.

21 April 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
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

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Refer to important disclosures on page 7 to 9.

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Timestamp: 21 April 2023 06:00AM EDT

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

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

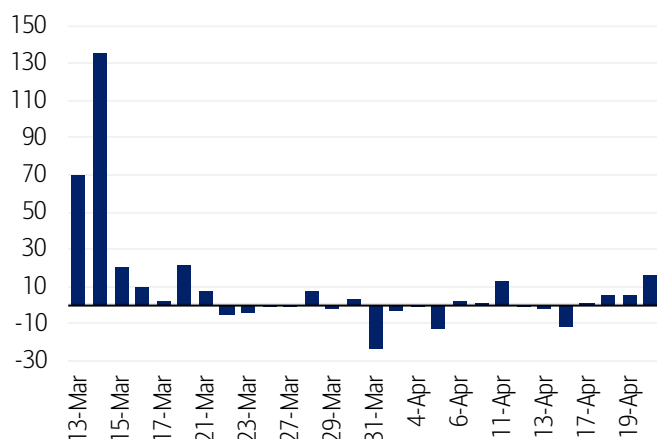
| FHLBs | 3-Apr | 4-Apr | 5-Apr | 6-Apr | 10-Apr | 11-Apr | 12-Apr | 13-Apr | 14-Apr | 17-Apr | 18-Apr | 19-Apr | 20-Apr |
|-------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Total | -2.85 | -1.19 | -12.52 | 2.08 | 0.57 | 13.17 | -1.17 | -1.83 | -11.33 | 0.35 | 5.69 | 5.01 | 16.02 |
| DN outstanding | 516.86 | 521.32 | 510.34 | 514.36 | 510.69 | 521.45 | 518.69 | 517.08 | 507.97 | 505.69 | 509.94 | 508.31 | 518.65 |
| Money Markets | 3-Apr | 4-Apr | 5-Apr | 6-Apr | 10-Apr | 11-Apr | 12-Apr | 13-Apr | 14-Apr | 17-Apr | 18-Apr | 19-Apr | 20-Apr |
| ON RRP Total | 2,221.01 | 2,219.38 | 2,243.01 | 2,173.66 | 2,239.66 | 2,297.21 | 2,303.86 | 2,321.70 | 2,253.79 | 2,256.85 | 2,238.99 | 2,294.68 | 2,277.26 |
| ON RRP Change (d/d) | -154.16 | -1.64 | 23.64 | -69.35 | 65.99 | 57.55 | 6.65 | 17.84 | -67.91 | 3.06 | -17.85 | 55.68 | -17.42 |
| MMF Flows | -7.64 | 27.98 | 7.87 | -38.00 | 56.60 | 2.00 | 8.19 | -0.42 | -37.50 | 9.87 | -8.51 | -9.17 | |
| MMF Inflow - RRP Change | 146.52 | 29.62 | -15.76 | 31.35 | -9.39 | -55.55 | 1.54 | -18.26 | 30.41 | 6.81 | 9.34 | -64.85 | |

Source: BofA Global Research, Bloomberg, FHLB Office of Finance, Crane Data. Note: For FHLB data we use estimates of daily net issuance

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

FHLB daily debt issuance has recently picked up

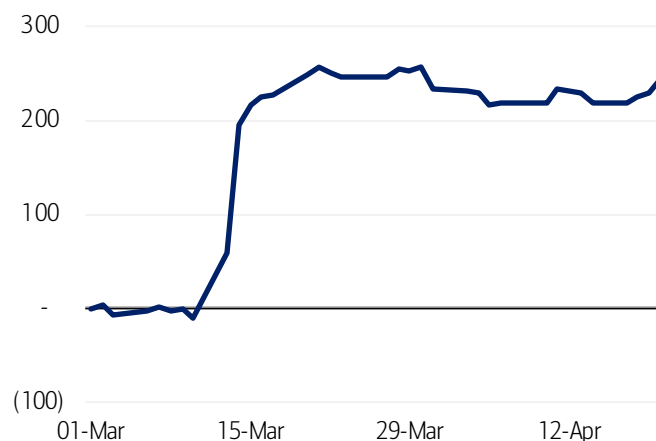


Source: Bloomberg, FHLB Office of Finance. Note: we use estimates of daily net issuance

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Exhibit 3: Cumulative growth in FHLB debt since March 1 (\$bn)

Daily FHLB cumulative debt is roughly \$245bn higher since March 1

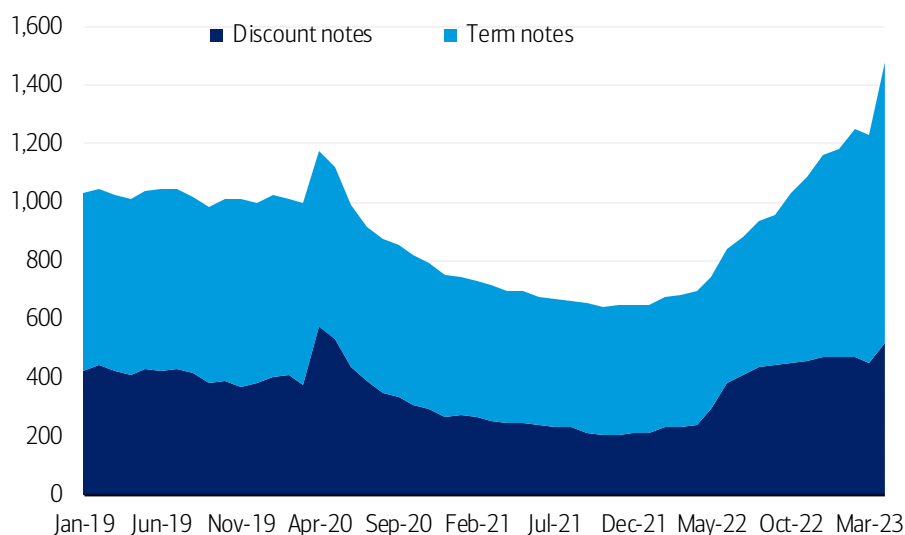


Source: Bloomberg, FHLB Office of Finance. Note: we use estimates of daily net issuance

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Exhibit 4: FHLB debt issuance (\$bn)

Higher FHLB debt issuance leading to more MMF investment



Source: FHLB Office of Finance

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Exhibit 5: MMF AUM (\$bn)

MMFs saw -\$68.64bn in flows from prior week, likely due to corporate tax-date



Source: ICI, Bloomberg

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Exhibit 6: ICI Money Market Fund AUM (\$bn)

MMF aum declined \$69bn from prior week, likely due to corporate tax-date

| 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 |
|------------------|-------|-------|-------|------------|--------|---------------|---------------------|---------------------|--------------------------|--------------|--------------|-------------------|
| 4/12/2023 | 5,277 | 769 | 4,392 | 116 | 1,904 | 3,374 | 257 | 3,105 | 12 | 511 | 1,287 | 105 |
| 4/19/2023 | 5,209 | 767 | 4,332 | 110 | 1,894 | 3,315 | 257 | 3,048 | 11 | 510 | 1,284 | 99 |
| WoW Change | -69 | -2 | -60 | -6 | -10 | -59 | -1 | -57 | -1 | -1 | -3 | -6 |
| Change since 3/8 | 315 | -28 | 349 | -6 | 67 | 248 | -12 | 262 | -2 | -15 | 86 | -4 |

Source: ICI, Bloomberg

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Exhibit 7: Daily Crane MMF AUM (\$bn)

MMF AUM declined \$9b from prior day

| Dates | Total | Prime | Gov't | Tax exempt | Retail | Institutional | Prime Institutional | Gov't Institutional | Prime Retail | Gov't Retail |
|------------|-------|-------|-------|------------|--------|---------------|---------------------|---------------------|--------------|--------------|
| 4/13/2023 | 5,667 | 1,141 | 4,403 | 123 | 1,808 | 3,736 | 628 | 3,109 | 513 | 1,295 |
| 4/14/2023 | 5,630 | 1,155 | 4,352 | 122 | 1,804 | 3,703 | 642 | 3,061 | 513 | 1,292 |
| 4/17/2023 | 5,639 | 1,158 | 4,362 | 120 | 1,803 | 3,717 | 647 | 3,070 | 511 | 1,291 |
| 4/18/2023 | 5,631 | 1,161 | 4,350 | 120 | 1,802 | 3,709 | 650 | 3,059 | 511 | 1,291 |
| 4/19/2023 | 5,622 | 1,164 | 4,341 | 117 | 1,801 | 3,704 | 652 | 3,052 | 512 | 1,289 |
| DoD Change | -9 | 3 | -9 | -3 | -1 | -4 | 2 | -6 | 1 | -2 |
| WoW change | -45 | 23 | -61 | -7 | -7 | -31 | 24 | -56 | -1 | -6 |

Source: Crane Data

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Exhibit 8: ON RRP take-up (\$bn)

ON RRP take-up decreased -\$17.42bn from prior day

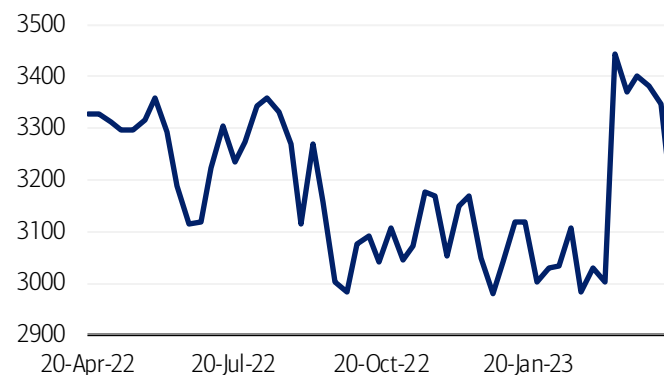


Source: FRBNY

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Exhibit 9: Fed reserve balances outstanding (\$bn)

Change in reserve balance from prior week was -\$182.67bn

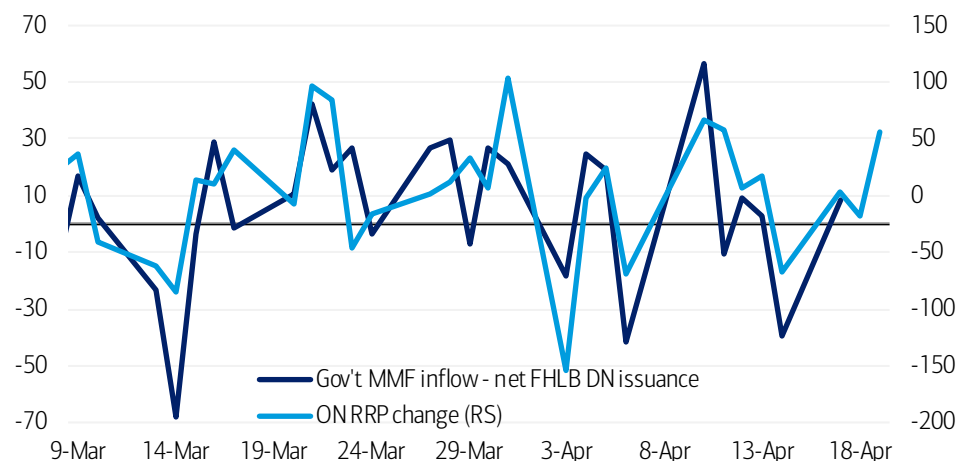


Source: Federal Reserve

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Exhibit 10: Daily gov't MMF inflow – net FHLB DN issuance vs ON RRP change (\$bn)

When MMF inflows exceed FHLB debt issuance, Fed RRP typically increases



Source: BofA Global Research, FRBNY, Bloomberg, FHLB, Crane data

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Exhibit 11: US Commercial Bank balance sheets, selected assets & liabilities (\$bn)

Domestic banks saw deposits increase but borrowings declined

| | | Total | Assets | | | | | | Liabilities | | | |
|----------------|----------|-------|--------|-----------|------|-----------|----------------|-------|-------------|------------|------------------------------------|-------|
| | | | Cash | UST & Agy | MBS | Repo & FF | Loans & Leases | Other | Deposits | Borrowings | Net due to related foreign offices | Other |
| All Banks | 4/5/2023 | 22986 | 3381 | 1553 | 2622 | 618 | 12060 | 2751 | 17425 | 2356 | 323 | 2882 |
| | 1w Chg | -110 | -78 | -3 | 13 | -8 | -6 | -29 | 75 | -55 | -66 | -66 |
| | 1m Chg | 118 | 320 | -69 | -114 | 16 | 28 | -62 | -191 | 378 | -1 | -68 |
| | YTD Chg | 10 | 286 | -100 | -151 | 17 | -45 | 3 | -520 | 501 | 52 | -23 |
| Domestic Banks | 4/5/2023 | 19975 | 2120 | 1445 | 2595 | 263 | 11020 | 2532 | 16176 | 1435 | -386 | 2750 |
| | 1w Chg | -31 | -36 | -1 | 13 | -10 | 5 | -1 | 56 | -61 | -8 | -18 |
| | 1m Chg | 227 | 433 | -67 | -116 | 0 | 15 | -38 | -77 | 382 | -43 | -34 |
| | YTD Chg | -26 | 252 | -103 | -142 | -50 | -27 | 44 | -455 | 452 | -48 | 24 |
| Large Banks | 4/5/2023 | 13230 | 1638 | 1144 | 1961 | 220 | 6565 | 1703 | 10776 | 892 | -419 | 1981 |
| | 1w Chg | -24 | 5 | -3 | 7 | -10 | 6 | -28 | 28 | -36 | -7 | -9 |
| | 1m Chg | 315 | 370 | -47 | 2 | 0 | 49 | -59 | 101 | 242 | -45 | 18 |
| | YTD Chg | 112 | 223 | -71 | 1 | -44 | -10 | 14 | -229 | 316 | -44 | 68 |
| Small Banks | 4/5/2023 | 6745 | 483 | 300 | 634 | 43 | 4455 | 829 | 5400 | 543 | 33 | 769 |
| | 1w Chg | -7 | -42 | 2 | 7 | 0 | 0 | 27 | 28 | -25 | -1 | -9 |
| | 1m Chg | -88 | 63 | -20 | -117 | -1 | -33 | 21 | -178 | 140 | 2 | -51 |
| | YTD Chg | -138 | 29 | -31 | -143 | -6 | -17 | 29 | -226 | 135 | -4 | -44 |
| Foreign Banks | 4/5/2023 | 3011 | 1261 | 108 | 27 | 355 | 1040 | 219 | 1249 | 920 | 709 | 133 |
| | 1w Chg | -79 | -41 | -2 | 0 | 3 | -11 | -28 | 19 | 7 | -58 | -48 |
| | 1m Chg | -109 | -113 | -3 | 2 | 16 | 12 | -24 | -113 | -4 | 42 | -35 |
| | YTD Chg | 37 | 34 | 2 | -9 | 68 | -18 | -41 | -66 | 50 | 100 | -48 |

Source: Federal Reserve H8

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Exhibit 12: Fed balance sheet, selected assets & liabilities (\$bn, Wednesday comparison data)

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

| Dates | Assets | | | | | | Liabilities | | | | | |
|-----------------------|------------|------|-----------------|------|----------------------------|--------------------|-------------|-------------|--------|-----|----------|-------|
| | Securities | Repo | Discount Window | BTFF | FDIC bank credit extension | CB Liquidity Swaps | Currency | Foreign RRP | ON RRP | TGA | Reserves | Total |
| 3/8/2023 | 7,948 | 0 | | 5 | 0 | 0 | 2,308 | 367 | 2,193 | 312 | 3,004 | 8,392 |
| 4/12/2023 | 7,878 | 30 | | 68 | 72 | 173 | 2,324 | 373 | 2,304 | 87 | 3,348 | 8,665 |
| 4/19/2023 | 7,860 | 20 | | 70 | 74 | 173 | 2,323 | 372 | 2,295 | 265 | 3,165 | 8,643 |
| Change from 4/12-4/19 | -17 | -10 | | 2 | 2 | 0 | -1 | -1 | -9 | 179 | -183 | -21 |
| Change from 3/8-4/19 | -88 | 20 | | 65 | 74 | 173 | 15 | 5 | 101 | -47 | 161 | 252 |

Source: BofA Global Research, Federal Reserve

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Exhibit 13: Cumulative individual tax receipts YTD (\$bn)
'23 receipts are well below '22 but above the pre-COVID average

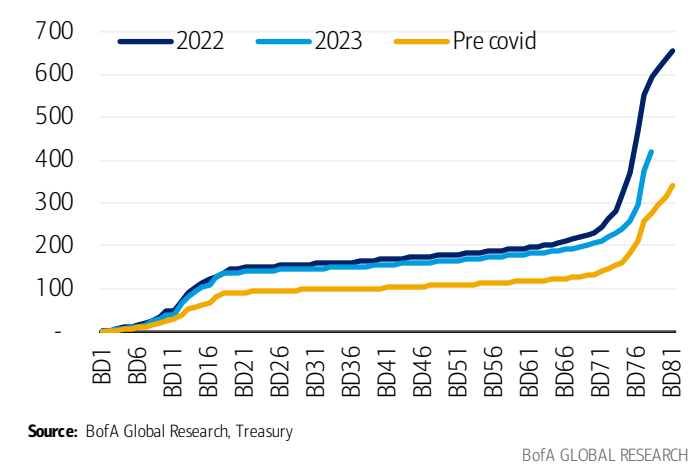
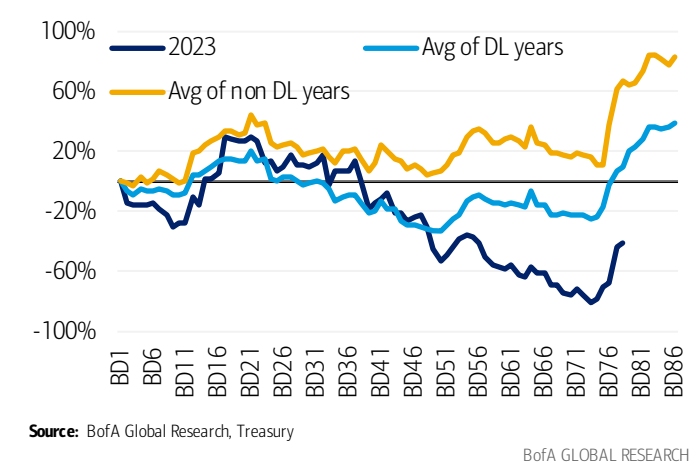


Exhibit 14: Percent change in TGA YTD
TGA was declining continuously in '23 due to debt limit dynamics



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 | Total |
|-----------|--------|---------|---------|-------------|--------|----------|---------|----------|----------|
| 3/1/2023 | 14,450 | 6,550 | - | (21,685) | - | 1,317 | 603 | (2,794) | (1,559) |
| 3/2/2023 | 17,964 | 4,656 | 5,650 | (17,127) | - | 114 | 789 | (6,685) | 5,361 |
| 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) | 7,977 |
| 3/29/2023 | 17,095 | 1,957 | - | (29,865) | 1,000 | 9,924 | 162 | (1,881) | (1,609) |
| 3/30/2023 | 15,250 | 4,213 | 4,700 | (20,936) | - | 3,498 | 129 | (3,202) | 3,652 |
| 3/31/2023 | 8,000 | 964 | - | (32,122) | - | - | - | - | (23,158) |
| 4/3/2023 | 9,620 | 2,421 | - | (16,456) | - | 7,642 | 96 | (6,175) | (2,852) |
| 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) | 2,083 |
| 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) | (1,831) |
| 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) | 351 |
| 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 | 5,682 | 310 | (1,317) | 16,018 |

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

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