Liquidity and Funds Management Today

MEASURING AND MANAGING LIQUIDITY RISK

Today's Presenter

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Agenda

1. Defining Liquidity
2. Sources of Liquidity
3. Measuring Liquidity Risk
4. Managing Liquidity
5. Stress Testing

Liquidity: Regulatory Hot Button

LCR, BLR, Liquidity Worksheets 2024

What is Liquidity?

The capacity to readily meet cash and collateral obligations at a <u>reasonable cost</u>.

Maintaining adequate levels depends on the institution's ability to meet expected and unexpected cash flow and collateral needs without adversely affecting daily operations or financial performance.

**FDIC/OCC/Federal Reserve Liquidity*

Sources of Liquidity

Pools

Contingency Plan

Flows

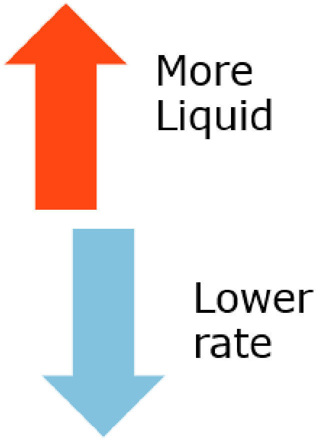
Liquidity is a Balancing Act

Balancing act: liquidity levels and net interest margins

- *Too much* liquidity – weak earnings, bank performance
- *Too little* liquidity – stressed financial impact
- Balanced – strong earnings, protection of bank

Liquidity Trap

Typically, the more liquid as asset or liability, the lower the rate earned or paid.



Regulatory pressure to:

- Increased levels of liquid assets
- Lower levels of volatile liabilities

  (Large deposits, brokered CDs, wholesale funding)

Impact:

- More liquid assets = lower yield on assets, downward pressure on earnings
- Less volatile liabilities = more core funding

Common Regulatory Liquidity Ratios

- Net Non-Core Funding Dependence > $250,000
- Short Term Non-Core Funding as a percent of Total Assets
- Core Deposits as a percentage of Total Assets

Regulatory Liquidity Ratios

Limitations:

- Lacks information on asset cashflows available for funding needs.
- Considers time deposits > $250,000 volatile and potentially unstable but not core deposits.
- All ratios are backward looking, not forward looking.
- Defining the “core deposit” relationship is subjective.

Liquidity in the Investment Portfolio

V.

Liquidity Cycles

- High loan/deposit ratio
- Increased use of non-core funding
- Fast loan growth

- High levels of cash
- Slow loan growth
- Increased levels of loan paydowns

2018 - Need Liquidity

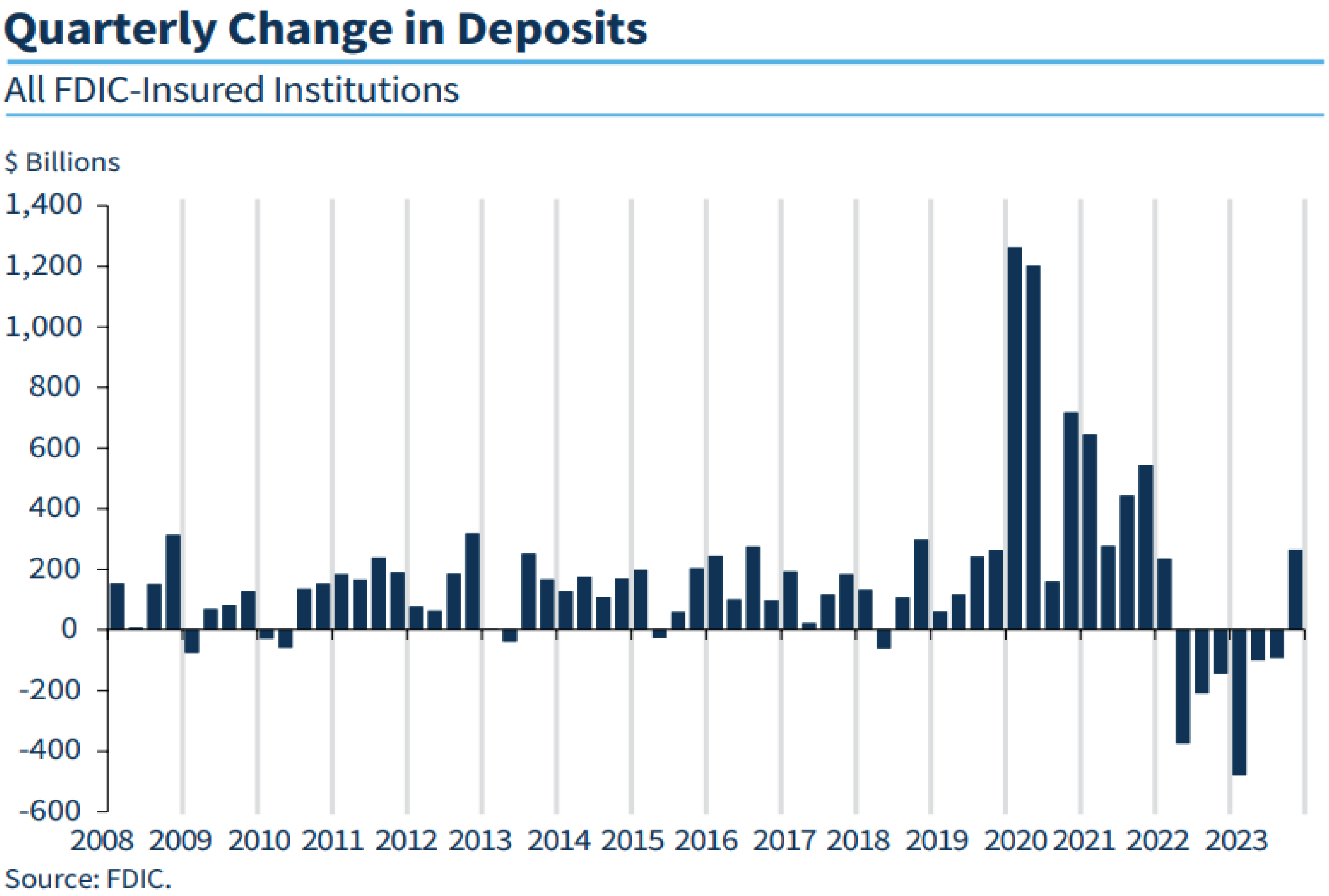
2020 - Too much Liquidity

2022 - Need Liquidity

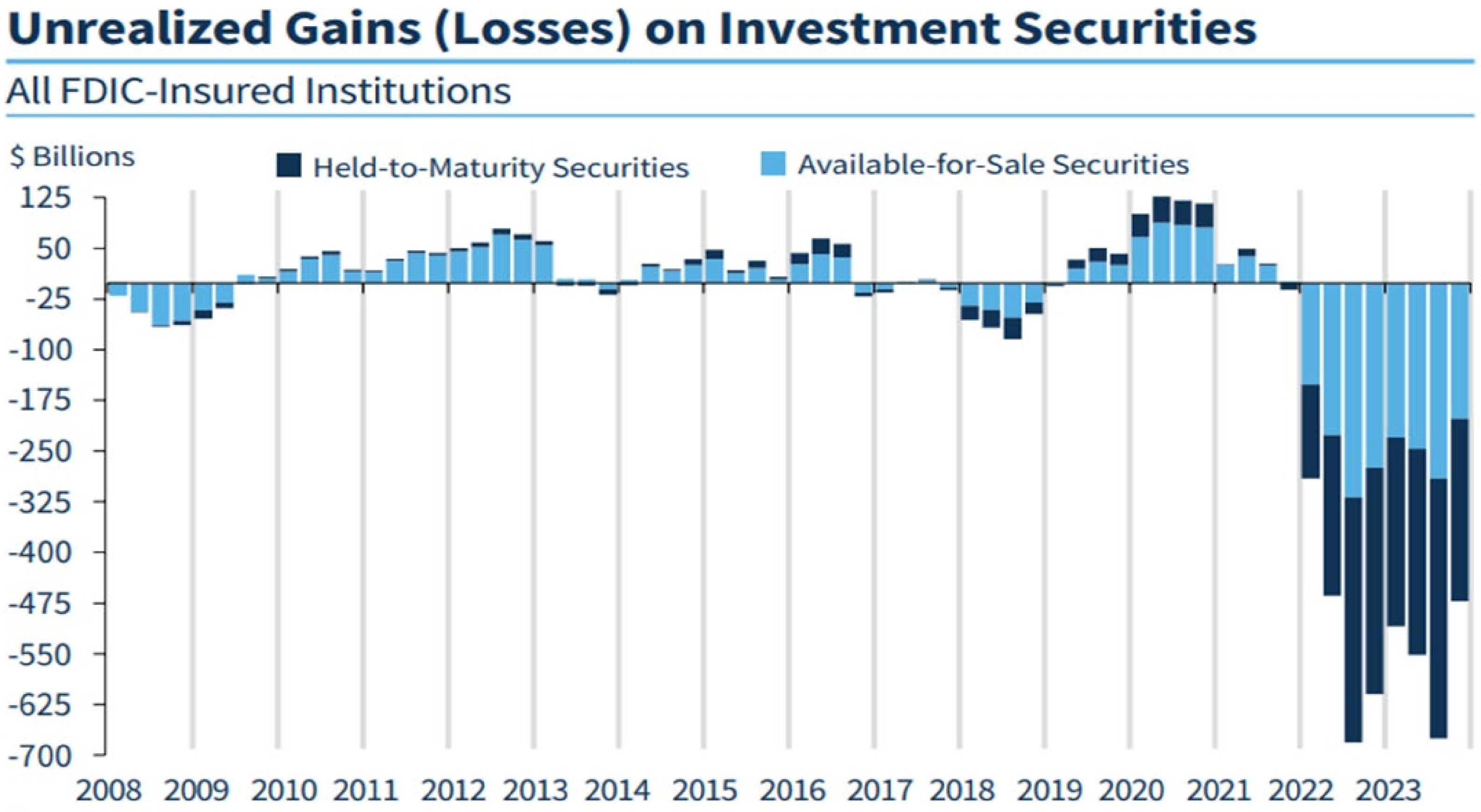
Current Liquidity

- Previous fast increase in ST market rates; inverting the yield curve
- Volatility, uncertainty
- Competition from non-traditional providers
- Economic hardships and lack of consumer funds increase competition for deposits
- Deposit longevity/stability uncertain
- Asset-sensitive balance sheet will lose earnings when rates inevitably fall
- Variable rate loan portfolio will reprice down
- Prepayment speeds will increase when rate fall

Current Liquidity: Loss of Deposits



Current Liquidity: Unrealized Loss on Investments



Source: FDIC.
Note: Insured Call Report filers only. Unrealized losses on securities solely reflect the difference between the market value and book value of non-equity securities as of quarter end.

Putting the Pieces Together: Managing Liquidity

Liquidity Gap Analysis Steps

1. Define Maturity Buckets
2. Determine cash flows for interest-earning assets and interest-bearing liabilities
3. Slot cash flows into time buckets and get a sum for assets and liabilities
4. Calculate liquidity gap (asset cash flows minus liability cash flows)
5. Determine periodic and cumulative gaps (asset sensitive or liability sensitive?)

Liquidity Gap Analysis

Liquidity gap report							
Time interval	1 to 14 days	15 to 28 days	29 days up to 3 months	Over 3 months and up to 6 months	Over 6 months and up to 12 months	Over 1 year	Total
Assets (Inflows)							
Overnight Investments	15 456	0	0	0	0	0	15 456
Investments	18 890	16 678	15 034	43 278	27 413	18 996	140 289
Loans	54 234	48 098	42 896	111 567	65 447	50 320	372 562
Other assets	0	0	0	0	0	0	0
Total assets	88 580	64 776	57 930	154 845	92 860	69 316	528 307
Liabilities (Outflows)							
Non maturity deposits	956	4 003	3 045	10 519	9 459	9 774	37 756
Time deposits	39 671	38 004	42 590	90 488	74 933	32 309	317 995
Total deposits	40 627	42 007	45 635	101 007	84 392	42 083	355 751
Overnight borrowings	0	0	0	0	0	0	0
Borrowings	96 551	23 599	1 678	7 990	29 045	5 332	164 195
Other liabilities	0	0	0	0	0	0	0
Total liabilities	137 178	65 606	47 313	108 997	113 437	47 415	519 946
							Cumulative
Periodic net cash-flow	-48 598	-830	10 617	45 848	-20 577	21 901	8 361
Marginal gap		47 768	11 447	35 231	-66 425	42 478	70 499
Internal limits as gap cannot exceed % of cash outflows							

Scenario analysis							
Retained 75% of time deposit	29 753	28 503	31 943	67 866	56 200	24 232	238 496
Projected Net Cash flow	-18 845	27 673	42 560	113 714	35 623	46 133	246 857

Cumulative gap:

15-28 days
-49,428

29 days-3 months
-38,811

Over 3 to 6 months
7,037

Over 6 to 12 months
-13,540

Over 1 year
8,361

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More Liquidity Ratios

- Liquidity coverage ratio (LCR) – liquid assets/net cash (out) flows over next 30 days
- Basic Liquidity Ratio (BLR)
- Short-term investments to short-term non-core funding
- Short-term assets to short-term liabilities
- Net loans to deposits

Basic Liquidity Ratio

	Apr-2023	Aug-2023	Sep-2023	Oct-2023
Primary Liquidity Ratio	11.72%	12.82%	10.65%	11.75%
Total Liquidity Ratio	5.20%	31.42%	29.59%	30.38%

	Apr-2023	Aug-2023	Sep-2023	Oct-2023
Total NIB Cash	13,380,212	14,120,903	14,120,903	14,120,903
Short Term Investments	114,426,283	115,758,499	91,693,478	104,643,837
Less Minimum Cash Needs	14,000,000	14,000,000	14,000,000	14,000,000
Availble Cash & Due	**113,806,495**	**115,879,402**	**91,814,381**	**104,764,740**
Total Investment Securities				
AFS Haircut	15%	15%	15%	15%
AFS Investments With Haircut(at FV)	119,356,563	119,178,582	119,056,288	118,929,299
HTM Haircut	20%	20%	20%	20%
HTM Securities	17,486,549	2,431,222	2,425,433	2,419,681
Less Investment in Subsidiary - RBRE	14,799,423			
Less Pledged Securities (90% AFS)	117,746,991	107,260,724	107,150,659	107,036,369
OCI Adjustment Included	*-6,670,896*	*0*	*0*	*0*
Total Investments	**4,296,698**	**14,349,080**	**14,331,062**	**14,312,611**
EOM Primary Liquidity (w/Stress)	**118,103,194**	**130,228,481**	**106,145,443**	**119,077,351**
Contingent Secondary Liquidity				
Remaining Borrowing Capacity	209,966,743	209,966,743	209,966,743	209,966,743
Total External Sources	**209,966,743**	**209,966,743**	**209,966,743**	**209,966,743**
Additional Stress Reductions in OBS Sourc	0%	0%	0%	0%
Less Reductions in Secondary Liquidity	0	0	0	0
Total Secondary Liquidity Sources	**209,966,743**	**209,966,743**	**209,966,743**	**209,966,743**
Contingent Liquidity Uses	10%	10%	10%	10%
Lines of Credit (Unused)	191,936,962	19,193,696	19,193,696	19,193,696
Firm Commitments to Originate	16,685,725	0	0	0
Other Unused Commitments	0	0	0	0
Letters of Credit	42,000,000	0	0	0
Total Draws on Unused Lines of Credit	**250,622,687**	**19,193,696**	**19,193,696**	**19,193,696**
Additional draws	25,062,269	1,919,370	1,919,370	1,919,370
Total Contingent Liquidity	**-65,718,213**	**188,853,677**	**188,853,677**	**188,853,677**
Total Liquidty ($)	**52,384,981**	**319,082,158**	**294,999,120**	**307,931,028**
TOTAL ASSETS	**1,007,707,269**	**1,015,650,052**	**996,947,412**	**1,013,636,446**

Liquidity Trigger Ratios - Canary

- Using the OCC Canary Ratios as a Guide helps pinpoint potential concern or deeper review

- The following ratios and trigger limits are regulatory guidelines
  - **Net loans/total deposits <= 75%**
  - **Net noncore funding dependency <= 20%**
  - **Net short-term liabilities/ total assets <= 15%**
  - **On hand liquidity/total liabilities <= 15%**
  - **Wholesale funding/total funding > 15%**

- Use historical trends to show past liquidity management process

Liquidity Red Flags

- Significant increase in reliance on wholesale funding.

- Significant increases in large time deposits (CD’s), brokered Deposits, or
- Deposits with interest rates higher than current market rates.

- Significant increases in borrowings.

- Significant increases in dependence on funding sources other than core deposits.

- Declines in the level of core deposits.

- Significant decreases in short-term investments.

ALCO Agenda – IRR and Liquidity and Funds Management

- **Liquidity & Funds Management**

  - Deposits and Borrowing
  - Sources and Uses of Funds
  - Liquidity Back Testing
  - ALM Modeling Results - stress testing, comparison of actual results to targets/benchmarks, mitigation efforts for out-of-tolerance results
  - Investment Committee Reporting
  - Strategy Update
  - Investment Activity & Portfolio Reports
  - ALM First Investment Portfolio Analysis
  - Treasury Yield Report
  - Contingency Plan Update
  - New Product Offerings and Impact on ALM
  - Policies Approval (usually annually)

Liquidity and Funds Management Process

1

Establish policies and procedures (liquidity benchmarks, monitoring, reporting, responsibilities, governance and controls)

2

Daily analysis of liquidity and funds management position and resolutions

3

Periodic monitoring through stress testing, comparison of actual results to targets/benchmarks, mitigation efforts for out-of-tolerance results

4

Periodic reporting of liquidity reports to senior management, board of directors (ALCO)

5

Periodic contingency plan update for economic, regulatory and institution-specific strategic plan changes

Liquidity and Funding Policy Elements

- Corporate Governance
- Liquidity and Funding Strategy
- Key Liquidity Ratio Limits and Metrics
- Funding Mix and Allowable Gaps
- Reporting
- Early Warning Systems in Place
- Contingency Funding Plan
- Stress Testing
- Model Validation

Regulatory Role

- CAME**L**S ("L" is liquidity)
- **Liquidity Risk Focus:**
  - Should employ both quantitative targets and qualitative guidelines such as:
    - Cash flow mismatches or gaps (sources and uses of funds) over specified future short-and long-term time horizons under both expected and adverse business conditions
    - Target amounts of unpledged liquid asset reserves
    - Funding concentrations that address diversification issues, such as dependency on a few large depositors or sources of borrowed funds
    - Contingent liability metrics, such as amounts of unfunded loan commitments and lines of credit relative to available funding. Potential funding of contingent liabilities, such as credit lines and commercial back-stop lending agreements, should also be appropriately modeled and compared to policy limit

Contingency Funding Plan

- Determine contingent funding sources given the **stress scenario**
  - Depending on nature of crisis, wholesale sources may be limited
  - Secured funding
  - Liquidation of unencumbered assets, where possible

- Identify a crisis management team in charge to provide :
  - Early warning signs
  - Action plan to take during a given level of stress
  - Communication plan with counterparties, large investors, correspondent banks, vendors and regulators involved
  - Identify reporting measures and escalation process
  - Link with other contingent activities such as the Business Continuity Plan of the bank

Liquidity Stress Testing

Low Probability or Frequency/High Impact Scenarios-Market & Institution Specific

Stress Event	Warning Indicators	Monitoring
Large depositor withdrawals	Customer feedback, competitor specials, level of transactional deposits (not relationship deposits), economic/access to markets events or bank-specific events	Change in deposit balances report; CD redemption report; deposit runoff reports
Deterioration in asset quality	Deteriorating trends in loans past-due and downgraded; decline in earnings	Loan loss provision; risk rating change reports, past-due reports, local economic triggers; NIM reports
Negative press event (regulatory, system issues, release of negative financial info)	Deterioration in one of the CAMELS, net losses, failure of bank systems	Capital reports, asset-quality, management turnover, systems reports

Liquidity Stress Tests

Other Stress Considerations:

- Immediate runoff of all uninsured deposits
- Double and cut in half core deposit betas and lags (also a stress test of key assumptions)
- No wholesale funding available
- Assume a significant “haircut” on the liquidation of unencumbered assets
- Double the assumption for disbursement of unfunded loan commitments

Wrap Up

1. What is Liquidity?
2. How can we obtain Liquidity?
3. How we measure Liquidity
4. Managing Liquidity
5. Stress Testing

Questions?

Thank You!