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ALM Liquidity Risk Management – Preparing for Your Next Regulatory Exam

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Objectives

- Current Landscape – Liquidity Trends
- Overview of Liquidity Management
- Regulatory Examination Guidance



NCUA Supervisory Priorities for 2018

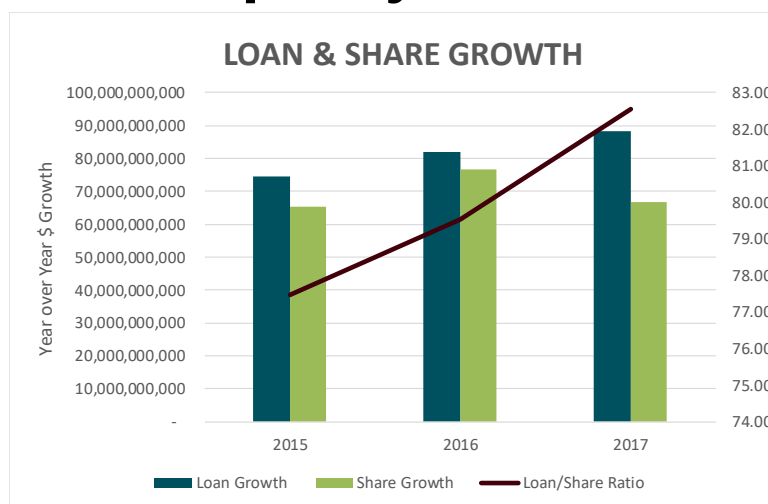
Letter to Credit Unions 17-CU-09

Interest Rate and Liquidity Risk

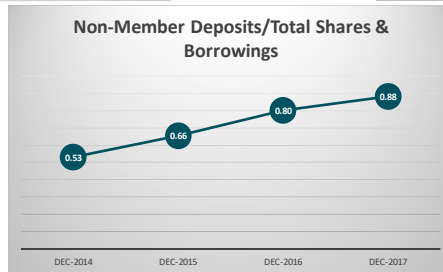
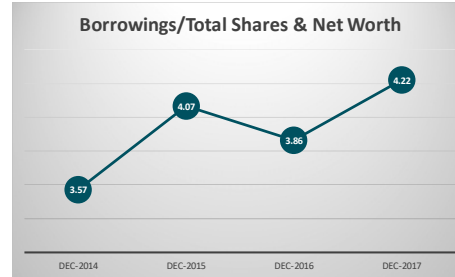
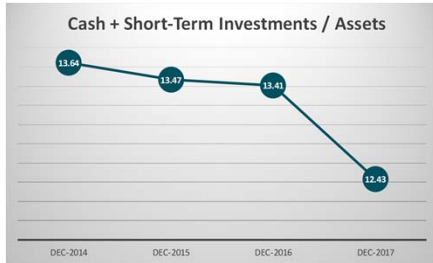
Examiners will also increase their focus on liquidity risk management practices given the emerging trends related to on-balance-sheet liquidity.



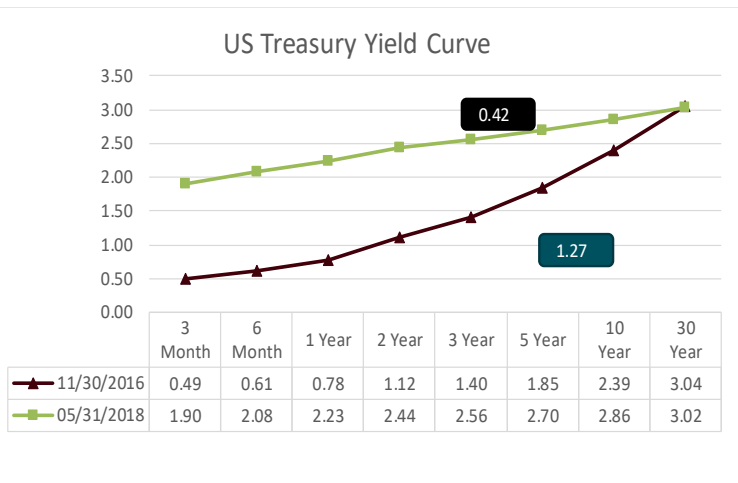
Potential Liquidity Crunch?



Potential Liquidity Crunch?



Rates on the Rise



LIQUIDITY & IRR IMPLICATIONS

- Pressure for higher deposit rates to fund loan growth
- Share withdrawal – members seeking higher yields
- Lower values in the securities portfolio
- Slower prepayments
- Callable Securities extend



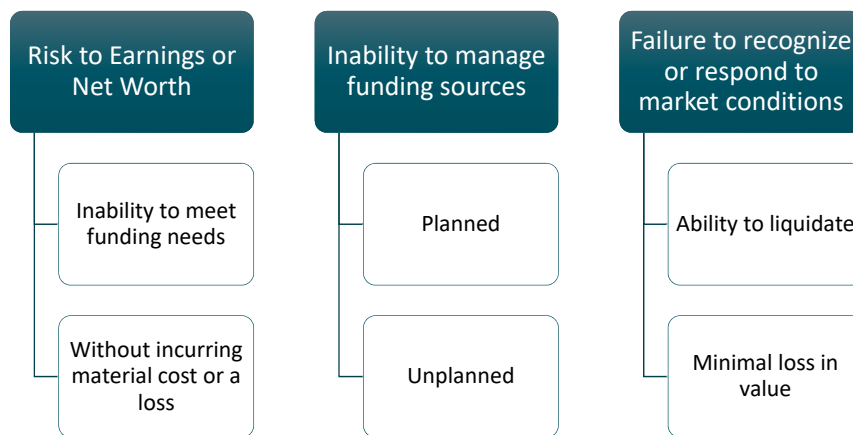
Liquidity Defined

The ability to meet demands for cash at a reasonable cost

- loan fundings
- share withdrawals
- operating needs



Liquidity Risk – NCUA



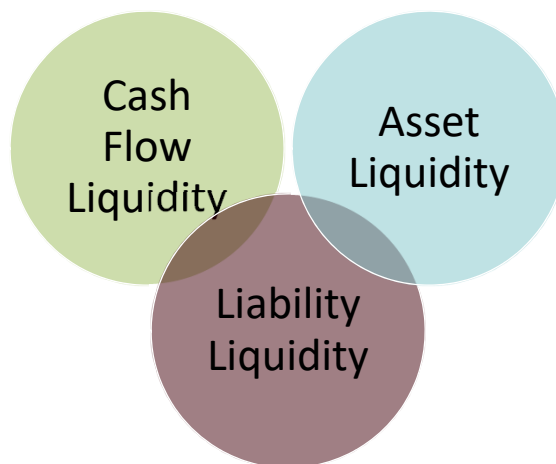
Liquidity Management

Answers the Questions

- How much liquidity do I have now?
- How much will I need in the future?
- Where do I get it and how much will it cost?
- How do I balance liquidity, earnings and interest rate risk



Liquidity Management



Liquidity Management

Cash Flow Liquidity

- Source of Funds
 - Loan P&I
 - Investment P&I
 - New Deposits
 - Non-interest income
- Uses of Funds
 - Loan Originations
 - Investment Purchases
 - Deposit runoff & maturities
 - Borrowing Maturities
 - Operating Expense
 - Net Inflow (Outflow)

Asset Liquidity

- Cash and FI Deposits
- Investments
 - Pledge to secure borrowings
- Sales
- Loans
 - Sales
 - Participations
 - Pledge to secure borrowings

Liability Liquidity

- Member Deposits
- Borrowings
 - Corporate CUs
 - FHLB
 - Commercial Banks
- Non-Member Deposits
- Repurchase Agreements



NCUA Liquidity & Contingency Funding Rule - §741.12 October 2013

CUs < \$50 million

- Liquidity Policy

CUs \$50 million or more

- Liquidity Policy
- Contingency Funding Plan

CUs \$250 million or more

- Liquidity Policy
- Contingency Funding Plan
- Access to Discount Window and/or CLF



Examination Scope – Aires Questionnaire

Part A – Exam Scope Determination

- **Fundamental Ratios – Part A of the Liquidity Review Questionnaire**
 - Loans to Assets - < 80%
 - Borrowings & Non-member Deposits/Total Shares and Liabilities - <5%
 - Cash & Short-Term Investments/Assets - >15% or rapid decline in ratio
 - Regular Shares & Share Drafts/Total Shares & Borrowings
- Sale or Participation of a Loan with Recourse
- Examiner judgement if assessment indicates the level of liquidity risk greater than reflected in ratios

Part B – Limited Scope if meet these requirements:

Part C – Expanded Scope



Examination Objective

- Risk Identification
 - Current Level of Risk
 - Emerging trends that may cause future liquidity demands
- Risk Management – does the CU have an effective liquidity management process in place?



Liquidity Examination – What are they checking?

- ✓ Board Oversight & Active Management
- ✓ Policies & Procedures
- ✓ Measurement, Monitoring & Reporting Systems
- ✓ Stress Testing
- ✓ Cushion of Liquid Assets
- ✓ Diversified Funding Sources
- ✓ Contingency Funding Plan



Board & Management Oversight

Is Liquidity Oversight Adequate or Inadequate?

Evidenced By

- Policy
- Regular ALCO meetings with minutes
- Reporting to Board
- Liquidity results compared to risk limits
- Recommendations for action provided if applicable
- Strategic plans integrated with liquidity risk



Policies and Procedures

□ Are the CU's Liquidity Policies and Procedures Adequate or Inadequate?

- Not required to have a separate policy
- Designed based on complexity of CU
- Basic Elements – All CUs regardless of size
 - Purpose & goals
 - Thresholds or limits for liquidity measures & reporting requirements
 - Primary and secondary sources of liquidity
 - Tools for liquidity risk management
 - Provides for a periodic review and revisions as needed



Policy Design

Basic Policy

- Assets < \$50M
- Large % of Liquid Assets
- Strong Core Deposits (Regular Shares & Share Drafts)
- Low variability of cash flows – no mortgages or investments with cash flow variability

More Robust Policy

- Assets > \$50 million
- High Reliance on Market Sensitive Funds (Money Market)
- Assets with more dynamic cash flows – mortgage loans & MBS securities, securities with call options



Policies & Procedures – Risk Limits

□ Have Appropriate Risk Limits Been Established?

Should convey the CU's board's tolerance for liquidity risk

1. Limits based upon periodic cash flow projections
 - Coverage Ratios or Liquidity Gap Ratios
 - Shift from traditional ratios to cash flow-based limits



Policies & Procedures – Risk Limits

2. Traditional Ratios
 - still provide a role - early warning indicator of developing liquidity issues or to set limits on asset/liability levels
 - CUs with assets < \$50 million, high level of cash, assets with low cash flow variability and non-volatile deposits can still use traditional ratios.
3. Minimum level of cash
 - \$ amount of cash or
 - x percent of assets



Risk Limits

- Ratios that can signal changing liquidity conditions –
 - Increased reliance on volatile shares, borrowings or non-member deposits
 - Decline in the level of liquid assets
 - Loan growth in excess of deposit growth
 - Increase in the level of contingent liabilities
 - Weakening credit quality
 - Decline in earnings
 - Fundamental & Supplemental Ratios in Section A of Aires Liquidity Questionnaire are examples



Measurement, Monitoring & Reporting

Is Liquidity Measurement Adequate or Inadequate?

- Cash Flow Projections – most important measurement tool for triggering action.
 - Base plan should reflect projected balance sheet growth
 - Sources and Uses of Funds
 - Identify cash flow mismatches
 - Time Horizons - monthly for 12 months and potentially longer
 - More complex the cash flows, more detailed the projections
 - Basis for Stress Testing



Sources and Uses Report Base (\$ in 000's)						
SOURCES	1 Month	2 Months	3 Months	6 Months	9 Months	12 Months
Total Loan Sources	3,739	3,801	3,864	4,175	4,397	4,763
Total Investment Sources	6,954	3,618	10,105	10,041	1,156	4,071
Total Deposit Sources	24,640	11,673	12,087	11,780	10,810	11,436
Other Cash Inflows	121	122	122	123	123	121
Total SOURCES	35,453	19,214	26,177	26,119	16,486	20,391
USES						
Total Loan Uses	5,110	5,178	5,264	5,511	5,710	6,064
Total Investment Uses	6,871	3,471	9,870	9,867	866	3,866
Total Deposit Uses	13,831	12,874	13,292	13,006	12,054	12,681
Other Cash Outflows	593	592	592	592	592	592
Total USES	26,405	22,115	29,018	28,976	19,222	23,203
LIQUIDITY GAP	9,048	(2,901)	(2,841)	(2,858)	(2,736)	(2,812)
O/N Investment (Borrowing), period begin	-	9,048	6,148	9,557	11,927	3,554
O/N Investment (Borrowing), period end	9,048	6,148	3,307	6,699	9,191	743

Measurement, Monitoring & Reporting

- Process for Daily Monitoring – Settlement accounts & large or unusual withdrawals
- Assumptions used in cash flow projections should be reasonable, documented and formally reviewed
- Exceptions to Policy with Action Plan Reported to Board



Measurement, Monitoring & Reporting

- Reports
 - Cash Flow Projections
 - Cash Flow Projection Assumptions
 - Risk Limit Ratios and/or Early Warning Indicators
 - Ratio Trends
 - Borrowing & Non-member Deposit Reports
 - Investment Portfolio Reports
 - Deposit Concentration Reports
 - Contingent Funding Reports
 - Compliance with Policy Limits



Liquidity Stress Testing

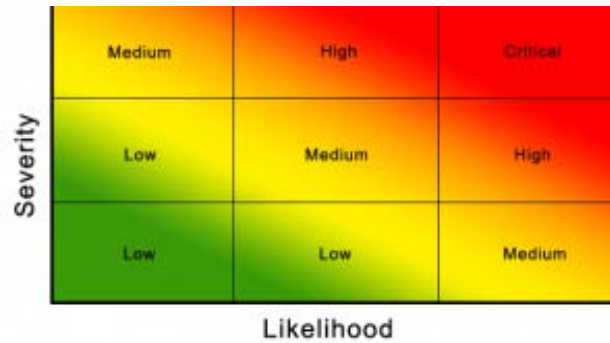
Are Cash Flows Projected Under Stressed Conditions?

- Cash flow stress testing allows the credit union to assess how plausible scenarios affect a credit union's cash flows
- Should reflect scenarios based on credit union specific liquidity risk exposure
- Frequency of stress testing – depends on credit union's risk exposure



Liquidity Stress Testing

- **Likelihood of Occurrence**
 - High
 - Medium
 - Low
- **Severity of Occurrence**
 - Critical
 - Medium
 - Low
- **Timing**
 - Temporary – daily to weekly
 - Medium-term – monthly – 1 year
 - Long-term – longer than a year



Examples of Stress Events

Event	Impact to Liquidity
Decline in Asset Quality	• Operating losses
	• Decline in capital
	• Reduced borrowing capacity
	• Negative perception – share withdrawals
Economic Recovery	• Unplanned loan growth
	• Share withdrawals seeking higher returns
	• Decline in cash reserves
	• Increased borrowings



Liquidity Stress Testing

Most frequent stress testing we see:

- Increasing levels of loan growth and/or
- Increasing levels of share runoff
- Mild, Moderate and Severe

Assumptions

- Based on historical levels of:
 - Loan growth – average and highest
 - Share declines – average and highest



Liquidity Stress Testing

- Scenario Examples provided by NCUA¹
 - Material drawdown of unused commitments – 5% over 30 days and 20% over 6 months
 - Market rate shock capturing loan prepayment speeds
 - Material decline in shares – 5% over 30 days and 20% over 6 months
 - Decline in value of collateral limiting the availability of contingent funding sources
 - Combination of stress events happening at the same time



¹ The NCUA Report July 2016

12 Month Cash Flow Projection and Funding Coverage Report (FCR)

3/31/2018

Stress Scenario
Share Growth --20%
Investment - Runoff

Primary Liquidity	3/31/2018	Apr-18	May-18	Jun-18	Sep-18	Dec-18	Mar-19
Cash in Banks	10,186,213	9,039,170	9,039,170	9,039,170	9,039,170	9,039,170	9,039,170
Interest-bearing deposits	32,269,729	10,927,891	8,277,014	3,690,966	(874,210)	(4,821,149)	(8,862,797)
Total Cash In Banks & Equivalents Available	42,455,941	19,967,061	17,316,184	12,730,136	8,164,960	4,218,021	176,373
Investment Securities AFS	63,339,416	62,908,515	62,485,693	62,043,391	57,729,564	52,449,228	47,264,838
Less: Pledged ⁽²⁾	0	0	0	0	0	0	0
Less: 15% Haircut	9,500,912	9,436,277	9,372,854	9,306,509	8,659,435	7,867,384	7,089,726
AFS Investment Securities Available	53,838,503	53,472,237	53,112,839	52,736,882	49,070,130	44,581,844	40,175,112
Liquid Assets	96,294,445	73,439,298	70,429,023	65,467,018	57,235,090	48,799,865	40,351,485
Liquid Assets/Total Assets	23.75%	19.00%	18.44%	17.19%	15.32%	13.35%	11.32%
Cash Equivalents/Total Assets	10.47%	5.16%	4.53%	3.34%	2.19%	1.15%	0.05%
Projected Cash Flow:		Apr-18	May-18	Jun-18	Sep-18	Dec-18	Mar-19
Estimated loan maturities & interest		13,161,028	5,869,151	5,983,261	6,301,731	6,599,035	6,854,223
Estimated investment maturities & interest		4,192,995	3,903,251	4,956,994	5,934,541	3,584,145	9,085,352
New Deposits		7,353,694	4,880,720	4,087,792	4,775,711	4,320,702	8,178,801
Other Assets/Liabilities		919	15,067	11,208	9,936	9,023	31,016
Other Cash Inflows		552,735	489,416	487,806	532,978	558,149	495,214
Total Projected Inflow		25,261,371	15,157,605	15,527,061	17,554,897	15,071,055	24,644,605
Loan disbursements		19,894,396	6,753,271	9,842,699	7,127,101	7,419,551	7,963,033
Deposit Runoff, Maturities and interest paid		26,610,107	9,829,726	9,035,104	9,174,597	8,721,439	12,894,057
Other Cash Outflows		1,245,748	1,225,484	1,235,306	1,266,226	1,256,104	1,252,187
Total Projected Outflow		47,750,251	17,808,481	20,113,110	17,567,924	17,397,094	22,109,277
Projected Net Inflow <Outflow>		(22,488,881)	(2,650,876)	(4,586,049)	(13,027)	(2,326,040)	2,535,328
Cumulative inflow(outflow)		(22,488,881)	(25,139,757)	(7,236,925)	(1,486,518)	(2,876,539)	(112,848)

Cushion (Reservoir) of Liquid Assets



- Cash is like an insurance policy for liquidity
- NCUA - How much is enough?
 - LCU 2013-10 - *A simple rule of thumb is to identify the largest liquidity outflow your credit union has ever experienced and how long it persisted. Then set your on-balance-sheet liquidity target based on that experience. This liquidity cushion will buy you some time to avoid service disruptions and enter external funding arrangements if they become necessary.*
- CU must determine risk tolerance – high level of cash provides liquidity, but lowers yield on assets
- Size the cushion using stress tests



Cushion of Liquid Assets

Other Liquid Assets - unpledged assets than can be converted easily and immediately to cash

Can be sold or pledged as collateral

Consider Market Value and AFS/HTM designation



Cushion of Liquid Assets

Does the CU maintain a portfolio of highly liquid investments?

- *Highly liquid investments consist of those instruments that can be readily sold with minimal loss (e.g., short-term Treasuries).*
- *Prices of longer maturity investments, or lower grade investments, may deteriorate under adverse market conditions (e.g., due to credit or interest rate risks).*



Cushion of Liquid Assets

Basel III Definition – High Quality Liquid Assets

- Liquid in markets during times of stress and ideally be Federal Reserve eligible
- Easily and immediately converted into cash at little or no loss of value – primarily focused on breadth and depth of market & credit risk not actual loss due to change in market interest rates
- Unencumbered – not pledged to secure or collateralize any transaction

Level 1- No Haircut

- Securities issued or unconditionally guaranteed by the US Treasury such as US Treasuries
- 0% Risk Weight on Bank Call Report

Level 2 – 15 % Haircut

- Securities issued by US government agencies such as FNMA, FHLMC, FHLB
- 20% Risk Weight on Bank Call Report



Asset Liquidity

Does the CU assess its asset liquidity?

- Identify and Understand Sources of Asset Liquidity
- Understand conditions that affect cash flows
- Identify primary and secondary sources to meet cash needs



Diversified Funding Sources

- **How does the CU assess its liability liquidity?**
 - **Identify and Understand Sources of Liability Liquidity**
 - **Cost & maturity/cash flows**
 - **Affected by interest rates and creditworthiness**



Diversified Funding Sources

- **Member Shares – Primary source of liability liquidity**
 - **Volatile vs Stable**
 - **Large concentration in a single depositor or SEG?**
 - **Maturity structure**
- **Market Funding**
 - **Lines of Credit with FHLB, Corporates, Correspondent Banks**
 - **Non-Member Deposits – (i.e. Simpli CD)**
 - **Repurchase Agreements**
 - **Ability to borrow requires pledged assets and credit worthiness**
 - **CUs with greater potential funding needs should have multiple sources**



Contingency Funding Plan (CFP)

- ❑ For credit unions with total assets of \$50 million or more, is the CU's CFP Adequate or Inadequate?
- Identify potential stress events
- Periodically prepare a cash flow forecast assessment under different levels of severity – stress testing
- Identify contingency sources such as lines of credit



Contingency Funding Plan (CFP)

- Develop a process to identify a potential liquidity event before it occurs. Early Warning Indicators
- Outline specific actions plans and responsibilities for varying degrees of liquidity stresses – e.g. mild, moderate or severe
- Test the plan
 - Borrowing Arrangements
 - Loans Sales
 - Repurchase Agreements
 - Brokered Deposits



Emergency Funding

❑ For credit unions with total assets of \$250 million or more, has the CU established access to the Federal Reserve Discount Window and/or the Central Liquidity Facility?

- Required for CUs with assets \geq \$250 million
- Encouraged for all credit unions if their contingency funding analysis identifies liquidity events pose a real threat to the CU. *NCUA Letter # 13-CU-10*



Summary

- Cash flow/liquidity planning is a critical element of managing a balance sheet
- Identify all your liquidity resources – assets & liabilities, market funding and emergency funding
- Be prepared – develop plan and stress test



REFERENCE MATERIALS



Regulatory Guidance

- Section 741.12 NCUA Rules and Regulations. Liquidity & Contingency Funding Plans
 - <https://www.ncua.gov/Resources/Documents/LCU2013-10-Liquidity-and-ContingencyFundingPlans.pdf>
- Letter to Credit Union – 13-CU-10 – Guidance on How to Comply with NCUA Regulation 741.12 Liquidity & Contingency Funding Plans
 - <https://www.ncua.gov/regulation-supervision/Pages/policy-compliance/communications/letters-to-credit-unions/2013/10.aspx>



Regulatory Guidance

- Interagency Policy Statement on Funding & Liquidity Risk Management
 - <https://www.ncua.gov/Resources/Documents/LCU2013-10-InteragencyPolicyStatementFunding.pdf>
- NCUA Aires Examination Questionnaires
 - <https://www.ncua.gov/regulation-supervision/Pages/regulatory-reporting/aires-exam.aspx>



Pre-Exam Request List

Expect the examiner to request these items

- Policy
- Strategic plan
- Liquidity reports provided to ALCO
- Internal liquidity analysis
- Listing of lines of credit and borrowings
- Non-member deposits by concentration, rate and maturity
- List of loan participations with recourse terms
- Contingency Funding Plan
- Results of liquidity stress testing



Liquidity Ratios – Risk Limits

NCUA Fundamental Ratios	Formula	NCUA Guideline
Loans/Assets	Total Loans/Total Assets	< 80%
Borrowings & Non-member Deposits/Total Shares & Liabilities	Total borrowings + non-member deposits DIVIDED BY total shares + total liabilities	<5%
Cash & Short-term Investments/Total Assets	Cash + investments < 1 Year DIVIDED BY total assets	>15%
Regular Shares & Share Drafts/Total Shares + Total Borrowings	Regular Shares + Share Drafts DIVIDED BY Total Shares + Total Borrowings	Not provided



Liquidity Ratios – Risk Limits

NCUA Supplemental Ratios	Formula	NCUA Guideline
Loans/Shares	Total Loans DIVIDED BY total Shares	< 100%
Contingent Liabilities/Cash and Investments	Total unused commitments + outstanding balance of loans sold or swapped with recourse DIVIDED BY total cash + non-security investments + FV of HTM investments + AFS investments + trading investments	<200%
Net Liquid Assets/Total Liabilities & Shares	Cash + non-security investments (<1Yr) + FV HTM investments + AFS investments + trading investments, LESS accounts payable + accrued dividends and interest payable + reverse repurchase agreements + subordinated debt (< 1 Yr) + notes payable (< 1 Yr), DIVIDED BY total liabilities (including shares)	>5%
Volatile Liabilities/Cash & Short-term Investments	Money market shares + borrowings < 1 year + non-member deposits < 1 year + certificates < 1 year DIVIDED BY cash + total investments < 1 year	< = 600%

Liquidity Ratios – Risk Limits

NCUA Supplemental Ratios	Formula	NCUA Guideline
Growth in Volatile Liabilities/Assets	Volatile liabilities in current year less volatile liabilities in prior year DIVIDED BY current assets (annualized as necessary) Volatile liabilities = Money market shares + borrowings < 1 year + non-member deposits < 1 year + certificates < 1 year	<15%
Investments Loss Ratio	Unrecognized losses on HTM securities plus unrealized losses on AFS securities DIVIDED BY HTM securities plus the book value of AFS securities (i.e., excluding market value adjustments)	> - 3%



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