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Banking, Cash Management & Investments Workshop

Preservation of Capital and Liquidity Risk Management

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Goals of Presentation

- Outline the various dimensions of cash management
- Explain critical factors that support capital preservation and liquidity
- Discuss the investor-money fund relationship
- Understand the credit review and the portfolio constructions process
- Highlight roles of liquidity facilities established by Fed & Treasury

Portfolio Management Objectives

Prioritization

1. Safety

2. Liquidity

3. Return

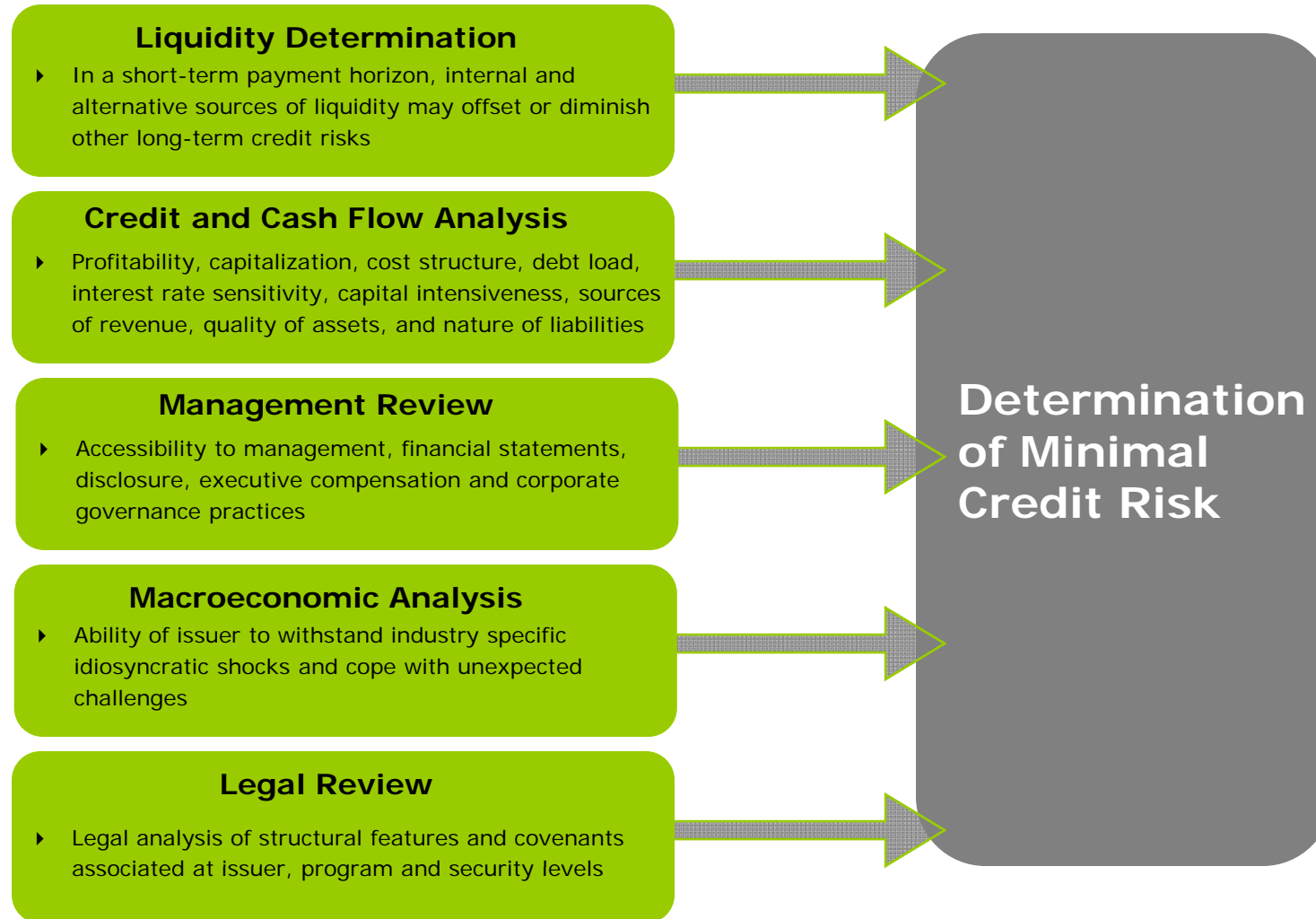
Identify and Measure All Relevant Risk Parameters

Investment Risks	Significance of Risk Exposure	Benefits of a Multi-Dimensional Research Process
Credit Risk	Principal depreciation through price volatility or default	Non-reliance on Nationally Recognized Statistical Rating Organizations
Interest Rate Risk	Principal depreciation through rising interest rates and widening spreads	Quantitative Risk Management Framework
Liquidity Risk	Lost access to cash holdings	Thorough analysis of underlying liquidity provisions
Structural Risk	Complex documentation contains embedded risks	Dedicated legal team with specialized securities knowledge

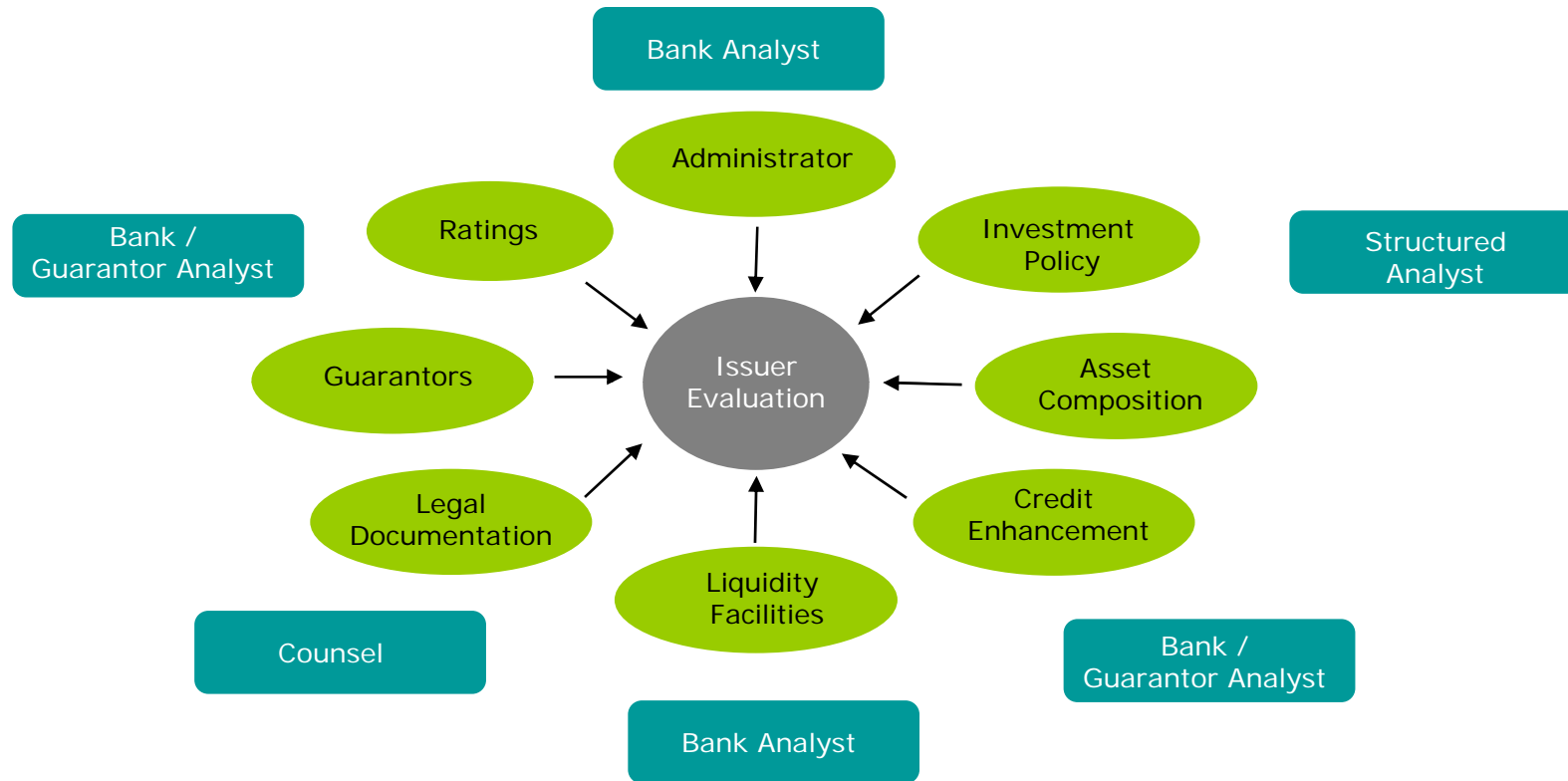
Minimal Credit Risk

- Minimal Credit Risk is the fundamental credit restriction imposed on Money Market Funds
 - The ability of an issuer to withstand foreseeable “worst case” scenarios, without affecting timely repayment is the foundation of Minimal Credit Risk
 - Minimal Credit Risk is not defined in Rule 2a-7 giving analysts the responsibility to make such assessments and document their determinations via financial models with a concentrated focus on liquidity
 - It is vital to maintain access to financial or other pertinent information necessary to maintain a minimal credit risk determination

Elements of Minimal Credit Risk Assessment



Structured Research Analysis

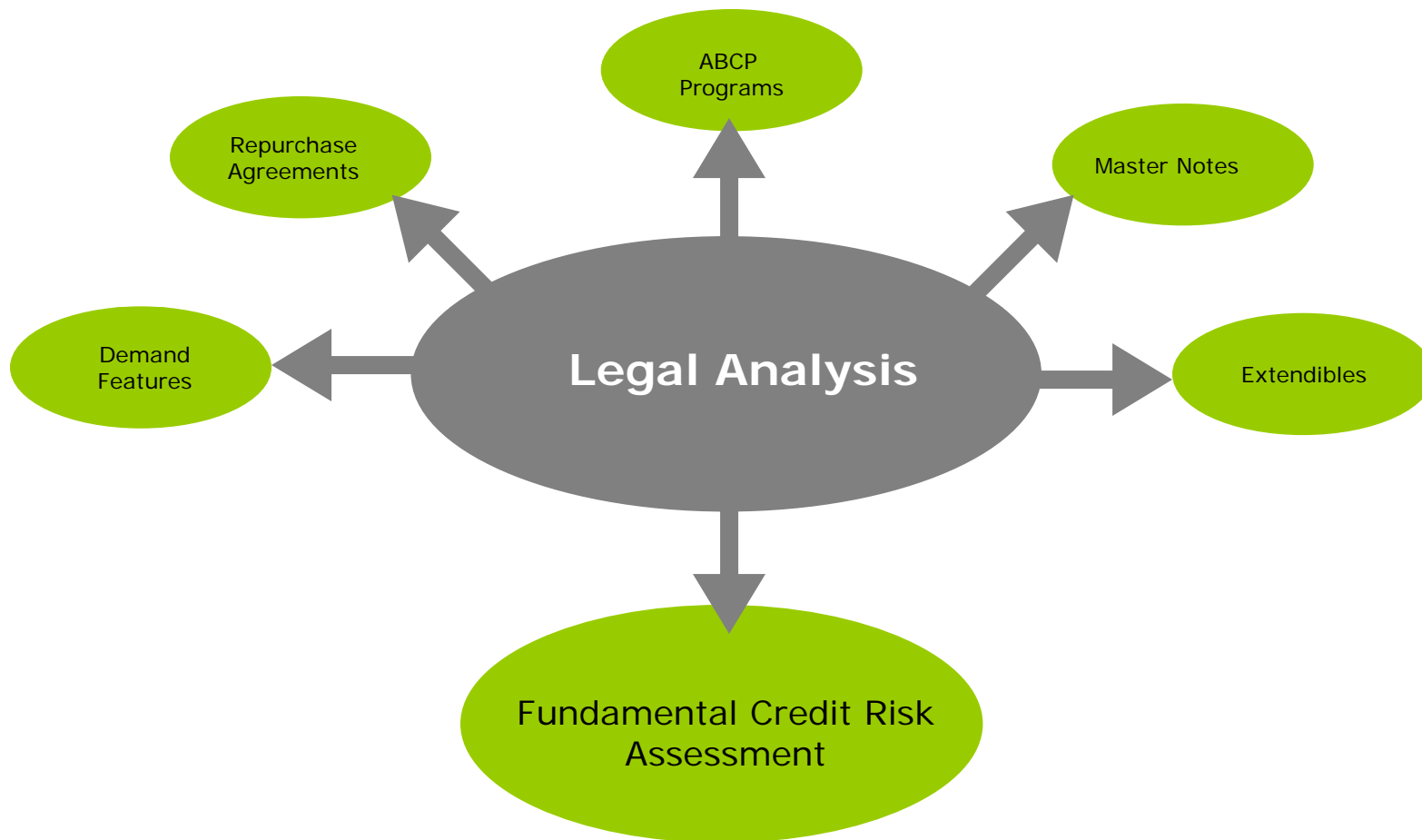


- Leverage corporate credit research analysis (administrators, credit enhancers, liquidity providers)
- Interview administrators (site visits, issuer conferences, telephone)
- Review documents thoroughly (external and internal legal counsel, analysts)
- Monitor issuers regularly (asset composition and performance, guarantors, 10% obligors)

Repurchase Agreement Framework

- Know your counterparty
 - Would you invest on an unsecured basis?
- Establish collateral requirements
 - Collateral type (Treasury, Governments, Investment Grade & Non-Investment Grade Corporates, Equities)
 - Margin requirements by collateral type (102%-110%)
 - Bilateral vs. tri-party custodial arrangements
- Collateral valuation process
 - Can investors rely on industry pricing sources?
- Legal Review
 - Market standard repo agreements (MRA) & custodial undertaking agreements
 - Ensuring “perfected interest” in collateral
 - Understanding “default” provisions

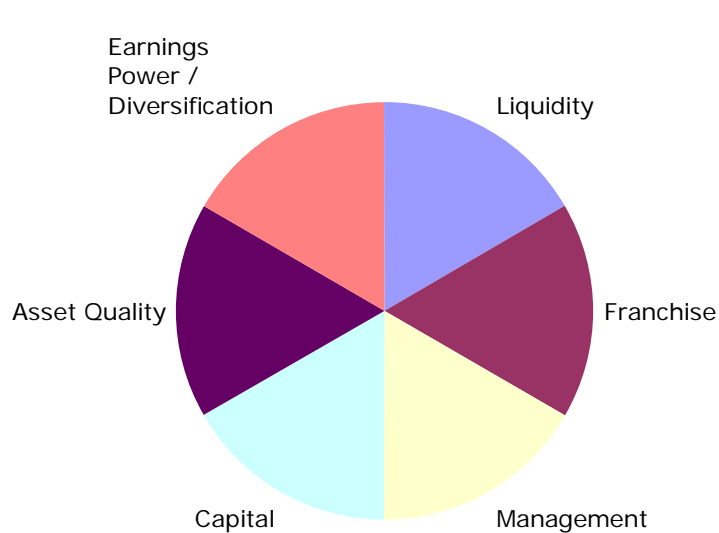
Multi-Faceted Legal Contribution to Research Process



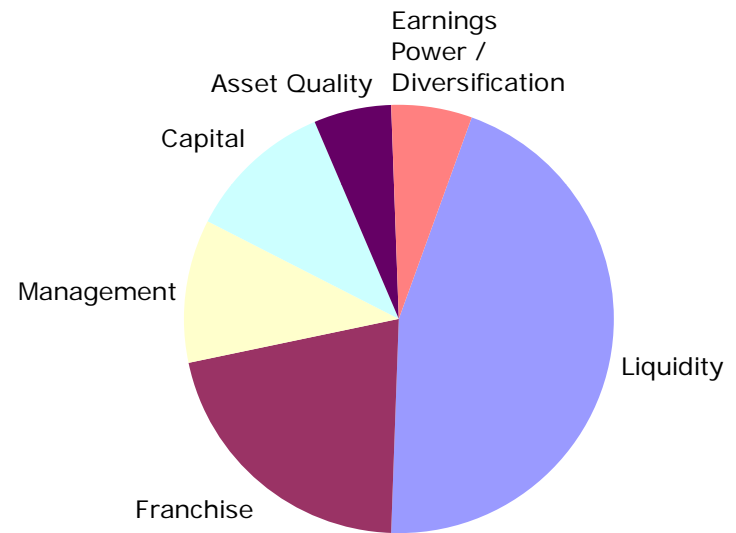
Extensive Document Review by Structured Analysts and Legal Team is Essential in Determining Minimal Credit Risk

Pillars of Strength – Diversity of Factors Enhances Credit

Factors for a highly diversified entity



Factors of a highly liquid entity




- The most preferred short-term credits are well supported by all factors, with each playing roughly equal importance
- The ability to measure high levels of liquidity helps find favorable short-term securities even if other factors are lacking

Internal Credit Rating Process

An internal rating scale for issuers is critical in the portfolio construction process, as well as from a risk management perspective

- Level 1** Exceptional financial condition, operating environment and/or repayment structure. Consistent with a pristine credit profile. Strength across a diversity of credit drivers. Ability to pay on short-term obligations is extremely strong. Such entities have the capacity to easily withstand one or more adverse credit events without falling below the minimal credit risk standard.
- Level 2** Very strong financial condition, operating environment and/or repayment structure. Differs from Level 1 in small degree. Similar strength across a number of credit drivers. Ability to pay on short-term obligations is very strong. Such entities have the capacity to withstand one or more adverse credit events without falling below the minimal credit risk standard.
- Level 3** Solid financial condition, operating environment and/or repayment structure. The ability to pay on short-term obligations is strong. Strength across a number of credit drivers is stable, but less robust than Level 1 and Level 2 issuers. The capacity to withstand adverse credit events is solid, although the issuer may experience more pressure from adverse events than Level 1/Level 2 issuers. Such entities are stable, solid credits that are somewhat more vulnerable than Level 1/Level 2 issuer, but still capable of absorbing adverse credit events.
- Level 4** Financial condition, operating environment and/or repayment structure are more than adequate to support minimal credit risk. Depth and breadth of credit drivers are generally concentrated in a few areas. The ability to pay on short-term obligations is strong, but not exceptional. Vulnerability to credit shocks is greater than Level 3 issuers. Operating environment may be more volatile than higher rated issuers. Adverse credit events might lead to the issuer falling below minimal credit risk.
- Level 5** Financial condition, operating environment and/or repayment structure are adequate for minimal credit risk standard but the issuer may not have the financial capability to withstand an adverse credit event without falling below minimal credit risk standard. Depth and breadth of credit drivers is generally concentrated in one or two areas. The ability to pay on short-term obligations is satisfactory, but the issuer is vulnerable to adverse financial or economic events. Industry and/or operating environment for the issuer may be more volatile than higher rated issuers. The Level 5 designation signals the vulnerability of the issuer or the security and the accompanying risk that it will fall below minimal credit risk.

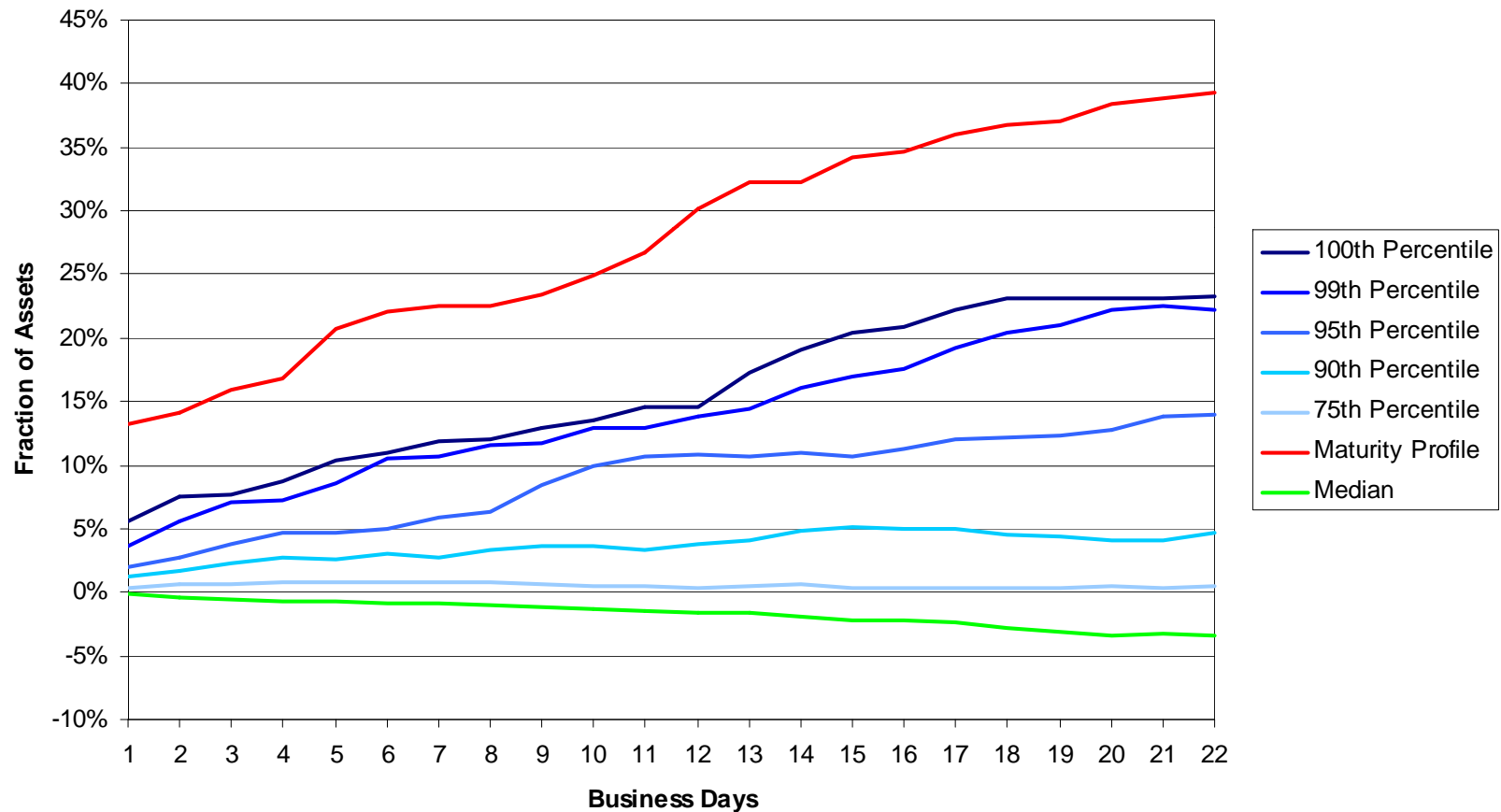
Developing Internal Ratings Can Assist with Risk Management

M-Score	Credit Quality	Maximum Maturity Guideline	Absolute Aggregate Limits
Level 1	Multiple offsets to buffer possible blows to financial strength	397	\$50B
Level 2		397	\$15B
Level 3		397	\$12B
Level 3		187	\$10B
Level 3		97	\$6B
Level 4		97	\$5B
Level 4		30	\$4B
Level 5		Fewer layers of credit/liquidity provided via Banks/Guarantors	30

Source: Fidelity Research and Management as of 3/31/09

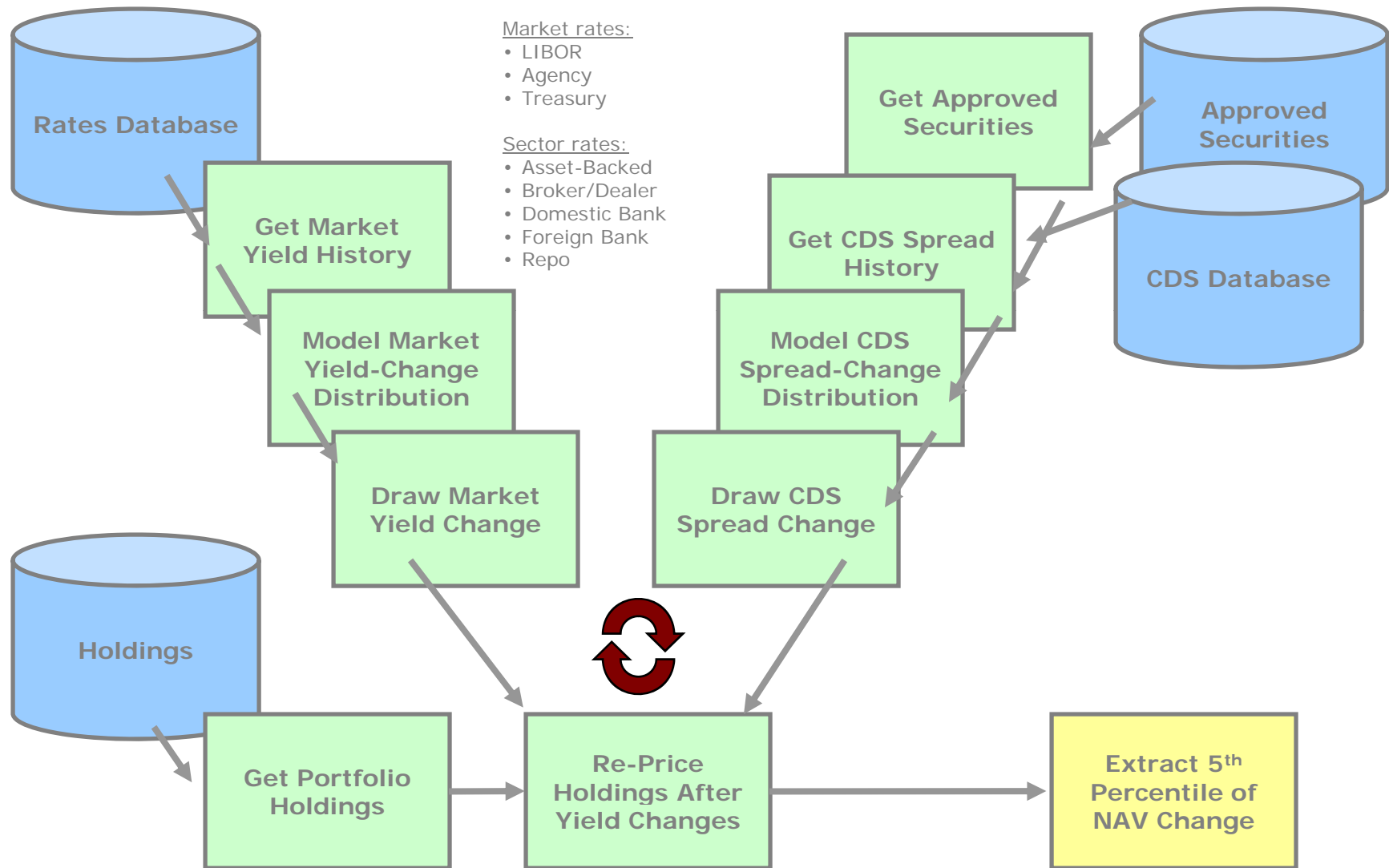
Liquidity Risk Management – Outflow Analysis

Shareholder Outflow Statistics and Maturity Profile



Source: Fidelity Research and Management as of 4/21/09, Apr 2008 - Apr 2009

Risk Management: Value at Risk



Risk Management & Compliance

- ▶ Stability, experience and track record of management greatly enhances a fund's safety
 - Distinguish between money market portfolio management and fixed income portfolio management
- ▶ Operating policies and risk preferences
 - Established by committees or individual responsibility
 - Amount, type, and quality of information used in making policy and investment decisions is an important differentiator
- ▶ Internal controls (credibility & commitment to policies)
 - Pricing policies
 - NAV deviation procedures
 - Depth & adequacy of staff training
 - Stress-testing capabilities
 - Asset-flow monitoring
 - Trade ticket verification
 - Disaster recovery
- ▶ Systematic capability to enforce, monitor, and report rules & regulations
 - Pre-trade/post-trade capabilities

Conclusion: Cash Management Takeaways

- Investment goals and objectives are independent of current market conditions
 - Preserve Capital
 - Maintain Liquidity
 - Generate modest returns
- Cash Management is a time consuming, resource intensive multi-dimensional process
 - Develop a Risk vs. Return profile
 - Understand all aspects of the investable universe
- The guiding principle of credit research is minimal credit risk
- Portfolio Construction incorporates fundamental credit, structural, legal and quantitative research efforts
- Risk Management is a critical component of monitoring and understanding a portfolio's risk/return characteristics

Types of S&P Fund Ratings

Principal Stability Fund/Pool Ratings

- Assigned to 2a-7 (and 2a-7 like) funds whose investment policies are consistent with providing a Stable \$1.00 Per Share NAV (*i.e. Stable NAV Funds/ Pools; WAM 60 days or less; max final maturity 397 days; high credit quality; highly diversified amongst issues/sectors, etc.*)
- Also known as Money Market Fund Ratings or Stable NAV Fund Ratings
- Represented by 'm' after the traditional rating symbology (AAAm)
- Address the ability of a fund to maintain principal value and limit exposure to losses due to credit, market, and/or liquidity risks.

Fund Credit Quality & Volatility Fund/Pool Ratings

- Assigned to funds with investment policies beyond what is permitted by rule 2a-7 (*i.e. Variable NAV Funds; WAM > 60 days; max final maturity > 397 days; etc.*)
- **Fund Credit Quality Ratings**
 - ⇒ Addresses level of protection a fund's portfolio holdings provide against losses from credit defaults
 - ⇒ Represented by 'f' after the traditional rating symbology (AAAf)
- **Fund Volatility Ratings**
 - ⇒ Represented by 'S' scale (S1, S2, etc.)
 - ⇒ Addresses a fund's sensitivity to changing market conditions

What Principal Stability Fund Ratings **Are** and Are **Not**

A S&P Principal Stability Fund Rating **Is**...

- An opinion on relative safety of invested principal.
- An indication of the extent to which a portfolio is comprised of high credit quality instruments.
- A weekly review of the investment holdings and key fund statistics including but not limited to NAV, WAM and asset flows.
- An indication of the extent to which a fund provides principal stability.
- An independent, third party review of management's experience, operations and controls.

A S&P Principal Stability Fund Rating **Is NOT**...

- A guarantee.
- An indication of the willingness and/or ability of sponsor to provide support.
- A comment on the yield or performance.
- An indication investments are risk free.
- Impacted by fund management's decision to make payments in kind versus cash.
- Impacted by a fund management's decision to suspend redemptions (i.e. do not guarantee daily liquidity).

Stable NAV Pool/Principal Stability Fund Rating Criteria Summary

<i>Rating</i>	<i>Definitions</i>	<i>Min* A-1+</i>	<i>Max A-1</i>	<i>Max A-2</i>	<i>Max WAM (Days)</i>	<i>Floating Rate Note Maximum Final Maturity</i>
AAAm	Fund provides extremely strong capacity to maintain principal value and limit exposure to principal losses due to credit, market, and/or liquidity risks.	50%	50%	0%	60	Two Years
AAm	Fund provides very strong capacity to maintain principal value and limit exposure to principal losses due to credit, market, and/or liquidity risks.	20%	80%	5% overnight	75	Three Years
Am	Fund provides strong capacity to maintain principal value and limit exposure to principal losses due to credit, market and/or liquidity risks.	0%	100%	10% overnight	90	Four Years
BBBm	Fund provides adequate capacity to maintain principal value and limit exposure to principal losses due to credit, market, and/or liquidity risks.	0%	100%	25% overnight	90	Five Years
BBm	A fund rated 'BBm' has uncertain capacity to maintain principal stability and is vulnerable to principal losses resulting from its exposures to credit, market and/or liquidity risks.					
Dm	A fund rated 'Dm' has failed to maintain principal stability resulting in a realized or unrealized loss of principal.					

- Investments rated A-1 maturing in 7 days or less can be counted toward the A-1+ percentage.
- The letter 'G' follows the rating symbol when a fund's portfolio consists primarily of direct U.S. government securities.
- The ratings (except AAAm) may be modified by the addition of a plus (+) or minus (-) sign to show relative standing within the rating categories.

Principal Stability Fund Ratings Sensitivity Matrix

Weighted Average Maturity **60**
 Shares Outstanding: **200,000,000**
 Market Value: **1.000000**
 Total \$ Loss: \$ -
 Total \$ Gain: \$ -

Basis Point Shift

300	0.992955	0.993836	0.994521	0.994809	0.995068	0.995303	0.995517	0.995890	0.996207
250	0.994129	0.994863	0.995434	0.995674	0.995890	0.996086	0.996264	0.996575	0.996839
200	0.995303	0.995890	0.996347	0.996539	0.996712	0.996869	0.997011	0.997260	0.997471
150	0.996477	0.996918	0.997260	0.997404	0.997534	0.997652	0.997758	0.997945	0.998103
100	0.997652	0.997945	0.998174	0.998270	0.998356	0.998434	0.998506	0.998630	0.998736
50	0.998826	0.998973	0.999087	0.999135	0.999178	0.999217	0.999253	0.999315	0.999368
0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
-50	1.001174	1.001027	1.000913	1.000865	1.000822	1.000783	1.000747	1.000685	1.000632
-100	1.002348	1.002055	1.001826	1.001730	1.001644	1.001566	1.001494	1.001370	1.001264
-150	1.003523	1.003082	1.002740	1.002596	1.002466	1.002348	1.002242	1.002055	1.001897
-200	1.004697	1.004110	1.003653	1.003461	1.003288	1.003131	1.002989	1.002740	1.002529
-250	1.005871	1.005137	1.004566	1.004326	1.004110	1.003914	1.003736	1.003425	1.003161
-300	1.007045	1.006164	1.005479	1.005191	1.004932	1.004697	1.004483	1.004110	1.003793

Redemption/Inflow

	-30%	-20%	-10%	-5%	0%	5%	10%	20%	30%
O/S Shares	140,000,000	160,000,000	180,000,000	190,000,000	200,000,000	210,000,000	220,000,000	240,000,000	260,000,000

Sample Factors of S&P Principal Stability Fund Ratings

Quantitative

- Overall portfolio credit quality
- Individual security credit quality
- Counterparty risk and exposure
- Diversification of securities
- Credit Deterioration vs. Default
- Net Asset Value Stability
- Weighted Average Maturity (WAM) / Duration
- Maturity Structure (Ladder vs. Barbell)
- Pricing
- Liquidity
- Shareholder Composition/Asset Volatility
- Structured & Variable / Floating Rate Notes
- Leverage: Rev Repo/Sec Lending

Qualitative

- Depth and stability of organization & management team
- Experience and track record of fund manager
- Operating policies and risk preferences
- Internal controls
- Fund Governance

Comparison of AAAM vs. AAf (Case Study GA OTFS)

Georgia Fund 1

- Rated AAAM
- The Net Asset Value is \$1.00 (as of 5/1/2009 was \$1.00024)
- The primary investment objectives are safety of capital, liquidity, yield, and diversification with primary emphasis on safety of capital and liquidity
- The maximum weighted average maturity (WAM) is 60 days
- The maximum final maturity per security is one year
- Intended for entities with short term (including daily) liquidity needs

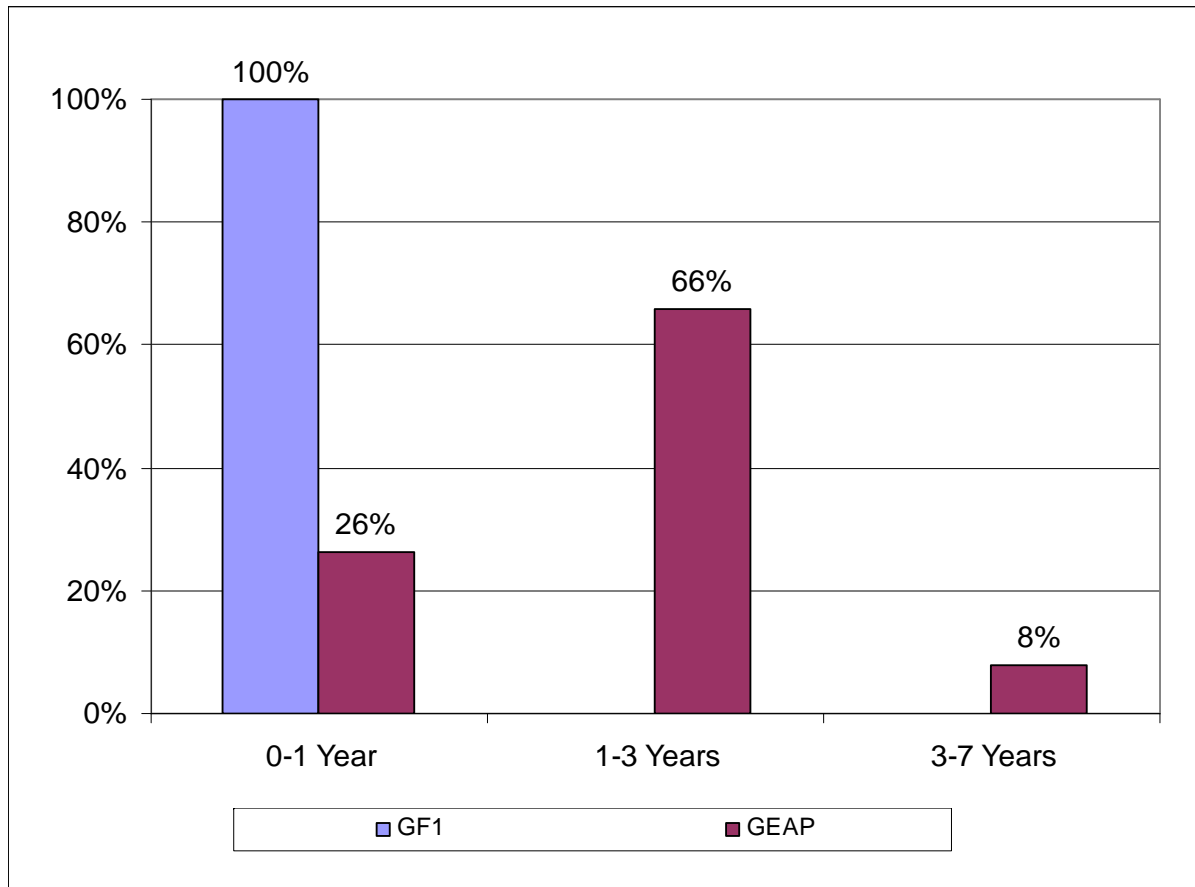
Georgia Extended Asset Pool

- Rated AAf/S1
- This is a variable NAV fund so the value of the shares will fluctuate with changes in the market
- Starting unit value was \$2.00 (as of 3/31/2009 was \$2.05)
- Designed for investors seeking taxable income higher than money market rates and willing to accept price fluctuations
- Managed duration band of 6 to 18 months
- The maximum final maturity per security is 5 years
- Intended for core deposits or reserves available for investment periods of 1 year or longer

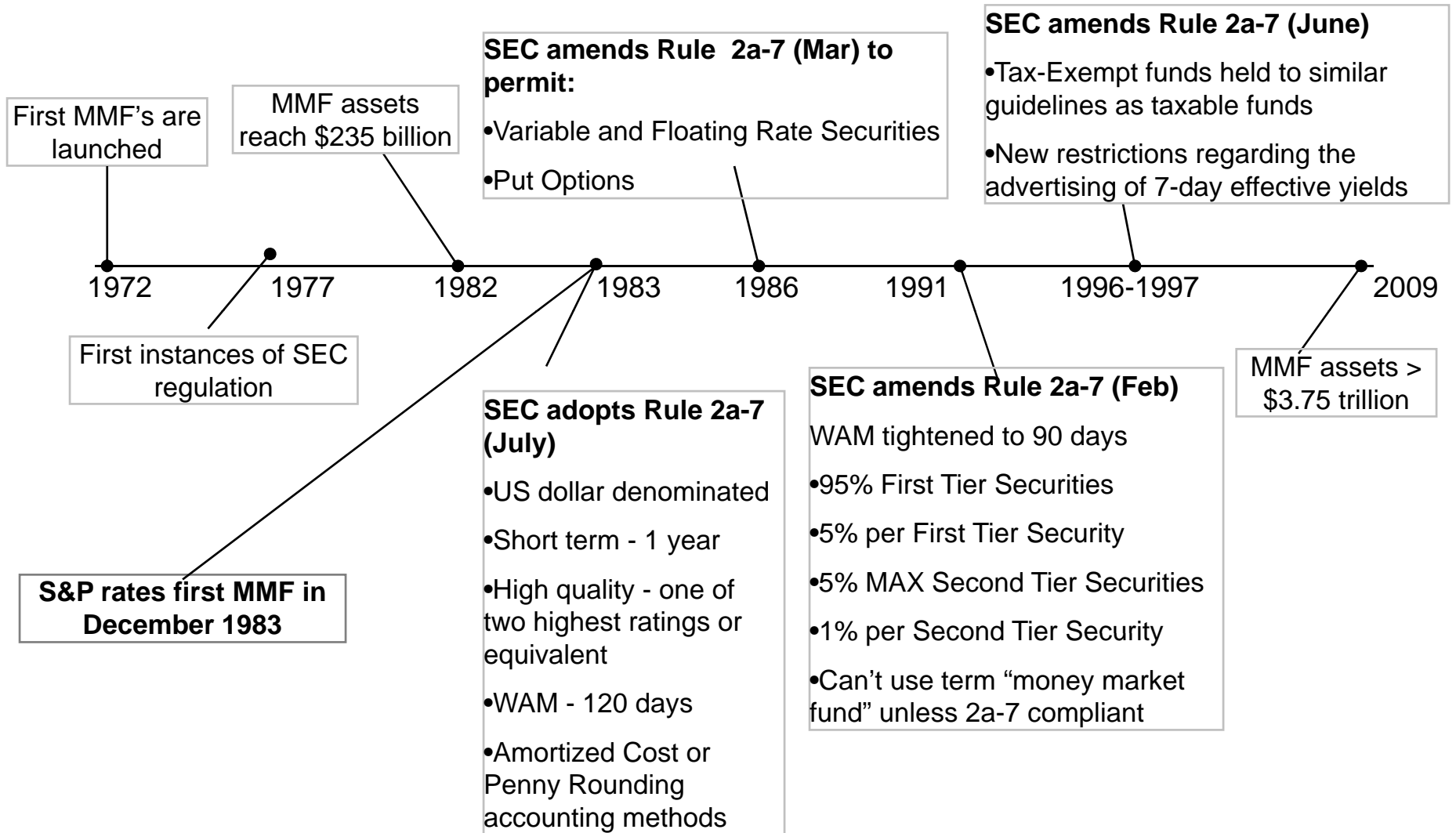
Comparison of AAAM vs. AAf (Case Study GA OTFS Continued)

GF1 WAM as of 5/1/09:
48 days or 0.13 years

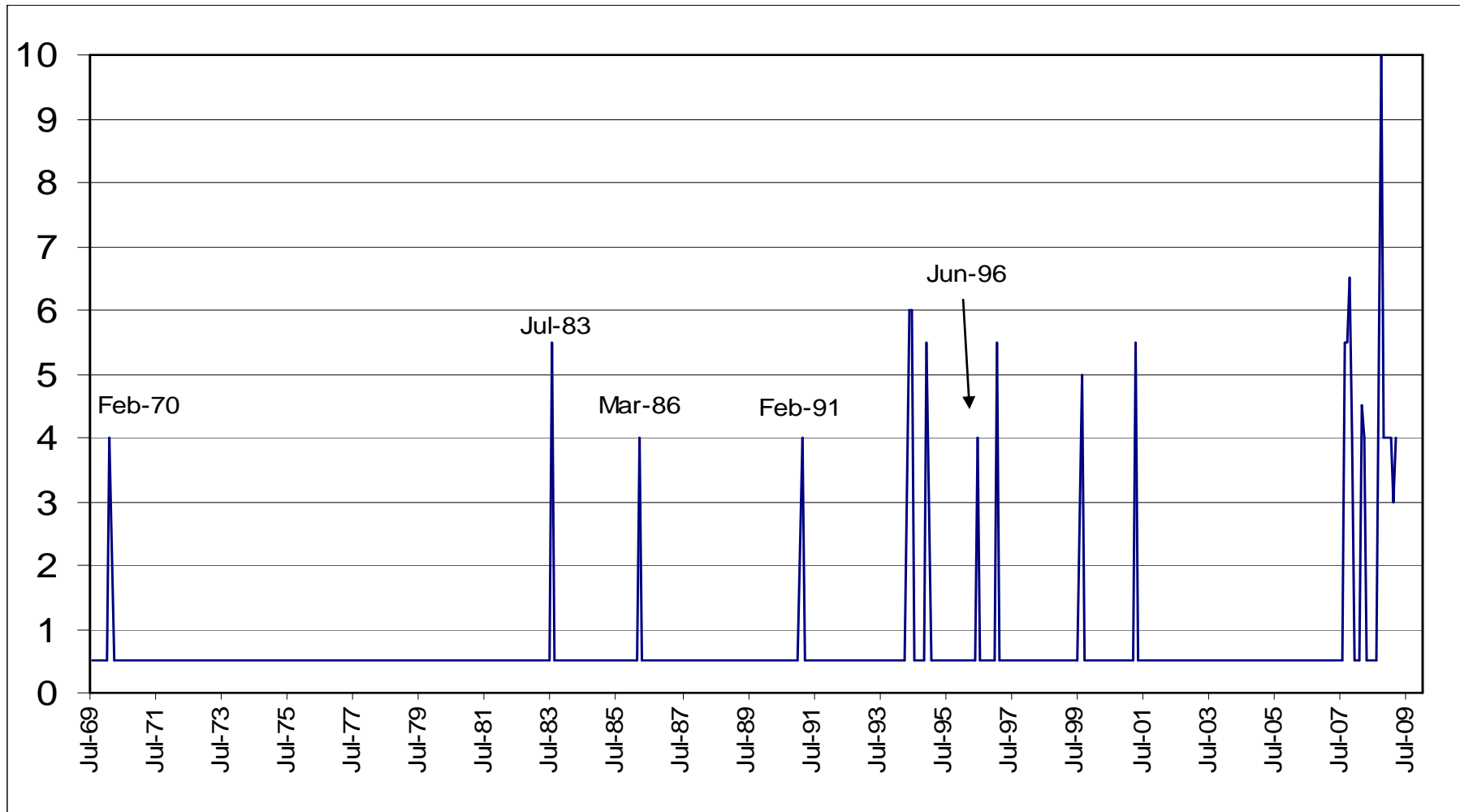
GEAP WAM as of 3/31/08:
595 days or 1.63 years



Investment Company Act of 1940/Rule 2a-7 History



Money Market Fund Industry Events on 'Richter Scale'



* Dates noted on graph indicate regulatory rule changes

Richter Scale

The scale assigns a single number to quantify the amount of seismic energy released by an earthquake. It is a base-10 logarithmic scale obtained by calculating the logarithm of the combined horizontal amplitude of the largest displacement from zero on a Wood–Anderson torsion seismometer output. So, for example, an earthquake that measures 5.0 on the Richter scale has a shaking amplitude 10 times larger than one that measures 4.0.

<u>Magnitude</u>	<u>Description</u>	<u>Earthquake Effects</u>	<u>Frequency of Occurrence</u>
Less than 2.0	Micro	Micro earthquakes, not felt.	About 8,000 per day
2.0-2.9	Minor	Generally not felt, but recorded.	About 1,000 per day
3.0-3.9	Minor	Often felt, but rarely causes damage.	49,000 per year (est.)
4.0-4.9	Light	Noticeable shaking of indoor items, rattling noises. Significant damage unlikely.	6,200 per year (est.)
5.0-5.9	Moderate	Can cause major damage to poorly constructed buildings over small regions. At most slight damage to well-designed buildings.	800 per year
6.0-6.9	Strong	Can be destructive in areas up to about 160 kilometres (100 mi) across in populated areas.	120 per year
7.0-7.9	Major	Can cause serious damage over larger areas.	18 per year
8.0-8.9	Great	Can cause serious damage in areas several hundred miles across.	1 per year
9.0-9.9	Great	Devastating in areas several thousand miles across.	1 per 20 years
10.0+	Epic	Never recorded.	Extremely rare (Unknown)

Noteworthy Events in the Money Market Industry

Feb-70	4.0	First MMF Created
Jul-83	5.5	SEC Adopts Rule 2a-7
Mar-86	4.0	SEC Amends Rule 2a-7
Feb-91	4.0	SEC Amends Rule 2a-7
May-94	6.0	Derivatives in MMFs
Jun-94	6.0	Community Bankers US Government Fund breaks the buck
Dec-94	5.5	Orange County Bankruptcy
Jun-96	4.0	SEC Amends Rule 2a-7
Jan-97	5.5	Mercury Finance CP Default
Aug-99	5.0	General American Funding Agreement Problems
Apr-01	5.5	PG&E Default (CA Energy Crisis)
Aug-07	5.5	XABCP
Sep-07	5.5	SIV-lites
Oct-07	6.5	SIVs
Nov-07	4.0	FL SBA LGIP
Feb-08	4.5	Auction Rate Securities, Bond Insurers
Mar-08	4.0	Bear Stearns
Sep-08	10.0	Lehman Bankrupt; Reserve Primary Fund 'Breaks the Buck' & Govt Gty
Oct-08	4.0	Lehman/Reserve Fallout
Nov-08	4.0	Lehman/Reserve Fallout
Dec-08	4.0	Very Low Yields
Jan-09	4.0	G30 Report on Financial Reform
Mar-09	4.0	ICI MMF Working Group Report

Sample Emergency U. S. Government Support Programs

- Troubled Assets Relief Program (TARP)
- Temporary Guarantee Program for Money Market Funds
- Asset Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF)
- Commercial Paper Funding Facility (CPFF)
- Money Market Investor Funding Facility (MMIFF)
- FDIC Temporary Liquidity Guarantee Program (TLGP)
- Public Private Partnership Investment Program (PPIP)

What should investors know about their MMF/LGIP?

- Review the investment policy & practices to make sure it's consistent with objective If your maintaining stable \$1.00 per share NAV
- Understand who is managing your money (internally vs. externally managed)
- Know what your fund is investing in – ABCP vs. CP, etc.
- Identify how much investment manager relies on NRSRO ratings for non-government approved issuers (credit research vs. credit analysis)
- Demand transparency – investments in these fundss generally turn-over (i.e. mature) frequently, so semi-annual or quarterly reports is not enough.
- If fund is not 2a-7 registered, is there there an 'Advisory Committee', 'Board of Trustees' or another forum where participants views can be shared with pool sponsor/manager?
- Understand various definitions of maturity (WAM, WAL, Spread WAM, Credit Duration, etc.)
- If a fund is not rated, that does not necessarily mean something is amiss

Potential Regulatory Changes on the Horizon

ICI Money Market Fund Working Group (Sample Recommendations)

- Daily (5%) & Weekly (20%) Liquidity
- WAM 75 Days (from 90 Days)
- New Spread WAM (120 Days)
- No “Second Tier”, Designate NRSROs (3)
- New Products Committees
- Disclose Monthly Portfolio Holdings
- Know Your Client, Concentration Disclosures

SEC Comments on Money Market Fund Regulation Changes

- Proposal on revisions around credit quality, liquidity & maturity expected in June
- Reviewing if more fundamental changes in MMF regulation are needed (i.e. floating NAVs)

Top 10 Quips I Heard/Read During Market Turmoil

(From the home office in East Northport NY)

- 10) I bought a toaster the other day and they gave me a bank with it
- 9) Marked to market rules coupled with risk based capital standards may lead banks to hold fewer loans on their books, packaging them as complex securities for sale to investors *(sounds like NOSTRADAMUS but was said in early 1990's by Alan Greenspan & Richard Rosenberg/BofA)*
- 8) I hope they stop referring to them as 'Monolines'; that fact they strayed away from core business model is what caused them all the trouble in the first place
- 7) More money has been lost reaching for yield than at the point of a gun
- 6) Let's not forget that the only value of an asset is what someone will pay for it, not some theoretical value derived from a complex computer model / If you really do market values right, you don't want them too hot or too cold, you want it just right *(sounds like GOLDILOCKS, but was said by former SEC Chief Accountant)*
- 5) Instruct regulators to look for the newest fad in the industry and examine it with great care. The next mistake will be a new way to make a loan that will not be repaid – *From former FDIC/RTC head Bill Seidman's 1993 memoir*
- 4) Some market participants have referred to the subprime crisis as being contained.....well that must be some huge container
- 3) Liquidity doesn't matter until it matters and then it is the only thing that matters
- 2) On transparency in structured products and compared it to real life: "Let's say you are eating sausage & peppers for dinner tonight, would you want to see the entire process of how that sausage was made or would you rather just eat it when it was done cooking? This runs true for financial products, two years ago you just wanted the sausage, and now you want to see the pig and the sausage casing, its a whole new world in terms of disclosure"

And the number one quip overheard during the market turmoil... (drum roll please)

- 1) I'm SIV Negative

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 - Diversification does not ensure a profit or guarantee against a loss.
 - An investment in a money market fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although the fund seeks to preserve the value of your investment at \$1.00 per share, it is possible to lose money by investing in the fund. Interest rate increases can cause the price of money market securities to decrease.
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