



# A guide to instituting a cash investment policy

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# A well-written cash investment policy: a solid foundation for future cash investment decisions

As markets shift and business needs and requirements evolve, a well-written cash investment policy is a necessity for corporate and institutional investors striving to meet important liquidity and investment objectives. By compelling an organization to put its goals and strategy in writing, a cash investment policy (hereinafter, “investment policy”) ensures a more consistent, disciplined approach to investing and provides a sound foundation on which to build a portfolio.

An investment policy provides important internal clarity that allows everyone—from the investment team to the board of directors—to share a common and clear understanding of the organization’s objectives and permissible investments. When markets are fluctuating, an investment policy helps an organization avoid making impromptu investment decisions and focuses attention on long-term goals. It also provides financial transparency and serves as a mechanism for internal control.

Constructing an investment policy should be a dynamic process. Once a policy has been implemented, organizations must regularly review and update it. In this way, organizations can be certain that the policy is current and provides the flexibility needed to quickly respond to unexpected events, whether they are business, market or regulatory changes.

Following the SEC’s adoption of new and improved rules that govern 2a-7 money market funds, organizations are in the process of implementing the required changes. Two key changes will take effect in October 2016, following a two-year

transition period: First, institutional prime and municipal money market funds must float their net asset values (NAV) to reflect their market prices and retail funds (which will retain the constant net asset value (CNAV) for transactions) must limit their beneficial owners to “natural persons.” Second, a fund board has new powers to impose a liquidity fee or redemption gate if the fund’s weekly liquid assets fall below 30% of total assets. Government money market funds (which also retain the ability to transact at the CNAV) are not required to be subject to the fee and gate provisions.

It is more than likely that your organization already has an investment policy in place—an estimated 80% of all organizations do.<sup>1</sup> But it is also possible that your investment policy is not up to date with current market trends and thinking, contains vague or contradictory language, or fails to reflect all market risks.

**A well-articulated investment policy helps achieve your organization’s investment goals, provides internal clarity, and promotes long-term discipline in your investment decision-making.**

<sup>1</sup> 2015 AFP Liquidity Survey, July 2015.

In this white paper, we have consolidated our best thinking—with that of our global clients—as a guide to help you chart a path to develop a formal investment policy. Today more than ever, an organization needs a clear investment policy to help bridge the gap between shifting market circumstances and investment goals.

- The first section provides an overview and menu of the most common components of an investment policy.
- The Reference Guide, beginning on page 12, includes a list of applicable terms, definitions and additional resources.

**AS YOU REVIEW THIS WHITE PAPER, PLEASE CONSIDER THE FOLLOWING QUESTIONS:**

- Are the liquidity features and risk characteristics of the policy's permissible investments understood by the treasury organization, investment committee and board of directors?
- When a security falls out of compliance with the investment policy, what happens? Are there procedures that outline who must be notified? What drives the decision to keep the security or sell it? Who makes the ultimate decision? If the security is kept, how is it tracked and monitored going forward?
- Does the policy allow for fluctuation in principal in its money market investments?
- Does the policy allow for the possibility of liquidity fees and redemption gates?
- Is portfolio duration tracked? (Interest rate duration is a measure of risk that is typically defined as the price sensitivity of the portfolio to a given change in interest rates.)
- Does the organization's reporting provide the necessary data to update financial reports and senior management on a regular basis? Are the reports timely and Financial Accounting Standards Board (FASB) and/or International Accounting Standards Board (IASB) compliant?
- Is diversification among different security types addressed within the portfolio?
- How are pooled investment vehicles, such as money market mutual funds, evaluated?

# Typical cash investment policy components

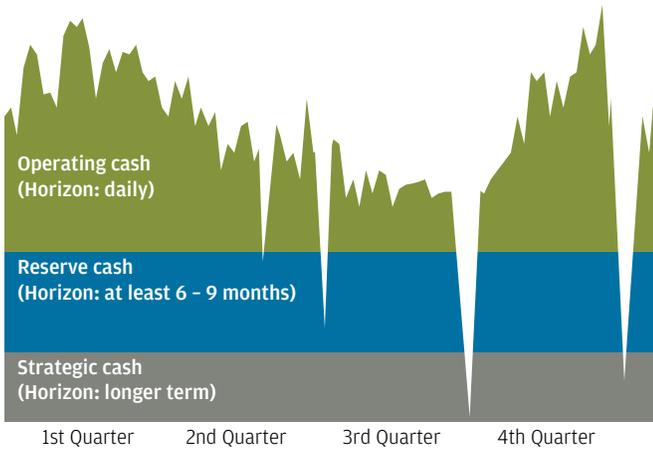
When drafting a new investment policy or reviewing an existing one, consider the organization's current situation. Factors such as the size and experience of the treasury staff, past investment experience, risk tolerance of senior management or board of directors, cash levels and the ability to have a reliable cash flow forecast can affect the tone of the policy. Also keep in mind that an investment policy should be designed to adapt to changing needs, such as significant cash inflow from a divestiture or change in risk tolerance. The following is a discussion of the common key elements of an investment policy and questions to consider when determining what is appropriate for the organization.

## SCOPE

A critical component of an investment policy is the policy scope, which defines what is covered by the policy within an organization's structure. The scope should include to whom the policy applies and to which pockets of cash held within the overall organization it is applicable. The scope provides structure as an organization grows, particularly if cash is managed on a decentralized basis, and helps to ensure the organization's investment objectives are met locally, nationally and globally. When developing the scope of the policy, considerations will typically include:

- Whether the policy applies to all subsidiaries and entities globally or only to certain legal entities
- Whether the policy applies to cash managed in-house, by external managers or both
- Whether cash will be segmented with different investment parameters based on the different characteristics of cash pools (e.g., working capital, reserve cash and strategic cash)
- Whether the policy will be global in nature, covering investment options in multiple jurisdictions and multiple currencies, which may be used to hedge asset exposure and minimize foreign exchange risk

**EXHIBIT 1: SEGMENTING CASH BY LIQUIDITY NEEDS AND PROFILE**



- **Operating**
  - Cash typically used for daily operating needs, may be subject to unforeseen volatility
  - Focus on preservation of principal
  - Late-day access
  - Same-day liquidity
- **Reserve**
  - Investment horizon of six to nine months or longer
  - Fairly static, same-day access not needed
  - Cash set aside for possible acquisition, stock repurchasing and R&D
- **Strategic**
  - No short-term forecast use
  - Cash on balance sheet that has not been historically used
  - Investment horizon of one year or longer

For illustrative purposes only.

Many organizations have adopted a segmentation strategy for their cash. **EXHIBIT 1** is an example of how cash might be categorized to reflect the types of cash for which the treasury department may be responsible.

## OBJECTIVES

An investment policy should clearly state the organization’s objectives in relation to its overall investment strategy. This section should provide a high-level framework that clearly explains how the organization will meet each objective. Clearly defining the objectives of the policy in order of their importance may be helpful. The objectives section of the policy should address some of the following:

- Level of preservation of capital
- Necessary liquidity
- Maximizing total returns (subject to guideline boundaries, objectives and risk tolerance, as well as tax position for U.S.-based investors only)

## DEFINING TOLERANCE FOR RISK AND VOLATILITY

How tolerant of risk and volatility is the organization? An effective policy must define acceptance levels for the three main types of risk in a portfolio: interest rate risk, credit risk and liquidity risk.

## Interest rate risk tolerance

Does the organization have any sensitivity for unrealized losses in the portfolio due to interest rate volatility? Can it tolerate potential negative total returns over the short term (e.g., a one-month or three-month period) in order to achieve potentially higher returns over a longer term period such as one year? Has the “bandwidth” for acceptable net realized gains/losses in a given period been considered?

## Credit risk tolerance

What is the organization’s tolerance for moving down in credit quality? How much risk is the organization willing to take in the search for yield? A security with a lower credit rating typically adds yield to the portfolio, but it also adds an element of risk.

## Liquidity risk tolerance

What is the organization’s tolerance for the possibility that it will be unable to raise cash for any chosen purpose—that is, that its liquidity could be constrained? How does the organization view the prospect that a liquidity fee or redemption gate could be put in place in times of market stress?

## ASSESSING INTEREST RATE OR DURATION RISK

Treasury indices with varying interest rate durations provide a proxy to help an organization understand its tolerance for interest rate risk. Using 10 years of historical risk/return data, **EXHIBIT 2** shows how both the frequency and magnitude of negative returns typically increase with longer durations.

The total rate of return also typically increases over the long term, as shown by the annualized 10-year returns for the BofA Merrill Lynch US 3-Month, 6-Month, 1-Year and 1-3 Year Treasury Bill Indices. Generally, the longer the duration of a portfolio, the higher its return over the long term; however, the volatility of those returns is usually greater in the short term, as shown by the frequency of rolling negative returns for the above Indices over three months. Typically, as duration increases, so does the interest rate sensitivity of a portfolio. In this example, it is interesting to note that the 3-Month Treasury Bill Index had a higher frequency of negative returns than the 6-Month Treasury Bill Index, because in the current low interest rate environment, there have been times when the 3-Month Treasury Bill Index had a negative yield, which then increased to a positive yield.

While frequency of negative returns is important, it is just as important to understand the magnitude of those negative returns. While the BofA Merrill Lynch US 3-Month Treasury Bill Index has had monthly negative returns approximately 6.7% of the time over the past 10 years, the average monthly negative return rounds to 0.0%. Similarly, the magnitude of the monthly negative returns for the BofA Merrill Lynch 6-Month Treasury Bill Index has also been minimal, averaging -0.01%.

EXHIBIT 2

BofA Merrill Lynch US 3-Month Treasury Bill				BofA Merrill Lynch US 6-Month Treasury Bill				BofA Merrill Lynch US 1-Year Treasury Bill Note				BofA Merrill Lynch 1-3 Year US Treasury			
Total rate of return (%)				Total rate of return (%)				Total rate of return (%)				Total rate of return (%)			
1 Year		0.05		1 Year		0.22		1 Year		0.15		1 Year		0.54	
3 Years		0.05		3 Years		0.17		3 Years		0.20		3 Years		0.51	
5 Years		0.07		5 Years		0.19		5 Years		0.28		5 Years		0.70	
10 Years		1.24		10 Years		1.57		10 Years		1.78		10 Years		2.42	
StDev*		0.57		StDev*		0.65		StDev*		0.79		StDev*		1.31	
Frequency of negative returns (rolling)				Frequency of negative returns (rolling)				Frequency of negative returns (rolling)				Frequency of negative returns (rolling)			
1 Month		6.67%		1 Month		6.67%		1 Month		16.67%		1 Month		26.67%	
3 Months		3.33%		3 Months		0.00%		3 Months		5.83%		3 Months		12.50%	
1 Year		0.00%		1 Year		0.00%		1 Year		0.00%		1 Year		0.00%	
Avg 1M Negative Return (%)		(0.00)		Avg 1M Negative Return (%)		(0.01)		Avg 1M Negative Return		(0.06)		Avg 1M Negative Return		(0.18)	
Avg 3M Negative Return (%)		(0.00)		Avg 3M Negative Return (%)		-		Avg 3M Negative Return		(0.08)		Avg 3M Negative Return		(0.21)	
Avg 1Y Negative Return (%)		-		Avg 1Y Negative Return (%)		-		Avg 1Y Negative Return		-		Avg 1Y Negative Return		-	
Benchmark returns % (rolling)				Benchmark returns % (rolling)				Benchmark returns % (rolling)				Benchmark returns % (rolling)			
Period	Worst	Average	Best	Period	Worst	Average	Best	Period	Worst	Average	Best	Period	Worst	Average	Best
3 Months	0.00	0.32	1.34	3 Months	0.00	0.40	1.82	3 Months	-0.18	0.45	2.52	3 Months	-0.92	0.62	3.75
6 Months	0.00	0.66	2.70	6 Months	0.04	0.83	3.40	6 Months	-0.06	0.93	4.15	6 Months	-0.13	1.25	5.95
1 Year	0.01	1.41	5.29	1 Year	0.12	1.74	6.08	1 Year	0.05	1.93	6.91	1 Year	0.15	2.56	9.16
2 Years	0.03	1.52	5.03	2 Years	0.15	1.84	5.50	2 Years	0.17	1.99	5.84	2 Years	0.28	2.56	6.98
3 Years	0.05	1.59	4.42	3 Years	0.16	1.90	4.79	3 Years	0.20	2.04	5.00	3 Years	0.45	2.59	5.95
5 Years	0.07	1.75	3.27	5 Years	0.19	2.07	3.66	5 Years	0.28	2.24	3.68	5 Years	0.68	2.85	4.40
10 Years	1.24	2.49	3.81	10 Years	1.57	2.81	4.03	10 Years	1.78	3.05	4.34	10 Years	2.42	3.65	4.93

Source: BofA Merrill Lynch. Above data is based on 120 monthly observations. Returns for periods of one year or longer are annualized. \*Annualized standard deviation of monthly returns on a trailing 10-year basis. Charts are shown for illustrative purposes only. All data as of December 31, 2015.

## ASSESSING CREDIT RISK

**EXHIBIT 3** compares indices of a similar duration but with different credit rating risks. It is important to note that risk does not necessarily increase linearly as credit quality falls. In fact, historically, the BofA Merrill Lynch 1-3 Year BBB US Corporate Index had a lower frequency of negative returns than the BofA Merrill Lynch 1-3 Year Single-A US Corporate Index did, and the magnitude of those negative returns was also lower.

## ASSESSING LIQUIDITY RISK

Liquidity is the ability to raise cash for any chosen purpose. Liquidity risk is the inability to raise cash for any chosen purpose. At one extreme a company might be unable to meet a debt payment for principal or interest and consequently default. At the other extreme a company could stockpile cash to guard against a possible calamity or potential acquisition. The first company has the highest liquidity risk; the other has almost none. Similarly, a cash fund must carry ample liquidity, in the form of short-dated maturities, to meet client redemptions. Should a fund experience meaningful

redemptions, especially unexpected redemptions, it could be forced to sell longer-dated securities to limit its liquidity risk.

## BENCHMARKS

The benchmark of a portfolio expresses goals and provides a mechanism to track long-term objectives, define risk limits and provide clear communication among the advisory committee, senior management and any external managers. Using a benchmark will help the organization maintain sight of its goals and take action if investment performance lags behind the benchmark. The benchmark helps to:

- Define tolerance for risk and volatility
- Determine the investment horizon
- Identify return expectations

When evaluating a benchmark, consider gathering data regarding the historical total rate of return, the negative return frequency, and the frequency of rolling one-month, three-month and 12-month returns.

### EXHIBIT 3

BofA Merrill Lynch 1-3 Year AAA US Corp				BofA Merrill Lynch 1-3 Year AA US Corp				BofA Merrill Lynch 1-3 Year Single-A US Corp				BofA Merrill Lynch 1-3 Year BBB US Corp			
<b>Total rate of return (%)</b>				<b>Total rate of return (%)</b>				<b>Total rate of return (%)</b>				<b>Total rate of return (%)</b>			
1 Year			1.03	1 Year			1.05	1 Year			1.19	1 Year			0.73
3 Years			0.91	3 Years			1.01	3 Years			1.29	3 Years			1.53
5 Years			1.29	5 Years			1.48	5 Years			2.00	5 Years			2.45
10 Years			3.11	10 Years			3.16	10 Years			3.17	10 Years			4.43
StDev*			1.96	StDev*			1.94	StDev*			3.52	StDev*			3.24
<b>Frequency of negative returns (rolling)</b>				<b>Frequency of negative returns (rolling)</b>				<b>Frequency of negative returns (rolling)</b>				<b>Frequency of negative returns (rolling)</b>			
1 Month			27.50%	1 Month			24.17%	1 Month			22.50%	1 Month			20.00%
3 Months			14.17%	3 Months			14.17%	3 Months			11.67%	3 Months			15.83%
1 Year			0.00%	1 Year			0.83%	1 Year			7.50%	1 Year			5.00%
Avg 1M Negative Return			(0.27)	Avg 1M Negative Return			(0.35)	Avg 1M Negative Return			(0.68)	Avg 1M Negative Return			(0.60)
Avg 3M Negative Return			(0.55)	Avg 3M Negative Return			(0.62)	Avg 3M Negative Return			(2.15)	Avg 3M Negative Return			(1.24)
Avg 1Y Negative Return			-	Avg 1Y Negative Return			(0.73)	Avg 1Y Negative Return			(5.63)	Avg 1Y Negative Return			(3.35)
<b>Benchmark returns % (rolling)</b>				<b>Benchmark returns % (rolling)</b>				<b>Benchmark returns % (rolling)</b>				<b>Benchmark returns % (rolling)</b>			
<b>Period</b>	<b>Worst</b>	<b>Average</b>	<b>Best</b>												
3 Months	-2.43	0.79	4.30	3 Months	-2.96	0.80	4.74	3 Months	-10.22	0.82	7.34	3 Months	-7.48	1.12	9.51
6 Months	-2.19	1.58	5.76	6 Months	-2.43	1.61	7.27	6 Months	-10.27	1.64	11.32	6 Months	-7.19	2.28	15.08
1 Year	0.68	3.23	8.78	1 Year	-0.73	3.28	10.51	1 Year	-8.05	3.35	16.90	1 Year	-5.04	4.67	23.11
2 Years	0.86	3.23	7.05	2 Years	0.99	3.28	7.59	2 Years	-1.58	3.31	11.03	2 Years	-0.25	4.64	14.77
3 Years	0.91	3.26	5.70	3 Years	1.01	3.31	5.49	3 Years	0.48	3.32	7.79	3 Years	1.38	4.68	10.42
5 Years	1.29	3.57	5.17	5 Years	1.44	3.59	5.11	5 Years	0.98	3.59	5.77	5 Years	1.78	4.94	7.74
10 Years	3.11	4.32	5.53	10 Years	3.16	4.34	5.57	10 Years	3.17	4.24	5.62	10 Years	3.99	5.11	6.01

Source: BofA Merrill Lynch. Above data is based on 120 monthly observations. Returns for periods of 1 year or longer are annualized. \*Annualized standard deviation of monthly returns on a trailing 10-year basis. Charts are shown for illustrative purposes only. All data as of December 31, 2015.

## PERMISSIBLE INVESTMENTS

While different countries will have different investment options, the permissible investments section of an investment policy defines the types of securities that are permitted along with parameters for credit quality, maturity and diversification. This

section should be updated periodically to reflect market changes and the organization's evolving investment philosophy. The following chart is provided for illustrative purposes only, and does not represent all investments or parameters. Based upon objectives, the organization would assign an appropriate parameter from the suggested ranges below.

Security type <sup>1</sup>	Minimum credit rating <sup>2, 3</sup>	Maximum maturity	Maximum portfolio exposure <sup>3</sup>	Maximum issuer exposure <sup>3</sup>
U.S. Treasury Securities	N/A	0 - 5 years	No limit	No limit
U.S. Government Agency Obligations	N/A	0 - 5 years	50% - No limit	No limit
Obligations of Non-U.S. Agencies, Governments and Supranational Organizations	All investment grade ratings from AAA to BBB-, or the equivalent, depending on credit risk tolerance	0 - 5 years	50% - No limit	5% - No limit
Commercial Paper <sup>4</sup>	All investment grade ratings from A-1+ to A-2, or the equivalent, depending on credit risk tolerance	0 - 397 days	50% - No limit	3% - 5%
Asset-Backed Commercial Paper	All investment grade ratings from A-1+ to A-2, or the equivalent, depending on credit risk tolerance	0 - 397 days	50% - No limit	3% - 5%
Certificates of Deposit (Domestic, Eurodollar and Yankee)	All investment grade ratings from A-1+ to A-2, or the equivalent, depending on credit risk tolerance <sup>5</sup>	0 - 5 years	50% - No limit	3% - 5%
Time Deposits, including Eurodollar Deposits	All investment grade ratings from A-1+ to A-2, or the equivalent, depending on credit risk tolerance <sup>5</sup>	0 - 3 months	50% - No limit	3% - 5%
Money Market Funds (Institutional)	SEC Rule 2a-7 compliant, Institutional Money Market Funds Association (IMMFA) compliant <sup>6</sup> European Securities and Markets Authority (ESMA) ST MMF <sup>6</sup>	N/A	50% - No limit	No greater than 5% to 10% of total assets of the money market fund
Private Placement Funds, including 3(c)(7) funds, Lux Specialized Investment Funds (SIF)	N/A	N/A	50% - No limit	No greater than 5% to 10% of total assets of the fund
Variable NAV Short-Term Fixed Income Funds	Not generally applicable	N/A	50% - No limit	No greater than 5% to 10% of total assets of the fund
Corporate Debt Securities, including Corporate Notes, Bonds and Medium-Term Notes (fixed and floating rate)	All investment grade ratings from AAA to BBB-, or the equivalent, depending on credit risk tolerance	0 - 5 years	0% - 50%	3% - 5%
Asset-Backed Securities, including, but not limited to, securities backed by credit card, auto, and other assets	AAA/Aaa/AAA	0 - 5 years weighted average life	0% - 30%	3% - 5%
Mortgage-Backed Securities, limited to agency mortgage-backed securities, including agency-collateralized mortgage obligations	N/A	0 - 5 years weighted average life	0% - 30%	3% - 5%
Commercial Mortgage-Backed Securities	AAA/Aaa/AAA	0 - 5 years weighted average life	0% - 30%	3% - 5%
Traditional Repurchase Agreement, collateralized fully by cash or U.S. Government Securities <sup>7</sup>	All investment grade ratings from A-1+ to A-2, or the equivalent, depending on credit risk tolerance	Overnight to 95 days	50% - No limit	0% - 25%
Non-Traditional Repurchase Agreement, collateralized by corporate debt securities, sovereign debt, municipal debt, private mortgages, asset-backed securities, money market securities and equity	All investment grade ratings from A-1+ to A-2, or the equivalent, depending on credit risk tolerance	Overnight to 95 days	50% - No limit	0% - 10%
Variable Rate Demand Notes (VRDN)	A-1+/P-1/F1, SP-1+/Variable Municipal Investment Grade (VMIG) 1/F1 A-1/P-1/F1, SP-1/VMIG 1/F1 <sup>8</sup>	0 - 397 days <sup>9</sup>	0% - 100%	3% - 10%
Municipal Securities	All investment grade ratings from AAA to BBB-, or the equivalent, depending on credit risk tolerance <sup>8, 10, 11</sup>	0 - 5 years	0% - 100%	3% - 10%
Covered Bonds	AAA/Aaa/AAA	0 - 5 years	0% - 50%	3% - 5%

<sup>1</sup>Where applicable, specify if it is permissible to purchase instruments in broad range of currencies. <sup>2</sup>Order of ratings is S&P/Moody's/Fitch. <sup>3</sup>At time of purchase. <sup>4</sup>Including Euro Commercial Paper (ECP). <sup>5</sup>Depending upon the tenor of the certificates of deposit, long-term ratings may be more appropriate than the short-term ratings shown here. <sup>6</sup>Details on requirements are included in the Reference Guide. <sup>7</sup>Repurchase agreements are referred to as reverse repurchase agreements outside the United States. <sup>8</sup>Or, if unrated, have been determined to be of comparable quality. <sup>9</sup>For VRDNs, most commonly used maturity limits are reset dates with most being puttable either daily or weekly, in which case an investor would receive its principal back within 1-5 business days stating a similar effective maturity. <sup>10</sup>Depending on the tenor of municipal securities, short-term ratings may need to be included here as well, such as A-1+/P-1 or the equivalent. <sup>11</sup>It is common to use short-term ratings, especially with notes, i.e., Bond Anticipation Notes, Tax Anticipation Notes and Tax and Revenue Anticipation Notes.

## MONEY MARKET FUNDS

A money market fund is a mutual fund that invests in high-quality, short-term securities (generally with maturities of 13 months or less) that present minimal credit risk. The primary objectives of money market funds are preservation of principal, daily liquidity and a high level of current income.

In the U.S. money market funds must adhere to the SEC's Rule 2a-7. Under changes to the rule that take effect in October 2016, government and retail funds can continue to maintain constant \$1.00 net asset values, but institutional prime and municipal funds are required to float their NAVs, that is, transact at their market-based NAVs, rounded to four decimal places (\$1.0000).

Investors must evaluate the relative attractiveness of government and prime money market funds. Government funds offer a constant NAV, but at potentially lower yields; prime funds offer potentially higher yields, but a floating NAV. The yield differential between government and prime money market funds will alternately widen and narrow in different rate environments.

## TAXABLE VS. TAX-EXEMPT SECURITIES (APPLICABLE TO U.S. COMPANIES ONLY, OTHER COUNTRIES MAY HAVE SIMILAR CONSIDERATIONS)

When determining an organization's investment strategy, especially for U.S. companies, consideration should be given to adding both taxable and tax-exempt securities as part of the permitted investments list. This will allow the organization to most efficiently invest as its tax situation changes over time, without the need to amend an investment policy with each change. Items to consider include:

- Tracking expiration of any net operating losses (NOLs) should be built into internal policies, with notification of a change in tax status given to investment managers and/or internal teams to maximize investment performance.
- Because taxable versus tax-exempt performance varies widely over time, consider whether the organization will adopt a fully taxable or fully tax-exempt strategy based on its current tax situation, or whether it will use a "tax-aware" strategy where both taxable and tax-exempt securities may be part of the portfolio at any given time, based on relative value or other portfolio criteria.

## CREDIT QUALITY

It is important to define the minimum credit quality of individual securities; however, having an average credit quality limit on the overall portfolio may be just as important to ensure credit quality diversification.

Key questions to consider about credit quality:

- If the organization is self-directing investments, how will it assess and monitor credit quality of potential investments beyond agency ratings?
- Does the organization have the ability and resources in-house to assess credit quality or should it outsource?
- What will be the guidelines for minimum credit quality?
- How often will credit quality and credit risk be reviewed?
- What is the agreed course of action if a security or issuer is downgraded and falls below the minimum credit quality standards?
- How does the organization expect to be notified of a downgrade event?

It is also important to clearly define how split-rated securities—securities receiving different ratings from different rating agencies—will be handled. Determine whether the organization will use the highest, middle or lowest rating in cases where the security is rated differently by two or three rating agencies.

## MAXIMUM PORTFOLIO AND ISSUER EXPOSURES

Defining maximum exposures within the portfolio is critical in an investment policy. Maximum exposure can be defined as it relates to any individual issuer, or across sectors or asset classes. Exposures should be defined using percentage values of the portfolio (or a combination of the lesser of a percentage and a dollar value), rather than absolute dollar values as a stand-alone measure. This will provide flexibility as the portfolio grows or shrinks over time, as well as clear direction when using several managers and/or internal purchases without the need to compare each set of holdings with the whole for compliance.

Also consider the effects of exposure limits if a partial withdrawal of investments leads to existing positions being greater than the stated percentage limits. Organizations may want to note that exposure limits mentioned in the policy will be determined as of the purchase date in relation to the

aggregate portfolio value at the time of each purchase transaction. This flexibility may prevent individual securities from simply being sold to bring the portfolio back under the required maximum exposures if the portfolio's size decreases due to a withdrawal.

**Having an average credit quality requirement on the overall portfolio may be as important as having minimum credit ratings for individual securities.**

## REALIZED GAIN/LOSS

An investment policy should define an organization's tolerance (if any) for realized gains/losses, either on a net or absolute basis in the portfolio on a per-month or per-quarter basis. This will provide clear internal parameters for acceptable performance and may offer the investment manager additional flexibility to help enhance return. As there are no set standards for appropriate levels, tolerance should be internally agreed upon based on the organization's unique circumstances, and gain and loss information should be determined in conjunction with its internal accounting department. This will ensure it has the information needed to properly account for gains/losses. Gain/loss tolerance can be defined as:

- Percent of total market value per month/quarter
- Hard cash value per month/quarter

Many clients provide a net realized gain and/or loss limit rather than an absolute limit so that gains and losses during the period can be offset against one another.

Under changes to the SEC's Rule 2a-7, institutional prime and municipal money market funds will transact at their market-based NAVs rounded to four decimal places, introducing the potential for capital gains or losses.

Fluctuations in the market-based NAV, above or below \$1.0000, can occur as the result of changes in market interest rates, changes in credit spreads, inflows and outflows of money, and ratings downgrades or defaults on securities held in the portfolio. Fluctuations are typically very small.

## LIQUIDITY TARGETS

Investment policies should define an appropriate percentage of the portfolio that must be accessible and available in cash at any given time. This percentage should be determined in conjunction with the strategy and benchmark used for the portfolio, and will depend upon an organization's cash flow forecast. The forecast should consider day-to-day operating cash needs plus an additional cash buffer readily available for unanticipated liquidity needs. The forecast will also consider expected expenditures and other factors, such as the history of making acquisitions. The liquidity target can be broken down further to define readily available cash (e.g., amounts that must be available overnight, in one week or one month). After the liquidity target (operating costs plus an additional cash buffer) has been determined, the remainder of the portfolio can be put to work using the most effective strategy—without being constrained by possible liquidity needs.

**Investment policies should define the appropriate percentage of the portfolio that must be accessible and available in cash at any given time.**

## REPORTING

An integral part of the treasury department's responsibilities is reporting on the organization's investment holdings and performance. Adding a section that defines reporting needs to an investment policy will allow the organization to track performance and investment policy compliance, as well as provide timely reports to accounting, the board and senior management.

## CUSTODY

Whether investing directly or through an external manager, thought should be given to how custody services will be arranged. Many organizations choose to have a single custodian for all securities held, regardless of where the securities are managed, to provide standardized reporting across all portfolios. Others choose to have custody arrangements with each individual manager or broker. Determinants should include cost and ease of reporting plus due diligence around the custodian itself to ensure it is a stable entity with the appropriate

processes in place. Any custodian should be able to provide Statement on Auditing Standards (SAS) 70-type reporting as a minimum requirement.

## ROLES AND RESPONSIBILITIES

Individual roles in the investment process will vary based on each organization's structure and workflow. First, identify each position involved in the investment process, including those authorized to approve the policy, make revisions and recommend changes, and clearly state the responsibilities for each position. Individuals involved generally include some or all of the following: chief financial officer (CFO), treasurer, assistant treasurer, treasury manager and treasury department. The chief executive officer (CEO) or board of directors may also be responsible for handling exceptions or updates to the policy. Second, consider how frequently and by whom an investment policy will be reviewed. To ensure the policy remains current and reflects changes within the organization, a process to review the policy on a regular basis should be implemented.

## EVALUATION AND COMPLIANCE

Most investment policies developed prior to 2008 did not address, or contained little content regarding, corporate governance, which often exacerbated issues that organizations experienced during difficult market events. Therefore, it is important to consider how an investment policy will be evaluated both initially and on an ongoing basis, and how the organization will ensure compliance with the terms of the policy once it is implemented. Methods for both evaluation and compliance should be made part of the formal policy.

### Questions that should be addressed in this section include:

#### Who approves the policy?

The final approval of the policy typically rests at the highest position responsible for the organization's investment activities. This may be the board of directors, the CEO, CFO or other senior positions. In many cases, the policy is prepared by the CFO or treasurer and then submitted to the board or others for final approval. Each of these steps should be clearly delineated in the policy.

#### How often and by whom is the policy updated?

Given that an organization's investment strategy can dramatically change over time, it is important to review the policy on a regular basis and approve or amend as appropriate. The time frame for accomplishing this should be described in the policy (e.g., annually or biennially). To ensure the review occurs, responsibility for the review/approval process also should be outlined.

#### How can exceptions be made?

During extraordinary markets, exceptions may become necessary even with well-written policies. Procedures can be included in the policy to accommodate exceptions, along with a formal approval process that outlines who is responsible for each step.

#### What steps must be taken if a security falls out of compliance?

Over time, securities held in a portfolio may fall out of compliance with an investment policy, even though they were in compliance at the time of purchase. Noncompliance can occur because of changes in ratings or any other criteria required by the policy. The policy should contain provisions for the handling of such securities, including a formal approval process to determine a) whether to continue to hold the security or to sell it, and b) if selling, when to sell, since the security may have to be sold at a loss. The persons responsible (e.g., CFO, board) for each step and for approval should be clearly stated.

#### Does the policy only apply to the rating (or other policy criteria) at the time of purchase, or is the organization (or its managers) required to monitor ratings on an ongoing basis for compliance?

Because the policy should reflect the organization's risk tolerance, ongoing monitoring is recommended to ensure the portfolio remains within guidelines. However, if ongoing monitoring is required by the policy, it is important to state who is responsible for monitoring and how regularly it should be completed.

If the organization is self-directing investments, it should carefully consider whether it has the appropriate staff, in terms of both knowledge and time capacity, to accomplish the monitoring. The policy also should include a procedure for regular compliance-monitoring reporting to senior levels, including to whom the reports should be sent and how often.

## DISASTER RECOVERY

As part of compliance and evaluation, there should be discussion regarding disaster recovery (DR) procedures as they relate to cash and investments. While a formal DR policy is typically addressed separately from an investment policy, making certain decisions with regard to DR can impact the investment policy (e.g., liquidity targets may need to be adjusted depending upon how quickly an organization has access to cash in an emergency situation, or the hierarchy of responsibility for investments may need to change in a DR situation).

## SUMMARY

Due to uncertainties inherent in all markets, many organizations regularly review and update existing investment policies and/or create new ones. An investment policy provides a firm foundation for sound investment decision-making. It helps organizations monitor investment performance, remain focused on objectives, and ensure that everyone understands its goals and permitted investments. Regular review of an investment policy helps to keep it current and relevant.

This white paper presented an overview of the primary components of an investment policy and includes a reference guide of terms and resources. An investment policy framework is also included and can be used both internally and with external counsel and advisors as a basis for discussions about an organization's evolving investment management priorities.

Through all market conditions, a strong investment policy—carefully written and implemented, regularly reviewed and revised as necessary—is one of the most effective tools to help protect and grow an organization.

# Reference guide

## SECTION A: RATINGS

### S & P

Short-term ratings	Long-term ratings
A-1+	AAA AA+ AA AA- A+
A-1	A+ A A-
A-2	A A- BBB+ BBB
A-3	BBB BBB- BB+

### MOODY'S

Short-term ratings	Long-term ratings
P-1	Aaa Aa1 Aa2 Aa3 A1 A2 A3
P-2	A3 Baa1 Baa2
P-3	Baa2 Baa3

### FITCH

Short-term ratings	Long-term ratings
F1+	AAA AA+ AA AA- A+
F1	A+ A A-
F2	A- BBB+ BBB
F3	BBB BBB-

Source: Standard & Poor's, Moody's, Fitch Ratings, December 31, 2015.

**SHORT-TERM RATINGS**

S & P	Moody's	Fitch
A-1+	P-1	F1+
A-1		F1
A-2	P-2	F2
A-3	P-3	F3

**LONG-TERM RATINGS**

	S & P	Moody's	Fitch
Best quality	AAA	Aaa	AAA
High quality	AA+	Aa1	AA+
	AA	Aa2	AA
	AA-	Aa3	AA-
Upper-medium grade	A+	A1	A+
	A	A2	A
	A-	A3	A-
Medium grade	BBB+	Baa1	BBB+
	BBB	Baa2	BBB
	BBB-	Baa3	BBB-

Source: Standard & Poor's, Moody's, Fitch Ratings, December 31, 2015.

**MUNICIPAL RATINGS**

S & P			Moody's			
Long-term	Short-term		Long-term	Short-term		
AAA	A-1+	SP-1+	Aaa	P-1	MIG1	VMIG1
AA+	A-1+	SP-1+	Aa1	P-1	MIG1	VMIG1
AA	A-1+	SP-1+	Aa2	P-1	MIG1	VMIG1
AA-	A-1+	SP-1+	Aa3	P-1	MIG1	VMIG1
A+	A-1+/A-1	SP-1+/SP-1	A1	P-1	MIG1	VMIG1
A	A-1/A-2	SP-1/SP-2	A2	P-1	MIG1	VMIG1
A-	A-1/A-2	SP-1/SP-2	A3	P-1/P-2	MIG2	VMIG2
BBB+	A-2	SP-2	Baa1	P-2	MIG3	VMIG3
BBB	A-2/A-3	SP-2/SP-3	Baa2	P-2/P-3	MIG3	SG
BBB-	A-3	SP-3	Baa3	P-3, not prime	MIG3	SG

Source: Standard & Poor's, Moody's, December 31, 2015.

## SECTION B: DEFINITIONS

### Active management vs. passive management

There are two primary types of portfolio management: active management and passive management (also referred to as “buy-and-hold”).

Active management refers to a portfolio management strategy wherein the manager makes specific investments with the goal of outperforming an investment benchmark index. Active managers will sell holdings from time to time (potentially realizing gains/losses) and reinvest proceeds to reposition the portfolio in line with the index or their current market view to benefit the portfolio’s performance on a total return basis.

Passive management (buy-and-hold strategy) refers to a portfolio management strategy wherein the manager does not seek to outperform a benchmark index but invests in securities at the highest yield available (which also meet their other investment criteria) at the time of purchase. Buy-and-hold managers usually do not sell the securities once they are in the portfolio; they hold them until maturity and then reinvest the principal and interest generated from the maturity. Therefore, maturities are typically staggered.

The Financial Accounting Standards Board (FASB) requires that all investments in debt securities be classified in one of three categories<sup>2</sup> and accounted for as:

- Held-to-maturity securities
- Available-for-sale securities
- Trading securities

### Alternative minimum tax

The corporate alternative minimum tax (AMT) is an alternative tax base to the regular tax system. It was designed as part of the Tax Reform Act of 1986 to increase the income tax on businesses that the legislature believes pay too little relative to “standard” rules of taxation. Companies pay the AMT when their tax liability calculated under the AMT rules is higher than when calculated under the regular rules of the tax system. Some securities that might otherwise be considered tax-exempt may still subject a corporation to the AMT.

<sup>2</sup> Financial Accounting Standards Board, Statement of Financial Accounting Standards No. 115, Accounting for Certain Investments in Debt and Equity Securities, May 1993.

### Amortized cost

Measure of the cost of a security whereby the cost value will change over time as the discount or premium paid for the security is gradually incorporated into the principal value as interest payments are received. This involves valuing a security at its cost initially and thereafter assuming a constant amortization to maturity of any discounts or premium, regardless of the impact of fluctuating interest rates on the market value of the security.

### Asset-backed securities

A securitized interest in a pool of assets such as credit card receivables or auto loans. Asset-backed securities (ABS) derive cash flow and credit characteristics from the pool of underlying assets. The goal of a securitization is to isolate the asset pool from the issuer so it is not part of the issuer’s bankruptcy estate in case the issuer becomes insolvent. ABS contain credit enhancement to allow the issued securities to attain a rating higher than the unsecured debt rating of the issuer.

### Bank debt

Time deposits (TDs) and certificates of deposit (CDs) indicate that a specific sum of money has been deposited at a banking institution for a fixed term at an agreed-upon fixed or floating interest rate. TDs are non-negotiable instruments, meaning they cannot be sold in the secondary market to another investor. While non-negotiable CDs exist, they are not in the institutional marketplace because their investment size is typically substantially smaller than negotiable CDs, which can be bought and sold several times on the open market until their maturity. Therefore, negotiable CDs enjoy liquidity advantages over TDs and non-negotiable CDs. The investor’s credit risk is the exposure to the bank counterparty holding the deposit.

### Collateralized mortgage obligations

Collateralized mortgage obligations (CMO), a type of mortgage-backed security, are bonds that represent claims to specific cash flows from large pools of home mortgages. The streams of principal and interest payments on the mortgages are distributed to the different classes of CMO interests, known as tranches, which may have different principal balances, coupon rates, prepayment risks and maturity dates. Investors in CMO may be exposed to significant market and liquidity risks, as well as interest rate changes resulting from homeowners selling their properties, refinancing or pre-paying their loans.

## Commercial mortgage-backed securities

A type of mortgage-backed security that is secured by a pool of mortgages on commercial properties. Commercial mortgage-backed securities (CMBS) transactions isolate a commercial mortgage pool from its issuer, thereby insulating the securities from the adverse effects of an issuer's insolvency. CMBS are typically structured with multiple tranches, similar to CMO. The analytical techniques of CMBS combine real estate and structured finance analysis. Structure and credit support allow issued securities to attain various ratings. Many CMBS carry less prepayment risk than other residential mortgage-backed securities products given the structure of commercial mortgages.

## Commercial paper

A short-term debt instrument with maturities ranging from one to 397 days, including asset-backed commercial paper (ABCP). The debt is usually issued at a discount and matures at par, but can be interest bearing. Commercial paper (CP) issued by corporate entities are unsecured short-term debt instruments typically issued to finance receivables, inventories or short-term liabilities. ABCP is a short-term secured debt instrument issued by a bankruptcy-remote special purpose vehicle (SPV). The sponsor sets up this SPV to issue ABCP and uses the proceeds to acquire a portfolio of assets. These programs are structured with credit enhancement to absorb losses and liquidity facilities to cover cash flow differences between the underlying assets and repayment of the CP.

## Convexity

Convexity is a measure of the curvature in the relationship between bond prices and bond yields that demonstrates how the duration of a bond changes as the interest rate changes. When graphed, it produces a line that is curved or convex, not straight. A bond is positively convex if the percentage decrease in price for a given increase in yield is always less than the percent increase for the same decrease in yield. Convexity is used as a risk-management tool and helps to measure and manage the amount of market risk to which a portfolio of bonds is exposed.

As convexity increases, the systemic risk to which the portfolio is exposed increases. In general, the higher the coupon rate, the lower the convexity (or market risk) of a bond. This is because market rates would have to increase greatly to surpass the coupon on the bond, meaning there is less risk to the investor.

## Corporate securities

Debt obligations issued by corporations with either a fixed or floating interest rate with maturities of all tenors.

## Counterparty risk

The risk to each party of a contract that the counterparty will not live up to its contractual obligations. In most financial contracts, counterparty risk is known as default risk.

## Credit risk

The possibility that the issuer of a bond will default by failing to repay principal and interest in full or in a timely manner. Also called default risk. Because buyers of a security expect to be compensated for bearing this risk, a higher interest rate will typically be offered by issuers having a higher credit risk.

## Current yield

Also known as market yield, the current yield is the yield of a security based on its current market price.

## *De minimis* rule (applicable to U.S. investors only)

The *de minimis* rule refers to Section 265 of the Internal Revenue Code, which disallows deductions of interest expense if evidence exists that the purpose of the loan was to purchase or carry tax-exempt securities. Because the disallowance applies to both direct borrowings to *purchase* tax-exempt securities, as well as borrowings used to *carry* tax-exempt securities, it is possible that holding any tax-exempt securities could give rise to an interest disallowance. However, in a Revenue Procedure, the IRS has stated that an investor in tax-exempt bonds does not risk losing a portion of their interest deduction as long as the average amount of their tax-exempt obligations (valued at adjusted basis) does not exceed 2% of average total assets (valued at adjusted basis) held in the active conduct of the trade or business. This assumes that the corporation is not a dealer in tax-exempt obligations.

## Duration

### Macaulay duration

A measure of a bond's/portfolio's price sensitivity, expressed in years. As defined by Frederick Macaulay in 1938, it is a measure of the interest rate risk of a bond that considers that there may

be cash flows before the maturity date, and the cash flows must be considered in terms of their present value. Duration is similar to but much more precise than average life. It is a measure of the number of years until the average dollar—in present value terms—is received from coupon and principal payments. Average life, on the other hand, is the time-weighted average of expected principal repayments on a fixed income security—it considers neither interest payments nor present value. Duration is computed by multiplying each principal and interest payment by its present value, summing these products and dividing the sum by the full price of the bond.

**Modified duration**

A measurement of the change in an instrument’s value in response to a given change in interest rates. Modified duration is the primary basis for comparing the effect of interest rate changes on prices of fixed-income instruments. The formula shows the small difference between modified and Macaulay duration. Many applications are not sensitive to the difference, and modified and Macaulay duration numbers are often used interchangeably.

$$\text{Macaulay duration} = \frac{\sum_{t=1}^n \frac{t * C}{(1 + i)^t} + \frac{n * M}{(1 + i)^n}}{P}$$

Where n = number of cash flows; t = time to maturity; C = cash flow; i = required yield; M = maturity value; and P = bond price

$$D_{\text{mod}} = [ 1 / (1 + (y/f)) ] D_{\text{mac}}$$

Where Dmod = modified duration; Dmac = Macaulay duration; y = yield to maturity; and f = frequency of coupon payment

**Spread duration**

The percentage change in a security’s market value for a 100-basis point change in its option-adjusted spread (OAS). The spread duration of a portfolio is the market-weighted average of the spread durations of all its securities. Spread duration is used to quantify the sensitivity of a portfolio or an individual security to changes in spreads.

**European Securities and Markets Authority**

The European Securities and Markets Authority (ESMA) is a European Union financial regulatory institution that helps ensure the integrity, transparency, efficiency and orderly functioning of securities markets. ESMA has established a two-tiered approach to the classification of money market funds in order to help provide a more detailed understanding of the distinction between funds. This allows investors to more easily choose between funds that are tightly constrained to holding short-dated investments and those that hold longer-dated instruments. Any fund identifying itself as a “money market fund” must conform to the ESMA-established definitions of either a short-term money market fund or a money market fund.

**Excess return**

The total return of the portfolio minus the total return of its benchmark, also known as alpha.

**Fair value**

Fair value, also called fair price, is a concept used in finance and economics, defined as a rational and unbiased estimate of the potential market price of a good, service or asset, taking into account such objective factors as:

- Acquisition/production/distribution costs, replacement costs or costs of close substitutes
- Actual utility at a given level of development of social productive capability
- Supply vs. demand

Fair value also considers subjective factors such as:

- Risk characteristics
- Cost of capital
- Individually perceived utility

In accounting, fair value is used as an estimate of the market value of an asset (or liability) for which a market price cannot be determined (usually because there is no established market for the asset). Under generally accepted accounting principles (GAAP) Financial Accounting Standards (FAS 157), fair value is the amount at which the asset could be bought or sold in a current transaction between willing parties, or transferred to an equivalent party, other than in a liquidation sale.

### Information ratio

The information ratio is a measure of the risk-adjusted return of a portfolio relative to its benchmark. It is calculated by taking the annualized return of the portfolio, subtracting the annualized return of the benchmark, and dividing by the annualized standard deviation of the excess return (excess return/tracking error). The information ratio is also the ratio of expected return to risk, as measured by standard deviation. Higher ratios mean that more excess return is being generated per unit of risk.

$$\text{Information ratio} = \frac{\text{Annualized return } [p_1, \dots, p_n] - \text{annualized return } [b_1, \dots, b_n]}{\text{annualized standard deviation } (e_1, \dots, e_n)}$$

Where p = portfolio; b = benchmark; and e = excess return

### Interest rate risk

Interest rate risk is the risk that a bond's yield will rise (as its price falls) after it has been purchased. Securities that are more sensitive to changes in interest rates will have greater price fluctuations than those with less sensitivity. Generally, the longer the maturity of the asset, the more sensitive the asset will be to changes in interest rates. See definition of duration above.

### Institutional Money Market Funds Association

The Institutional Money Market Funds Association (IMMFA) is a London-based trade association whose members represent the European AAA-rated constant net asset value (CNAV) money market fund industry. All IMMFA members agree to abide by the IMMFA Code of Practice, which strives to protect investors by imposing high and consistent standards on IMMFA funds. Broadly based on the SEC's Rule 2a-7 guidelines, the standards in the Code are significantly tighter than those required by ESMA Guidelines. The Code protects investors by establishing minimum standards for risk management (including in relation to credit risk, interest rate risk, liquidity risk and market risk).

### Liquidity risk

Liquidity risk is the risk that a given security or asset cannot be traded quickly enough in the market to prevent or minimize a loss. Increased liquidity risk is typically reflected in unusually wide bid-ask spreads or large price movements, especially to the downside.

To address liquidity risk in money market funds, beginning in October 2016, U.S. regulations require that money market funds hold at least 30% of assets in weekly liquid assets (WLA). Weekly liquid assets may consist of cash, Treasury securities of any maturity, certain other government securities that have a remaining maturity of 60 days or less, or securities that will mature or can be converted into cash within five business days. For all taxable funds, at least 10% of assets are required to be held in cash, Treasury securities of any maturity, or securities that will mature or can be converted into cash within one business day. If a money market fund's weekly liquid assets fall below 30% of total assets, its board may impose a liquidity fee of up to 2% or it may institute a redemption gate. If WLA continues to fall below 10%, the fund's board has the authority to implement a fee or a gate of up to 1% if it feels that such action would be in shareholders' best interest.

### Market yield

The market yield, or current yield, is the ratio of the annual interest payment and the bond's current mark-to-market price:

$$\text{Market yield} = \frac{\text{Annual interest payment}}{\text{Market price}}$$

The current yield, therefore, only refers to the yield of the bond at the current moment. It does not reflect the total return over the life of the bond or the actual yield earned if held to maturity using the price at which the bond was purchased.

### Maturity

The maximum time that a bond can be outstanding. The date when the final principal payment will be made.

### Money Market Fund

A type of mutual fund that invests in high-quality, short-term securities generally with maturities of 13 months or less that present minimal credit risk. The primary objectives of money market funds are preservation of principal, daily liquidity and a high level of current income. Returns vary along with short-term interest rates. Dividends are typically declared daily and paid on a monthly basis.

In order to be called a money market fund in the U.S., the fund must adhere to the SEC's Rule 2a-7 (See Rule 2a-7 definition, applicable to U.S. investors only). Under changes to Rule 2a-7

that take effect in October 2016, government and retail money market funds may continue to maintain a constant \$1.00 net asset value, but institutional prime and municipal funds are required to transact at their market-based NAVs, rounded to four decimal places.

Retail funds are defined as funds that limit their beneficial owners to “natural persons.” Institutional funds are defined as non-retail funds. To qualify as a government money market fund, a fund must invest at least 99.5% of its total assets in cash, government securities, or traditional repurchase agreements.

An investment in a money market fund is not insured by the Federal Deposit Insurance Corporation (FDIC) or any other government agency. Although money market funds strive to preserve the value of the investment at \$1.00 per share, it is possible to lose money by investing in a money market fund.

### Mortgage-backed securities

Mortgage-backed securities (MBS) are a type of asset-backed security that is secured by a mortgage or collection (pool) of mortgages. The mortgages of MBS may be residential or commercial (CMBS). The structure of MBS may be known as “pass-through,” where the interest and principal payments from the borrower or homebuyer pass through to the MBS holder, or it may be more complex, made up of a pool of other MBS. Other types of MBS include CMO.

The total face value of MBS decreases over time, because the principal is not paid back as a single payment to the bond holder at maturity but is rather paid along with the interest in each periodic payment (monthly, quarterly, etc.). The nuance that makes residential MBS different from the average bond is uncertainty in the timing of principal cash flows. Because homeowners may repay their entire mortgage at any time (i.e., prepayment), an investor cannot be certain about the timing of the payoff of principal.

### Non-U.S. sovereign and regional government debt

Debt securities issued and guaranteed by a non-U.S. sovereign government, such as the Government of Canada, Kingdom of Sweden, Republic of Italy and Federal Republic of Germany; or non-U.S. regional government, such as the Province of Quebec or Province of Ontario.

### Option-adjusted spread

The true spread between the yield on a bond that is callable at the option of the issuer before its maturity and the yield on a U.S. Treasury security of the same duration that is not callable. The ability to retire a bond before maturity if interest rates fall is the option for which there must be an adjustment when comparing a callable bond with a non-callable bond. Option-adjusted spread (OAS) is a measurement tool for evaluating price differences between similar products with different embedded options. If a bond has embedded options, its OAS is the spread at which it presumably would be trading over a benchmark if it had no embedded optionality. More precisely, it is the instrument’s current spread over the benchmark minus that component of the spread that is attributable to the cost of the embedded options.

### Repurchase agreement

A repurchase agreement, or repo, is a contract for the sale of a security with a commitment by the seller to buy the same security back from the buyer at a specified price at a designated future date. The repo seller, often a broker/dealer, borrows money and provides collateral for the loan while the repo buyer, often a money market fund, lends money and accepts securities as collateral for the loan. While repo transactions are primarily overnight, they can be for any length of time.

In a tri-party repurchase agreement, a third party, the tri-party agent, acts as an intermediary between the repo buyer and seller. The tri-party agent is responsible for the administration of the transaction, including collateral allocation, marking to market and substitution of collateral.

In a repo transaction, the securities that serve as collateral are categorized as traditional/general collateral (GC) or non-traditional. Traditional/GC collateral is comprised of government securities; non-traditional collateral may include any other financial asset. For traditional repo transactions, money market funds “look through” the repo counterparty to the underlying collateral pool when measuring portfolio diversification. As a general rule, a money market fund must ensure that the fund’s maximum exposure to any single repo issuer does not exceed 25% for traditional repo transactions or 5% for non-traditional repo where “look through” is not applied.

In the Federal Reserve’s Overnight Reverse Repo Program (RRP), the Fed sells a security from its balance sheet to an eligible RRP counterparty with an agreement to repurchase that security at a future date. RRP has effectively helped set a floor (or minimum rate) for repo in the markets. The Fed facility has been well received, especially around month-ends and quarter-ends, when funding is most difficult. Certain 2a-7 money market funds are eligible to participate in the Fed program as counterparties. In its latest FAQ on MMF reform, the SEC declared that the Fed’s RRP program is considered a government security for diversification purposes.

### Rule 2a-7 (general summary, applicable to U.S. investors only)

Domestic money market mutual funds are stringently regulated by the U.S. Securities and Exchange Commission (SEC) pursuant to Rule 2a-7 under the Investment Company Act of 1940. Rule 2a-7 governs the credit quality, diversification, concentration and maturity of money market fund investments. Generally, the maximum maturity of individual securities held in the portfolio must be 397 days and the average dollar-weighted portfolio maturity of investments held in a money market fund cannot exceed 60 days. Additionally, the fund’s weighted average life (WAL) must not exceed 120 days. From a credit rating perspective, no more than 3% of assets can be invested in securities that do not fall within the first or second-highest rating tier. Funds must also undergo stress tests to verify their ability to maintain a stable NAV under adverse conditions.

Under changes to the rule that take effect in October 2016, government and retail money market funds may continue to maintain a constant \$1.00 net asset value, but institutional prime and municipal funds are required to transact at their market-based NAVs, rounded to four decimal places.

Retail funds are defined as funds that limit their beneficial owners to “natural persons.” Institutional funds are defined as non-retail funds. To qualify as a government money market fund, a fund must invest at least 99.5% of its total assets in cash, government securities, or traditional repurchase agreements.

U.S. regulations require that money market funds hold at least 30% of assets in weekly liquid assets (WLA). Weekly liquid assets consist of cash, Treasury securities of any maturity, certain other government securities that have a remaining maturity of 60 days or less, or securities that will mature or can be converted into cash within five business days. For all

taxable funds, at least 10% of assets are required to be held in cash, Treasury securities of any maturity, or securities that will mature or can be converted into cash within one business day.

### Liquidity fees and redemption gates

The board of trustees of a U.S. money market fund may impose a liquidity fee or temporarily suspend redemptions (impose a gate) if the fund’s weekly liquid assets fall below 30% of total assets—if the board determines that a fee or gate is in the fund’s best interests. Government funds are not required to be subject to the fee and gate provisions. If a money market fund’s level of weekly assets falls below 10% of total assets, its board is required to impose a liquidity fee of 1% on all redemptions, unless the board concludes that such a fee is not in the fund’s best interests or if it determines that a lower or higher fee (up to 2%) is more appropriate. A redemption gate can stay in place no longer than 10 business days, but it can be lifted earlier and it need not result in fund liquidation. A fund board cannot impose a gate for more than 10 business days in any 90-day period.

Visit the SEC website for complete information about Rule 2a-7. <http://secsearch.sec.gov/search?utf8=%E2%9C%93&affiliate=secsearch&query=rule+2a-7>

### Sharpe ratio

A ratio developed by Nobel laureate William F. Sharpe to measure risk-adjusted performance returns. Typically, the higher a portfolio’s Sharpe ratio, the better the returns have been relative to the amount of investment risk it has taken. The Sharpe ratio is calculated by subtracting the risk-free return—such as that of the 3-Month US Treasury bill—from the rate of return for a portfolio and dividing the result by the standard deviation of the portfolio returns.

$$\text{Sharpe ratio} = \frac{\bar{r}_p - r_f}{\sigma_p}$$

Where  $\bar{r}_p$  = expected portfolio return;  $r_f$  = risk free rate;  $\sigma_p$  = portfolio standard deviation

### Supranational debt obligations

Debt obligations or securities issued by an international agency-like organization that encompasses more than one

nation and is not associated with any one country transcending national boundaries, such as the World Bank, Asia Development Bank (ADB) or Export-Import Bank (EIB).

### Total return

The total return on a portfolio of investments takes into account not only the income received on the portfolio but also the capital appreciation/depreciation on the portfolio. Total return includes interest income and capital gains or losses (the increase or decrease in the value of a security), both realized and unrealized.

### Tracking error

The standard deviation of the annualized total return of the portfolio minus the annualized total return of the benchmark (i.e., standard deviation of the excess return over the benchmark). Tracking error quantifies the amount by which the performance of the portfolio differed from that of its index or benchmark.

$$\text{Tracking error} = \text{Standard deviation} \\ \text{(annualized total return}[p1, \dots, pn]) - \\ \text{(annualized total return}[b1, \dots, bn]).$$

Where: p = portfolio and b = benchmark

### Undertakings for the Collective Investment of Transferable Securities

Undertakings for the Collective Investment of Transferable Securities (UCITS) is a public limited company that coordinates the distribution and management of unit trusts among countries within the European Union (EU).

### U.S. agency debt obligations

Bonds, notes, debentures or other debt obligations or securities issued by any U.S. federal government agency, instrumentality, or government sponsored enterprise (GSE).

### U.S. Treasury obligations

U.S. Treasury bills, notes, bonds or Treasury Inflation Protected Securities (TIPS), or any other obligation or security issued by the U.S. Treasury.

### Weighted average life (WAL)

The time-weighted average of the expected principal repayments on a fixed-income security. Average life is computed by multiplying each principal repayment by the time of payment (months or years from the evaluation date), summing these products and dividing the sum by the total amount of principal repaid. Once calculated, WAL tells how long it will take to pay half of the outstanding principal. WAL is particularly relevant for amortizing assets. For amortizing securities, investors do not talk in terms of a bond's maturity because its principal is paid over time. This is because the stated maturity of such securities only identifies when the final principal payment must be made before that security is in default.

Under SEC Rule 2a-7 (applicable to U.S. investors only), the term WAL means that the legal final maturity of all securities, including floating rate notes, will be used to determine the weighted average maturity of the overall portfolio. The WAL limitation, therefore, restricts the extent to which a fund can invest in longer-term securities that may expose a fund to increase spread risk.

### Weighted average maturity (WAM)

The dollar-weighted average time remaining until maturity on a fixed-income securities portfolio. WAM of a portfolio is the weighted average of the remaining terms to maturity of the underlying securities, using the market value of each of the securities as of the date calculated as the weighting factor. Typical market convention allows for the calculation methodology to shorten the maturity of an adjustable-rate security by reference to its interest rate reset dates.

### Yield to maturity

Also known as book yield, the yield to maturity (YTM) is the percentage rate of return earned on a bond, note or other fixed-income security if it is purchased and held to its maturity date. The calculation for YTM is based on the coupon rate, length of time to maturity and purchase price. It assumes that the coupon interest paid over the life of the bond will be reinvested at the same rate.

## SECTION C: KEY QUESTIONS TO ASK BEFORE INVESTING IN A MONEY MARKET FUND

### ASSET MANAGEMENT FIRM SPONSOR

- What are the firm's total assets under management?
- Does the MMF business reside in a diversified fixed income and asset management business?
- What are the firm's total assets under management in money market funds?
- Have you evaluated the strength of the MMF sponsor?
- How long has the firm been in the money market fund business?
- What are the firm's total money market fund assets by geography?
- What is the market share for the firm's money market fund business? And, how has it changed in the past two years (U.S. vs. international)?
- Does the asset manager have depth and breadth of products across the liquidity spectrum?
- Is the money market fund complex global or only domestic?
- What is the scope of your overall relationship with the MMF sponsor?
- Has the fund sponsor garnered assets during times of market instability?
- How diverse is the client base of the fund sponsor?

### MONEY MARKET FUND

Obtain and review the investment parameters for individual funds, including:

#### Ratings and regulation

- Who acts as the fund's regulator (e.g., Commission de Surveillance du Secteur Financier (CSSF), Central Bank of Ireland, SEC)?
- Is the fund rated? If so, by which agencies and what is required to obtain a rating?
- If the fund is domiciled in the U.S., is it regulated by SEC Rule 2a-7; if the fund is domiciled in the EU, is it compliant with UCITS, EMSA and/or IMMFA?

### Fund facts

- What is the inception date of the fund?
- What is the current size of the fund? Provide history for the past two years.
- What is the fund's underlying investment diversification?
- What is the current WAM? Provide history for the past two years.
- What is the current 7-day SEC yield or comparable yield for offshore funds? Provide history for the past year.
- How does the fund operate in a negative-yielding environment?
- Has the fund ever restricted withdrawals?
- Who is the portfolio manager or the portfolio management team for the fund? How has this team evolved in the past two to five years? Obtain biographies.
- What is the fund's cutoff time for transactions?
- Who is the fund's custodian and transfer agent?
- How, and with what frequency, are redemption proceeds paid out by the fund?

### Fund holdings and reporting

- How are client statements provided (electronically or paper)?
- Is daily access to transactions/balances available on the Web or electronically?
- Does the fund provide a holdings report? How often is the holdings report updated? What level of detail is provided in the report? Can reports be requested on an ad hoc basis?
- What day of the month are statements available?

### Administration

- Does the fund provide the ability to link demand deposit accounts (DDA) to investment accounts?
- Is there a sweep option available?

### CREDIT AND RISK MANAGEMENT

#### Credit team

- How is the credit team structured? Is the credit team sector specific (e.g., each analyst covers a different sector such as asset backed commercial paper (ABCP), financials, utilities, etc.)?

- What is the experience level of the credit team (average years in the industry, average years with the asset manager)?
- Is the credit team a separate team from the portfolio managers? Can portfolio managers override the credit team's recommendations or approved issuer list?
- How large is the credit team dedicated to the money market fund business? Do the credit analysts serve both short-term and long-term fixed-income portfolios? How has the team evolved in the past two to five years?
- What level of access do clients have to portfolio managers and credit analysts?

### Credit process

- Does the fund manager employ a proprietary credit evaluation process? If so, how does the fund manager assign internal ratings?
- Does the fund manager use approved issuer lists? How is the approved issuer list developed? How often is the approved issuer list reviewed or changed? Does each name on the approved issuer list have a specific tenor assigned to it?
- What is the process to add or remove a name from the approved issuer list? How has the approved issuer list changed within the past 12 to 24 months?
- How often are credits monitored or reviewed? What is the process for changing a credit rating or limit?
- What additional limits are placed on individual issuers, sectors or asset classes?

### Monitoring risk

- How does the firm evaluate counterparty risk? For example, total exposure to a particular financial name could include exposure to: time deposits, commercial paper, corporate bonds, repurchase agreements, liquidity provider for another security.
- What systems does the firm have in place to monitor exposures?
- Has the fund manager/sponsor ever needed to purchase a security out of any money market fund they have managed? If yes, what was the security? When did the transaction take place? How large was the holding? Why was the decision made to do so?

- What are the internal risk and compliance review procedures of the funds and business?
- Has any fund ever had a security downgraded below 2a-7/ UCITS/ESMA/IMMFA compliant rules? Is the fund currently holding any defaulted or downgraded securities? If yes, what security? When did the downgrade take place? How large was the holding?

### Repurchase agreements

- Is the fund allowed to do repos?
- Who are the repo counterparties?
- What underlying collateral is permitted for the repo?
- How has the list of approved repo counterparties changed within the past 12 months?
- What are the concentration limits?
- What is the tenor of repo transactions?
- What is the collateral requirement for repo (e.g., 102%)?
- Does this collateral requirement differ by type (i.e., traditional, nontraditional)?

### Liquidity risk

- Does the fund have an internal policy regarding shareholder concentration limits? If yes, what is the policy?
- What percent of total assets is the current daily overnight position of the fund? Provide history for the past two years.
- What is the overall maturity distribution of the securities held in the fund?
- Has the fund manager/sponsor ever had to inject liquidity into any money market fund they have managed? If yes, when did the transaction take place? How much was injected? Why was the decision made to do so?
- Is the fund's client base diversified? Provide a breakdown of client type (e.g., individual, retail, corporate, financial intermediary, institutional, government not-for-profit).
- Provide top-10 client listing with details on industry and type of client along with percentage of the fund's asset size.
- Are there internal targets for overnight cash and maturities within seven days and one month?

## SECTION D: RATING AGENCY AND REGULATION GUIDELINES FOR AAA-RATED FUNDS

### RATING AGENCIES' GUIDELINES FOR AAA-RATED FUNDS

Guidelines	S&P AAAM rating																				
Max WAM <sup>1</sup>	60 days																				
Max WAL <sup>2</sup>	90 days (120 days for Treasury/Government only funds)																				
Max asset maturity	Fixed-rate investment 397 days Government sovereign FRN 762 days, rated AA- and above																				
Min asset credit rating	Min overall A-1 with exceptions for repo Min A-1+ or A-1 (maturing <5 business days) 50% Max A-1 (maturing >5 business days) 50%																				
Diversification/concentration	Max per issuer (including issuer guarantee) 5% with exceptions for repo government and sovereign securities																				
Limited liquidity/illiquidity	Max 10%																				
Repo (lend cash)	<table border="1"> <thead> <tr> <th>Counterparty</th> <th>1 day</th> <th>2 - 5 days</th> <th>&gt;5 days</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>A-1+</td> <td>50%</td> <td>10%</td> <td>5%</td> <td>50%</td> </tr> <tr> <td>A-1</td> <td>25%</td> <td>10%</td> <td>5%</td> <td>25%</td> </tr> <tr> <td>A-2</td> <td>5%</td> <td>0%</td> <td>0%</td> <td>10%</td> </tr> </tbody> </table>	Counterparty	1 day	2 - 5 days	>5 days	Total	A-1+	50%	10%	5%	50%	A-1	25%	10%	5%	25%	A-2	5%	0%	0%	10%
Counterparty	1 day	2 - 5 days	>5 days	Total																	
A-1+	50%	10%	5%	50%																	
A-1	25%	10%	5%	25%																	
A-2	5%	0%	0%	10%																	

### RATING AGENCIES' GUIDELINES FOR AAA-RATED FUNDS

Moody's Aaa-mf rating					
	Weight	Score			
		1	2	3	4
<b>ASSET PROFILE:</b>	20%				
WAM		<60 days	<90 days	<120 days	≥120 days
Top-3 obligor concentration / Fund AUM		<15%	<30%	<50%	≥50%
<b>FUND LIQUIDITY:</b>	40%				
Overnight liquidity / Largest 3 investors		>90%	>75%	>25%	≤25%
Overnight liquidity / Fund AUM		>20%	>10%	>5%	≤5%
<b>FUND EXPOSURE TO MARKET RISK:</b>					
NAV stress	40%	>0.995	>0.990	>0.985	≤0.985

Portfolio stability score	Credit score					
	Aaa	Aa	A	Baa	Ba	
Scorecard	1	2	3	4	5	
1.0 - 1.7	1	Aaa-mf	Aaa-mf	Aa-mf	A-mf	Baa-mf
1.8 - 2.5	2	Aaa-mf	Aa-mf	A-mf	Baa-mf	B-mf
2.6 - 3.5	3	Aa-mf	A-mf	Baa-mf	B-mf	C-mf
3.6 - 4.0	4	A-mf	Baa-mf	B-mf	C-mf	C-mf

<sup>1</sup> WAM = Weighted Average Maturity

<sup>2</sup> WAL = Weighted Average Life

**RATING AGENCIES' GUIDELINES FOR AAA-RATED FUNDS**

Guidelines	Fitch AAmmf rating
Max WAM <sup>1</sup>	60 days
Max WAL <sup>2</sup>	120 days
Max asset maturity	Fixed-rate investment 397 days Government sovereign FRN 762 days, rated AA or better
Min asset credit rating	F1+ or F1; some exceptions apply
Diversification/concentration	Max 10% for F1+ or F1 issuers Max exposure of maturities greater than 7 days is 5% for F1+ or F1 issuers Max direct and indirect exposure to single institution 15%
Liquidity	Overnight min 10% Minimum of 30% maturing in <=7 days Max illiquidity 10%
Repo (lend cash)	Max exposure to repo counterparty 25%

} With exceptions for repo government and sovereign securities

**REGULATION GUIDELINES FOR MONEY MARKET OR LIQUIDITY FUNDS**

Guidelines	Rule 2a-7	UCITS <sup>4</sup>	IMMFA <sup>5</sup>	ESMA <sup>6</sup>
Max WAM	60 days		60 days	60 days
Max WAL	120 days		120 days	120 days
Max asset maturity	Fixed 397 days Govt FRN rate of interest must readjust within 397 days Second-tier securities 45 days		Fixed 397 days	Fixed 397 days
Min asset credit rating	Tier I <sup>3</sup> : AMB-1, R-1, F1, P-1/MIG1, A-1/SP-1 Tier II <sup>3</sup> : AMO-1, R-1, F2 P-2/MIG2, A-2/SP-2		Subject to approval under the credit and risk policy of the fund	Subject to management's own documented credit assessment
Diversification/concentration	Issuer diversification: Max 5% with exceptions for repo government and sovereign securities Tier II Issuer concentration: Max 0.5% Aggregate Tier II: Max 3%	5/10/40 Rule Deposits - Max 20% per counterparty	Max 5% per "family" excluding repo, ABCP government and sovereign securities	
Repo (lend cash)	Traditional repo considered to be that of the underlying security if fully collateralized and Board has fully evaluated the seller's credit worthiness	Repo - Max 20% per counterparty	Repo whose collateral consists of High Quality Government Securities is considered that of the underlying security	
Illiquid securities	Percentage limit: Max 5%	Percentage limit: Max 10%	Percentage limit: Max 5%	

<sup>1</sup> WAM = Weighted Average Maturity

<sup>2</sup> WAL = Weighted Average Life

<sup>3</sup> Subject to regulatory change October 2016.

<sup>4</sup> Undertakings for the Collective Investment of Transferable Securities (UCITS) is a public limited company that coordinates the distribution and management of unit trusts among countries within the European Union.

<sup>5</sup> Institutional Money Market Funds Association is the trade association representing AAA-rated constant net asset value (CNAV) money market funds domiciled in Europe.

<sup>6</sup> European Securities and Markets Authority is the independent financial supervisory institution of the European Union.

## SECTION E: MONEY MARKET MUTUAL FUND RATINGS

### MONEY MARKET MUTUAL FUND RATINGS

#### **S&P: AAAm**

A fund rated AAAm has extremely strong capacity to maintain principal stability and to limit exposure to principal losses due to credit risk. AAAm is the highest principal stability fund rating assigned by Standard & Poor's.

#### **Moody's: Aaa-mf**

Money market funds with this rating rated Aaa-mf have a very strong ability to meet the dual objectives of providing liquidity and preserving capital.

#### **Fitch: AAmmf**

Money market funds with this rating have an extremely strong capacity to achieve the fund's investment objective of preserving principal and providing shareholder liquidity through limiting credit, market, and liquidity risk.

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## LIQUIDITY INSIGHTS

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