



Society of Actuaries in Ireland

Perspectives on Cash/Liquidity Management in today's low yield environment

David Furey, Portfolio Strategist , SSgA Global Cash

05.11.13

Agenda

- 1 **Major Challenges Affecting Cash Investors Globally**
- 2 **Understanding the Investment Objectives of Cash Investors**
- 3 **Money Market Funds – Features and Regulations**
- 4 **Current Investment Landscape and Challenges for Cash Investors**
- 5 **Summary**

Major Challenges Affecting Cash Investors Globally

Ultra-low yields are forcing investors to focus more closely on their approach to cash management

Deteriorating credit universe and elevated credit risks a major concern for risk-averse cash investors

Low Yields

Regulation

Credit Risk

Transparency

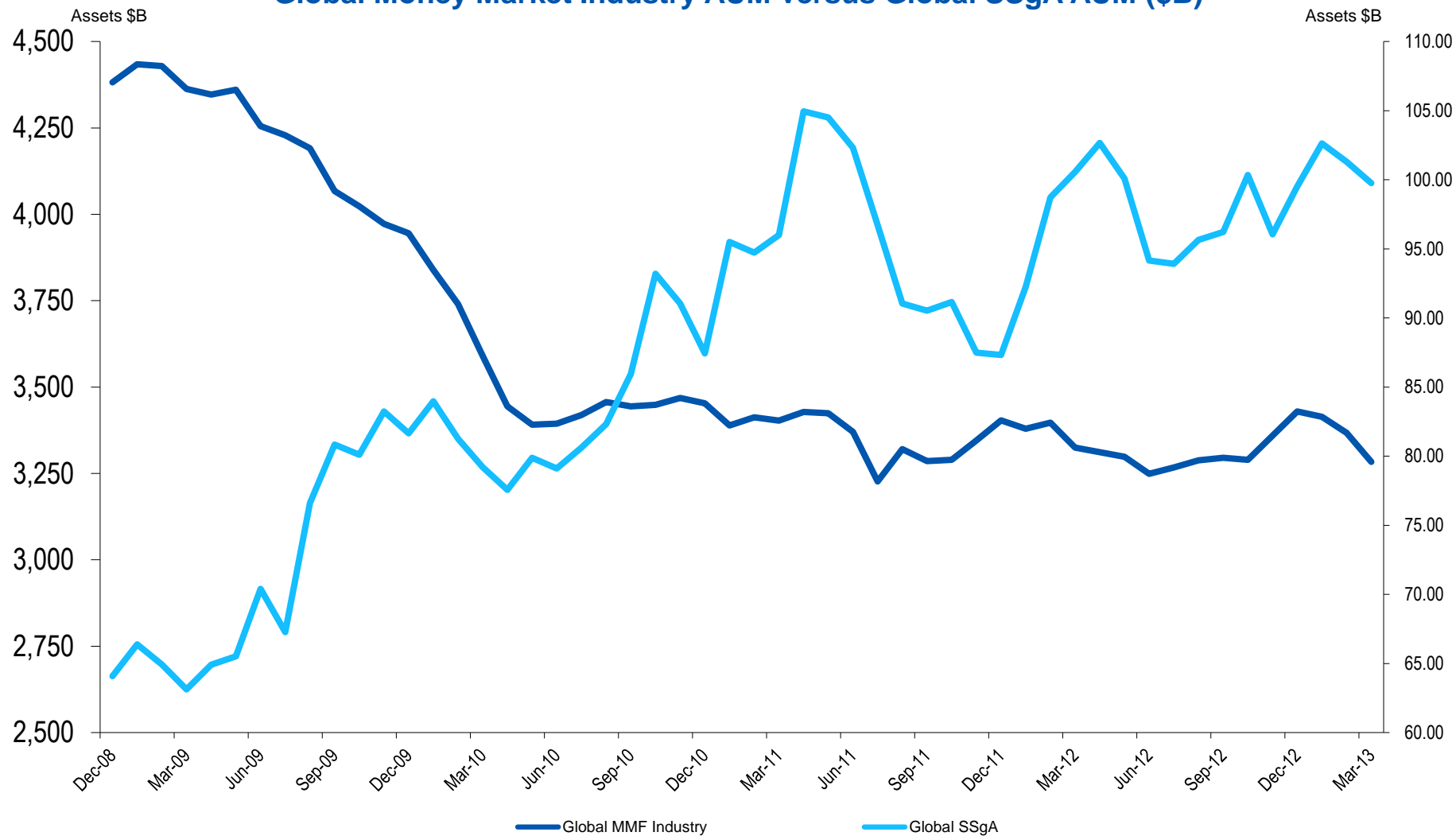
Regulation is threatening the use of the amortised cost approach in MMF valuation.

Forced switch from Constant-NAV to Variable NAV likely

Investors seeking look-through to fund holdings, strategy updates and access to PMs/Analysts

Assets in Money Market Funds have stabilized

Global Money Market Industry AUM versus Global SSgA AUM (\$B)



The Investment Objectives of Cash Investors

Investment Objectives of Cash Investors

SAFETY

Principal Preservation

Risk Appetite

Horizon

LIQUIDITY

Investor's Perspective

Maturity Profile

Market Liquidity

YIELD

Yield from Risk

3rd Objective

Competitive Return

Objectives must be understood and defined properly

Principal Preservation: Must identify and eliminate risks early

Figure 2: SSgA Credit Research Identifies and Eliminates Weak Issuers Early



Source: SSgA, Bloomberg, Moody's

Past performance is not a guarantee of future results.



Concept of Risk is very different for cash investors

Principal Preservation: Staged exit strategy

Figure 3: The Time-line of Washington Mutual Credit Deterioration



Source: SSgA, Bloomberg, Moody's

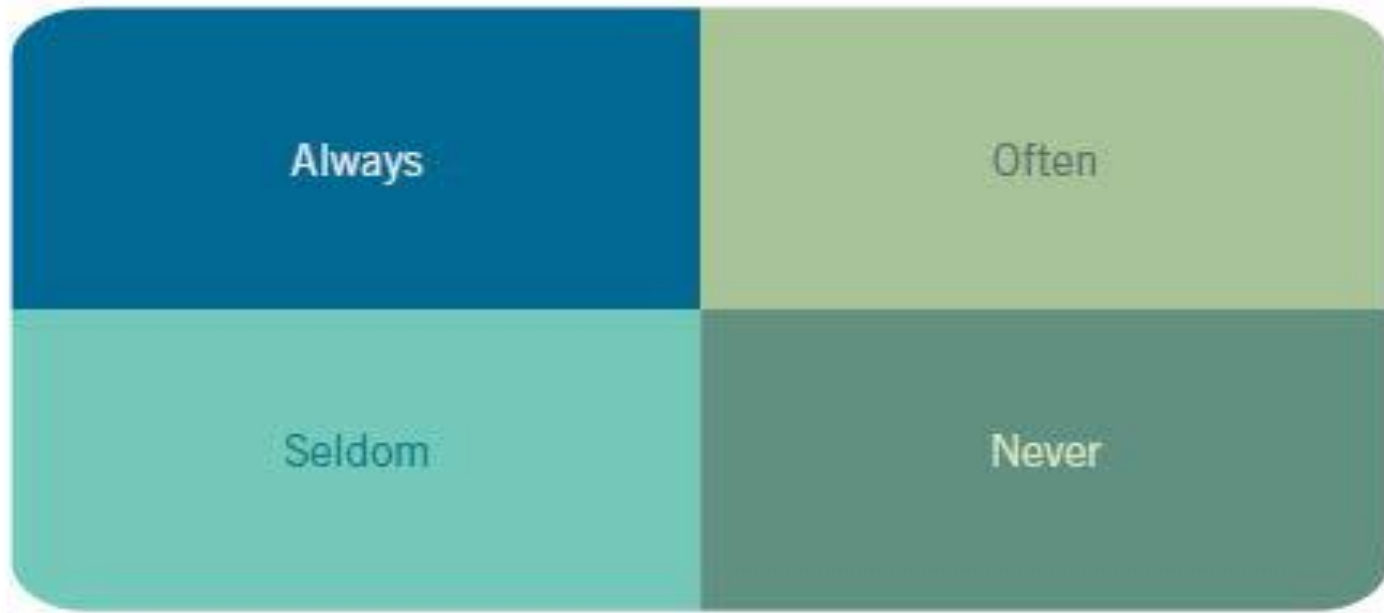
Past performance is not a guarantee of future results.

SSgA's Two Dimensional Approach to Credit Approval

Figure 2: SSgA's Two-Dimensional Approach to Issuer Approval

Credit Quality

+ High



- Low

Short

Maturity

Long

Investment Objectives of Cash Investors

Objectives

1. **SAFETY:** (Principal Preservation)

2. **LIQUIDITY:** (Maturity and Market)

3. **YIELD:** (Competitive Return)

SSgA Approach

- Inherently conservative culture at SSgA
- SSgA Credit Research — Approved Issuers list
- Guidelines: IMMFA*/Rating Agencies
- Primary liquidity source from maturity profile
- Secondary source from strong credits/holdings
- Client engagement to understand requirements
- Understand that yield comes from risk exposure
- Yield only sought once other objectives satisfied
- Construct yield prudently, aim for stable sources

* Institutional Money Market Funds Association.

Investment Objectives of Cash Investors

Priority of Investment Objectives*

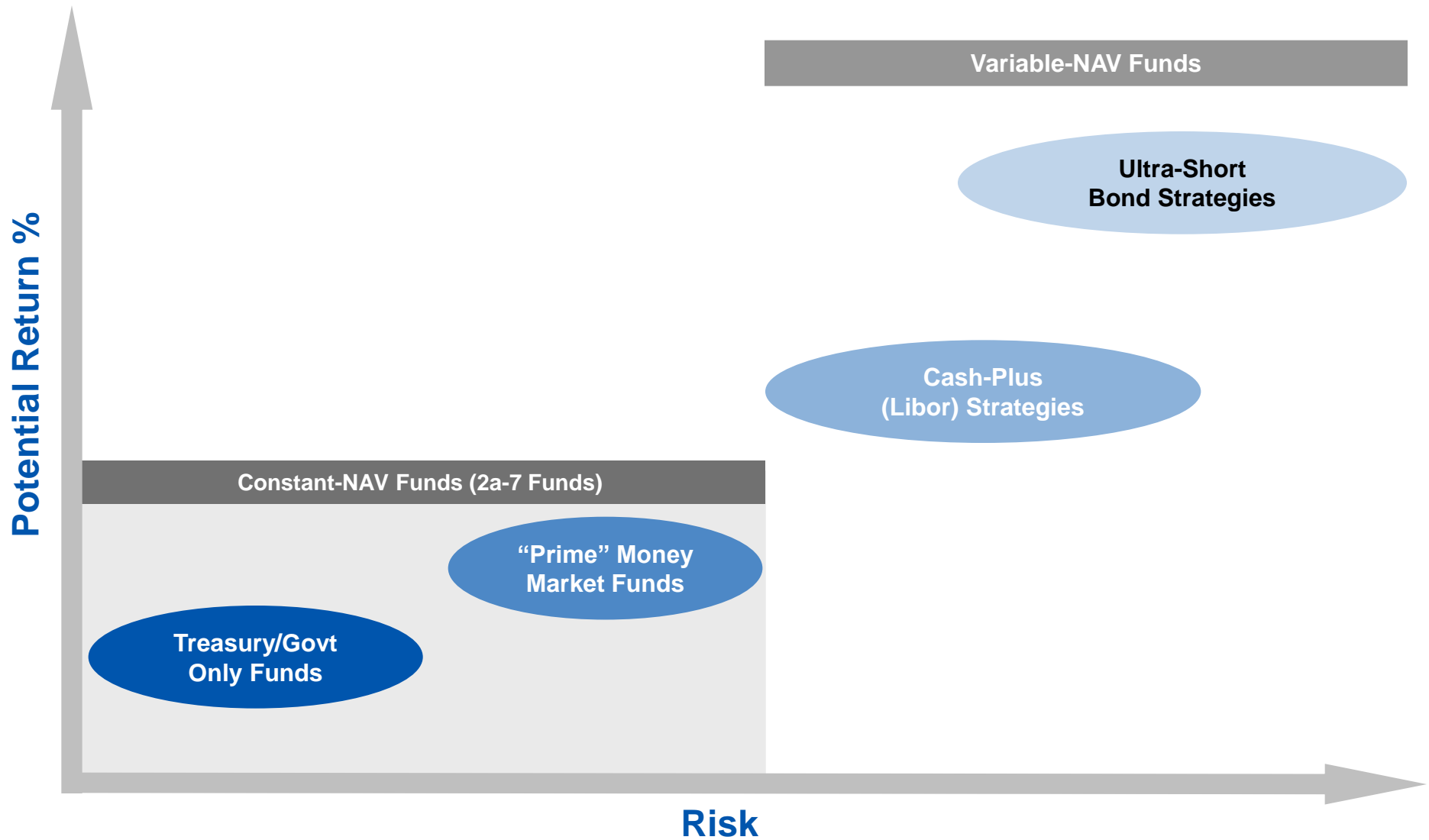
Types of Cash Investors	Priority of Cash Investment Objectives*		
	Safety	Liquidity	Yield
Sovereign Wealth Funds	1	2	3
Pension Funds	2	3	1
Futures Exchange	2	1	3
Corporations	1	2	3
Insurance Companies	2	3	1
Hedge Funds	2	1	3
Individuals	1	3	2
Liability Driven Investors	1	2	3



Different priority may require different strategy

* For illustrative purposes only.

Cash Investment Spectrum



Investment Objectives of Cash Investors

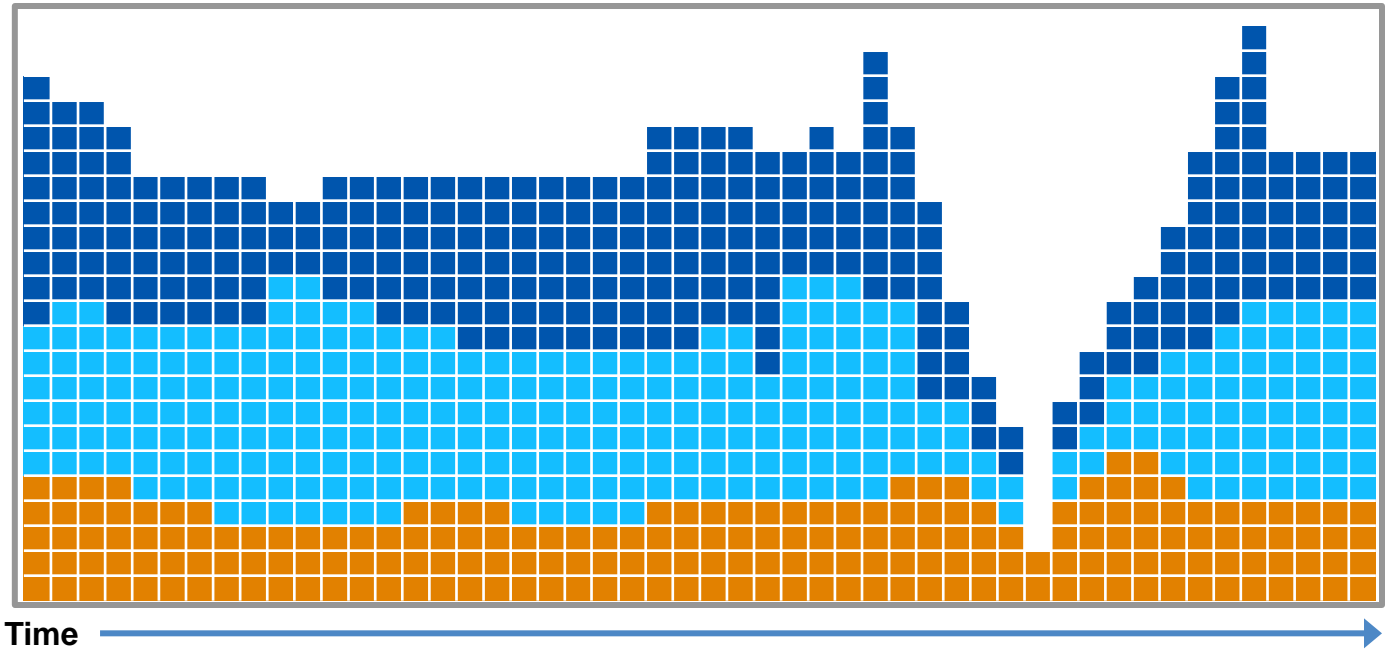
Cash Investment Strategies

Type of Cash	Client Needs	Cash Flow Volatility	WAM	Products
Overnight and Liquid (Operating Cash)	Working capital to fund daily and short-term operations	High (+/- 100%)	1–60	Money Market Funds
Short-term Liquidity (Core Cash)	More stable funds that will likely not be targeted within next 3 to 6 months	Medium (+/- 25%)	90–180	Cash-Plus Funds
Non-operating Core Cash (Strategic Cash)	Strategic cash that will not be required for 6 months or longer	Stable (+/- 0%)	180–240	Ultra-short Bond Funds

 ***Liquidity segmentation required to optimise results***

Liquidity segmentation required to optimise results

Sample Cash Cycle



Types of Cash	Investment Objectives	Possible Strategy Options
Liquidity	<ul style="list-style-type: none"> Daily liquidity and preservation of capital 	Money Market Fund
Core Cash	<ul style="list-style-type: none"> Periodic liquidity and preservation of capital 	Cash Plus
Strategic Cash	<ul style="list-style-type: none"> Extended horizon and no liquidity need identified 	Short Duration

Apple's Cash Pile

<HELP> for explanation.

Click numbers for transparency

AAPL US Equity 96 Settings 97 Actions 98 Output 99 Feedback Financial Analysis

Apple Inc Periods 10 Quarters Currency USD

1) Key Stats 2) I/S 3) B/S 4) C/F 5) Ratios 6) Segments 7) Addl 8) ESG 9) Custom

11) Standardized 12) As Reported 13) Common Size 14) Fair Value Analysis 15) Statement Chart

In Millions (except Per Share)	Q4 2013	Q3 2013	Q2 2013	Q1 2013	Q4 2012	Q3 2012
Period ending	2013-09-28	2013-06-29	2013-03-30	2012-12-29	2012-09-29	2012-06-30
Assets						
+ Cash & Near Cash Items	14,259.00	11,248.00	12,053.00	16,154.00	10,746.00	7,945.00
+ Short-Term Investments	26,287.00	31,358.00	27,084.00	23,666.00	18,383.00	19,709.00
+ Accounts & Notes Receivable	13,102.00	8,839.00	7,084.00	11,598.00	10,930.00	7,657.00
+ Inventories	1,764.00	1,697.00	1,245.00	1,455.00	791.00	1,122.00
+ Other Current Assets	17,874.00	15,077.00	15,871.00	19,475.00	16,803.00	15,510.00
Total Current Assets	73,286.00	68,219.00	63,337.00	72,348.00	57,653.00	51,943.00
+ LT Investments & LT Receivables	106,215.00	104,014.00	105,550.00	97,292.00	92,122.00	89,567.00
+ Net Fixed Assets	16,597.00	16,327.00	15,026.00	15,422.00	15,452.00	10,487.00
+ Gross Fixed Assets	28,519.00	26,889.00	24,194.00	23,214.00	21,887.00	16,205.00
- Accumulated Depreciation	11,922.00	10,562.00	9,168.00	7,792.00	6,435.00	5,718.00
+ Other Long-Term Assets	10,902.00	11,296.00	10,830.00	11,026.00	10,837.00	10,899.00
Total Long-Term Assets	133,714.00	131,637.00	131,406.00	123,740.00	118,411.00	110,953.00
Total Assets	207,000.00	199,856.00	194,743.00	196,088.00	176,064.00	162,896.00
Liabilities & Shareholders' Equity						
+ Accounts Payable	22,367.00	15,516.00	14,912.00	26,398.00	21,175.00	16,808.00
+ Short-Term Borrowings	0.00	0.00	0.00	0.00	0.00	0.00
+ Other Short-Term Liabilities	21,291.00	20,803.00	20,596.00	20,481.00	17,367.00	16,252.00
Total Current Liabilities	43,658.00	36,319.00	35,508.00	46,879.00	38,542.00	33,060.00
+ Long-Term Borrowings	16,960.00	16,958.00	0.00	0.00	0.00	0.00

Navigation buttons: << < > >> Zoom 100%

Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 9204 1210 Hong Kong 852 2977 6000
 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2013 Bloomberg Finance L.P.
 SN 347440 GMT GMT+0:00 H716-1356-1 04-Nov-2013 11:47:29

Cash Definition Has Expanded

Investment Manager View:



Corporate Treasurer View:



Investment Options

Your Perspective

Cash is not return seeking

Accept Low Yields

Investment Options

Money Market Funds

Segregate cash strategy

Segment Cash according to liquidity needs

Money Market Funds and Cash Plus Fund

Optimize cash strategy

Increase Risk: Liquidity, Credit and Maturity

Short Maturity Strategies Via Separately Managed Account

Illustrative Example of Cash Segmentation

Investment	Yield	Example Weights
EUR Liquidity Fund	0.11%	20%
Euribor Plus Fund	0.45%	30%
Short Maturity Strategy	0.75%	50%
Blended Yield	0.53%	100%

Money Market Funds: Features and Regulations

Money Market Funds — Key Features

Liquidity

Same day funds access

Stability

Constant NAV

Quality

Principal Return Focus
Rating Agencies

Regulation

SEC (2a-7), IMMFA, ESMA

Diversification

By issuer and investor

Disclosure

Detailed fund holdings
provided frequently

Convenience

Access via web sites,
portals, telephone

Multiple advantages and attractions of Money Market Funds

Cash Funds versus Bank Deposits

	Money Market Fund	Time Deposits
Counterparty Risk	Diversified across a number of issuers	Exposure to one issuer only
Liquidity	Daily access with same day settlement	Non-transferable investment/locked in for a period of time
Rating	Fund as a whole rated AAA based on maturity and credit profile	Rating of bank will likely be lower suggesting higher probability of default
Investment Function	Outsourced to specialist investment manager (portfolio management and credit research)	Counterparty research would need to be done in-house (often purely ratings agency based)

Drivers of Change in Money Fund Management

Regulation

- ✓ Enhanced guidelines
- ✓ Reporting requirements
- ✓ Stress testing

Client Demands

- ✓ Increased disclosure
- ✓ Improved transparency
- ✓ Access to portfolio managers /credit analysts

Impact to Fund Providers

- ✓ Increased liquidity
- ✓ Lower credit risk
- ✓ Reduction in permitted investments
- ✓ PMs and credit analysts on client calls
- ✓ Frequent, detailed holdings disclosure

A more robust product to deliver on investment objectives

Money Market Funds — SEC Rule 2a-7 Enhancements : Phase 1

Enhancements to Rule 2a-7, adopted in February 2010, effective May 2010

Fund Controls

Credit Quality	Reduced fund exposure limit for second tier (A-2/P-2) securities Reduced maturity limit for second tier (A-2/P-2) securities to 45 days
Diversification	Tighter issuer limits Tighter collateral rules on Repo
Liquidity	Min 10% in Daily Liquid Assets* Min 30% in Weekly Liquid Assets^ Reduced permitted exposure for “illiquid” securities to 5%
Maturity	Reduced WAM from 90 days to 60 days WAL limit of 120 days introduced Reduced permitted exposure for “illiquid” securities to 5%

Manager Controls

Transparency	Monthly disclosure of Fund holding on manager website Monthly disclosure of Fund holdings and additional information (Shadow NAV) to SEC
Risk Management	Portfolio Stress Testing required in fund’s policies and procedures
Board Powers	Policies and Procedures in place to suspend redemptions temporarily

* Daily liquid assets include cash, US Treasury securities, and securities readily convertible to cash within one business day.

^ Weekly liquid assets include daily liquid assets (except convertible to cash within five business days rather than one) as well as US government agency discount notes with remaining maturities of 60 days or less.

US Regulatory Reform

Alternative 1: Floating NAV

- Prime institutional money market funds would be required to transact at a floating NAV, not at a \$1.00 stable share price

Alternative 2: Liquidity Fees and Redemption Gates

- Money market funds would continue to transact at a stable share price, but would be able to use liquidity fees and redemption gates in times of stress

Important Points to Note:

- The two alternatives are being considered by themselves or can be adopted in some form of combination
- The proposal also includes additional disclosure and investment guideline requirements designed to increase safety and transparency in the portfolios
- The SEC's release of the proposal for public comment is only the beginning of what has historically been a long rulemaking process. After the 90 day comment period, the SEC will further deliberate on the submitted comments and vote a second time if, in fact, they will adopt the new rule. Once the new rule is adopted, there is typically an extensive implementation period (18–24 months) for fund providers to enact the changes.

EMEA Regulatory Reform



3% Capital Buffer for MMFs using amortised cost accounting, other MMFs are prohibited from receiving external sponsor support

- This level of capital is not viable for any MMF provider and will not alone address systematic concerns around 'runs' in MMFs



Investments: Curtailment in the use of reverse repo, ABCP excluded, government securities not included in liquidity calculations

- MMF guideline changes already in place sufficient — further guideline restrictions will not be of any benefit



MMFs are prevented from soliciting or financing an external credit rating

- A sudden withdrawal of ratings will cause difficulty to investors



Six month transition period

- Not sufficient time to execute anticipated changes

Money Market Funds — Ratings Agencies

Summary of Ratings Agency rules governing Triple-A Money Market Funds

Maturity Limits	S&P	Moody's	Fitch
Portfolio Max — WAM*	60	60	60
Portfolio Max — WAL^	90–120	60–90	120
Security Max (non-sovereign)	397		397
Security Max (sovereign)	762		730
Liquidity Constraints			
Overnight maturities and other eligible assets		20%	10%
Seven-day maturities and other eligible assets			25%
Overnight Investments to Top 3 Investors		90%	
Max in non-Liquid/illiquid investments	10%		
Diversification			
Max per Issuer rated 'A-1+' or 'F1+'	10%		10%
Max per Issuer rated A-1 or P-1 or F1	5%	5%	5%
Max per Sovereign Issuer rated 'AA-' or better	100%		
Max per Sovereign Issuer rated 'A+' < 1week	10%		
Max per 'A-1' rated Bank for overnight deposit/cash	10%		
Portfolio Credit Quality			
Min 'A-1+' as well as 'A-1' investments < 5days	50%		
Max A-1 investments > 5 days	50%		
Min F1+ or F1			100%
A-2 or F-2 rated issuers	0%		0%
NAV Stress Testing and Shadow NAV			
Tolerance to withstand defined stress tests	+/- 0.25%	+/- 0.25%	

* WAM — Weighted Average Maturity: To next coupon reset date for FRNs.

^ WAL — Weighted Average Life: To final maturity.

Money Market Instruments

Money Market Instruments — Types and Features

Instrument	Short Name	Seniority	Liquidity	Coupon Features
Treasury Bills	Bills	Government	Extremely High	Discount Notes — Zero Coupons
Bank Deposits	Depos	Senior Unsecured	Non-Tradable	Coupon bearing (Fixed)
Commercial Paper	CP	Senior Unsecured	High	Discount Notes — Zero Coupons
Certificates of Deposits	CDs	Senior Unsecured	High	Coupon bearing (Fixed, Floating or Zero)
Repurchase Agreements	Repo	Secured by Collateral	Non-Tradable	Coupon bearing, set rate
Floating Rate Notes	FRNs	Senior Unsecured	Medium/High	Floating Coupon, typical quarterly resets to Libor
Corporate and Bank Notes	Bonds	Senior Unsecured	Medium/High	Fixed Coupon
Asset Backed Securities	ABS	Secured by Collateral	Varied	Fixed and Floating
Asset-Backed Commercial Paper	ABCP	Secured by Collateral	High	Discount Notes — Zero Coupons

Overview

- A Repurchase Agreement (Repo) is basically a secured deposit
- Used extensively by investment banks to convert securities inventory into cash
- The other side of this Trade is known as a Reverse Repo: (deposit cash, receive securities)
- Many types of collateral (security types) are accepted and traded
- Lower credit ratings of investment banks necessitates secured approach to their funding

Repurchase Agreements — Key Features

Participants

- Central Banks — as lenders of last/(first) resort
- Investment banks, Leveraged investors
- Real Money Managers, Money Market Funds

Repo Type

- Bilateral
- Tri-party
- Overnight

Maturity

- Term
- Open

Collateral

- AAA Sovereigns to BB Corporates
- Equities

Margin (Haircut)

- Proportionate to the risk of collateral used

Current Investment Landscape and Challenges for Cash Investors

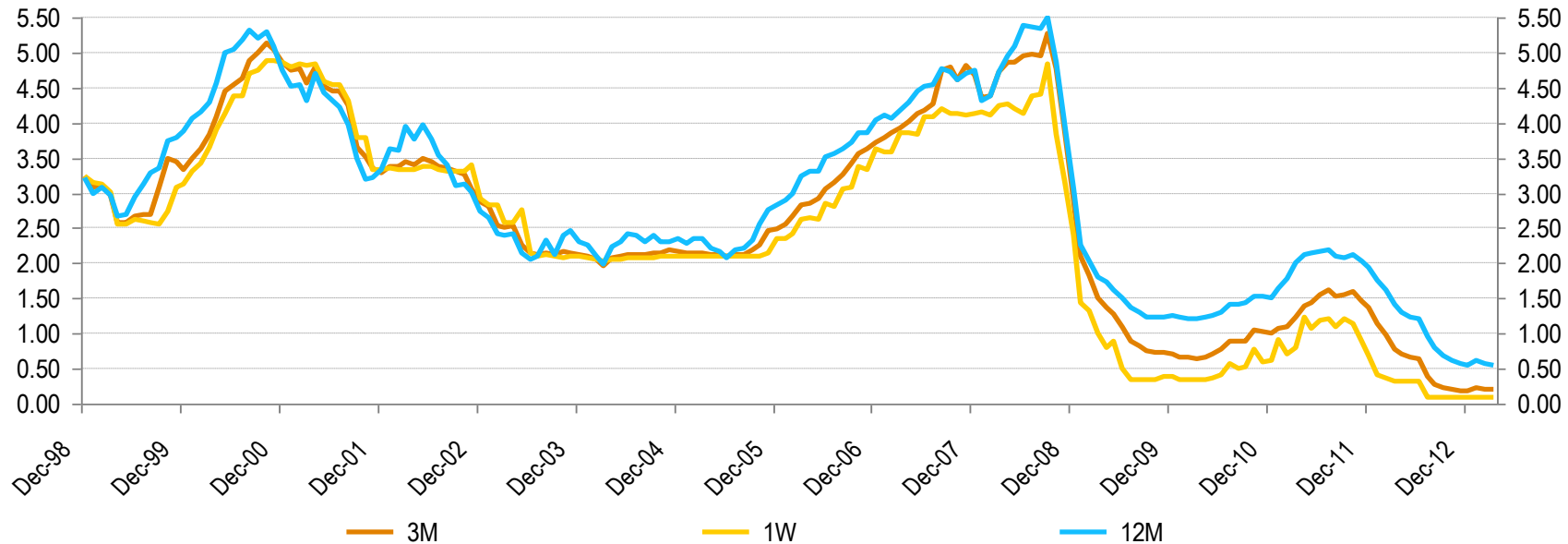
Key Developments

Policy Initiative	Actions taken	Market impact	Consequences for Cash Investors
LTRO Long-Term Refinancing Operations	Unlimited 3-year funding for Eurozone banks	<ul style="list-style-type: none"> • Eliminate funding pressures for Eurozone banks • Buy time to deleverage slowly • Excess market liquidity 	<ul style="list-style-type: none"> • Distorted cash rates • Lower funding levels • Reduce/postpone default risk
OMT Outright Monetary Transactions	Conditional support for Sovereign bonds	Credible backstop to <ul style="list-style-type: none"> • Reduce tail risks • Prevent speculative attacks • Stabilize bond markets 	<ul style="list-style-type: none"> • Reduces Sovereign — Bank linkage • Improved sentiment • Selective peripheral funding
Greece	Debt restructuring PSI* — 70% loss OSI* — maturity extensions and rate reductions	<ul style="list-style-type: none"> • Remove Greece as headline risk • Remove Greek refinance risk • Provide longer adjustment period 	<ul style="list-style-type: none"> • Secondary effects eliminated

Decisive ECB actions eventually regain control and buy time

* PSI: Private Sector Involvement
 * OSI: Official Sector Involvement

Ultra-low rate environment in EUR



- New and prolonged period of ultra-low rates for EUR cash investors
- Low rates accompanied by higher risks elsewhere; credit, political, sovereign etc
- Challenging environment for risk-averse investors

Source: SSgA, Bloomberg as at March 2013

* EONIA: Effective overnight index average

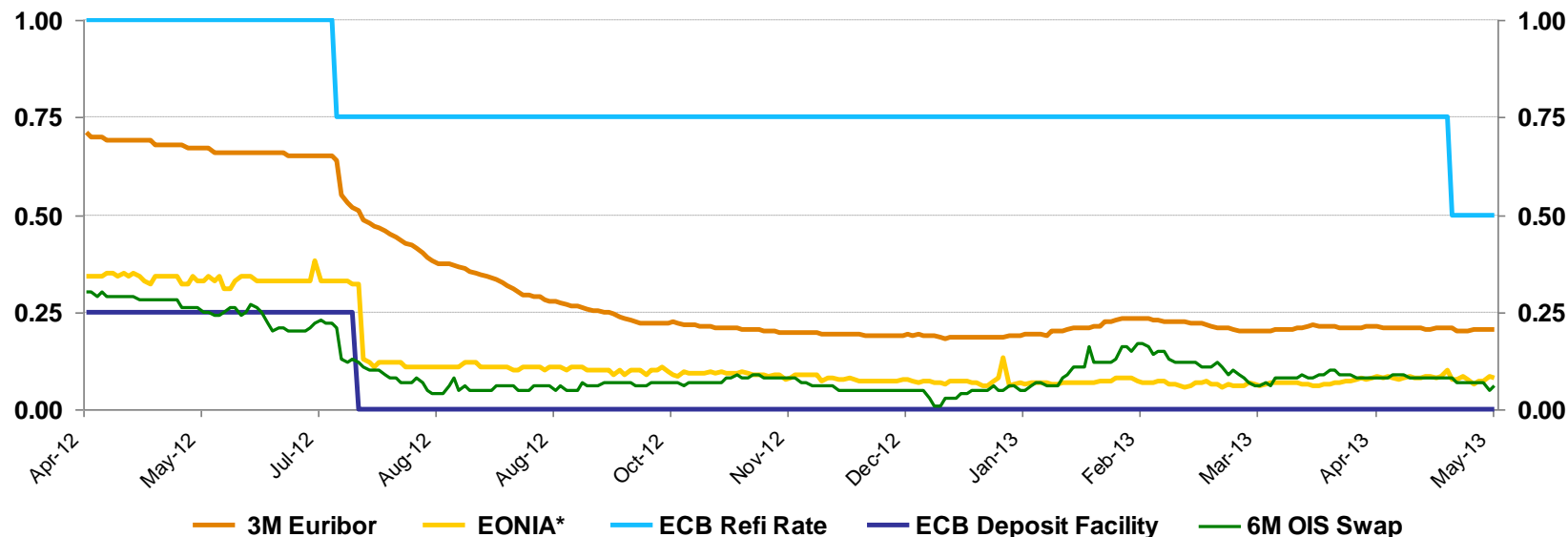
^ OMT: Outright Monetary Transactions

The views expressed in this material are the views of SSgA Cash, Dublin and are subject to change based on market and other conditions.

This document contains certain statements that may be deemed forward-looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected.

EUR Interest Rates

Ultra-low rate environment to prevail



- Latest ECB rate cut largely symbolic— little impact on market rates
- LTRO paybacks significant but excess liquidity remains very high
- Forward OIS swaps indicate rates on hold
- 0% deposit rate key to avoiding negative rates

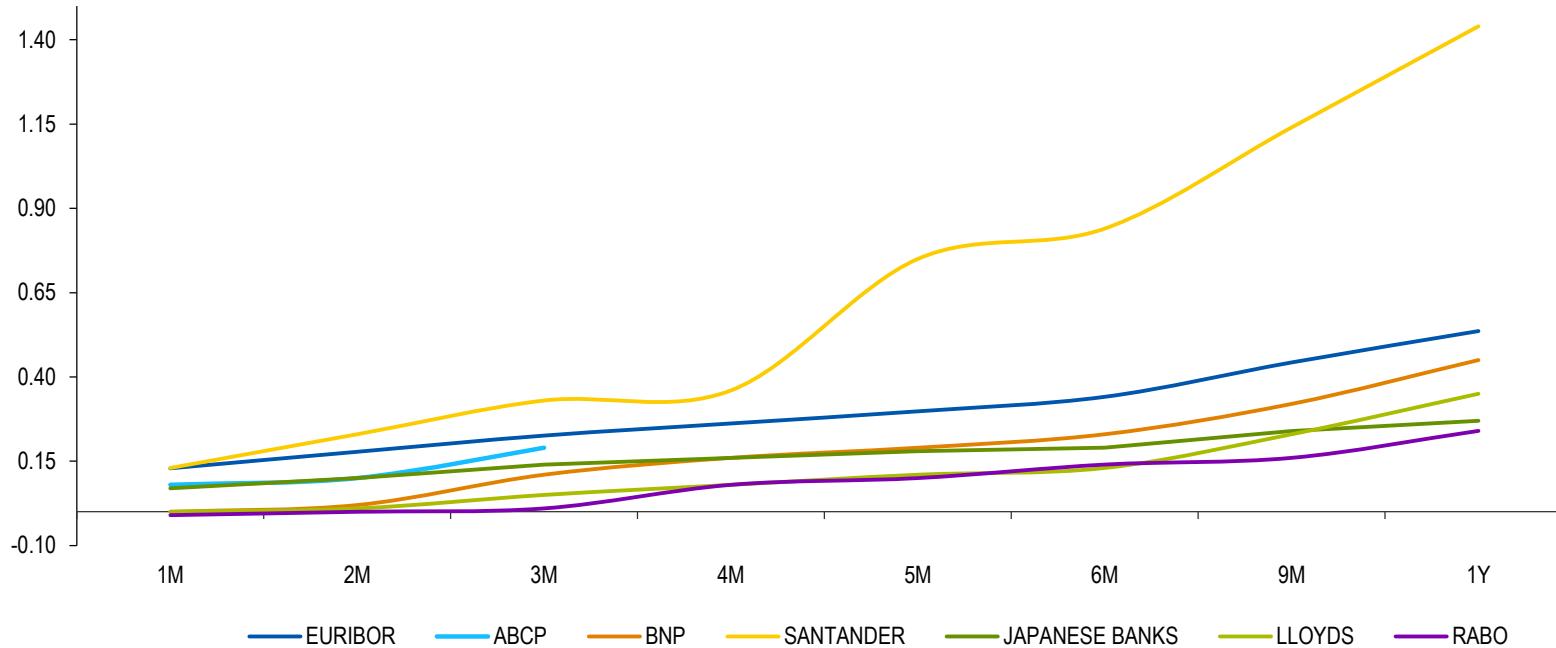
Source: SSgA, Bloomberg as at May 2013
* EONIA: Effective overnight index average

The views expressed in this material are the views of SSgA Cash, Team and are subject to change based on market and other conditions. This document contains certain statements that may be deemed forward-looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected.

Issuer Funding Levels in EUR

Significant dispersion persists

Issuer Funding Curves in EUR



- Pronounced dispersion and distortion due to LTRO* excess liquidity
- Many SSgA approved issuers funding at zero to negative rates out to one months
- Euribor; a poor average of the haves (A1/P1) and the have-nots (A2/P2, A3/P3)
- Some recent improvement in issuer levels and supply in short maturities

Source: SSgA, Bloomberg.

* LTRO: Long-Term Refinancing Operations.

The views expressed in this material are the views of SSgA Cash Team and are subject to change based on market and other conditions. This document contains certain statements that may be deemed forward-looking statements. Please note that any such statements are not guarantees of any future performance and actual results or developments may differ materially from those projected.

Investment Strategy in EUR

Liquidity:

- Balancing act to maintain high liquidity ratios but avoid zero/negative yields
 - Ensure portfolio maturity laddering
 - Selectively increase Repo investments as an overnight asset with positive yield

Credit Quality:

- Maintain focus on highest quality issuers and avoid/limit exposure to weaker regions
 - Key strategy is to move up in credit quality as we move out in maturity
 - Govt/Agency issuers at longer dates to lock in rates and within acceptable credit risks
 - Major headwinds for Eurozone banks - focus on highest rated only in stronger countries

Diversification:

- Expand selectively into new issuers, sectors and regions
 - Close to 30 Corporate names now approved by SSgA Credit Research for cash portfolios
 - Increasing diversification by geography and sector
 - Continue to favour issuers with strong balance sheets in resilient economies



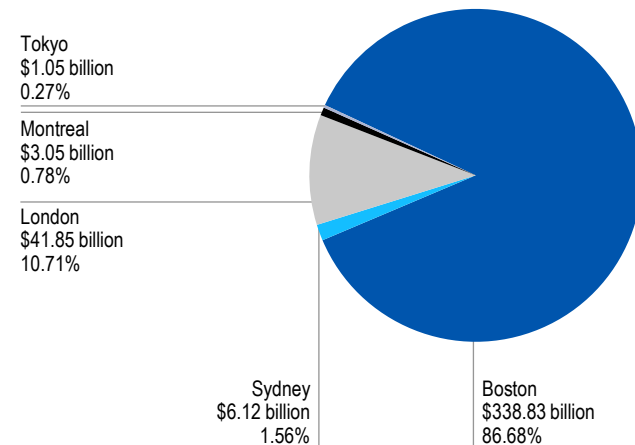
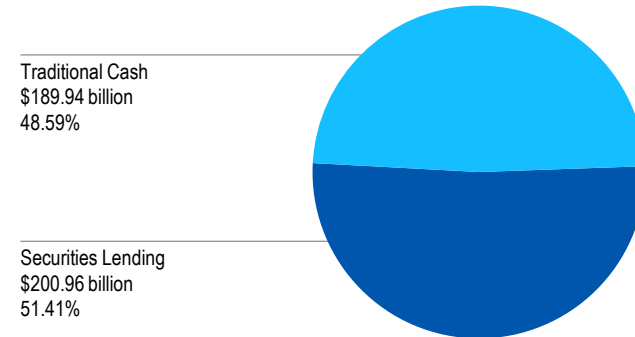
Prudent approach to deliver upon the objectives of Cash investors

SSgA AUM and Competitive Advantages

As one of the world's largest Cash managers, SSgA is able to provide the following benefits to our clients:

- Priority treatment from dealers
 - Information flow
 - Access to product
- Price breaks for large tickets
 - Complete flow-through to clients
- First look at new structures
- Access to liquidity
- Well known by issuers
 - Reverse inquiry
- Well known by rating agencies
- Access to company management
 - Conformity with Regulation FD

\$390.90 Billion* in Global Cash Assets
As of 30 June 2013



Investing involves risk including the risk of loss of principal.

* Includes Cash and Lending. All umbrella funds and as of funds assets have been removed from the calculations.

Global Fixed Income assets under management include those Strategies managed by SSgA's Asset Allocation Team.

All calculations are unaudited.

Numbers are based on Par Value of the underlying securities (converted to USD).

Numbers do not include Fund of Fund positions in SSgA managed money market funds.

Source: SSgA Assets Under Management reporting system.

Investment Objectives

- Stability, Liquidity, Yield
- Understand objectives to optimise results

Money Market Funds

- Tighter regulations in place post crisis
- Variety of future proposals

Investment Landscape

- Ultra-low yields
- Credit Deterioration
- Market Distortions

Implications

- Re-examine Objectives
- C-NAV versus V-NAV

Cash Investing

- Conservative, Challenging and Complex

Questions...

Comments...

Queries...

Thank You



David Furey

David is a Vice President of State Street Global Advisors and a Senior Portfolio Strategist in the Global Cash investment team. In this role, David acts as a key link between the cash investment team and SSgA's cash clients and distribution teams.

David joined State Street Global Advisors Ireland Limited in July 2007 as a Senior Portfolio Manager responsible for the management of Enhanced Cash strategies as well as European Investment Grade credit portfolios. Previously, David spent five years in a similar role with Butterfield Asset Management in Bermuda. David began his career with AIG in London in 1993 as a fixed income portfolio manager managing active and liability driven bond strategies for AIG and other institutional clients.

David is a graduate of Trinity College Dublin, and of the Smurfit Graduate School of Business at UCD.