

Global Cash

STATE OF THE MARKETS

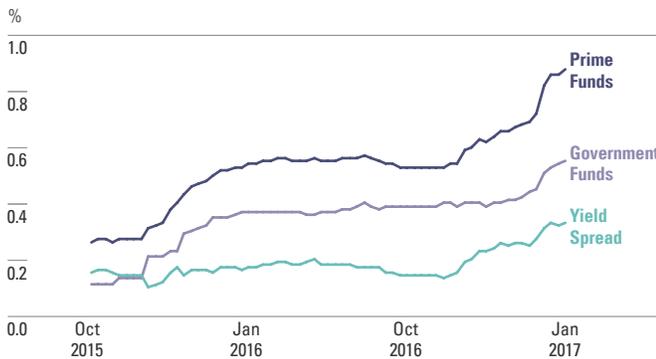


STATE STREET
GLOBAL ADVISORS®

2017 marks a fresh beginning for the world of cash investing. New investment parameters are impacting cash investors worldwide. The long-awaited money market fund reform is past in the US and is now rapidly approaching in the European Union. Meanwhile, global interest rates are beginning to diverge, and we expect this trend to intensify in 2017.

For investors on both sides of the Atlantic, we see the potential for additional returns among US dollar-denominated prime and short-term bond funds, within a risk profile acceptable for most cash investors. In the US, in response to money market fund (MMF) reform implementation, the yield spread of prime vs. government funds had moved incrementally higher, to about 30 basis points (bps). The spread has continued to rise, and we expect it to remain in the 30–35 bps range (see Figure 1) in early 2017 driven mainly by technical factors; credit conditions among MMF counterparties are widely viewed as strong and stable. Capitalizing on this, we expect at least \$200 billion to move into US prime funds.

Figure 1: Yield Spread Between US Prime and Government Money Funds



Source: SSGA, iMoney Net, as of January 10, 2017.
 Past Performance is not a guarantee of future results.

In Europe, the net 7-day yield spread of dollar- vs. euro-denominated prime funds was about 100 basis points as of late 2016. We believe euro-denominated rates will remain low given the European Central Bank’s (ECB) stated intention to continue quantitative easing through December of 2017. In April, when the ECB scales-back corporate and government bond buying from the current \$80 billion per month to \$60 billion per month, rates could become marginally less negative. Yet we expect negative interest rates to support the current trends in Europe, where assets under management (AUM) in US dollar-denominated institutional prime funds continued to outstrip AUM in euros and in pounds sterling, with US dollar funds offering the most attractive yields. (See Figure 2.)

Figure 2: AUM and Yield in EU-Based Institutional Prime Funds

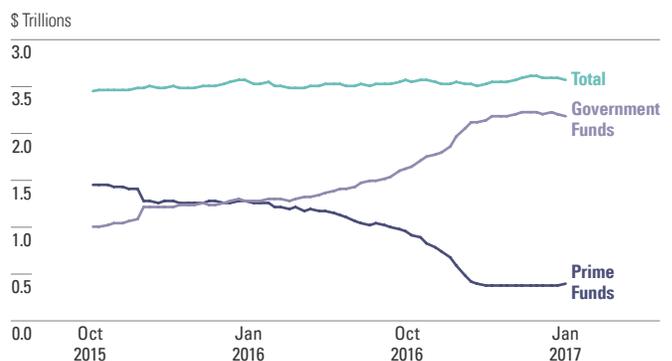
	US Dollar	Pound Sterling	Euro
Assets Under Management (billions)	\$233	£164	€85
AUM in US\$ (billions)	\$233	\$204	\$90
Avg. 7-Day Simple Yield (%)	0.70	0.28	-0.41
1-Year Net Return (%)	0.43	0.43	-0.28

Source: Institutional Money Market Funds Association (IMMFA), as of 11/25/2016.
 Past performance is not a guarantee of future results.

Looking back at the October 2016 US reform deadline, investors exercised extreme caution as reflected in an unprecedented \$1.1 trillion move from prime funds largely to government funds. (See Figure 3). Yet reform arrived without a hitch. Liquidity and principal were preserved. Government funds seamlessly absorbed the influx with some assist from the Fed’s Reverse Repurchase Agreement Operations (known as RRP). The changes were well telegraphed, and everyone involved — cash investors, portfolio managers and credit issuers — had adequate time to make adjustments and avoid disruptions. As expected, the share prices of the newly floated prime funds avoided significant volatility. Money funds maintained more than ample liquidity, obviating the need to contemplate fees or gates despite an asset transfer representing three-quarters of prime fund assets.

While we understand investors’ need to exercise an abundance of caution, there’s irony in this unprecedented asset transfer. The prime funds that investors fled from are arguably more transparent and more liquid than at any time since the SEC adopted regulation 2a-7 in 1983. Indeed, reform was conceived to further protect both cash investors and the wider financial system. We see no reason to believe this goal has not been achieved.

Figure 3: Migration From US Prime to Government Money Funds



Source: ICI, Bloomberg Finance, LP, as of January 1, 2017.

In Europe, we foresee a smooth transition for money fund reform over the next two years. We expect that global players will take lessons learned from US reform implementation to markets in Europe. Moreover, the reform in Europe represents less of a departure from the past. Variable Net Asset Values (NAVs) and even redemption restrictions (albeit less explicit) have long been a feature of the EU money-fund landscape. Finally, the EU reform presents less clear-cut decisions for investors. In particular, in contrast to US reform, the new EU regulation imposes liquidity-guarding gate and fee criteria on constant NAV government MMFs and low-volatility prime MMFs, leaving variable NAV prime funds exempt from such criteria.

Regarding the credit outlook, while we anticipate stable conditions similar to 2016, recent developments and emerging trends suggest that 2017 will be an eventful year, with a variety of headlines relevant to cash investors.

Part I

Part I highlights some of the key macro trends that SSGA's portfolio managers and credit analysts are monitoring, which could affect both credit stability and interest rates. These include the following:

- Fed policy, which we expect to result in two 2017 rate hikes, in June and December, for a likely increase of 50 bps;
- The debt ceiling debate, which could result in T-bill issuance volatility;
- Trump administration regulatory changes, which we view as a net positive for MMF credit conditions, although we doubt change will be as extensive as envisioned; and
- Other global macro trends, such as political and financial stress in the European Union (EU), and growing uncertainty in China.

Part II

In Part II we address European Union (EU) money fund reform. The revised EU regulations codify new standards for fees, gates, NAV calculations, liquidity and diversification. We outline the changes, and provide commentary on what we believe they mean.

Part III

Finally, recognizing that it will take time for investors to adjust and grow comfortable with the revised cash parameters, Part III drills down on real-world observations and data about how funds have performed under the new rules — addressing investor concerns about floating NAVs, redemption gates and liquidity fees.

Given the rising interest rates, the enhanced safeguards and the relative regulatory certainty in the US, SSGA is eager to help clients reevaluate their portfolios and consider allocating cash — particularly core and strategic cash not needed for near-term daily operations — to higher yielding strategies, such as US prime funds and short-term bond funds. We remain available to review your particular cash needs and investment constraints, and to discuss options that could help achieve your goals.

Part I

THE MACRO VIEWPOINT

SSGA's Global Cash Team ("SSGA") anticipates a stable and gradually improving environment for cash investing in 2017. We believe that interest rates are poised to slowly rise. We expect adequate supply of credit and government debt instruments, notwithstanding the potential for T-bill supply volatility. And despite a maturing credit cycle – as evidenced by leverage, M&A activity and share buybacks – we believe credit quality for MMF and short-term bond fund assets will remain strong, supported by high bank-capital levels.

Our portfolio managers and credit analysts will be monitoring various events that could contribute to some market volatility, and that will likely be of interest to cash investors. These include Fed rate hikes; the US debt ceiling debate (and its effect on T-bills); the potential for changes to Dodd-Frank under President Donald J. Trump; and other global developments. This section provides perspective on these events.

Fed Rate Hikes

SSGA foresees two rate hikes in 2017, likely in the middle and end of the year, lifting the federal funds rate to 1.00% to 1.25%, although numerous factors can influence the timing and scope of rate hikes. President Trump's intention to boost fiscal stimulus and reduce taxes supports the likelihood of these hikes. In terms of Fed policy, we expect the potential for more hawkish Trump Fed appointees to be largely offset by a slightly more dovish Fed voting rotation in 2017.

For cash investors, additional Fed rate increases would obviously be a welcome development after years of minimal returns. We expect yield spreads on all money funds to move largely in parallel with Fed rate hikes, with widening as the year progresses for prime and bond funds (vs. government funds as highlighted).

With the advent of variable NAV prime funds, some investors may be concerned that rate hikes (and other significant changes in interest rates) could impact the value of assets in prime or bond funds, resulting in a NAV drop. We do not expect NAV volatility on the scale that would negate the yield advantages presented by these funds.

In theory, a Fed rate hike does have the potential to put short-term paper underwater, leading possibly to minor share-price fluctuations in a floating NAV fund. Yet portfolio managers can take steps, both in an effort to protect against such price moves and to promptly maximize the benefits of interest rate hikes. First, to reduce interest rate sensitivity, they can minimize the weighted average maturity of the portfolio, by holding floating-rate instruments or short-duration assets. Second, they can position the portfolio to provide ample dry powder needed to take advantage of interest rate hikes as soon as they take effect. To accomplish this, managers can boost short-term liquidity, and concentrate maturities close to dates where Fed rate hikes are likely.

Since the spring of 2015, money market fund managers have had to provide the mark- to-market NAV of their prime funds. The managers were required to provide fund NAV data from October of 2015 to the current date. This is published daily on the fund companies websites. What we have observed is that prime fund NAVs have not varied much (see Figure 8). Even with two rate hikes and more than a year's worth of data we continue to observe little movement in prime money market fund NAVs.

Investors eager to monitor portfolio managers' preparation for rate hikes can check WAM and liquidity statistics on money funds' websites. (Weighted Average Life statistics – which do not factor in interest rate resets – are also available; a large gap between Weighted Average Maturity (WAM) and Weighted Average Life (WAL) suggests a high concentration of floating-rate instruments.)

Debt Ceiling and Treasury-Bill Supply

Unless Congress acts preemptively, the restoration of the US government’s debt ceiling could prompt diminished T-bill issuance, both prior to March 15 and in early Q3. Occurring at a time of ultra-high demand for short-term government assets and historically low issuance (as a portion of total government debt), this could result in higher prices and lower yields for T-bills, potentially expanding the spread between government and prime money funds. In the long term, once this dynamic runs its course, we foresee a positive trend for T-bill issuance, particularly if the Trump administration is able to cut taxes and increase stimulus spending. The Treasury Department is cognizant of the high demand for T-bills in the wake of money fund reform, and has indicated to industry participants that it intends to increase supply when possible.

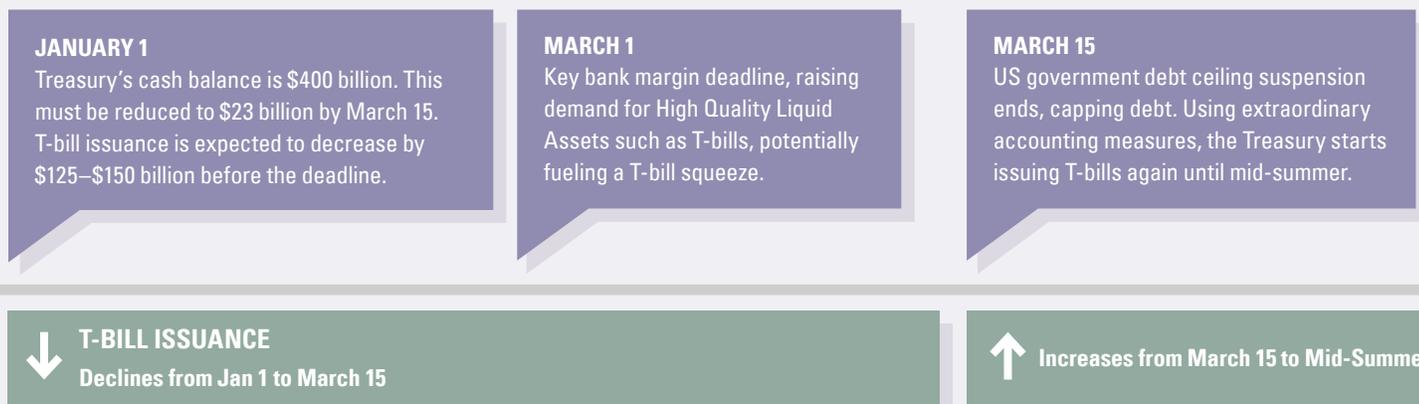
Money fund reform has boosted the T-bill’s importance, as both a key investment in government funds and a source of liquidity in prime funds. Meanwhile the T-bill is the primary asset affected by the recurring political confrontation over US government debt. Under the October 2015 compromise, the debt ceiling has been suspended until March 15, 2017, after which the

government is prohibited from expanding the debt. On that date, the Treasury’s cash balance must be below \$23 billion, from a year-end balance of about \$400 billion. (This cash limit was imposed to ensure that the Treasury didn’t use the debt ceiling suspension to amass large cash reserves.) Estimates show that this dynamic could result in a T-bill issuance cut of approximately \$125–\$150 billion before the March deadline. Moreover, March 1 marks a new margin compliance deadline for US financial institutions, fueling demand for high quality liquid assets and potential worsening a T-bill squeeze.

After the debt ceiling deadline, extraordinary accounting measures (which free up borrowing capacity) could enable the Treasury to issue debt until mid-summer of 2017, at which point the ceiling would need to be either raised or suspended again. As this second milestone approaches, T-bill issuance is once again likely to diminish. Another wild card: a Trump administration cash repatriation deal or trade tariffs could also positively impact Treasury revenues, potentially decreasing T-bill issuance. In brief, 2017 could be a roller coaster year for T-bill supply. (See Figure 4.)

Figure 4: Timeline — A Roller Coaster Year for T-Bills

If Congress doesn’t act preemptively, the debt ceiling will have a significant impact on T-bill issuance in 2017.

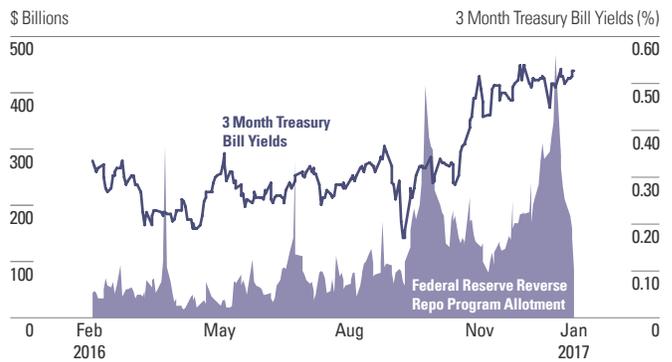


With Republicans controlling the White House and Congress, there is less chance for the kind of brinkmanship that compelled portfolio managers to defend against a possible technical default in the past. However, the threat of volatility or even a crisis has not been eliminated. Fiscal hawks in Congress could find it politically awkward to issue a blank check to President Trump, who appears poised to boost debt through tax cuts and increased spending.

Overall, the potential for marginally higher prices and lower yields in early Q1 and Q3 could help expand spreads between prime and government funds. Since T-bills account for a significant portion of government (and particularly Treasury) money funds, managers will need to seek alternative investments. Agency issuance is expected to remain stable in 2017; the Trump administration's pick for Treasury secretary has floated the possibility of privatizing Fannie Mae and Freddie Mac, but so far this hasn't affected short-term spreads. MMFs managing in excess of \$5 billion in assets will be able to allocate up to \$30 billion to the Fed's Overnight Reverse Repo Program

(RRP). The RRP offers the MMF market as much as \$2 trillion in overnight capacity, of which less than a quarter has been tapped at moments of peak utilization (see Figure 5).

Figure 5: Fed Repo Allotment and 3 month Treasury-Bill Yields



Source: Federal Reserve and Bloomberg Finance, L.P. as of January 13, 2017. Past performance is not a guarantee of future results.

WILDCARD

Trade tariffs or a cash repatriation deal could dramatically change Treasury's cash position, and therefore alter T-bill issuance

MID-SUMMER 2017

The Treasury exhausts extraordinary accounting measures, halting T-bill issuance until Congress suspends or raises the debt ceiling.

LATE 2017

The Treasury will likely once again ramp up T-bill issuance through year-end.

↓ Declines until Congress raises the debt ceiling (likely in mid-to-late summer)

↑ Increases after the debt ceiling is suspended or raised.

President Trump and Banking Regulations

Since the Republican sweep in November, bank shares have rallied on the expectation of higher interest rates and less stringent financial regulations. President Trump and key economic appointees have been sharp critics of the Dodd-Frank Wall Street Reform and Consumer Protection Act, and in particular the Volcker Rule. We don't expect the new administration to repeal Dodd-Frank outright. However, a more relaxed regulatory environment for US banks is likely, and such an environment should be supportive of profitability. While higher profitability for the US banks that are frequent MMF counterparties would generally be positive for the fundamental credit profiles of these banks, we must also analyze any potential risks associated with less regulation when these details emerge. Regardless of the regulatory evolution, we expect US banks to remain among the world's best capitalized, and capitalization is the basis for any credit assessment.

There are various reasons the Trump administration is unlikely to prioritize an attempt to repeal Dodd-Frank. Most importantly, repeal is unlikely to muster the 60-vote supermajority in the Senate needed to bypass the resistance from Dodd-Frank supporters, such as Massachusetts Senator Elizabeth Warren. Moreover, with Trump campaigning as a defender of middle class workers and criticizing his Democratic opponent as "controlled" by Wall Street, a public battle over Dodd-Frank could prove politically awkward. Finally, US banks do not favor a full repeal. Rather the preference amongst US bank management teams is to make regulation simpler and less costly, rather than returning banking to the "Wild West days" that preceded the Global Financial Crisis. Bank management teams readily acknowledge benefits to the new rules, noting they have helped improve the way firms manage risks and view their businesses. They also recognize that having been forced to hold

more capital, and build it quickly after the financial crisis, made their firms stronger than European peers.

A more likely scenario would be for the administration to weaken enforcement, through appointments and the budget process. For example:

- Congressional foes of Dodd-Frank could use the budget reconciliation process, (which requires only 51 votes in the Senate) to defund enforcement capacity;
- Regulators could be more lenient in interpreting the Volcker Rule, which limits the amount of securities a broker-dealer can inventory to "the reasonably expected near-term demand of clients, customers, or counterparties" — a standard for which there is no single calculation; and
- Trump's choice for Treasury secretary could be less vigilant in designating systemically important financial institutions.

Regarding capitalization, there's good reason to believe that US bank capital levels will remain exceptionally strong, relative to global peers. The Basel committee sets international regulatory and capitalization guidelines, which are then implemented by national authorities — the Fed in the US. Currently, the minimum leverage ratio (the broadest measure of bank capital) imposed by the Fed is among the world's highest. It's conceivable that new Trump-appointed Fed governors could tip the balance toward less onerous capital requirements. Yet key Trump appointees and advisors have gone on record as supporting current US bank capital requirements, at minimum, with some supporting even higher levels under certain circumstances. As such, we do not believe that US bank capital levels will decrease materially.

Political and Financial Risk in Europe

The Brexit vote last June alerted the world to the high level of discontent in Europe. After years of high unemployment and weak growth, 2017 could be a watershed year for EU cohesion, with the potential for political upheaval to spill over into the credit markets.

Key elections will occur in the Netherlands (March), France (April-May) Germany (likely in September), and possibly Italy, at a time of rising populism, emboldened by Brexit and the surprise election of a political outsider in the US. Euro-skeptic parties are polling strongly in the Netherlands, France, and Italy. While it currently seems unlikely that any euro-skeptic party would be able to win enough support to represent the majority in any of their respective governments, the growing popularity of these parties will have political and economic ramifications across Europe. At a minimum, there's a risk that the EU will become even less stable and cohesive. This would negatively impact EU banks and financial markets. For cash investors, setbacks for the EU could lead to negative rate pressure, and could reduce the likelihood or number of Fed interest rate hikes in 2017. A worst-case scenario would involve a European country choosing to leave the EU and/or the euro. France and Italy would seem the most vulnerable to this "tail risk" scenario.

With regard to MMF investing, European banks are at the forefront of the Global Cash Credit Research team's focus. Even prior to the enhanced political risks that are evolving for 2017, we have observed pockets of fundamental credit weakness within the European banking universe – stemming from lingering bad debt, excessive litigation and restructuring costs, and regulatory deadlines to boost capital reserves – particularly in Italy, Spain, Portugal and in other isolated cases (such as large European investment banks). To be sure, there have been many positive developments for the fundamental credit profiles of European banks since the Global Financial Crisis. Regulatory implementation has led to a banking system

that has significantly more capital, and is far safer from a funding and liquidity perspective. However, idiosyncratic risks relating to the political environment could threaten these positive credit developments.

Already, the December 2016 defeat of then-prime minister Matteo Renzi's reform referendum increases the likelihood that Italy would have to hold early elections in a time when the anti-EU, populist Five Star Movement has momentum. If it gains power, the movement has vowed to cut government aid to Italy's debt-saddled banks, a move that could precipitate a Greek-style crisis in Europe's 4th largest economy. An Italian banking crisis would have significant market repercussions, particularly on other weak European banks and on banks holding Italian bank debt. We believe credit research teams must be nimble in defining and adjusting the investible universe for global cash portfolios, with regard to European banks, and continue to exclude banking institutions for which there are enhanced risks to their fundamental credit profiles.

Chinese Volatility

Finally, China is grappling with a weakening economy, downward pressure on its currency, capital outflows, rapidly diminishing foreign reserves, a potential housing bubble, and a rising (yet still relatively small) budget deficit. Meanwhile, the incoming Trump administration has signaled a more confrontational approach to Beijing, possibly leading to a trade war or tension over Taiwan and/or the South China Sea. These events aren't unlikely to affect investors directly given our bearish stance on Chinese banks as an approved credit for the short-end funds. Yet a downturn in this major economy could have widespread effects, potentially impacting interest rates and the broader economy.

Part II

THE EU FINALIZES MMF REFORM

In late 2016, the European Parliament finalized a long-awaited reform for the €1.2 trillion MMF market. The new rules are expected to come into effect in late 2018 for existing funds, and six months earlier for new funds. Precise deadlines are scheduled to be announced in Q2 of 2017, after formal adoption, translation and publication. This section summarizes key reform provisions and our analysis of their impact.

On balance, similar to the US reforms, we think the EU reforms enhance stability, diversification and transparency among EU money funds. We also believe they render the financial system safer, by working to forestall future asset runs, and by reducing the likelihood that an incident within one fund would trigger broader impact.

We do not expect the new rules to significantly impact investors. Prime funds will generally continue investing in asset backed commercial paper (ABCP), certificates of deposit (CDs), floating-rate notes and other securities long held by MMFs. We do not envision outflows from certain MMF strategy classes, as witnessed in the US. The EU reform effectively forces investors to choose either a floating NAV or specific redemption criteria (gates and fees) intended to safeguard liquidity; unlike in the US, in the EU no funds will be exempt from both provisions.

The final regulation *eliminated* various provisions that appeared in previous drafts. These include:

- A proposal to require fund sponsors to hold capital buffers;

- A sunset clause that would have converted all prime funds into variable NAV funds after 5 years;
- A proposal to prevent MMFs from seeking ratings from credit agencies;
- An independent asset pricing scheme; and
- A requirement that CNAV public debt funds hold at least 80% EU public debt.

A general review is slated to take place 5 years after the regulation comes into force. In particular, the review is directed to: a) assess whether the LVNAV MMF might be an appropriate alternative for a non-EU government debt CNAV MMF; and b) study the feasibility of mandating that government debt constant-NAV funds hold at least 80% in EU public debt instruments. The latter provision was dropped from the current reform due to a shortage of appropriate short-term government assets.

On page 11 is a summary of the main reform stipulations. See also the matrix on page 13.

4 TYPES OF EMEA FUNDS

New EU Fund Categories and Valuation Methodology

The EU money fund reform divides MMFs into four categories:

1

PUBLIC DEBT CONSTANT NAV (CNAV)

- Invests 99.5% in government or government-guaranteed funds;
- Maintains a constant share price, to two decimal places;
- Uses amortized cost accounting on all assets;
- Applies gate and fee criteria;
- Liquidity: >10% daily, >30% weekly (including daily liquidity).

2

LOW-VOLATILITY NAV (LVNAV)

- Invests in prime-fund assets;
- Seeks to retain a constant share price, with 2 decimal places;
- Uses amortized-cost accounting for assets <75 days to maturity that don't diverge by >10 bps to mark-to-market price; all other assets are marked-to-market;
- If the gap between amortized-cost NAV and full-portfolio mark-to-market NAV exceeds 20 bps, the share price temporarily floats and converts to 4 decimal places;
- Applies gate and fee criteria;
- Liquidity: >10% daily, >30% weekly (including daily liquidity).

3

SHORT-TERM VNAV

- Features less conservative diversification and liquidity requirements (7.5% daily, 15% weekly, including daily liquidity);
- 100% mark-to-market accounting calculated to 4 decimal places;
- The reform doesn't impose gate and fee criteria for short term VNAV funds, although existing EU regulations provide the potential for gates.

4

STANDARD VNAV

- Is identical to Short-Term VNAV, except that it offers longer maturity and asset life constraints, positioning Standard VNAV funds between traditional MMFs and short-term bond funds.

Maturity and Asset Life

All MMFs other than Standard VNAV funds have the same limits, as follows:

	CNAV, LVNAV and Short-Term VNAV	Standard VNAV
Max Asset Maturity	397	2 years, with 397 days max to next interest rate reset
Weighted Average Maturity	60	6 months
Weighted Average Life	120	12 months

Source: Institutional Money Market Funds Association (IMMFA), as of 11/25/2016.

Liquidity

The reform establishes two tiers of liquidity requirements:

CNAV and LVNAV Funds

- Must maintain >10% daily and >30% weekly liquidity (with the latter inclusive of daily liquidity).
- Daily liquidity is defined as cash and daily maturing assets (such as overnight reverse repos).
- Up to 17.5% of the weekly liquidity can be held in highly liquid assets from sovereigns, supranationals or agencies with <190 days to maturity.
- The remaining 2.5% must be held in weekly maturing assets, including reverse repos and deposits.

Short-Term and Standard VNAVs

- Must maintain >7.5% daily and >15% weekly liquidity (with the latter inclusive of daily liquidity).
- Eligible daily assets include cash and daily maturing assets.
- Weekly assets are deposits in other MMFs, or securities that can be sold and settled within 5 business days.

Redemption Constraints (Gates and Fees)

In contrast to US reform, the new EU regulation imposes gate and fee criteria to safeguard the liquidity of only the most liquid and conservative MMF categories, but not for prime variable-NAV funds (which have long existed in the EU). Moreover, the UCITS rules applicable to EU MMFs enable gates on funds under duress, and these provisions still apply. Either way, SSGA believes that implementing a gate or fee will remain rare, and could signal a fund-ending situation.

CNAV and LVNAV Funds

- If weekly liquidity falls below 30%, or daily net redemptions exceed 10%, the fund's board must meet and consider imposing fees or gates.
- Liquidity fees “reflect the cost to the MMF of achieving liquidity and ensure that investors who remain in the fund are not unfairly disadvantaged.”
- Redemption gates can last up to 15 working days, and can either totally suspend redemptions or limit them to 10% of outstanding MMF shares.
- If weekly liquidity drops below 10%, liquidity fees and/or total redemption suspensions become mandatory.
- If redemptions are suspended for more than 15 days over 90 consecutive days, the fund must float its share price.

Short-Term and Standard VNAV

The reform imposes no gate or fee criteria, although these funds may impose redemption constraints under pre-existing EU regulations.

Credit Review, Governance and Support

The reform stipulates that all MMFs must establish, maintain and regularly review internal procedures for assessing credit. Additionally, funds are required to perform stress testing, and to implement enhanced public disclosures and Know Your Customer (KYC) rules. Finally, sponsors are prohibited from providing financial assistance to prop up the share price, guarantee principal or otherwise support a fund.

EU MONEY FUND REFORM AT A GLANCE

	1 PUBLIC DEBT CNAV	2 LOW VOLATILITY NAV	3 SHORT-TERM VNAV	4 STANDARD VNAV
Share Price	Constant NAV	Constant NAV per share, but converts to VNAV when mark-to-market valuation gap >20bps	Variable NAV	
Valuation	Amortized Cost	<ul style="list-style-type: none"> Amortized cost for assets <75 days to maturity and with gap to mark-to-market <10bps All other assets mark-to-market 	Mark-to-market	
Gates/Fees/Restrictions	<ul style="list-style-type: none"> Fees, gates or redemption restrictions are optional when weekly liquidity <30% or net redemptions >10% Gates or fees are mandatory if weekly liquidity <10% Fund share price floats if redemption constraints last >15 days in 90 day period 		No constraints specified by MMF reform, but gates are allowed under UCITS directive	
Asset Maturity	<397 days			< 2 years, with <397 days to next interest rate reset
WAM	<60 days			6 months
WAL	<120 days			12 months
Minimum Overnight Liquidity	10%		7.5%	
Minimum Weekly Liquidity	30%		15%	
Weekly Liquidity Eligible Assets	≤ 17.5% highly liquid agency, sovereign or supranational assets, maturing in <190 days; the rest in weekly maturing assets		≤ 7.5% in MMFs	
Eligible Investment Assets	99.5% government assets, cash or reverse repo backed by government assets	Money market instruments, certain securitisations or ABCP, instantly accessible deposits, short-dated reverse repo, other short-term MMFs (excluding circularity), currency and interest rate derivatives (only for hedging purpose)		
Diversification	<100% per sovereign, agency or European supranational, across at least 6 issues, max 30% per issue; <15% per reverse repo counterparty	Max 5% per issuer	Max 10% per issuer and max 40% aggregate in issuers > 5%	
		<ul style="list-style-type: none"> Max 10% per deposit counterparty Max 15% per reverse repo counterparty Max 100% per sovereign, agency or European supranational, across at least 6 issues, max 30% per issue Max 5% risk exposure per derivative counterparty Max 5% per MMF Max 15% overall exposure to securitisation and ABCPs Max 17.5% overall MMF exposure 		

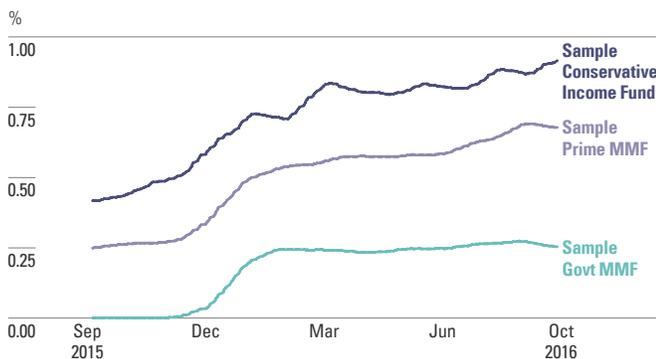
Part III

WHO'S AFRAID OF GATES, FEES AND FLOATING NAVS?

Confronted with the October 2016 US MMF reform deadline, most investors opted to watch from the sidelines by allocating to safer, low-yielding government funds. At a minimum, they saw little upside to leaving their cash in prime funds undergoing major changes.

Yet as the sample portfolios in Figure 7 illustrate, by late 2016 there was already a growing opportunity to harvest additional yield in the cash markets. SSGA thinks now is the time to consider whether the potential for additional yield justifies the risk posed by gates, fees and floating NAVs. To help investors make informed allocation decisions, this section offers perspective on floating NAVs, gates and fees, as well as the growing list of alternative cash options – such as bank deposits and private funds.

Figure 7: Sample Guideline Illustration



Source: SSGA as of October 31, 2016

The information shown above is for illustrative purposes only. The sample guideline performance shown was created by Cash Management Team. The guideline characteristics were generated using a six fund representative sample for the fund categories mentioned above based on varying degrees of portfolio duration. An average of the funds' 1 day yield was utilized using a 20 day moving average. There were no proprietary or customized calculations used to describe these portfolios. The sample guideline performance does not reflect the performance of any product offered by State Street Global Advisors. The results shown were achieved by means of a mathematical formula and are not indicative of actual future performance, which could differ substantially.

Prime Funds: Potential Surplus Yield

As mentioned in the introduction, the prime fund yield spread exceeded 30 bps by the end of 2016, and we expect it to remain in the 30–35 bps range in early 2017 (assuming two or three rate hikes in 2017). At that level, the prime fund yield pickup would be substantial. We do not see the rising prime fund spread as a sign of deteriorating credit conditions. It is instead attributed to the steepness of the Libor curve, issuer demand in the face of significantly diminished prime fund balances, and potential T-bill squeezes in early 2017 owing to another imminent debt ceiling event.

This potential yield spread is obviously good news for prime fund investors, who have endured uncertainty surrounding MMF reforms as well as low returns since the financial crisis. The question remains, however, whether post-reform prime funds – saddled with floating NAVs, gates and fees – are worth the risk. Every institution needs to assess its own risk constraints, however now more than ever prime funds could prove to be an appropriate option for many investors, at a minimum for cash not needed for immediate operations.

Reform, in the SEC's words, was "designed to make money market funds more resilient by reducing the interest rate, credit, and liquidity risks of their portfolios," and, more recently, by boosting transparency and "providing new tools... to address runs." Post-reform, prime funds are arguably more liquid, transparent and resilient, in a variety of ways.

For example:

- New diversification requirements diminish credit concentration risk;
- Mark-to-market accounting on prime funds more accurately reflects portfolio value (some funds are marked three times a day), and demands a higher level of vigilance from portfolio managers; and
- Statistics published on fund providers' websites — such as liquidity concentrations and daily net inflows and outflows — provide better visibility on fund's profile, helping investors choose prime MMFs on parameters other than yield;

Perhaps most importantly, the SEC's mandate directing MMFs to conduct their own credit analysis, rather than relying on ratings agencies, reduces risk stemming from potential agency conflicts and from the outsourcing of a critical money fund responsibility.

Gates and Fees

As unsettling as they might be to those who had previously viewed prime funds as seemingly risk-free, gates and fees serve investors' interests. With redemption gates a fund's board can block redemptions for up to 10 business days in a 90-day period; with liquidity fees the board can levy a fee of up to 2% on redemptions in times of stress. These measures enable portfolio managers to address liquidity challenges well in advance of an emergency scenario, and do it in a way that protects shareholders equally, deterring the first-mover advantage that left MMFs vulnerable to asset runs in the past. It's important to remember that under reform, gates and fees are designed to protect the new, elevated liquidity requirements: 30% weekly and 10% daily liquidity.

Taken together, gates, fees and the liquidity mandate amount to a significant cushion compared to past practices, when MMFs managed liquidity to match shareholder activity. Under the reforms, liquidity has been dialed up to a point where potential safeguards are available at a level that would have vastly exceeded a highly liquid pre-crisis prime fund. This can make prime funds more resilient, and better protects shareholders.

In other words, with gates, fees and liquidity requirements, prime funds have been fitted with new, state-of-the-art emergency prevention tools. We believe that these tools hardly

increase the probability of illiquidity, just as a fire station relocating down the street doesn't make a house fire more likely. The SEC's requirement to consider gates and fees at the 30% weekly liquidity level is akin to a smoke detector that sounds an alarm long before there's an emergency. With this early warning, redemption constraints — akin to evacuating a home — represent a protective option that can be deployed if the situation is truly grave, although the early warning reduces the chances that such a measure will be needed.

SSGA is deeply sensitive to the importance of reliable, same-day liquidity across all of our global cash offerings. We actively seek to understand our clients' businesses and cash needs, and we remain in regular, close contact with large investors.

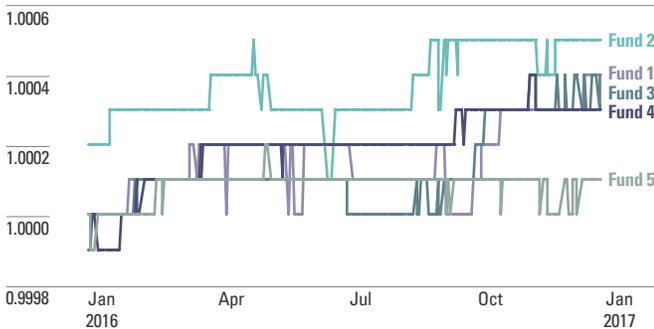
Floating NAVs

Another source of post-reform investor unease is the requirement that institutional prime funds abandon the dollar-based constant share price in favor of a price based on a floating net asset value, calculated to four decimal places. While this introduces the possibility for loss of principal, we anticipate that under current credit and interest rate conditions, Prime fund NAVs could likely remain stable given the high quality and very short duration of the assets prime money funds generally invest in, as well as fund managers' diligence in seeking to avert NAV fluctuations. We believe that under normal market conditions, NAV fluctuations will remain minimal and infrequent, on a magnitude of about $\pm 1-5$ bps per year.

Figure 8 shows the NAV changes on 5 of the largest* prime funds calculated according to the mark-to-market approach stipulated in the SEC's reforms and dates back to the beginning of 2016. The NAV from each fund does move but moves in smaller increments and over the course of time. No fund moves more than 2 basis points (2/100 of a penny) day over day and often reverts back in short order. Considering the events of 2016: market volatility, election surprises (UK, US) and a Fed rate hike in December, we think this should give investors comfort that, in normal market conditions, the funds' NAVs can follow a pattern of low price volatility. Meanwhile, the yield differential between a prime fund and a government fund has produced about 20–25 bps in excess yield (prime over government funds), meaning that the yield would compensate for any 1 basis point NAV decline in about 12 days' time.

* By AUM as of January 31, 2017.

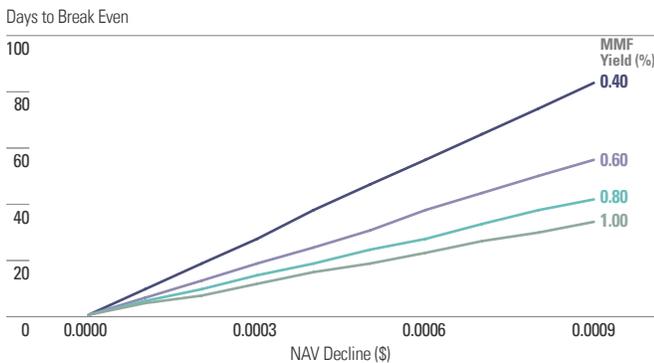
Figure 8: Institutional Prime Funds Variable NAVs



* Top 5 Institutional Prime Funds by AUM as of January 31, 2017.
 Source: SSGA, Fund Connect, Top 5 Funds’ sponsors as of January 31, 2017.
 Past performance is not a guarantee of future results..

With the Fed signaling as many as three interest rate increases in 2017, the impact of NAV declines will likely be further eclipsed by additional yield from prime funds. Figure 9 shows the number of days needed for a fund to break even with its initial investment after a NAV decline, assuming various different rates of yield (shown by the different lines). As shown, a decline of .0001 would take 9 days at a 0.40% yield, and 4 days at a 1.00% yield.

Figure 9: Number of Days to Break Even After NAV Decline



Source: SSGA research.
 The information contained above is for illustrative purposes only. It should not be construed as an indication of future performance.

TOTAL RETURN

Constant vs. Floating NAV MMF

Figure 10 demonstrates the impact of a NAV loss on the total return of a prime fund, with different prime-to-government yield spreads (20 bps and 30 bps) and investment horizons (2 and 4 months). The top chart shows a 2 bps NAV loss, while the bottom chart shows a 4 bps NAV loss. The figures calculated are for a \$100 million investment; gains and losses are directly proportional to investment size (in other words, to calculate the total return for \$1 billion investment, multiply by 10; for \$10 million, divide by 10).

As shown, despite the NAV decline, total return on the prime fund exceeds the government fund in all of these hypothetical scenarios except with the 4 bps NAV decline and the short (2 month) investment horizon.

Figure 10: Yield of Prime Vs. Government MMF, \$100m Investment

2 BPS NAV DECLINE*

Yield Spread*	20 bps		30 bps	
Months Invested	2	4	2	4
Prime Fund Excess Yield	\$32,883	\$66,371	\$49,336	\$99,586
Principal Loss	\$20,000	\$20,000	\$20,000	\$20,000
Additional Return (Deficit), Prime MMF	\$12,883	\$46,371	\$29,336	\$79,586

4 BPS NAV DECLINE*

Yield Spread*	20 bps		30 bps	
Months Invested	2	4	2	4
Prime Fund Excess Yield	\$32,864	\$66,331	\$49,313	\$99,539
Principal Loss	\$40,000	\$40,000	\$40,000	\$40,000
Additional Return (Deficit), Prime MMF	(\$7,136)	\$26,331	\$9,313	\$59,539

* Assumptions: These are hypothetical calculations, based on an \$100m initial investment; 20 bps and 30 bps yield spreads are based on a hypothetical government MMF yielding 0.40% and hypothetical prime MMFs yielding 0.60% or 0.70%; Excess yield = prime yield – government yield. Principal loss of \$20,000 is based on a NAV decline from 1.0000% to 0.9998%, and principal loss of \$40,000 is based on a NAV decline from 1.0000% to 0.9996%.

The information contained above is for illustrative purposes only.

Short-term Bond Funds

In addition to prime funds, short-term bond funds may be appropriate for investors' core or strategic cash with an investment horizon of 9 months or more. We estimate that the yield pickup for short-term bond funds in 2017 could be in the range of 20–40 bps over prime funds and 60-80 bps over government funds due to short-term bonds funds not holding as much liquidity and their ability to buy longer maturity assets.

In addition to yield pickup, short-term bond funds feature other attributes that investors should consider. These funds do not fall under Rule 2a-7, the SEC's money market fund regulation. As such, they are not subject to fees and gates. They feature marked-to-market floating NAVs calculated to 3 decimal places (rather than 4 for a prime MMF), making them an order of magnitude less sensitive to asset value fluctuations. Moreover, unlike MMFs — which must hold a minimum of 10% daily and 30% weekly liquidity — short-term bond funds have the discretion to determine the appropriate level of liquidity.

As an example, consider conservative income funds (CIFs), a strategy similar to a pre-reform MMF, albeit with a floating NAV. These funds typically invest in many instruments that a money market fund may invest in — US government securities, repos, commercial paper, CDs, and others — but without the same credit, maturity, and other limitations that apply to a money market fund. CIFs seek to maintain liquidity sufficient to satisfy shareholder activity, taking into consideration the prevailing market conditions. This dynamic approach to liquidity may allow the CIF to better optimize the portfolio for both liquidity and return, and is appropriate since the strategy is intended for a longer investment horizon, not for daily liquidity needs.

Although CIFs generally seek to follow a conservative strategy, the investment parameters should enable it to seek greater yield than traditional MMFs as outlined above.

Other Cash Options

In an effort to achieve liquidity and yield goals in the new cash world, various other strategies are gaining prevalence. Below we address the risks and potential benefits of select options.

Separately Managed Accounts

Separately Managed Accounts (SMAs) could be appropriate for investors with a large core or strategic cash positions. Since they are not subject to SEC's MMF Rule 2a-7, there are no gates or fees and the securities are held and managed in the investor's name. Because the funds are not commingled, liquidity risk can be more easily managed, and there is clearly no risk of a shareholder run. SMAs feature custom guidelines tailored to the investor's needs, including tax, liquidity, interest-rate and credit-risk constraints. While some organizations choose to manage their own short-term fixed income holdings, SSGA'S separately managed accounts can offer the benefit of in-house credit screening and professional portfolio management.

Private Accounts

In response to money fund reform, some fund providers have launched or considered launching private liquidity funds as a way of offering strategies similar to pre-reform prime funds, without the constraints imposed by the new regulations. For example, these funds could seek to maintain a constant NAV using amortized cost accounting, and they may choose to forgo the right to impose fees and gates. Because they are private, they are exempt from Rule 2a-7 although they could choose to voluntarily abide by protective stipulations of the regulation, such as liquidity and credit requirements, maturity limits and issuer concentration constraints. They are also not required to register under the Investment Company Act of 1940, nor do investors implicitly receive the protections provided by this law.

Private liquidity funds are not new, per se. They are typically available as an ancillary service to securities lending clients, at certain asset managers. The balance of these fund types was more than \$300 billion as of 2015, according to an Office of Financial Research report. By late 2016, however, AUM in private liquidity funds marketed publicly as MMF alternatives remained minimal. Notably, it is unclear how regulators will respond to these vehicles, particularly since a key selling point is that the new SEC reforms do not apply.

Moreover, investors should be aware that the number of subscribers in a private fund is limited by law, and is likely to be smaller than in a MMF. As such, investors need to consider the possibility of shareholder risk stemming from large redemptions. Finally, it is important to note that the terms of an unregulated private fund can typically be revised at fund-provider discretion via a shareholder notice, and these funds are not required by law to have an independent oversight board the way a MMF does.

Bank Deposits

Faced with new regulations on prime MMFs, and with regulatory pressure prompting tier-1 banks to remove large cash deposits from their balance sheets, some investors have turned to bank deposits in second-tier banks to park cash not needed for daily operations. Such banks are not subject to the more stringent capital requirements imposed on systemically important financial institutions (SIFIs) under Basel III, which have prompted SIFIs to discourage such deposits.

Bank deposits appeal to some investors as a strategy paying reasonable yield, while remaining free of fees, gates and floating NAVs. Yet it is important to consider the concentration risk associated with entrusting significant cash reserves to uninsured deposits within a single institution. Unlike MMFs – which deploy active, real-time credit analysis and are prohibited from allocating more than 5% to any credit issuer – bank deposits are highly concentrated and potentially vulnerable in events of stress.

Conclusion

As always, there are pockets of risk and uncertainty across the global economy, which we will be monitoring closely as 2017 progresses. Yet based on the data currently available to us, SSGA is optimistic that 2017 will be stable for cash investors, characterized by the slow rise in interest rates and strong credit fundamentals for MMF counterparties. With a new regulatory-friendly administration in Washington, a successful phase-in of US money fund reform, and visibility on the upcoming EU reforms, we believe cash investing is entering a new era of increased safety and liquidity. All this presents an opportunity for investors to diversify beyond government MMFs, by considering whether higher yielding strategies such as prime funds and short-term bond funds are appropriate for their needs. SSGA remains available to review your cash needs and to help analyze which options are most appropriate for you.

Glossary

Spread (or yield spread) is the number of basis points or percentage points between the yields of two fixed income investments.

Prime Funds are short-term investment portfolios that invest primarily in short-term, or less than one year, securities representing high-quality, liquid debt and monetary instruments such as US Government and US Treasury Securities, CD's, Banker's Acceptances, Time Deposits, Commercial Paper, Corporates, Repurchase Agreements, and Variable and Floating Rate Notes.

US Government Funds are short-term investment portfolios that invest primarily in short-term, or less than one year, securities representing high-quality, liquid debt and monetary instruments such as US Government Securities and repurchase agreements backed by US Government obligations.

Average 7-Day Simple Yield is interest earned on a money market mutual fund without the compounding interest. This yield is the dividend and interest earned by the fund, and paid out during the seven-day period, minus any management fees incurred during those seven days.

1-Year Net Return is the return an investment provides over a year period, expressed as a time-weighted annual percentage. Sources of returns can include dividends, returns of capital and capital appreciation. All investment and other expenses are subtracted from the gross return to calculate the net return.

Weighted Average Maturity (WAM) is a measure of the interest rate risk or interest rate exposure and duration in short-term and money market fund portfolios.

Weighted Average Life (WAL) is a measure of credit risk exposure in a portfolio and the length of time to final maturity.

LIBOR Curve is the graphical representation of various maturities of the London Interbank Offered Rate (LIBOR), which is the short-term floating rate at which large banks with high credit ratings lend to each other.

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