Can Money Market Funds Survive Variable Net Asset Values?

Introducing a Dual-NAV Approach

Abstract

We propose a variable Net Asset Value (NAV) approach based on a dual-NAV structure to preserve the transactional utility of money market funds. This approach would require funds to publish daily intrinsic NAVs up to the 4th decimal place, and would allow shares to be traded at rounded NAVs (RNAVs) up to the 2nd decimal place. Results from our studies show that, when prudently managed, RNAVs at $1.00 are achievable even under severe market conditions. Such studies cover shadow NAVs of large prime funds, normalized NAVs of an ETF and an ultra-short bond fund, and prime fund NAVs in FundIQ® stress tests. [1]

We believe that recent regulations have sufficiently addressed portfolio risk within money market funds. However, the dual-NAV approach may provide further shareholder risk mitigation. We think that this approach is less disruptive than the proposals being considered, and since a variation of the approach already exists, its implementation likely will encounter the least resistance.

Introduction

With each passing day, constituents of the money market fund industry wait with growing anxiety for the Securities and Exchange Commission (SEC) to announce its proposals for additional industry reform. Based on recent speeches from SEC officials and reports by the media, variable net asset values (VNAVs), capital buffers and holdbacks on share redemptions seem to be the three likely outcomes.

Not surprisingly, the fund industry and many institutional shareholders dislike all three solutions, suggesting that implementing any of them could mark the end of the popular investment vehicle as we know it and bring unnecessary stress to financial markets at large. On the other hand, government officials, notably SEC Chairman Mary Schapiro, feel strongly that the fund industry is operating without a safety net and that additional regulation is needed to address the funds' structural vulnerability.[2]

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The Dual-NAV Approach

Are the views from the two sides irreconcilable? Can money market funds operate under the existing SEC Rule 2a-7 framework and sufficiently avoid the dramatic capital flight that occurred in the wake of the Lehman Brothers bankruptcy in 2008? After studying the NAV history of a number of pooled vehicles, we suggest that a

modified version of the VNAV approach may bridge the gap between the private sector and the regulators.

The dual-NAV approach mimics the daily premium/discount presentation of closed-end funds and exchange-traded funds. It modifies the conventional VNAV approach by abolishing the amortized cost method, requiring funds to publish intrinsic NAVs (INAVs) daily up to the 4th decimal place ($0.0000), but allowing shares to be traded at rounded NAVs (RNAVs) up to the 2nd ($0.00) decimal place. Results from our studies show that RNAVs at $1.00 are achievable even under severe market conditions when managed prudently. The INAV disclosure eliminates information asymmetry in underlying asset values, a primary cause for shareholder runs.

We think the dual-NAV approach provides the right incentive for fund managers to structure portfolios in accordance with principal stability and liquidity requirements, and penalizes those who make poor portfolio decisions. Of equal importance, an INAV other than $1.00 serves as a constant reminder to shareholders that money market funds, unlike deposits, are investment vehicles bearing elements of risk, however minuscule that risk may be. For practical purposes, this approach resolves many of the non-investment based obstacles to VNAVs.

What Risks Should Future Regulation Address?

An abundance of literature from the fund industry and the investment community argues that the revised Rule 2a-7 regulations instituted by the SEC in 2010 have been effective in improving the credit, duration and liquidity parameters of money market funds.[3] We tend to agree with this argument. More regulation to wring investment risk out of money market funds may be counterproductive. Instead, future regulations should address one specific risk – shareholder runs.

Risk-Free Assumption: As a result of our interactions with institutional money market fund investors, we think that some investors mistakenly believe they will receive "market" returns from a "risk-free" asset. They derive their risk-free assumptions from the fact that very few (a total of two) funds have experienced losses and in *all* other "near miss" instances fund sponsors have provided voluntary capital or liquidity support to cover potential losses.[4] The Treasury Department further reinforced these assumptions when it announced the Temporary Guarantee Program for Money Market Funds on September 29, 2008.[5] As we have seen, when the risk-free assumption no longer is valid, a run may develop. Therefore, future regulation should aim to eliminate these assumptions.

Sponsor Strength Assumption: A byproduct of the risk-free assumption is that the perceived safety of money market funds is based on the credit strength of the funds' respective corporate sponsors rather than on portfolio strength. This erroneous assumption may result in an unfair disadvantage for funds whose corporate parents have limited financial flexibility. It also may create perverse incentives for certain funds to increase their risk appetites if shareholders perceive the corporate parents to be "too big to fail." When perceptions of fund sponsors change, a run may develop, so future regulation should level the playing field to the extent that all funds are judged solely on the strength of their portfolios.

Information Asymmetry: When cost-based NAV calculations do not provide sufficient data to analyze a fund's risk of breaking the constant dollar, redeeming fund shares immediately after a major credit event is a rational act by shareholders. We, therefore, believe it is inappropriate to take away shareholders' rights to exercise risk management responsibilities. Redemptions from funds experiencing stress should be expected and allowed to enforce market self-disciplines. Conversely, when the market values of the underlying assets are fully reflected in a fund's NAV, a run need not develop in non-distressed funds. Future regulation should resolve the information asymmetry so that shareholders do not run from healthy funds.

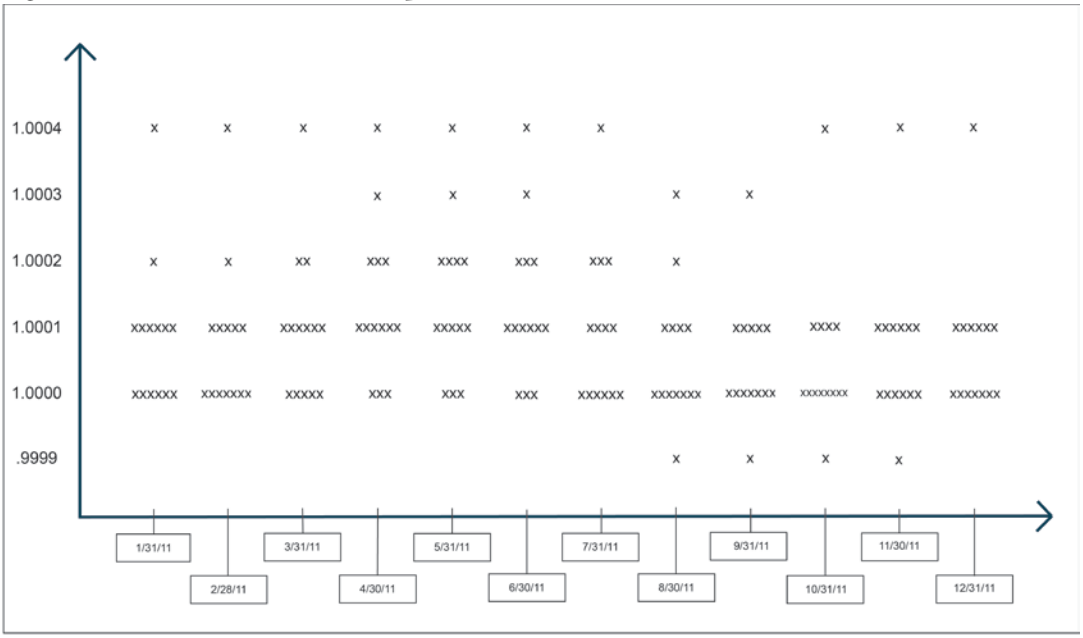
In short, we believe that regulation is not necessary to further tighten credit and liquidity standards, nor should regulation attempt to sterilize risk out of the product. Rather, our opinion is that regulation should eliminate or reduce the factors that contribute to runs. As an important platform for short-term, non-bank credit intermediation to governments and businesses, the money market fund industry may benefit from the dual-NAV treatment without experiencing major volatility in shareholder behaviors. We present our evidence in the following sections.

Will NAVs Float if They are Allowed to Float?

Many market participants feel strongly that the constant $1.00 NAV using the amortized cost calculation method is the cornerstone of the money market fund concept. They also believe that if NAVs are allowed to fluctuate, the product becomes unattractive to those shareholders who have zero-loss tolerance. In addition, participants argue that the variable NAV approach may create operational challenges for individuals and corporations with respect to liquidity management, particularly for daily sweeps. Potential operational challenges also may include extensive systems changes at various intermediary service providers to enable them to process "non-par" transactions and to track tax lot information for accounting and tax purposes. Without repeating many of the arguments,[6] we wholeheartedly agree that the attractiveness of money market funds will diminish substantially if NAV fluctuation is a daily event.

However, the adoption of a variable NAV mandate may not automatically result in NAVs deviating from the $1.00 goal post in most cases. In fact, it may provide the precise incentive for fund managers to strive to achieve the constant $1.00 through prudent risk management. Some historical data may help to illustrate this point.

Figure 1: Shadow NAV Scatter Graph in 2011



Source: FundIQ® compilation of monthly N-MFP reports filed with the SEC with a 60-day delay period

Our proprietary FundIQ® research tool tracks the month-end market value-based NAVs ("shadow" NAVs) of 15 of the largest AAA-rated prime institutional money market funds. Figure 1 indicates that, in the 12 months through December 2011, NAVs for the group of 14 funds (we are unable to obtain data for the 15th fund) were in a range of $0.9999 to $1.0004 and none of the NAVs changed more than $0.0001 within a one-month period. The difference between the highest and lowest values in the 12 months was $0.0003 for one fund, $0.0002 for two funds, $0.0001 for seven funds, and no change for three funds. Since a threshold NAV below $0.995 causes a fund to be priced at $0.99, **the largest $0.0003 peak-to-trough NAV variance represents only a 6% probability [0.0003/(1.00-0.995)] that a "worst performing" fund would breach the $0.995 threshold over a 12-month period.**

Although the analysis draws information from a relatively small sample over a relatively short time period, the total assets of the 14 funds represented 69% of all prime institutional money market fund assets as of February 29, 2012.[7] The observation period (2011) was a year marked by the contagion of the Eurozone debt crisis on major Eurozone bank credits and the downgrade of the U.S. government's debt rating from

AAA by Standard & Poor's. During this period, the three-month London Interbank Offered Rate (LIBOR), a common yield benchmark for short-term credit borrowing, more than doubled from 0.24% in June to 0.58% at year-end.[8] We think the NAV volatility may be much lower in calmer periods.

How "Real" NAVs Performed in 2011 for Other Short-Duration Investments

The downside to drawing conclusions from the so-called "shadow" NAVs is that they are not the prices on which share transactions were conducted nor were they immediately observable by shareholders due to their delayed disclosure. So, we set out to study two similar "cash" investments for which NAVs are directly observable and/or executable: an ultra-low duration exchange-traded fund (PIMCO Enhanced Short Maturity Strategy Fund, Ticker: MINT, $1.4 billion in net assets) and an ultra-short bond mutual fund (Wells Fargo Advantage Ultra Short Fund, Ticker: STADX, $1.2 billion in net assets). Both investments are widely held by cash investors pursuing "enhanced yield" strategies with publicly available daily NAVs.

Figure 2: Normalized NAV History of Commingled "Cash" Investments[9]

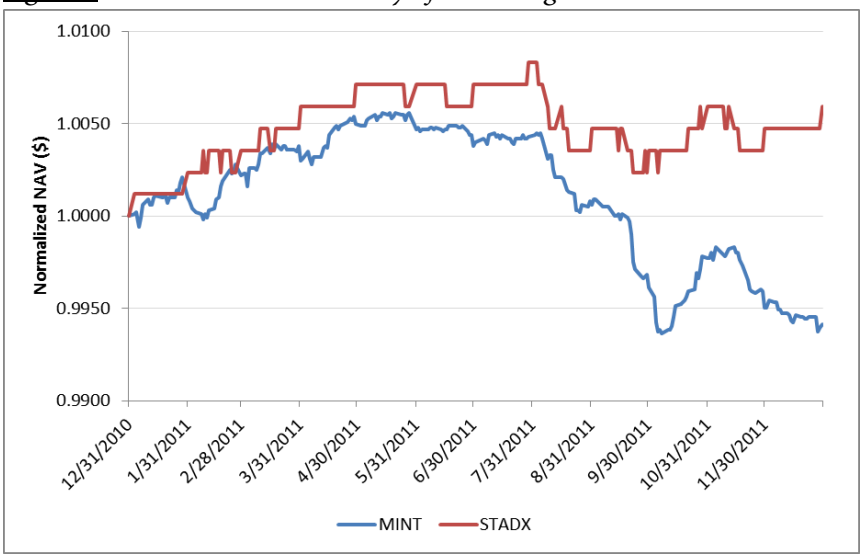


Figure 2 presents the normalized NAVs for the two alternative cash instruments by resetting their respective NAVs to $1.00 at December 31, 2010. The range of daily NAVs was $0.9936 to $1.0056 for MINT and $1.0000 to $1.0083 for STADX during 2011. At first glance, the rounded NAV for MINT would have been $1.01 in May and $0.99 in September. STADX would have seen its rounded NAV reach $1.01 in March and November.

However, direct application of the above illustration is not appropriate for money market funds. Both MINT and STADX are managed with policy guidelines significantly

more relaxed than money market funds' Rule 2a-7. For example, as of February 29, 2012, the effective maturity for MINT was 1.05 years, or 383 days.[10] For STADX, it was 0.67 years, or 244 days. This represents 6.4x and 4.1x, respectively, of the 60-day maximum maturity allowed for money market funds. If one assumes that NAV volatility roughly correlates to maturity risk, the NAVs for MINT and STADX might have been in the range of $.9990 to $1.0009 and $1.0000 to $1.0020, respectively, with 60-day weighted average maturity portfolio construction. Again, these figures would have been inside the $0.995 and $1.005 thresholds.

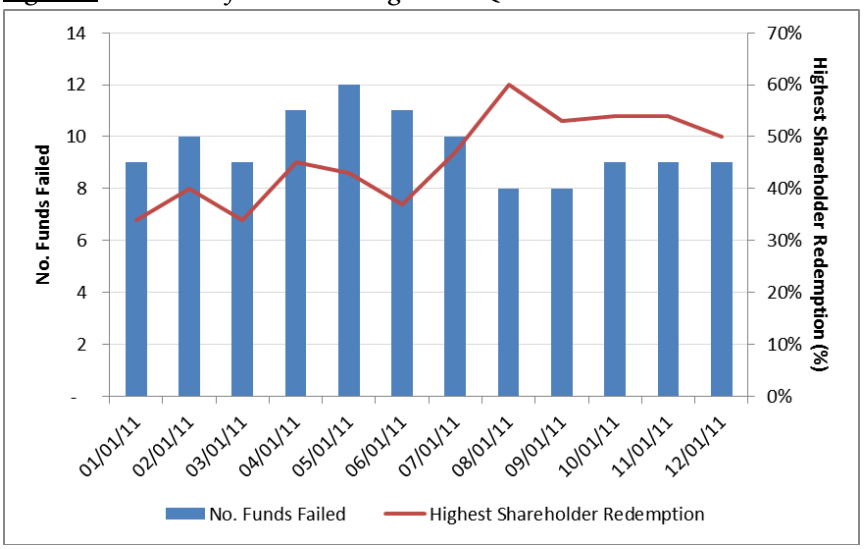
In addition to emphasizing that the above comparisons are for illustrative purposes only, we note that neither MINT nor STADX has regulatory minimum credit risk or liquidity requirements. Since money market funds do have such requirements, it is not unreasonable to imagine that they would have had tighter bands of NAV variations in a VNAV environment during 2011, all else being equal.

Can Rounded NAVs Survive More Stressed Situations?

Notwithstanding inferences from market value NAVs of MINT and STADX, it is still prudent to ask whether the rounded $1.00 NAV can withstand significantly higher market stress than what was experienced in 2011. To answer this question, we revisited the stress test engine within FundIQ®.

In a standard FundIQ® weighted average life (WAL) stress test, we assume that yield on non-Treasury direct obligations will rise gradually along the maturity curve at an increasing rate such that yield is unchanged for overnight securities but increases by 3.00% for a security with a one-year final maturity. Yield increases in other parts of the curve are interpolated accordingly (for example, the yield on a six-month agency note will rise 1.5%). The first objective of the stress test is to observe whether the NAV falls below $0.995 when portfolio securities experience yield increases. We also anticipate that mounting unrealized losses in the fund may invite shareholders to redeem shares at the constant $1.00 price, so the second objective of the stress test is to measure the percentage of share redemptions at $1.00 before the resulting NAV reaches $0.995.

Figure 3: Number of Funds Failing FundIQ® WAL Stress Tests



Source: FundIQ® proprietary research database from published fund holdings data

Figure 3 shows that between eight and 12 of the 15 prime funds tracked by FundIQ® failed our stress tests at least once in 2011. What strikes us is that roughly half of the funds survived our very stringent stress scenario which was intended to simulate the first weeks after the Lehman Brothers bankruptcy. The results demonstrate that it is at least conceivable to manage a Rule 2a-7-compliant fund to the rounded $1.00 NAV in a market situation that is more stressed than what was experienced during 2011. In addition, of the funds that survived the tests, some may tolerate an at-par ($1.00) shareholder redemption at 40% to 60% of net assets before seeing the rounded NAVs drop to $0.995.

These results gave us comfort that, under the dual-NAV approach, the rounded NAV of $1.00 may be maintainable without government intervention if the 2008 financial disaster were to repeat itself.

Will a NAV Other Than $1.0000 Cause a "Butterfly Effect?"

A major concern that we cannot overlook is the information signaling effect of a NAV less than $1.0000, however miniscule it may be. A main opposition to VNAV is the fear that a non-par NAV in one fund may cause the "butterfly effect" of runs in other, previously unrelated funds. We think that it is normal, and healthy, for funds experiencing market-value NAV drift to lose some assets, but funds unaffected by the root cause should not experience large scale redemption when shareholders are well informed. At least one empirical example validates this assertion.

In data related to Figure 1, one large prime fund disclosed in its N-MPF filing with the SEC dated September 8, 2011, that its market value NAV was $0.9999 on August 31.

Due to the 60-day delayed disclosure rule, this information would have become public knowledge on or about November 8. We, therefore, examined shareholder activities in the affected fund and its peer group of funds between October 31 and November 15, 2011.

Figure 4: Portfolio Net Asset Flows (10/31/11 – 11/15/11)[11]

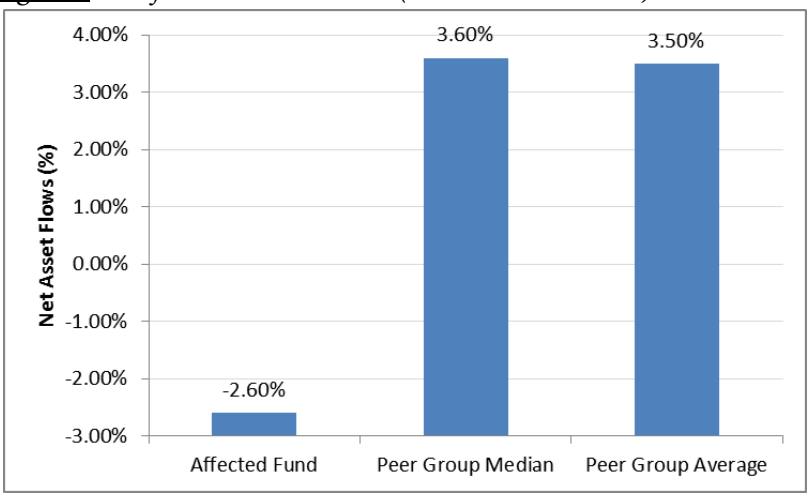


Figure 4 presents asset flows in the two-week period bracketing the announcement date. Although the affected fund saw outflows of 2.6% in the 15-day period, the rest of the large prime fund peer group saw inflows of more than 3%. It appears that the announcement by the affected fund did not influence shareholder activities in other funds. Although one should not read too much into a single incident, flow activities in the affected fund and the remaining peer group funds may be an indication that shareholders made informed decisions based on improved disclosure.

We think that the most direct threat to a fund's constant NAV is the sudden, and often unexpected, credit deterioration of one or several investments in a portfolio. Normal daily market value volatility should not trigger shareholder runs, especially when the volatility is fully reflected by the intrinsic NAV. When one fund experiences a large INAV drop, the absence of similar INAV movement in other funds should provide clarity that the drop may be idiosyncratic to the fund in question.

Likewise, we do not anticipate runs in a gradually rising interest rate environment because the INAV drift from higher interest rates may be very insignificant. For example, an increase of 0.50% in short-term rates may result in the INAV of a fund with a 60-day WAM to decline by only $0.0008 (0.50% x 60/365 x $1.00), or one-sixth (1/6) of the distance from $1.00 to $0.995.

Conclusion – A System of Dual-NAVs May Bridge Industry and Regulator Concerns
In this last section, we provide a concise summary of our observations and positions supporting the dual-NAV approach.

A. Further Credit, Liquidity, Capital or Redemption Requirements May Not be Necessary

a. The revised Rule 2a-7, in place since 2010, appears to have sufficiently strengthened the credit and liquidity profiles of money market funds
b. Prime money market funds survived the real-life stress tests of the Eurozone debt crisis and U.S. government rating downgrade with only moderate outflows and NAV volatility
c. Regulators and investors are better informed about potential money market fund risk than in the years leading up to the credit crisis in 2008
d. The systemic risk of money market funds has declined due to ongoing deleveraging of financial borrowers and behavioral rationalization by shareholders
e. Capital buffer requirements may be arbitrary and are akin to transaction costs, which may not be sufficient to fend off runs
f. Redemption holdback requirements may introduce major non-investment related complications, contradict other legal requirements, and require very expensive systems overhauls

B. The VNAV Approach Based on the Dual-NAV Structure May Bridge the Gap

a. The removal of the amortized cost method requires funds to achieve the rounded constant NAV of $1.00 solely through prudent risk management
b. The daily intrinsic NAV fully reflects the fair market value of portfolio securities without delay
c. All intermediary systems must be able to handle transactions at prices other than $1.00
d. RNAV and INAV must be displayed side-by-side in all public fund disclosures so that any premium and discount to intrinsic value is fully disclosed, a practice already in place for closed-end funds and exchange-traded funds

e. Funds should conduct stress tests with standardized assumptions provided by the SEC on a weekly basis for comparison purposes, and make the results available to the public

C. Benefits of Implementing the Dual-NAV Approach

a. The dual-NAV approach provides true transparency into money market fund risk without sacrificing the utility of a daily liquidity vehicle
b. The approach removes systemic risk and unfair competition by requiring funds to maintain NAV stability through management capability, not based on parental/systemic assumptions
c. Daily INAV transparency reduces information asymmetry that causes the first mover incentive to redeem shares from unaffected funds
d. It does not protect funds from idiosyncratic risk, such as defaults, which promotes strong credit management
e. It rationalizes the proper use of money market funds not as zero-risk vehicles (deposits), but as low-risk vehicles (investments) for shareholders
f. The approach does not require capital buffers or holdbacks, both of which may result in unintended consequences
g. The approach is already in practice, albeit at a monthly interval and on a 60-day delay

D. Thoughts and Issues Concerning the Dual-NAV Approach

a. More study is needed on the pricing accuracy of individual securities from which market value NAVs are calculated. The secondary market for money market securities tends to be thin and many securities are not publicly traded
b. Our preliminary studies indicate that RNAV stability may be achieved at a base of $10.00, although investor reaction to this change requires further study
c. More studies may be conducted on the NAV history of MINT, STADX and other cash-like instruments during other periods of stress
d. Additional costs in daily INAV reporting, and perhaps disclosure of daily fund holdings, need to be addressed
e. If desired (although we think it is unnecessary), the approach may be coupled with a $0.50 capital buffer and an automatic wind-down

provision, so that once the INAV breaches $0.9950, the buffer is applied and the fund enters the run-off state

In conclusion, we believe that recent regulations and external factors have sufficiently reduced the systemic risk of money market funds to taxpayers and greater financial markets. A dual-NAV based, variable NAV approach may provide further shareholder risk mitigation that removes the incentive to run from well-managed funds. We believe that this approach is less disruptive than the proposals being considered, and since a variation of the approach already exists, we think its implementation likely will encounter the least resistance.

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[1] FundIQ offers in-depth research and ongoing analysis of 50 elements within five risk categories of 15 of the largest AAA-rated prime institutional money market funds. FundIQ® is a registered trademark of Capital Advisors Group, Inc.

[2] Chairman Mary L. Schapiro made similar remarks on a number of occasions, one of which was at the Practicing Law Institute on February 24, 2012. http://www.sec.gov/news/speech/2012/spch022412mls.htm

[3] Interested readers may refer to an SEC webpage titled "President's Working Group Report on Money Market Fund Reform (Request for Comment)" for comment letters on this subject. http://www.sec.gov/comments/4-619/4-619.shtml

[4] Moody's Investors Service published "Special Comment: Sponsor Support Key to Money Market Funds" on August 9, 2010, indicating that more than 200 constant NAV funds in the U.S. and Europe received voluntary sponsor support since the introduction of money market funds some 43 years ago. http://www.moodys.com/researchdocumentcontentpage.aspx?docid=PBC_126231

[5] See the Treasury Department's original announcement of Temporary Guarantee Program for Money Market Funds here http://www.treasury.gov/press-center/press-releases/Pages/hp1161.aspx

[6] Interested readers may refer to the SEC's Request for Comment webpage for comment letters on this subject. See Endnote 2.

[7] Total net asset data is from the Money Fund Analyzer product from iMoneyNet, a subscriber service.

[8] Rates are from Bloomberg generic index data for the three-month (US0003M) LIBOR.

[9] Daily NAV information for MINT comes from PIMCO's website, http://www.pimcoetfs.com/Funds/Pages/PIMCOEnhancedShortMaturityStrategyFund.aspx?WT.svl=fund_nav_duration. Daily historical prices for SDATX may be downloaded from Yahoo! Finance, http://finance.yahoo.com/q/hp?s=STADX+Historical+Prices.

[10] Effective maturity information for MINT and STADX is from Morningstar's webpages http://etfs.morningstar.com/quote?t=MINT, and http://quote.morningstar.com/fund/f.aspx?t=stadx

[11] Total net asset data is from the Money Fund Analyzer product from iMoneyNet, a subscriber service.

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