IMMFA

INSTITUTIONAL MONEY MARKET FUNDS ASSOCIATION

Mohamed Ben Salem
International Organization of Securities Commissions (IOSCO)
Calle Oquendo 12
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Spain

**Monday 28 May 2012**

Dear Mr Ben Salem

**Public Comment on Money Market Fund Systemic Risk Analysis and Reform Options**

Please find below the response of the Institutional Money Market Fund Association (IMMFA) to the report 'Money Market Systemic Risk Analysis and Reform Options' (the Report).

IMMFA represents managers of EU-domiciled, constant net asset value (CNAV) MMFs that meet ESMA's definition of a 'short-term money market fund'. Therefore, all references in our response to a MMF, are references to a short-term money market fund. IMMFA's Members are bound by a Code of Practice (which can be found on our website) whose objective is to protect investors by imposing high and consistent standards on IMMFA funds.

In summary:

MMFs provide a simple but valuable intermediation service between lenders and borrowers in the short-term debt markets. They are used, in particular, by institutional investors whose cash assets are generally in excess of the amount guaranteed by deposit insurance schemes. To that extent, investors are exposed to credit risk when they make deposits, and manage that risk by diversifying deposits between creditworthy banks. But there are constraints on the level of diversification that investors can achieve on their own, in particular because they don't have the expertise to assess creditworthiness across a large number of issuers. Therefore they use MMFs which – like other collective investment schemes – can provide higher levels of diversification than investors could achieve individually, and can employ specialist credit analysts through economies of scale.

Prime MMFs invest substantially all of their assets in high-quality, low duration fixed income instruments issued by banks, businesses and governments. In September 2008, a series of headline events undermined investor confidence in the solvency of the global banking system. That caused some US investors to switch their investment from prime MMFs to treasury and government MMFs (which invest in US Treasury Bills and other government agency securities): a classic 'flight to quality'.

US MMF investors were not the only party to lose confidence in the global banking system: banks lost confidence in one another! Consequently, the interbank market and secondary market for money market instruments essentially closed, which made it increasingly difficult for MMFs to sell assets to raise cash to make redemption payments. The flight came to an end when the US Treasury Temporary Guarantee Programme effectively made prime MMFs 'as good as' treasury MMFs and made further switching unnecessary.

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Non-US investors didn't react so strongly, and therefore redemptions from non-US MMFs were less severe.

Nevertheless, generalising the experience of US MMFs in 2008: a loss of confidence in the banking system may cause some investors to 'fly to quality', including by switching their investments from prime to treasury MMFs. The only credible way of stopping that flight to quality is to restore confidence in the banking system, and quickly. In the intervening period and in the absence of a functioning secondary market, the primary objective of MMF reform should be to ensure that funds have sufficient natural liquidity to meet redemption payments.

Therefore, we recommend that:

- IOSCO should specify minimum liquidity requirements for MMFs, in order to be able to make redemption payments without relying on secondary market liquidity. Those requirements need to be proportionate to the role of MMFs in providing short term funding to the banks, companies and governments. The Securities and Exchange Commission (SEC) has struck a sensible balance by requiring US MMFs to hold at least 10% of their assets in overnight cash, and 30% in assets that mature within one week.
- IOSCO should require MMFs to know their clients, in order to enable them to monitor subscription/redemption cycles and manage risks arising from shareholder concentration. Such measures may need to be accompanied by requirements on intermediaries to disclose the identity of underlying investors to MMFs.

We believe those reforms represent an appropriate and sufficient response to the events of 2008.

Some regulators have taken the narrative further. They have observed that, insofar as a loss of confidence in the banking system may cause a switch from prime to treasury MMFs, then the funding provided by prime funds to the banking system would necessarily decrease; but in those circumstances, reduced funding would further undermine confidence in the banking system. Therefore, they recommend that MMF reform should not merely focus on ensuring that funds have sufficient liquidity to meet redemption payments, but also should actively disincentivise investors from redeeming.

We have strong misgivings about this proposal. Investors are entitled to redeem from a MMF if they have legitimate concerns about the creditworthiness of one of its underlying issuers; and a MMF is similarly entitled to withdraw funding from an underlying issuer if that would otherwise frustrate its investment objective ('security of capital and daily liquidity'). If MMFs are reformed in a manner that interferes with those entitlements, then investors are likely to seek an alternative wrapper.

Nevertheless, in the interest of engaging regulators, we have assessed the effectiveness of various reform proposals in disincentivising redemptions and we cautiously recommend that IOSCO should further investigate the viability and consequences of empowering MMF boards to impose a trigger-based liquidity fee on redemptions.

Some comments on shadow banking, and the comparison of MMFs with bank deposits:

The description of MMFs as 'bank deposit like' is a metaphor. We believe a metaphor is an inadequate foundation on which to construct regulation. What's more, this particular metaphor is unsustainable given the profound differences between banks and MMFs, notably in relation to leverage.

The comparison of MMFs with banks has caused regulators to fixate on fund pricing, and propose that MMFs would be less 'bank deposit like' if constant net asset value (CNAV) funds were forced to adopt a variable net asset value (VNAV). As described in detail below, we believe that changing the pricing mechanism of MMFs would neither disincentivise investor redemptions, nor better enable MMFs to meet such redemptions as arise without relying on secondary money markets. It would

merely undermine their utility to a large number of investors (as described in response to question twelve). We therefore recommend IOSCO should reject this proposal.

Finally, we would like to commend IOSCO on the thoroughness of its consultation. However:

- We do not believe a four week consultation gives sufficient time to fully answer all of the questions arising, and therefore request a further consultation on its final recommendations to the Financial Stability Board (FSB);
- We are concerned that prominent members of the FSB appear to have pre-judged the outcome of IOSCO's consultation, and therefore intend to seek reassurance from the FSB on its governance arrangements and the evidential basis of its policy making.

Yours sincerely

Travis Barker
Chairman

# SYSTEMIC RISK ANALYSIS

## QUESTION ONE

**Do you agree with the proposed definition of money market funds? Does this definition delimit an appropriate scope of funds to be potentially subject to the regulatory reform that the FSB could require to be put in place, with an objective to avoid circumvention and regulatory arbitrage?**

The Report defines a MMF as "an investment fund that has the objective to provide investors with preservation of capital and daily liquidity, and that seeks to achieve that objective by investing in a diversified portfolio of high-quality, low duration fixed-income instruments."

We agree with this definition, since it is consistent with the way institutional investors use MMFs, i.e. to manage credit risk through diversification. Specifically, the cash assets of institutional investors are in excess of the amount guaranteed by deposit insurance schemes. To that extent, investors are exposed to credit risk when they make deposits, which they manage by diversifying their deposits between creditworthy banks. For example, company treasury departments typically maintain a 'treasury policy' which specifies an approved panel of banks and associated counterparty exposure limits. But there are constraints on the level of diversification that investors can achieve on their own, in particular because they don't have sufficient expertise to assess issuer credit worthiness. Therefore, investors use MMFs as a means of 'outsourcing' credit analysis[1] and achieving diversification.

However, the definition focuses on investment funds and ignores other wrappers which investors can use to achieve the same economic exposure as a MMF (for example unit linked contracts of insurance, bank-issued certificates and unregulated schemes). If burdensome reform proposals were focussed exclusively on investment funds, then investors would reallocate to those other wrappers. This is a recurring issue in the regulation and taxation of investment funds relative to other wrappers, and is unlikely to be resolved in the context of MMF reform. In order to mitigate the issue, MMF reform proposals should not create an unlevel playing field by being too burdensome.

## QUESTION TWO

**Do you agree with the description of money market funds' susceptibility to runs? What do you see as the main reasons for this susceptibility?**

The Report says that MMFs are vulnerable to runs because each shareholder has an incentive to redeem their shares before others when there is a perception that the fund might suffer a loss. That incentive has been described elsewhere as providing investors with a 'first mover advantage'.

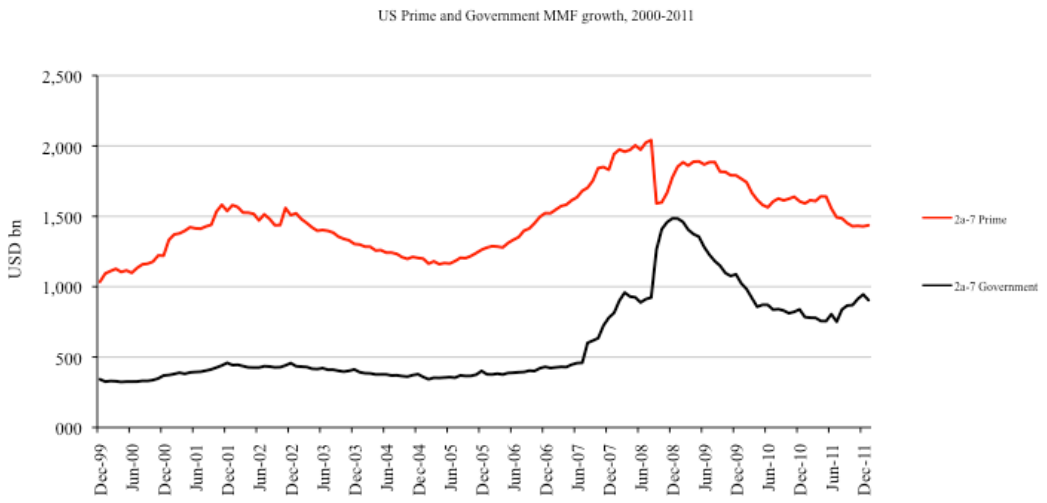
It is arithmetically true that:

- Redemptions from a CNAV fund may concentrate losses amongst remaining investors;
- Redemptions from a *mid-priced* VNAV fund may concentrate losses amongst remaining investors (hence the proposal that VNAV funds should switch to *bid-pricing in extremis*, see question twenty five);
- Redemptions from *any* MMF (or, for that matter, any equity or bond fund or other wrapper that enables collective investment) may concentrate less liquid assets amongst remaining investors.

[1] Since the financial crisis investors have shown greater interest in understanding the credit analysis processes employed by MMFs, who, in turn, have sought to distinguish themselves from one another by the quality of their process. We would be happy to provide IOSCO with marketing materials from a sample of sponsors, describing their credit analysis processes.

These various 'first mover advantages' have been a feature of MMFs for some forty years; during that period MMFs have only suffered one 'run' in 2008; therefore it follows that the first mover advantage cannot be a sufficient explanation for that run. Something else must have occurred in 2008 to cause investors to redeem from US 2a-7 prime funds. And it is not especially difficult to identify what that 'something else' may have been…

In September 2008 a series of headline events (e.g. relating to Fannie Mae and Freddie Mac, Merrill Lynch, American International Group, Washington Mutual Group, Bank of Ireland, Allied Irish Bank, Lloyds etc) caused investors to lose confidence in the solvency of the global financial system, and the banking system in particular. 'Prime' MMFs invest substantially all of their assets in deposits and securities issued by banks and other short-term issuers. US institutional investors therefore redeemed because they were worried about losses that prime MMFs might be exposed to, i.e. they redeemed from US prime MMFs because they no longer believed a diversified investment in the financial system was an effective way of managing credit risk. The majority of their redemption proceeds were used to subscribe to US Treasury MMFs (which invest in US Treasury bills). In other words, and contrary to much commentary, there wasn't a 'run' from US MMFs *per se*: rather investors sought to avoid losses by 'switching' their exposure from the banking system to the US government: a classic 'flight to quality'. The flight came to an end when the US Treasury's Temporary Guarantee Programme effectively made prime MMFs 'as good as' treasury MMFs and made further switching unnecessary:




*Source: iMoneyNet*

(Why did investors redeem from prime MMFs in greater numbers in the *USA* than elsewhere? In 2008 and subsequently, the US financial and mainstream media regularly reported stories about MMFs – presumably because the high level of retail investment makes them 'newsworthy'. However, outside of the USA, MMFs remain a niche product and receive little coverage, even in the financial media. Perhaps widespread reporting on MMFs in the USA in 2008 perpetuated investors' anxiety about possible losses in prime MMFs?)

Looked at in this way, a MMF is no different to any other investment fund, i.e. likely to experience redemptions if investors believe it may not meet its investment objective. Specifically, since the investment objective of a MMF is to "provide investors with preservation of capital and daily liquidity…", and since investors feared that prime MMFs might not be able to meet that objective in 2008, it is unsurprising that a significant number decided to redeem.

This is surely a more plausible explanation of investor redemptions than the 'first mover advantage', i.e. during a financial crisis it is plausible to suggest that investors will 'fly to quality', and implausible to suggest that they will pause to consider the pricing and liquidity structure of MMFs, identify that one investor's redemption might cause a disadvantage to those who remain, and therefore decide to redeem themselves. The reaction provoked by a crisis is panic/flight to quality, not careful calculation of the second-round consequences of other people's behaviour. Similarly, people run from burning buildings to avoid being burnt, not because they calculate the first person to the exit enjoys a 'first evacuator advantage'.

In summary: a loss of confidence in the banking system may cause a 'flight to quality' by some investors, including switching between prime and Treasury MMFs. The only credible way of stopping that flight to quality is to restore confidence in the banking system, and quickly. Therefore, in the intervening period and in the absence of a functioning secondary market, the main objective of MMF reform should be to ensure that funds have sufficient natural liquidity to meet redemption payments, otherwise there is a risk that MMFs would be forced to gate, which would transmit the crisis into the real economy.

## QUESTION THREE

**Do you agree with the description of the role of money market funds in short-term money markets? To what extent this role may create risks for short-term funding markets and their participants? Are there changes to be taken into account since the 2007-2008 experience? What are the interdependencies between banks and MMFs and the risks that are associated?**

We agree that MMFs are important providers of short-term funding to financial institutions, businesses, non-profits and governments. Therefore, if a loss of confidence in the banking system causes investors to redeem from prime MMFs, then this will result in a withdrawal of short term funding, with serious macroeconomic consequences.

However, it is important to contextualise this observation:

First, institutional investors were not the only party to lose confidence in the banking system in 2008: far more significantly, banks lost confidence in one another (and before investors started to redeem from MMFs)! Consequently, the interbank market closed, which was a substantial cause of the funding crisis they experienced, and their forced reliance on emergency liquidity support from central banks.

Second, in a 'world without MMFs', institutional investors would behave in essentially the same way, i.e. the would manage credit risk by switching their credit exposure, albeit by switching from direct deposits to direct holdings of Treasuries. (Please note that institutional investors are not 'flighty' depositors, *per se*. Their behaviour is a rational reaction to bank regulation, in particular to the fact that their deposits are largely uninsured.)

Third, a number of reforms have already been made to bank regulation which reduces their reliance on short-term funding from institutional investors (including MMFs). Specifically, the new liquidity rules contained in the Basel accord discount funding from institutional investors towards a bank's liquidity requirement. In a recent speech[2] Paul Tucker, Deputy Governor of the Bank of England, has gone even further and suggested there should be a cap on the proportion of funding banks can accept from institutional investors.

(We would like to sound a note of caution here: in their efforts to strengthen the balance sheets of banks and restore credibility to bank regulation, these reforms are merely passing risk from the financial system into the real economy. As the rate environment improves, these reforms are likely to impose significant costs on institutional investors – in particular,

[2] "Shadow banking – thoughts for a possible policy agenda", Paul Volker, 27 April 2012, www.bis.org

corporate treasurers - in the form of reduced interest rates. If those interest rates are lower than inflation, which seems likely, then institutional investors face a future in which they are exposed to negative real interest rates, i.e. the gradual erosion of the principal value of their cash. One can imagine them responding in a number of ways:

- Companies may try to manage their operations with minimal cash balances, in order to avoid the cost of carry and notwithstanding the potential liquidity risks;
- Companies may creep out along the yield curve in the search for yield, and notwithstanding the potential liquidity and credit risks;
- Companies may seek to generate returns on cash outside of the banking system, for example by lending to one another through commercial paper markets.

In any event, we are concerned that bank regulators have paid little regard to the impact their reforms may have on the real economy. It is unsatisfactory that a crisis which arose because of excess lending to the property and government sectors and inadequate regulatory and monetary oversight has prompted reforms which impose costs on the real economy!)

In summary, and notwithstanding the above: a loss of confidence in the banking system is likely to cause redemptions from prime MMFs, and such redemptions will necessarily reduce the level of funding MMFs can provide to banks and other issuers. Therefore, some commentators believe an objective of MMF reform should be to reduce the likelihood of redemptions during a financial crisis by making structural changes that either provide investors with an incentive to remain in MMFs, or impose a disincentive to redeem.

We have strong misgivings about this objective.

We recognise the interest banks and their regulators have in maintaining a deposit base during a financial crisis. But we also recognise the interest depositors have in avoiding losses! After all, a bank's losses are rarely the fault of its depositors, but rather: its shareholders may have received an excess reward relative to the amount capital subscribed; its management may have received an excess reward at the expense of its solvency; or it may have been allowed to hold insufficient capital relative to its risks. Surely, investors are entitled to redeem from a MMF if they have legitimate concerns about the creditworthiness of one of its underlying issuers; and a MMF is similarly entitled to withdraw funding from an underlying issuer if that would otherwise frustrate its investment objective ('security of capital and daily liquidity'). To that extent, it would be inappropriate for regulation to penalize rational behaviour by disincentivising redemptions.

However, we do recognise that high levels of redemptions from a MMF during a financial crisis can, in a self-fulfilling fashion and *in extremis*, cause redeeming investors to disadvantage remaining investors. Therefore, in our answers to questions twelve to thirty two, we analyse the likely effectiveness of structural reforms in disincentivising redemptions. However, we believe regulators need to exercise great caution for fear of falling on the wrong side of the dilemma described above.

## QUESTION FOUR

**What is the importance of sponsor support for MMFs? What is the respective percentage of bank versus non-bank sponsors in the MMF industry? Are there differences among MMFs depending on their sponsors? What are the potential systemic risks of support or protection against losses provided by sponsors?**

The risks and rewards of an investment in a MMF belong to its investors, and are described in its prospectus. There is no legal basis for investors to expect to be able to transfer downside risk to the fund sponsor (except in cases of gross negligence).

Notwithstanding the above, on rare occasions the sponsors of both CNAV and VNAV funds have voluntarily provided support to their funds. These are strictly commercial decisions:

sponsors have provided support if the expected benefits (in terms of retained business) outweighed the expected costs. It is rational for sponsors to support their funds in this way, just as it is rational for trading companies to tolerate occasional loss making periods in anticipation of a return to profit.

However, we recognise that investors should not be encouraged to *expect* sponsors to support their MMFs. Such expectations cannot be enforced (because managers are under no obligation to support their funds) and consequently might lead investors to misunderstand and misprice the risks they are subject to when they invest in a MMF. Indeed, for this reason IMMFA has strongly criticized credit ratings agencies who include an assessment of the likeliness of 'sponsor support' in their methodology.

We do not believe that the instances of sponsor support that occurred in 2007/8 have caused investors to develop an expectation of support. We note:

First, the fact that investors redeemed from US MMFs in 2008 is *prima facie* evidence they did not expect sponsors to support their funds, i.e. if they had believed support would be forthcoming, then they would not have redeemed.

Second, since 2008 investors have required more detailed and frequent disclosure of MMF portfolios, precisely because they recognise they own the risks and rewards associated with those portfolios and ought to monitor them carefully.

In summary: whilst sponsor support might be welcome, it ought not to foster any expectations on the part of investors. Therefore, an objective of MMF reform should be to reinforce the fact that the risks and rewards of an investment in a MMF belong to its investors.

## QUESTION FIVE

**Do you agree with the description of MMF benefits? Are there other benefits of MMFs for investors than those outlines in this presentation? What are the alternatives to MMFs for investors? How has investor demand for MMFs recently evolved? What would lead investors to move away from MMFs to other financial products?**

We agree with the description of MMF provided in the Report.

In particular, and as noted above, MMFs are a necessary by-product of bank regulation, i.e. since the cash asset of institutional investors are typically in excess of deposit insurance, they require MMFs to manage credit risk through diversification. We believe two things follow from this:

First, because MMFs exist to meet a legitimate economic need, any reform should be proportionate. It would not be proportionate to reform MMFs in a manner that made them uneconomic, frustrated them from meeting their investment objective, or disadvantaged them relative to direct investment.

Second, if MMFs were reformed in a disproportionate manner and, as such, became unusable by investors, then we believe either: investors would seek to manage credit risk through segregated accounts, other wrappers (unit linked contracts of insurance, participatory notes etc) or unregulated schemes; or would alternatively be forced to manage that risk by deliberately concentrating their deposits in a few select banks in the belief that they are (or in an effort to make them) 'too big to fail'. Neither outcome would be satisfactory from a systemic perspective.

Therefore, an objective of MMF reform should be to ensure the continued viability of MMFs.

## QUESTION SIX

**Do you agree with the proposed framework comparing money market funds and bank deposits? Are there other aspects to consider?**

MMFs have been compared with banks/bank deposits in two distinct ways:

### *Shadow banking*

MMFs have been described as part of a 'shadow banking system' which performs 'bank like' activities without being subject to the rigours of bank regulation.

In particular, the Financial Stability Board (FSB) has described shadow banking as 'a system of credit intermediation that involves entities and activities outside the regular banking system, and raises i) systemic concerns, in particular by maturity/liquidity transformation, leverage and flawed credit risk transfer, and/or ii) regulatory arbitrage concerns.' In Appendix A we consider how MMFs measure up to that definition, and find that:

- MMFs do perform liquidity transformation, but subject to tighter controls than are imposed on banks (which is sensible, since, unlike banks, they don't and shouldn't have access to the discount window) and consequently their maturity mismatch is modest;
- MMFs do not employ leverage as part of their investment strategy;
- MMFs do not perform credit transference, or credit transformation; and
- MMFs do not perform regulatory arbitrage.

### *Deposit-like*

CNAV MMFs have been compared with bank deposits on the grounds that they provide investors with a 'bank like' return. For example, Paul Tucker, Deputy Governor of the Bank of England, has said[3]:

> *"On both sides of the Atlantic, many [MMFs] are so-called Constant Net Asset Value (CNAV) funds. Stripping through the detail, this means that they promise to return to savers, on demand, at least as much as they invest. Just like a bank."*

We disagree with the comparison of CNAV funds and bank deposits for three reasons:

First, a MMF (CNAV or otherwise) *does not* 'promise' to return investors at least as much as they invest. Rather, and as defined by IOSCO, a MMF is: "an investment fund that has the *objective* to provide investors with preservation of capital and daily liquidity…". Insofar as a MMF that achieves that objective, it will necessarily be 'like' a bank deposit, since a bank deposit also provides preservation of capital and daily liquidity. But that id a mere tautology.

Second, the comparison of a MMF with a bank deposit is highly selective. In pursuit of its investment objective, a MMF invests in high quality, low duration fixed income instruments, notably deposits, commercial paper and short dated government securities. Those investments overwhelmingly redeem at par and exhibit minimal mark-to-market movements in the interim: so, why stop at describing MMFs as 'bank deposit like' and not also 'government security like' and 'commercial paper like'? The point, of course, is that return of an investment fund is inevitably 'like' the return of the assets that it invests in. A MMF invests in bank deposits, government securities and commercial paper because they are most likely to deliver its investment objective. That means a MMF is 'like' bank deposits, government securities and commercial paper, in the same way that an Indian equity fund is 'like' Indian equities, or an emerging market debt fund is 'like' emerging market debt.

[3] "Shadow Banking, Financing Markets and Financial Stability", Paul Tucker, 21 January 2010, www.bankofengland.co.uk

Third, and more importantly, the comparison of a MMF with a bank deposit has led to illogical policy recommendations. Specifically, some regulators have recommended that MMFs should adopt a variable NAV since that would make less 'bank deposit like'. For example, Mr Tucker has said[4]:

> *"Echoing the concerns that Paul Volcker is reported to have expressed at internal Federal Reserve meetings around thirty years ago, the Bank of England believes that Constant-NAV money funds should not exist in their current form. They should become either regulated banks or, alternatively, Variable NAV funds that do not offer instant liquidity."*

Setting aside for now whether there is a substantive difference between CNAV and VNAV funds (which we discuss in our answer to question seven) it is unclear to us why regulators suppose such price fluctuations would mitigate any of the substantive risks described in questions two, three and four. Specifically: investors would still be likely to redeem from a VNAV fund if they lost confidence in its assets; such redemptions would cause short-term funding to be withdrawn from financial institutions, businesses and governments; and sponsors would still seek to support VNAV funds if they considered it profitable to do so (for example, we understand enhanced VNAV funds received significant sponsor support in 2007/8).

Therefore, on both of the accounts described above, we disagree with the comparison of MMFs and bank deposits.

## QUESTION SEVEN

**Are there other similarities or differences between CNAV and VNAV funds which would be useful for the analysis? Is there evidence (based on representative samples) showing differences in the fluctuation of the funds' NAV depending on their model? What is the extent of the use of amortised cost accounting by VNAV funds? Has this practice evolved over time?**

As described above, the comparison of MMFs with bank deposits has caused the reform debate to fixate on fund pricing, and a simplistic narrative:

- CNAV = deposit like = bad
- VNAV = not deposit like = good

We believe that narrative is incorrect (see our answer to questions six and twelve); has distracted attention from more serious reform options (see our answer to questions twenty one, twenty two and twenty three); and has distorted industry engagement with the reform debate (i.e. by incentivising participants to identify with 'good' VNAV funds).

We therefore appreciate IOSCO's efforts to step back from this narrative, and look at the substantive differences and similarities between CNAV and VNAV funds.

The expressions CNAV and VNAV are somewhat misleading, and very poorly understood. CNAV is often supposed to refer to a MMF that makes a promise or commitment to provide security of capital, whereas VNAV is often supposed to refer to a MMF whose share price regularly fluctuates in proportion to the market value of its underlying portfolio. Neither supposition is correct.

Appendix B provides a detailed description of the pricing mechanism of CNAV and VNAV funds which meet the European definition of a 'short term money market fund'. We show that CNAV and VNAV funds have much more in common than is often thought. Both use amortised accounting to estimate market prices, although subject to different constraints.

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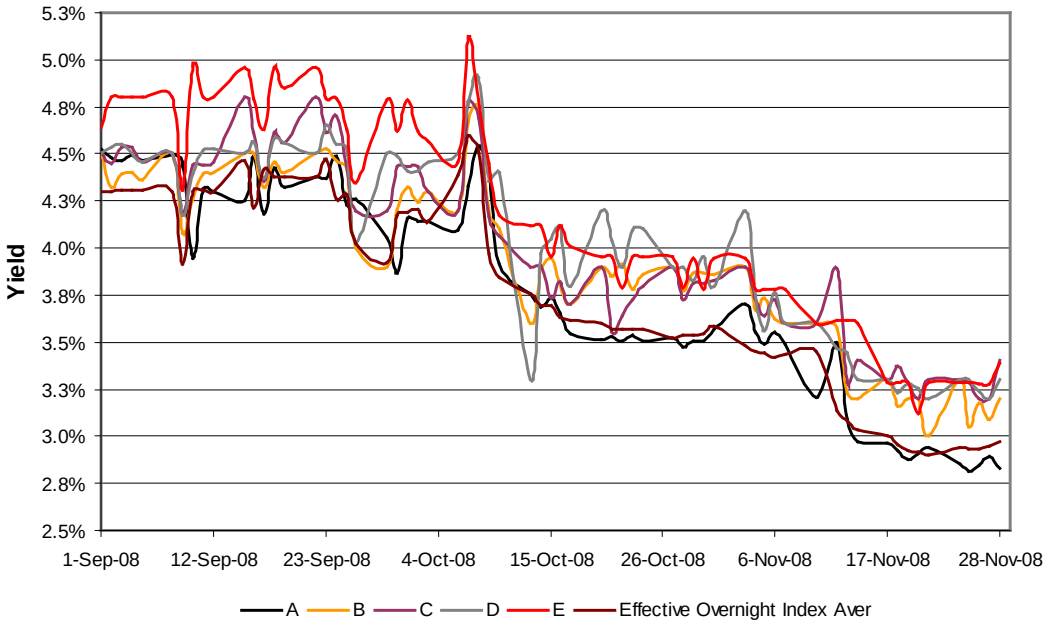
[4] "Shadow Banking, Financing Markets and Financial Stability", Paul Tucker, 21 January 2010, www.bankofengland.co.uk

And both can offer accumulating and distributing shares, which impact the constancy or variability of investment returns to investors.

To evidence this point, and since the most developed market for VNAV funds is in France, we have looked at the share prices of six of the largest French VNAV 'monétaire' funds (as at June 2007) over a ten year period (from January 1999 to September 2009). Since these funds only offer accumulating shares, we assessed the variability of their share price by looking at their daily yields: a negative yield implies that the day's accumulation of income was more than offset by a mark-to-market loss. We estimated the daily yield by comparing the accumulated share price from one day to the next, and making adjustments for accumulations over weekends and Bank Holidays.

In the case of five of those six funds, at *no point* during the ten-year period did they post a negative yield, i.e. daily mark-to-market losses were never substantial enough to cause the price of the funds to fall. This includes the period between September and November 2008 illustrated below, when markets were significantly dislocated. This is a surprising finding - one might have expected these funds to have experienced significant mark-to-market losses in this period, which would have manifested as a negative yield in the graph below (whereas, in fact, the yield never fell below circa 2.8%). In other words, *from an investor's perspective*, these funds behaved much the same as if they were CNAV, albeit their yields were presumably more volatile.




*Source: HSBC*

We concede that our analysis of the share price of the six largest French monétaire funds might not be regarded as a representative sample. Unfortunately, we have been unable to source a larger data set. It would be helpful if the daily share price movements of, say, the largest thirty monétaire funds could be made available over a ten year period to date.

Pending that data, and in support of our analysis, we understand that investors typically disclose their holdings of French VNAV monétaire fund as 'cash and cash equivalent', which IAS7 defines as:

> *"Cash and cash equivalents comprise cash on hand and demand deposits, together with short-term, highly liquid investments that are readily convertible to a known amount of cash, and that are* ***subject to an insignificant risk of changes in value****."* [Emphasis added]

*This is not intended to imply any criticism of the pricing mechanism of French VNAV funds*: rather, it is simply intended to illustrate that the distinction between CNAV and VNAV funds is often overstated. That ought to come as no surprise. As described above, institutional investors are exposed to credit risk and use MMFs to manage that risk through diversification. Therefore, it is natural that the investment objective of a MMF should be to provide security of capital and high levels of liquidity, and consequently the return of a VNAV fund should be similar to that of a CNAV fund; if it weren't, then the fund wouldn't be much use to investors!

What is the *maximum* price volatility that a MMF could exhibit?

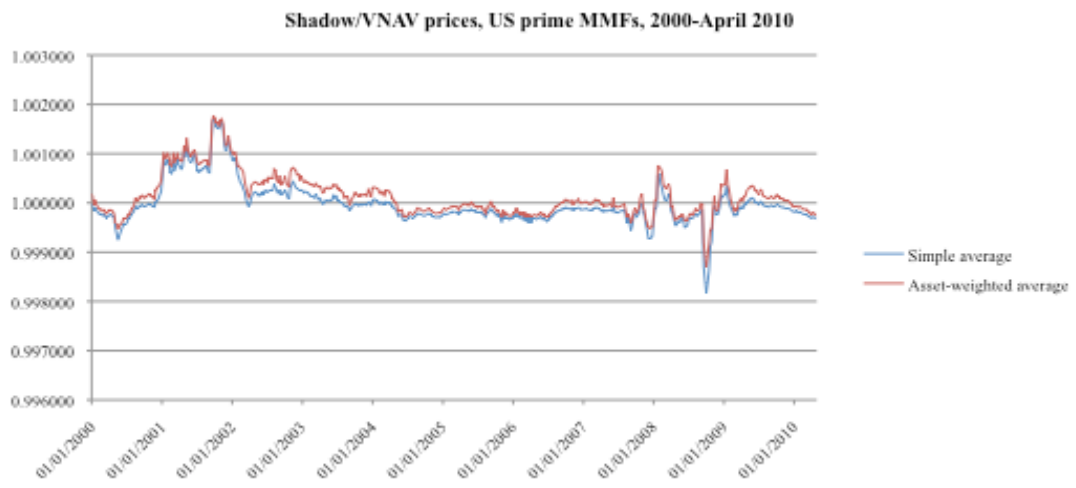
The shadow price of a CNAV fund is a good indicator, since it is calculated on the assumption that a fund:

- Does not use amortised cost accounting for any securities;
- Does not use interest rate swaps;
- Prices its shares to a large number of decimal places; and
- Distributes its net income.

Research by the ICI[5] shows that the average shadow price of US prime MMFs between 2000 and April 2010 was 0.999977 (i.e. an average variation from the CNAV of 0.23bps).

During that period, the highest average shadow price was 1.0020 (i.e. +20bps variation from the CNAV) and the lowest average shadow price was 0.999980 (i.e. -20bps variation from the CNAV).

In 2010 rule 2a-7 was amended and now requires fund to hold at least 10%/30% of their portfolio in investments maturing overnight/within one week: to that extent, future shadow prices are likely to be even less volatile.




*Source: ICI*

[5] "Pricing of U.S. Money Market Funds", ICI, January 2011, www.ici.org. The ICI collected weekly data on shadow prices from a sample of 53 taxable money market funds. In April 2010, those funds accounted for 11 percent of the number and 27 percent of the assets of all taxable money market funds, about the same percentages as in August 2008.

## QUESTION EIGHT

**What is the importance of ratings in the MMF industry? What is the impact of the monitoring function of credit rating agencies for MMFs? What are the potential systemic risks associated with ratings in the MMF industry?**

Investors value MMF ratings for a number of reasons:

First, rated MMFs are subject to additional risk constraints. That has been of particular benefit to investors in the EU where, until recently, there was no pan-European regulatory definition of a MMF, and investors had to rely on national definitions which often imposed relatively weak constraints on credit, market or liquidity risk. That's why, when IMMFA was founded in 2000, its Code of Practice required Member funds to be rated, i.e. in an effort to build investor confidence in the product. (France is an exception to this rule: its MMF sector has long been carefully defined by the AMF, and the product widely used. It never required fund ratings to establish investor confidence.)

Second, rated MMFs are subject to additional oversight by the CRAs.

Third, some investors are themselves rated and, as a consequence, are only allowed to invest in co-rated products. For example, securitisations often invest in MMFs as cash collateral; but if a securitisation is rated, then it is usually only permitted to invest in MMFs that are also rated by the same CRA.

Notwithstanding the fact that investors value MMF ratings, we acknowledge three risks:

First, we believe MMF ratings remain poorly understood. Investors appear to assume that the ratings of different agencies are interchangeable, whereas in fact they are increasingly diverse. Broadly speaking, Standard & Poor's rating relates to credit risk; Moody's to credit and liquidity risk; and Fitch's to credit and liquidity risk, and to an assessment of the likelihood of sponsor support. Investors also appear to assume the highest MMF ratings can be 'read across' to a long-term triple-A rating. That is understandable given the symbology the CRAs have used: AAAm in the case of Standard & Poor's; Aaa-mf in the case of Moody's; and AAAmmf in the case of Fitch. The suffix (m, mf, mmf) is intended to distinguish the rating as a MMF rating, and not a long term rating, but that subtlety seems to be lost of most investors who instead prefer to focus on the prefix (AAA). IMMFA and the CRAs have sought to address these issues by educating investors about differences in ratings methodology and symbology.

Second, many investors' treasury policies specify that a MMF must be rated. Therefore, if funds are put on ratings watch or downgraded, it can precipitate significant redemptions. For example, between 8th-22nd December 2011 Fitch Ratings placed three of Prime Rate Capital Management's (PCRM) MMFs on Rating Watch Negative (RWN). During that period PCRM's funds experienced very significant redemptions: 50%, in the case of its Sterling fund[6].

Third, and as a consequence of the above, there is enormous pressure on MMFs to maintain their ratings. Those ratings depend on MMFs satisfying CRAs' ratings criteria, which manage credit risk with reference to the ratings of the funds' underlying issuers. If an issuer is put on ratings watch or downgraded, then it may not longer be an eligible investment for a rated MMF, notwithstanding the fund's own assessment of credit worthiness. This is significant: issuer ratings are supposed to be mere opinions; but if CRAs rate both funds and issuers, then they change from being opinions to being soft forms of regulation. Indeed, as pressure is brought to bear on CRAs to behave 'consistently', they have less latitude even to permit rated downgraded assets from rolling-off, and instead require MMFs to make forced sales in order to maintain the fund rating.

[6] PCRM's funds remained fully compliant with ESMA's definition of a 'short term money market fund' throughout the period. This suggests – disappointingly – that investors place greater confidence in fund ratings than in regulation.

We expand further on these issues in our answers to questions twenty nine and thirty.

## QUESTION NINE

**Are existing rules adequately addressing risks regarding the management of collateral from money market funds? What are the risk management processes currently in place with regard to repo and securities lending transactions? Do MMFs present unique issues with regard to their use of repo markets or would general policy recommendations that the FSB may issue regarding repo markets be applicable?**

Repurchase agreements are used by MMFs to invest cash for short periods, typically overnight. MMFs have increased their use of repurchase agreements since the credit crisis as they prefer the high levels of liquidity provided by these overnight instruments, and to receive collateral in return for lending cash rather than placing money on deposit on an unsecured basis.

The majority of repurchase agreements executed by MMFs are collateralised with government securities. However, over the past few years some MMFs, particularly US MMFs, have begun execute repo collateralised with non-government securities. Haircuts differ between markets, for example: the standard haircut in the US domestic money markets for US government collateral and in certain European jurisdictions for US, UK and European government collateral is 102%; whereas in the French domestic market there is no over collateralisation for repurchase agreements backed by Eurozone government collateral. As with haircut levels, there is no standard settlement process for repurchase agreements. For example, some markets such as the French domestic market for repurchase agreements settlement is conducted on a bilateral basis whilst in other European markets and the US market settlement is conducted on a tri-party basis using a central clearing agent.

The SEC's Rule 2a-7 includes rules specific to the use of repurchase agreements. Repurchase agreements are an eligible investment for US MMFs with certain provisions. For example: all repurchase agreements maturing beyond 7-days must be included in the funds illiquid bucket; repurchase agreements backed by US government collateral can look through to the collateral for diversification purposes; repurchase agreements backed by non-government collateral must follow standard diversification requirements; and all repurchase agreement counterparties must be reviewed for credit quality assessment by the fund.

IMMFA's Code of Practice also includes a number of controls that relate to repurchase agreements. These controls refer to the credit quality of the counterparty for any repurchase agreement, reference to the nature of the collateral accepted and appropriate haircut levels and the maximum tenor of any repurchase agreement before it is considered illiquid. The relevant parts of IMMFA's Code of Practice are listed below. MMFs that are rated by a CRA also have guidelines they are required to adhere to that are specific to repurchase agreements:

> *"IMMFA funds may utilise collateral in repurchase agreements provided the assumed internal or explicit short-term rating of repurchase agreement counterparty is at least A1, P1 or F1, and the relevant Member has experience of utilising such collateral. A suitable haircut should be imposed and consideration should be given to how quickly the collateral may be accessed having regard to the applicable framework.*
>
> *...have more than twenty five percent of net assets invested with a single repurchase agreement counterparty, unless that counterparty is either a triple-A rated sovereign, or the counterparty is explicitly guaranteed by a triple-A rated sovereign...*

*...have more than five percent of net assets in illiquid securities. Members should determine which securities are considered illiquid, but this should include any deposit or repurchase agreement with a residual maturity of five business days or more."*

ESMA's money market fund definitions have no specific guidelines related to repurchase agreements.

With the exception of ESMA's MMF definitions which could benefit from specific guidelines related to repurchase agreements, we believe there are sufficient risk controls for IMMFA members MMFs.

We do not believe that MMFs present any unique issues regarding their use of the repo market and therefore do not require specific consideration as part of the FSB's broader review of the repo market. It is important that the FSB's review of the repo market does recognise the existing criteria that certain parts of the MMF industry, including IMMFA member funds, are require to follow.

## QUESTION TEN

**Are the above-mentioned changes in the environment of MMFs relevant factors to take into consideration? What are some of the implications for regulatory options? Are there other aspects to consider?**

The Report identifies various environmental changes which should be taken into account when contemplating further reform. We would emphasise the following:

First, and crucially, recent regulatory reforms of MMFs should be taken into account:

- In the USA, significant amendments to Rule 2a-7 were tested in the summer of 2011 when US MMFs met, without incident, large volumes of shareholder redemptions during periods of significant market turmoil, including the historic downgrade of US government debt. Currently, we understand the majority of the Commissioners of the SEC are of the opinion that those reforms should be given time to prove themselves before further amendments are made.
- In the European Union, the ESMA definition of MMFs meets the reform objectives set out in the Report on the High Level Group on Financial Supervision (the 'de Larosière report');
- IMMFA has significantly amended its own Code of Practice in 2010. (Our Code applies to EU-domiciled MMFs, and imposes constraints on Members' funds which are additive to the ESMA definition.)

Second, recent regulatory reforms of banks should be taken into account. As described above, the new liquidity rules in Basel III reduce banks' reliance on short-term institutional funding and, in the European Union, certain bond holders may be 'bailed in' to future bank recapitalisations. In that case, regulation should also recognise the legitimate need of investors to manage credit risk, including through MMFs.

Finally, the current low interest rate environment means there is little capacity to increase costs on either MMF investors (who are currently receiving a marginal yield, particularly in the case of USD funds) or MMF sponsors (who are currently waiving fees in order to maintain that marginal yield).

## QUESTION ELEVEN

**Do you agree with the systemic risk analysis and the rationale for reform presented in this section? Are there other factors to consider?**

We agree with the systemic risk analysis provided by the Report, with two exceptions:

First, and as described above, CNAV and VNAV funds provide essentially the same return to investors and pose essentially the same risks. We therefore see no need to distinguish between them for regulatory purposes. If a distinction were made that disadvantaged one form of fund relative to the other, then it would give some MMF providers a competitive advantage over the other. Unless very carefully argued and evidenced, such competitive advantages would undermine confidence in the regulatory process: in particular it would suggest regulators are advancing national commercial interests/agendas rather than a substantive regulatory agenda. (That said, we recognise and appreciate that IOSCO tries to strike a balance on the CNAV/VNAV issue.)

Second, and for understandable reasons, the Report tries to keep an open mind on whether reform should draw on securities regulation or banking regulation. We have a clear view this! Investors use MMFs to manage and diversify credit risk, not as a substitute for a bank deposit - in particular, and as described above, unlike banks MMFs: do not employ leverage; do not perform credit transference; and can only perform very limited maturity transformation. Reform should therefore draw on securities regulation.

In summary, we believe the Report establishes four clear criteria against which regulatory reforms can be assessed, namely:

*Liquidity criteria (question two)*
A loss of confidence in the banking system may cause a 'flight to quality' by some investors, including switching between prime and Treasury MMFs. The only credible way of stopping that flight to quality is to restore confidence in the banking system, and quickly. Therefore, in the intervening period, the primary objective of MMF reform should be to ensure that funds have sufficient natural liquidity to meet redemption payments.

*Redemptions criteria (question three)*
A loss of confidence in the banking system is likely to cause redemptions from prime MMFs, and such redemptions are likely to reduce bank funding. Therefore, an objective of MMF reform should be to reduce the likelihood of redemptions during a financial crisis by making structural changes that either provide investors with an incentive to remain in MMFs, or impose a disincentive to redeem. As noted above, we have reservations about this objective – regulation ought not to frustrate rational behaviour.

*Risk transfer criteria (question four)*
Whilst sponsor support might be welcome, it ought not to foster any expectations on the part of investors. Therefore, an objective of MMF reform should be to reinforce that the risks and rewards of an investment in a MMF belong to its investors, and cannot be transferred to a third party.

*Viability criteria (question five)*
MMFs are a necessary by-product of bank regulation (i.e. they enable institutional investors to manage credit risk through diversification) and provide an important source of short-term funding to banks, business and governments. Because MMFs exit to meet a legitimate economic need, any reform should be proportionate. Therefore, an objective of MMF reform should be to ensure the continued viability of MMFs.

We recognise those criteria may be in tension with one another, and so reform also has to be assessed 'in the round'.

# POLICY OPTIONS

## QUESTION TWELVE

**Do you agree with the benefits of imposing a mandatory move from CNAV to VNAV, which would amount to prohibiting the use of amortized cost valuation for any securities held by a MMF? Are the challenges identified in the US context valid in other jurisdictions currently authorizing CNAV funds? How could these challenges be overcome?**

Three arguments have been made in favour of mandating a move from CNAV to VNAV[7]:

First, that VNAV funds do not provide a 'first mover advantage' and so are less prone to redemptions. We addressed this argument in our answer to question two.

Second, that VNAV funds are less 'bank deposit like' than CNAV funds. We addressed this argument in our answer to question six.

Third, that daily fluctuations in the price of VNAV funds desensitise investors to losses and therefore make them loss prone to redeem in a financial crisis. For example, the President's Working Group has said:

> *"By making gains and losses a regular occurrence, as they are in other mutual funds, a floating NAV could alter investor expectations and make clear that MMFs are not risk-free vehicles. Thus, investors might become more accustomed to and tolerant of NAV fluctuations and less prone to sudden, destabilizing reactions in the face of even modest losses."*[8]

We disagree with this argument, for three reasons:

First, and as described in our answer to question seven, research by the ICI shows that, between 2000 and April 2010 the average price of a USD prime VNAV fund would have been 0.999977 (i.e. an average variation from the CNAV of 0.23bps). During that period, the highest average price would have been 1.0020 (i.e. +20bps variation from the CNAV) and the lowest average price would have been 0.999980 (i.e. -20bps variation from the CNAV). We fail to see how such tiny variations could desensitize investors to losses of, say, 300bps in the case of default by a security that represents 3% of a MMF's portfolio.

Second, the price of a VNAV fund would decline during a financial crisis (as can be seen from the graph included in our answer to question seven). Investors usually respond to declining prices/increasing losses by selling assets, especially if those losses arise in a fund whose investment objective is to provide security of capital, and even more especially during a financial crisis, which would tend to heighten their loss aversion. We find it implausible that daily fluctuations in the price of a VNAV fund could change such deep seated behavioural norms to reverse[9].

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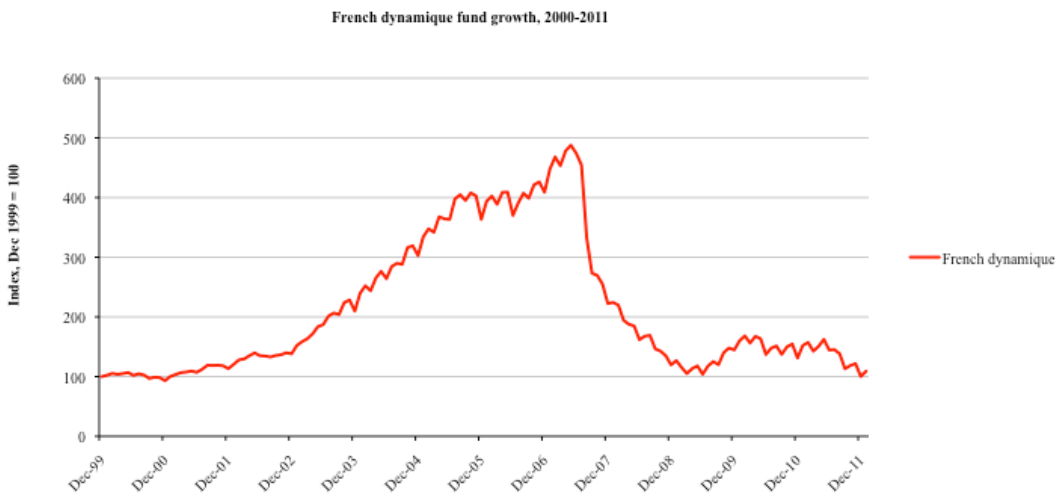
[7] Insofar as the objective of 'mandating a move from CNAV to VNAV' is to *maximise* the price volatility of a MMF, it would require more than simply prohibiting amortised cost accounting. In addition it would require: prohibiting of the use of interest rate swaps; obliging funds to distribute net income; and obliging funds to price their shares to a large number of decimal places.

[8] "Report of the President's Working Group on Financial Markets: Money Market Fund Reform", October 2010, www.sec.gov

[9] One could make a counter-argument... CNAV funds are able to 'absorb' temporary market-to-market movements of up to 50bps without a decline in the price of the fund. In benign markets that ability is largely irrelevant, because mark-to-market prices only move by fractional amounts and are very rarely realised (i.e. assets are overwhelmingly held to maturity, and mature at par). However, in a financial crisis that ability is systemically helpful, insofar as it absorbs noisy and pro-cyclical mark-to-market movements.

Third, we note that enhanced cash funds - which are VNAV - suffered significant redemptions in 2007, i.e. they do not support the thesis that investors become desensitised to losses[10]. For example, good statistics are available for French 'dynamique' funds, which suffered significant redemptions in 2007.




*Source: Euro Performance*

Therefore, we believe IOSCO should permit the continued co-existence of CNAV and VNAV funds.

Furthermore, we agree with the Report that mandating a move to VNAV would reduce the utility of MMFs to many investors, and not just in the United States:

- Investors domiciled in any country which taxes income differently from capital gains would face an additional compliance burden, in having to calculate the small gains or losses that may have arisen between the dates of subscription and redemption in a VNAV fund. (It is no accident that investors domiciled in countries which tax income and gains differently tend to buy distributing shares in CNAV funds, and investors domiciled in countries which do not distinguish between income and gains for taxation purposes tend to buy accumulating shares, and may be indifferent between VNAV and CNAV funds to the extent that the daily accumulation of income is usually greater than the daily variability in price in the VNAV fund.)
- The variability in the price of a VNAV fund would complicate cash-flow planning for institutional investors.
- Investors would be disadvantaged relative to direct investment. Compare the position of Investor A (who has a EUR100m investment in a VNAV fund) with Investor B (who has a EUR100m direct investment in assets which represent a horizontal slice of the portfolio of the VNAV fund). Imagine each investor needs EUR20m cash. Investor A would sell 20m shares in the VNAV fund, crystallizing a small gain or a loss, depending on the difference between the price of the fund at the time of purchase and sale: whereas Investor B would simply liquidate the cash element of his portfolio/those assets whose mark-to-market was closest to, or at, par, and so avoid crystallizing any gain or loss. The only circumstance in which a MMF would be as good as direct investment would be if Investors A and B liquidated their entire position.

[10] The Report notes that: "...observations during the summer of 2011 indicate fluctuations in the value of European VNAV MMFs, reflecting changing market conditions and increased volatility. Despite these moves, there was little impact on redemptions, suggesting that investors accept temporary variations (including negative ones) in the NAV of their funds." The conclusion, surely, is that investors do not redeem from MMFs, or refrain from redeeming from MMFs, because of their pricing mechanism. Rather, and as we argued in question two above, investors redeem because a financial crisis heightens their aversion to losses in the funds' portfolios.

Investor surveys have consistently indicated that mandating a move from CNAV to VNAV would result in very significant outflows from MMFs. For example, a recent survey[11] of US corporate treasurers indicated that if US MMF were mandated to adopt a variable NAV, then:

- None would increase their level of investments in money funds;
- 21% would continue using funds at the same level; and
- 79% would either decrease use or discontinue altogether.

The survey estimated that mandating a move from CNAV to VNAV would result in 61% decrease in MMFs by corporate, government and institutional investors. As discussed in our answer to question five, since those investors would continue to require management of credit risk, we believe they would simply switch from MMFs to an alternative wrapper.

In conclusion, we do not support mandating a move from CNAV to VNAV.

## QUESTION THIRTEEN

**What would be the main effects of establishing a NAV-buffer? What would be the most practical ways to implement such buffers? Should various forms of NAV-buffers be allowed or should regulators favor a single option? What would be a realistic size of the NAV-buffer and what would be the impact in terms of costs for running MMFs? In the case of subordinated shares, could the option be seen as creating a securitization position, with associated requirements in terms of retention?**

Two arguments have been made in favour of establishing a NAV buffer:

First, that during a financial crisis, a NAV buffer would enable a MMF to sell assets in the secondary market at a loss in order to raise cash to meet redemption payments, without those losses impacting the price of the fund and precipitating further redemptions. We agree with this argument, but think it is overstated. Secondary markets essentially closed down in 2008, and so the loss absorbing capacity of a NAV buffer would have been of limited use in enabling funds to raise cash. The best way of enabling MMFs to meet redemption payments is to reduce their reliance on secondary markets, by focussing on natural liquidity (see our answer to question twenty one.)

Second, that during a financial crisis, a NAV buffer would mitigate the likelihood of redemptions by, in effect, 'over collateralising' MMFs and therefore disincentivising investors from redeeming for fear they would lose the benefit of that over collateralization relative to any alternative investment option. To the extent that investors did redeem, the buffer would increase relative to the NAV to the benefit of remaining investors, and so the disincentive to redeem would grow still greater.

We disagree with this argument. The options facing an investor in a prime MMF with a NAV buffer during a financial crisis would be:

- To remain in the prime MMF, in which case there is a remote chance of a loss if one of fund's assets defaults, and the ensuing loss is greater than the NAV buffer; or
- To redeem from the prime MMF and subscribe to a Treasury MMF.

Faced with these options, it seems pretty clear that a risk averse investor would redeem: the NAV buffer provides an insufficient incentive to remain in the prime fund, relative to the 'risk free' option of the Treasury fund.

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[11] "Money Market Fund Regulations: the Voice of the Treasurer", Treasury Strategies, April 2012, www.treasurystrategies.com Treasury Strategies surveyed 203 financial executives representing corporate, government, and institutional investors between February 13, 2012 and March 6, 2012. The respondents were sophisticated investors (executives with treasury and cash management responsibilities for their institutions) with 61% of them overseeing short-term investment pools of $100 million or more.

Furthermore, the options for funding and structuring a NAV buffer give rise to additional issues:

### *Investor funded NAV buffer*

An investor funded NAV buffer would result in transfers between different generations of investor, i.e. income retained at the expense of today's investors, would be used for the benefit of tomorrow's investors. That is not consistent with basic principals of securities regulation.

### *Investor funded subordinated/capital shares*

We do not believe investors would invest in MMFs if they were required to make a parallel investment in riskier subordinated shares/capital shares, since it would defeat the purpose of their investment, i.e. to manage credit risk through diversification.

### *Sponsor funded NAV buffer*

Some commentators have suggested that a sponsor funded NAV buffer would cause them to have 'skin in the game', i.e. would cause greater financial alignment of interests of sponsors and investors, and cause sponsors to take less risk with investors' subscriptions.

We are uneasy with this argument. First, sponsors already have skin in the game, insofar as they receive fees from their MMFs, and would suffer reputational damage if they mismanaged those funds. Second, it seems possible that this proposal would result in a two-tier MMF industry, i.e. a top-tier comprising sponsors who have access to capital, and a bottom-tier comprising sponsors who do not have access to capital and – it has been proposed - whose funds therefore run with more liquidity and lower yields. In that case, the sponsors of bottom-tier MMFs seem likely to complain about the competitive consequences of a regulatory reform which causes them to lose market share to sponsors of top-tier MMFs. Indeed, such reform would represent a barrier to entry.

More importantly, a sponsor funded NAV buffer would enable investors not merely to manage credit risk through diversification, but substantially to transfer that risk to MMF sponsors. Consequently, institutional investors would be disincentivised from making any direct deposits, and instead would invest all of their funds in MMFs in order to benefit from the sponsor-funded NAV buffer. That would almost certainly impose unaffordable costs on the sponsor: unless, of course, the sponsor could pass those unaffordable costs back to investors. Either way, we do not think MMFs would be commercially viable. And needless to say, a sponsor funded NAV buffer would also undermine MMFs as investment products (whose risks and rewards are attributable to its investors).

### *Third-party funded subordinated shares*

These would give rise to essentially the same issues as a sponsor funded NAV buffer. In addition, we do not believe third-parties would invest in subordinated shares.

A recent investor survey[12] of US corporate treasurers indicated that if US MMFs were required to maintain a NAV buffer, then:

- 8% would increase their level of investments in MMFs;
- 56% would continue using funds at the same level; and
- 36% would either decrease their use or discontinue altogether.

However in a follow-up question, if the cost of the NAV buffer were to reduce the yield of the fund (i.e. because it was investor funded), then:

- 53% of those respondents to the follow-up, who originally answered that they would continue or increase usage, would decrease or stop usage of MMFs if the yield were to decrease by 2bp or more (0.02%).

[12] *Ibid.*

- 92% of those respondents to the follow-up, who originally answered that they would continue or increase usage, would decrease or stop usage of MMFs if the yield were to decrease by 5bp or more (0.05%).

In conclusion, we do not support a NAV buffer: it provides questionable benefits, and imposes unsupportable costs.

## QUESTION FOURTEEN

**Do you agree with the description of the challenges associated with the establishment of a private insurance? Are there ways to address them?**

We are not aware of any credible proposal to privately insure MMFs against losses. If such insurance were available, we suppose the premium would be unaffordable. Investors might just as well invest in Treasury MMFs.

## QUESTION FIFTEEN

**Do you agree with the description of the challenges and potential second-round effects of a conversion of MMFs into special purpose banks? Are there ways to circumvent those effects?**

The Report notes the rationale for converting MMFs into a special purpose bank (SPB) is due to '...the functional similarities between MMF shares and bank deposits and the risk of runs on both'. As described in our answer to question six and Appendix A, we disagree with that comparison.

In any event, we don't think this is intended to be a serious proposal to reform MMFs: there is insufficient capital to capitalise a newly incorporated USD2-3 trillion SPB sector; even if there were sufficient capital, the cost would be prohibitive.

## QUESTION SIXTEEN

**What are the main advantages and drawbacks of two-tier system(s)? Would it be sufficient to address the risks identified? What could be the conditions applicable to CNAV funds? What could be the potential impact on investor demand? Should certain funds be exempted from certain risk limiting conditions due to their holdings?**

As described in our answer to question twelve, we do not believe there are any advantages in mandating a move to from CNAV to VNAV. Therefore, neither do we believe there is any justification in developing a 'two tier' system.

Also, as described in our answer to question eleven, if a two-tier system distinction disadvantaged CNAV funds relative to VNAV funds, then it would give some MMF providers a competitive advantage over the other. Unless very carefully argued and evidenced, such competitive advantages would undermine confidence in the regulatory process.

## QUESTION SEVENTEEN

**Do you agree with the suggestion that reserving CNAV funds for only certain investors (i.e. retail or institutional investors) would face practical challenges and would not be sufficient to address the risks identified?**

As described in our answer to question twelve, we do not believe there are any advantages in mandating a move to from CNAV to VNAV. Therefore, neither do we believe there is any justification in reserving CNAV funds for certain types of investor.

## QUESTION EIGHTEEN

**Regarding the different structural alternatives described in Section 1 [questions twelve to seventeen], what are the benefits and drawbacks of the different options described above? How could they be prioritized? What are the necessary conditions for their implementation?**

We do not think any of the proposals in questions twelve to seventeen are credible.

## QUESTION NINETEEN

**What are the main benefits and drawbacks of imposing the use of marked-to-market accounting for all the instruments held by MMFs? What is the availability of market prices for securities commonly held by money market funds? Are there situations where this general principle could not be applied?**

We recognise that securities regulators have a strong presumption in favour of mark-to-market prices[13]. However, we believe the use of amortised cost prices is also justified in certain circumstances:

First, and as described in our answer to question seven, research by the ICI shows that, between 2000 and April 2010 the average price of a USD prime VNAV fund would have been 0.999977 (i.e. an average variation from the CNAV of 0.23bps). We note that bid-offer spreads in many equity and fixed income markets are larger than 0.23bps, but securities regulators are – quite rightly – relaxed about equity and fixed income funds using mid-pricing, because the dilutive consequences for subscribing investors relative to incumbent investors, or remaining investors relative to redeeming investors are, essentially, immaterial. If IOSCO were to take a 'purist' approach to mark-to-market pricing, it would seek to avoid the dilution that can arise through mid-pricing by requiring investment funds to publish dual prices: a liquidation price based on offer, and a creation price based on bid. That approach would not serve investors well: it would achieve fairness at the expense of utility. Similarly, a purist approach to money market funds would expose investors, on average, to 0.23bps price fluctuations, but impose significant administrative burdens on them, especially insofar as income and gains were taxed differently.

Second, investment fund administrators source market prices from specialist 'pricing vendors'. Those market prices are a mix of traded, quoted and evaluated prices. (A traded price is based on an actual transaction in the market; a quoted price is based on a market quote from a market maker/broker; and an evaluated price is estimated on the basis of fundamentals.) The ability of a pricing vendor to source traded, quoted or evaluated prices depends on the dynamics of the market in which the asset is traded:

- Equities are regularly traded on exchange. Therefore, the market prices of equities are usually based on traded prices.
- Fixed income securities are regularly traded, but rarely on exchange, and therefore provide no easily-accessible traded prices. Therefore, the market price of fixed income securities are usually based on quoted and evaluated prices.
- Money market instruments are usually held to maturity[14]. Furthermore, certain money market instruments are not tradeable, e.g. deposits and repurchase agreements. Therefore, the market price of money market instruments are usually based on evaluated prices.

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[13] "*…the key objective underlying CIS valuation principles is that investors should be treated fairly. Where possible, assets should be valued according to current market prices…*" IOSCO, Principles for the Valuation of Collective Investment Schemes, Consultation Report, February 2012, www.iosco.org

[14] The buy side of secondary money markets remain perfectly liquid: there is no particular challenge finding a buyer for a high quality certificate of deposit with one week to mature. Rather, an owner of such a CD are unlikely be a seller.

We asked two large fund administrators (A and B) to estimate the typical split of traded, quoted and evaluated prices provided to them by pricing agents:

Fund Administrator A[15]

| | Equity fund | Bond fund | USD MMF | EUR MMF | GBP MMF |
|---|---|---|---|---|---|
| Traded price | 100% | 0% | 0% | 0% | 0% |
| Quoted price | 0% | 25% | 0% | 0% | 0% |
| Evaluated price | 0% | 75% | 100% | 100% | 100% |

Fund Administrator B

| | Equity fund | Bond fund | USD MMF | EUR MMF | GBP MMF |
|---|---|---|---|---|---|
| Traded price | 98% | 0% | 0% | 0% | 0% |
| Quoted price | 2% | 20% | 10% | 10% | 10% |
| Evaluated price | 0% | 80% | 90% | 90% | 90% |

As can be seen from these estimates, the market prices of money market instruments overwhelming comprise evaluated prices, e.g. prices calculated from yield curves. It is unclear to us why evaluating a price on this basis should be supposed superior to evaluating a price on the basis of amortised cost accounting. Indeed, evaluating prices from yield curves is unhelpfully pro-cyclical during a financial crisis, when dislocation at the far end of the curve impacts the short end, and consequently contaminates prices. We understand both the SEC and the AMF approved amortised cost prices as appropriate estimates of fair value during the financial crisis in 2007/8, subject to various constraints.

## QUESTION TWENTY

**Should the use of amortized cost accounting be limited, and, if so, how? Are general restrictions on funds' WAM or WAL preferable? Are there practical impediments (e.g. availability of prices) to imposing stricter requirements on the use of amortized cost accounting than current existing regimes? What would be the potential effects on MMFs' investment allocation and short-term funding markets? What monitoring should be implemented? What conditions are advisable? In particular, please describe the rationale, feasibility and effects of limiting the residual maturity of instruments to [30-60-90-other] days. What materiality threshold could be proposed?**

Clearly there should be limits on the use of amortised cost prices: otherwise, if amortised prices were materially higher than mark-to-market prices, there is a risk of disadvantaging subscribing investors relative to incumbent investors, and remaining investors relative to redeeming investors. And if amortised prices were materially lower than mark-to-market prices, then *vice versa*.

Existing limits on amortised accounting take a variety of forms, and need to be considered in conjunction with other risk constraints designed to protect investors, notably limits on: maximum WAM; maximum WAL; maximum final legal maturity; minimum liquidity requirements; minimum credit quality requirements; asset diversification requirements; etc. Those limits are necessarily diverse because of differences in the relative maturity and size of national economies, which mean some money markets are relatively broad and deep (i.e. include a very large number of issuers and investors, and issuance at every available maturity) whereas others are relatively narrow and shallow. Consequently, and as noted in the Report, it is unsurprising that constraints on MMFs differ between Brazil, China, France, India and the United States.

[15] Fund Administrator A noted: "It is difficult for us to differentiate if vendor prices sourced from FTID for example are based on quotes from market makers as we do not get this level of transparency from them. As such apart from certain Bloomberg contributor prices, IBOXX and GEMMA levels, which we know are calculated based on actual market quotes, we would consider fixed income vendor prices to be predominantly in the evaluated bucket."

Therefore, it is not obvious to us that either of the 'options' for limiting the use of amortised cost prices discussed in the Report is necessarily superior to the other, or that other options might not also be appropriate. At this stage in the development of national and regional economies and money markets, a principals-based approach seems appropriate. For example, ESMA's Guidelines Concerning Eligible Assets for Investment by UCITS provides a helpful model:

> *"With respect to the criterion "value which can be accurately determined at any time", if the UCITS considers that an amortization method can be used to assess the value of a MMI [Money Market instrument], it must ensure that this will not result in a material discrepancy between the value of the MMI and the value calculated according to the amortization method. The following UCITS/MMI will usually comply with the latter principles:*
>
> - *MMI with a residual maturity of less than three months and with no specific sensitivity to market parameters, including credit risk; or*
> - *UCITS investing solely in high-quality instruments with as a general rule a maturity or residual maturity of at most 397 days or regular yield adjustments in line with the maturities mentioned before and with a weighted average maturity of 60 days. The requirement that the instruments be high-quality instruments should be adequately monitored, taking into account both the credit risk and the final maturity of the instrument.*
>
> *These principles along with adequate procedures defined by the UCITS should avoid the situation where discrepancies between the value of the MMI as defined at Level 2 and the value calculated according to the amortization method would become material, whether at the individual MMI or at the UCITS level. These procedures might include updating the credit spread of the issuer or selling the MMI."*

## QUESTION TWENTY ONE

**What are the main benefits and drawbacks of imposing global liquidity restrictions? Should there be restrictions regarding (daily/weekly) liquid assets as well as regarding illiquid assets? Are global definitions of (daily, weekly) liquid and illiquid assets practical? Are there other conditions to consider (e.g. regarding the concentration of assets)?**

As described in our answer to question two, a loss of confidence in the banking system may cause a 'flight to quality' by some investors, including switching between prime and Treasury MMFs. The only credible way of stopping that flight to quality is to restore confidence in the banking system, and quickly. Therefore, in the intervening period and in the absence of a functioning secondary market, the main objective of MMF reform should be to ensure that funds have sufficient natural liquidity to meet redemption payments, otherwise there is a risk that MMFs would be forced to gate, which would transmit the crisis into the real economy.

Minimum liquidity requirements directly address this issue: they better enable MMFs to meet redemptions in cash, and without relying on secondary markets.

Further to reforms in 2010, US MMFs now must hold at least 10% of their assets in overnight cash, and 30% in assets that mature within one week. Therefore, in November 2010 it was reported[16] that US MMFs had USD260b in cash, and USD800b maturing within one week: amounts far in excess of the actual redemptions experienced in 2008. Similarly, IMMFA's Code of Practice requires members' funds to hold at least 10% of their assets in overnight cash and 20% in assets that mature within one week.

[16] "Leave Money Market Funds Alone!", John D. Hawke Jr, 10 November 2011, www.americanbanker.com

However, we also acknowledge two challenges/drawbacks of imposing minimum liquidity requirements:

- Minimum liquidity requirements cause funding by MMFs of financial institutions, businesses and governments to 'compress' at the short end of the curve. As ever, securities regulators need to strike a balance between the needs of investors and the needs of the real economy. In this context, we do not think it would be necessary or helpful to specify any additional minimum liquidity 'buckets' (e.g. two weeks, one month, three months…) otherwise there would be insufficient diversity in the tenor profile of MMFs as a whole, and their collective funding might present 'cliff edge' problems to issuers.
- The definition of overnight cash may prove contentious. Specifically, it is often supposed that government paper is a liquid asset, and in this context it should count toward overnight cash. We agree that paper issued by some governments is very liquid, and becomes more so during a financial crisis as investors fly to quality. But paper issued by other governments in not particularly liquid, nor used as haven asset by the risk averse. Therefore IMMFA has issued a Statement of Clarification to our Members noting: "It is not prudent to consider *all* government debt as maturing the next day."

On the balance of these arguments, we recommend that IOSCO should impose minimum liquidity requirements on MMFs.

## QUESTION TWENTY TWO

**To what extent are managers able to "know their customers" and anticipate redemptions? Are there practical obstacles for managers to "know their customers" (e.g., in the case of platforms, omnibus accounts) and how could they be addressed? What are the main features of the funds' investor base to take into consideration from a liquidity risk management point of view? Should conditions, e.g., regarding the concentration of the investor base be considered? Would this requirement allow fund managers to better understand and manage the risks to which the fund is exposed?**

Two arguments have been made in favour of requiring MMF managers to know their investor base:

First, redemptions by relatively concentrated investors are necessarily more impactful than redemptions by relatively unconcentrated investors. Requiring MMF managers to know their customer would enable them to identify and discourage concentrated investors. Ideally, just as MMFs diversify their assets, so they should diversify their investor base. For example, the IMMFA Code of Practice requires Member to maintain:

> *"…a formal liquidity management policy to allow it to meet reasonably foreseeable liquidity demand, having regard to normal market liquidity… [and which should also] address concentration risk, including any concentrations arising within shareholders or sector-specific issuance."*

Second, some investors have correlated cash flow requirements: for example, US companies often redeem from MMFs at fixed points in the year to meet tax liabilities. Requiring MMF managers to know their customers would enable them to more accurately model and project those cash flow requirements, and manage maturity risk more effectively.

However, we acknowledge two challenges:

- Imposing maximum shareholder concentration limits would give relatively large MMFs an advantage over relatively small funds. Shareholder concentration limits are also prone to passive breeches, i.e. an original subscription may be within a limit, but then breech the limit if other investors redeem. Furthermore, some investors (e.g. liability matching portion of pension investments) may also be known to be longer term and less prone to

redemption at times that other investors may have an urgent need for cash flow – know your client becomes important in these circumstances but absolute client concentration limits could become counter-productive. Therefore, any reform ought not to take the form of formal limits *per se*, but rather of an obligation on MMFs to know their investor base in order to manage concentration risk.

- Many investors – particularly in the United States – subscribe *via* platforms and other omnibus/third party arrangements. Insofar as such platforms represent more than a *de minimis* amount of a MMFs investor base (10%?) then operators ought to be required or incentivised disclose the identity/characteristic of the underlying investors to MMF managers. A reasonable transition period would be needed to enable the platform operators to repaper contractual agreements, if necessary. However, this ought not to present any novel issues, since a number of regulatory and fiscal initiatives (e.g. FATCA) effectively already require disclosure by intermediaries to investment funds.

On the balance of these arguments, we recommend that IOSCO should require MMF managers to know their client base.

## QUESTION TWENTY THREE

**Would such a liquidity fee generate a pre-emptive run? If so, when and are there ways that pre-emptive run risk could be reduced? How would shareholders react to the liquidity fee? Would it cause shareholders to transfer their MMF investments to alternative investment products? If so, which types of shareholders are most likely to make such transfers and to which products and will such a shift in investment create new systemic risks or economic, competitive, or efficiency benefits or harm? Would MMF board directors be able to impose a liquidity restriction despite potential unpopularity with investors and competitive disadvantage imposed on the fund? At what level such a liquidity trigger should be set?**

We believe minimum liquidity requirements and 'know your client rules represent an appropriate and sufficient response to the events of 2008 (see questions twenty one and twenty two).

However, we recognise that some regulators have taken the narrative further. They have observed that redemptions from prime MMFs necessarily caused a reduction in short term funding to banks, businesses and governments. Therefore, they recommend that MMF reform should not merely focus on ensuring that funds have sufficient liquidity to meet redemption payments, but also should actively disincentivise investors from redeeming.

We are concerned that this recommendation could undermine investors' confidence in MMFs and force them into alternative wrappers/structures. Nevertheless, in the interest of engaging regulators, we have assessed the effectiveness of various reform proposals in disincentivising redemptions. We believe that a trigger-based liquidity fee would be the most effective in disincentivise redemptions.

During a financial crisis, the options facing an investor in a prime MMF which had decided to impose a liquidity fee would be:

- To remain in the prime MMF, in which case there is a remote chance of a loss if one of fund's assets defaults; or
- To redeem from the prime MMF, in which case the investor would suffer the liquidity fee, and [say] subscribe the net proceeds into a Treasury MMF.

Faced with these options, we believe a risk averse investor would be more likely to remain in the prime MMF than to redeem. Our belief is supported by research in behavioral finance, which observes that when faced with two negative options ('bad choices') people tend to prefer possible losses over sure losses, even when the amount of the possible loss is

significantly higher than the sure loss, i.e. an investor would tend to prefer the loss in the event of a default (a possible loss) over the liquidity fee (a sure loss).

Consistent with this, we also note certain anecdotal evidence in support of the disincentivising effect of a liquidity fee[17]:

> *"In November 2007 redemptions were suspended from Florida's Local Government Investment Pool following redemptions from the MMF and a fall in assets from USD27b to USD15b. Subsequently the MMF was restructured with the fund split into two with a fixed liquidity fee of 2% charged on the fund that was created to hold the less liquid assets.*
>
> *In 2008, liquidity fees were applied to a suite of international enhanced cash funds. The funds in question were variably priced enhanced cash money market funds. But, accounting differences aside, we understand the funds applied a variable charge based on the estimated bid price of the assets."*

As noted in our answer to question three, we believe it would normally be *inappropriate* to disincentivise redemptions from MMFs (or any other investment fund) – after all, investors are entitled to redeem from a MMF if they have legitimate concerns about the creditworthiness of one of its underlying issuers.

However, we do recognise that high levels of redemptions from a MMF during a financial crisis can, in a self-fulfilling fashion and *in extremis*, cause redeeming investors to disadvantage remaining investors. On that basis, we cautiously recommend that IOSCO should further investigate the viability and consequences of empowering MMF boards to impose a trigger-based liquidity fee on redemptions.

## QUESTION TWENTY FOUR

**How would shareholders react to a minimum balance requirement? Would it cause shareholders to transfer their MMF investments to alternative investment products? If so, which types of shareholders are most likely to make such transfers and to which products and will such a shift in investment create new systemic risks or economic, competitive, or efficiency benefits or harm?**

The principal argument made in favour of a minimum amount balance requirement is that it would disincentivise investors from redeeming. We disagree with this argument.

During a financial crisis, the options facing an investor in a prime MMF which imposed minimum balances would be:

- To remain in the prime MMF, in which case there is the remote chance of a loss if one of fund's assets defaults; or
- To redeem from the prime MMF, in which case [say] 95% would be subscribed into a Treasury MMF, and 5% held back in the prime fund for 30 days. In the remote chance of a loss if one of fund's assets defaults, the investor's pro-rata share of those losses would be deducted from the held back 5% amount.

Faced with these options, we believe a risk averse investor would redeem, since this limits potential losses pro rata to the held back amount, whereas remaining in the fund limits potential losses pro rata the entire investment. To address this issue, it has alternatively been suggested that potential losses should be *first attributed* to held back amounts in a fund, rather than attributed pro rata to held back amount:

- To remain in the prime MMF, in which case there is the remote chance of a loss if one of fund's assets defaults, but that loss would be first attributed to any amounts held back from other investors who redeemed within thirty days of the default; or

[17] "Liquidity fees: a proposal to reform money market funds", HSBC, November 2011, www.hsbc.com

- To redeem from the prime MMF, in which case [95%] would be subscribed into a Treasury MMF, and [5%] held back in the prime fund for [30 days]. In the remote chance of a loss if one of fund's assets defaults, those losses would first deducted from any held back amounts.

(In effect: if a fund's asset defaults and the percentage of the loss is greater than the percentage of the hold back - i.e. 5% in the scenario above - then it would be advantageous for an investor to redeem; otherwise it would advantageous for an investor to remain in the fund *and hope that others redeem*. Therefore, this mechanism provides a mischievous investor with a perverse incentive: to encourage others to redeem - e.g. by talking up the possibility of losses - in order gain the protection provided by held back amounts!)

Faced with these options, we believe a risk averse investor would redeem. The decision tree created by first attributing losses to held back amounts is too complicated for most investors to understand, and they would simply regard the held back amount as limiting their potential downside. Alternatively, if an investor did understand the decision tree, then they would not invest in the MMF in the first place. Indeed, a recent survey[18] of US corporate treasurers indicated that if US MMF were required to holdback 3% of redemptions proceeds for 30 days, then:

- None would increase their level of investments in money funds;
- 10% would continue using funds at the same level; and
- 90% would either decrease use or discontinue altogether.

The survey estimated that imposing minimum account balance would result in 67% decrease in MMFs by corporate, government and institutional investors. As discussed in our answer to question five, since those investors would continue to require management of credit risk, we believe they would simply switch from MMFs to an alternative collective investment wrapper.

On the balance of these arguments, we are opposed to minimum account balances.

## QUESTION TWENTY FIVE

**What are the benefits of using bid price for valuing the funds? Are there other options (such as anti-dilution levy) which could be explored to reduce shareholders' incentive to redeem?**

As noted in the Report, a trigger based move to bid pricing is conceptually similar to a liquidity fee (see question twenty three above) with one important difference: a move to bid pricing would impose a reduction in the published price of a MMF on all investors; whereas the imposition of a liquidity fee would cause no change in the published price of a MMF, but a reduction in redemption proceeds on those who chose to redeem.

Economically, these amount to the same thing. But behaviourally, they are quite different.

- A move to bid pricing would cause a reduction in the published price of a MMF. As noted in our answer to question twelve, investors tend to respond to losses by selling assets, especially if those losses arise in a fund whose investment objective is to provide security of capital, and even more especially during a financial crisis which would tend to heighten their loss aversion.
- The imposition of a liquidity fee would tend to cause investors to remain in a MMF in order to avoid the cost of the fee (see our answer to question twenty two).

On the balance of these arguments, we are strongly opposed to a move to bid pricing.

[18] "Money Market Fund Regulations: the Voice of the Treasurer", Treasury Strategies, April 2012, www.treasurystrategies.com

## QUESTION TWENTY SIX

**What are the benefits and drawbacks of allowing redemptions-in-kind? Are there practical impediments to implementing this option (e.g. some portfolio securities cannot easily be divided)?**

We agree that the boards of MMFs should be empowered to make redemptions-in-kind (*in specie*) to redeeming investors. We acknowledge that redemptions-in-kind could not be 'industrialised' but only made to large investors, i.e. because of limits on the horizontal division of a MMF's assets; the need to deliver those assets into a securities account; and the need to appoint an account custodian. We also acknowledge the challenge of treating the redeeming and remaining investors fairly, for example in the case of non-transferrable or indivisible assets. Notwithstanding these challenges, we think empowering the boards of MMFs to make redemptions-in-kind is a sensible part of the 'tool kit' for managing redemptions.

## QUESTION TWENTY SEVEN

**What are the benefits and drawbacks of requiring gates in some circumstances? Which situations should trigger gates to be imposed to redeeming investors? Would it be enough to permit gates in some jurisdictions? Would there be a risk of regulatory arbitrage?**

We agree that boards of a MMF should be empowered to gate the fund, if judged to be in the best interest of investors. In particular, if one of a fund's assets default, it is probable that fund will suffer unsustainable redemptions, in which case it may be appropriate to gate the fund, in order to ensure redeeming investors do not enjoy an advantage over remaining investors.

However, we do not regard *widespread* gating of MMFs as desirable. In a financial crisis, that would simply transmit illiquidity into the real economy, and put further pressure on the banking system.

## QUESTION TWENTY EIGHT

**Do you agree with the suggestion that the establishment of a private liquidity facility faces challenges that make the option unworkable or do you see ways to circumvent these challenges?**

As noted in the Report: "..for a liquidity facility to be effective, its structure and operations would have to be carefully designed to ensure that the facility has sufficient capacity during a crisis.... Sufficient capacity likely would only be possible through discount window access, as the MMF industry may not be able to raise sufficient capital without undue leverage."

We understand the Federal Reserve has emphatically ruled out providing MMFs with access to the discount window *via* a private liquidity facility, without MMFs converting into special purpose banks. As described in our answer to question fifteen, the economics of the MMF industry do not permit conversion into SPBs and, therefore, this is not a credible reform option.

## QUESTION TWENTY NINE

**What are the main benefits and drawbacks of the provisions included in current regimes referring to external CRA ratings? Are there alternatives to credit ratings that reasonably can be substituted?**

The Report defines a MMF as "an investment fund... [that invests in] high-quality, low duration fixed-income instruments." That begs the question; what constitutes 'high quality' and 'low duration'?

'Low duration' is easy enough to specify. Duration can be measured objectively, and so low duration can be defined in terms of the maximum permitted duration of individual assets and of the overall portfolio.

'High quality' is much more difficult to specify. In this context, quality is largely a measure of the creditworthiness of an issuer, which might depend on a large number of quantitative and qualitative factors. Although it might be possible to develop a simple definition of creditworthiness (for example, in terms of investments which meet certain balance sheet ratios, or satisfy certain backward-looking tests) such definitions are unlikely to be broad or flexible enough to encompass the large range of issuers that a MMF might invest in. Therefore it is not unreasonable that regulators have come to define 'high quality' in terms of the external ratings of CRAs.

However, this approach has its drawbacks[19]. In particular, if an issuer is downgraded to the point that it no longer meets the definition of 'high quality', then it can experience a sudden and dramatic withdrawal of funding by MMFs. Thus defining high quality in terms of externals ratings:

- May cause ratings actions to have self-fulfilling and destabilizing consequences for issuers;
- May preclude a MMF from investing in an issuer which its own independent credit process judges to be creditworthy; and
- Changes the 'nature' of the external rating from being the mere opinion of a CRA, into a formal measure of creditworthiness.

These issues might be dealt with in a number of ways. For example, MMFs could be permitted to invest [x%] of their portfolio in fixed income instruments which are not high quality; or could be permitted to invest in such instruments subject to making appropriate disclosure to their investors.

We do not support such proposals, because they would undermine investor confidence in the ability of a MMF to meet its investment objective. Ultimately, we do not believe there are any credible alternatives to defining 'high quality' other than by referring to CRA ratings. If those references were removed, it would cause great uncertainty to investors.

## QUESTION THIRTY

**What are the benefits of MMF ratings? Should a greater differentiation between MMF ratings be encouraged? To what extent are investors restricted in their investments to 'Triple-A' rated funds? What alternatives could there be (e.g. from other third parties)? What initiatives could be proposed to educate investors about MMF ratings?**

As described in our answer to question eight, there are a number of advantages and disadvantages of MMF ratings.

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[19] Many other criticisms have been made of CRAs, including: their 'issuer pays' business model results in a fundamental conflicts of interest; that they systematically over-rated the creditworthiness of financial institutions leading up the financial crisis; their ratings of securitisations were flawed, and contributed to the financial crisis; they are subject to insufficient competition etc.

Various proposals have been made to mitigate those disadvantages. For example:

- It has been proposed that there should be greater differentiation between MMF ratings, and funds should be encouraged to regularly migrate up and down the ratings scale. This is intended to desensitise investors to changes in MMF ratings, and make them less likely to redeem in large numbers if a fund is put on ratings watch or downgraded. We disagree with this proposal. We think it is implausible to suppose investors could be desensitised to ratings actions in this way, particularly during a financial crisis which would tend to heighten their risk aversion.
- It has been proposed that MMFs should not be permitted to accept a rating from a CRA whose methodology includes an assessment of the ability or willingness of a sponsor to support its MMFs. This is intended to reduce investors' expectations of sponsor support and reinforce their sense of ownership of the risks and rewards of their decision to invest in a MMF. We strongly agree that MMF ratings ought not to include an assessment of sponsor support, since this is likely to confuse investors and may result in risk being mispriced.
- It has been proposed that MMFs should not be permitted to request a rating from a CRA whose methodology does not permit a reasonable 'cure' period in relation underlying investments which are no longer eligible because of ratings actions. This is intended to reduce the impact such ratings actions can have on the funding of issuers. We agree that CRAs ought to allow funds which unintentionally breech ratings restrictions because of ratings actions in relation to their underlying issuers, ought to be allowed to cure the breech taking account of the best interest of investors. This is critical to breaking the 'automaticity' that is increasingly evident when a rating agency puts underlying securities on watch and then challenge MMFs with the 'threat' that they may also be put on watch if they don't immediately dispose of the securities in question. This kind of behaviour, while not universal, can disadvantage investors by forcing MMFs to 'fire sell' securities and/or transmit instability through the financial system.

## QUESTION THIRTY ONE

**In addition to the options explored in the four sections above, do you see other areas to consider which could contribute to reinforcing the robustness of MMFs?**

We recommend that regulators should require MMFs to disclosure their portfolio holdings in a standardised format, and on a monthly basis. Regular, standardised disclosure would enable investors to assess risk, and exercise discipline over MMFs. It would also enable regulators to monitor flows into and out of MMFs, and their underlying investments.

The SEC already requires monthly portfolio holdings disclosure. And IMMFA has issued non-binding guidance to its Members on standardised portfolio holdings (see Appendix C).

## QUESTION THIRTY TWO

**Do differences between jurisdictions require different policy approaches or would a global solution be preferable, notably to ensure a global level playing field?**

As discussed in our answer to question twenty, differences in the relative size and maturity of national economies mean that some money markets are relatively broad and deep (i.e. include a very large number of issuers and investors, and issuance at every available maturity) whereas others are relatively narrow and shallow. Consequently the precise regulatory approach to MMFs is likely to vary in different countries. In addition, local tax and accounting requirements may also necessitate variations in regulation.

Nevertheless, we believe it would be desirable to ensure a minimum level of international consistency in the treatment of MMFs:

- Institutional investors often operate across national borders – corporate treasury being a good case in point – and would therefore prefer a standard approach to MMF regulation;
- In the absence of a standard approach to MMF regulation, those same cross border investors may allocate between different funds on these basis of their regulation.

An important starting point would be a high level definition of a 'money market fund' that goes beyond its investment objective and includes key quantitative risk constraints.

# APPENDIX A

## Shadow banking

The expression 'shadow banking' was first used by Paul McCulley of PIMCO in 2007 to refer to "…the whole alphabet soup of levered up non-bank investment conduits, vehicles, and structures."[20] Those conduits issued commercial paper to finance their holdings of securitised loans; the loans were originated/repackaged by banks; and the banks often provided liquidity lines to the conduits to support their issuance of CP. When the sub-prime crisis broke in 2007, investors lost confidence in the conduits and this arrangement fell apart. The conduits were unable to roll-over their CP; which caused them to draw down and exhaust their liquidity lines; until, ultimately, many collapsed back into the conventional banking system. Mr McCulley likened this to a 'run' on a shadow banking system:

> *"Unlike regulated real banks, who fund themselves with insured deposits, backstopped by access to the Fed's discount window, unregulated shadow banks fund themselves with un-insured commercial paper, which may or may not be backstopped by liquidity lines from real banks. Thus, the shadow banking system is particularly vulnerable to runs – commercial paper investors refusing to re-up when their paper matures, leaving the shadow banks with a liquidity crisis – a need to tap their back-up lines of credit with real banks and/or to liquidate assets at fire sale prices."*

From time to time, commentators have sought expand this original definition of shadow banking to encompass the entities who purchased the conduits' CP – including money market funds (MMFs) – by likening those entities to 'depositors' in the shadow banking system. For example, a recent speech by Lord Turner makes such a connection, as did the original paper by the Financial Stability Board (FSB). However, that expanded definition has not caught on, for the simple reason shadow banking did not originate in 'demand pull' from investors, but in 'supply push' from the banks themselves. The supply push arose because the Basel accord did not require banks to hold risk weighted assets against the liquidity lines they provided to off balance sheet conduits; that requirement has now been added, and off balance sheet conduits/shadow banking has diminished accordingly.

Notwithstanding those reforms, the expression 'shadow banking' proved popular with regulators and the media, and continued to be used and to evolve. A key moment came when Paul Volker – who has been a consistent critic of MMFs over many years - described MMFs as part of the shadow banking system, not because they funded off balance sheet conduits, but because they are 'like' bank deposits.

Mr McCulley originally used the expression shadow banking idiomatically: to refer to banks' off balance sheet conduits. But following Mr Volker, regulators now use the expression metaphorically: to refer to entities which perform activities 'like' those performed by banks. In pursuit of that metaphorical definition, regulators have decomposed banking into its constituent activities; non-bank entities that perform any of those activities are deemed to be part of the shadow banking system. The implication being that the performance of 'bank like' activities without the controls imposed by bank regulation at best represents regulatory arbitrage, and at worst creates systemic risk.

The FSB adopted Mr Volker's approach, and defined shadow banking as: 'a system of credit intermediation that involves entities and activities outside the regular banking system, and raises i) systemic concerns, in particular by maturity/liquidity transformation, leverage and flawed credit risk transfer, and/or ii) regulatory arbitrage concerns.'

How do MMFs measure up against that definition?

[20] "Teton Reflections", Paul McCulley, September 2007, www.pimco.com

**MMFs and maturity/liquidity transformation**
MMFs perform maturity transformation, insofar investors have the right to redeem same- or next-day, but their subscriptions are invested at term.

However, the maturity transformation performed by MMFs is an order of magnitude less than that performed by banks, and is subject to tight controls. For example, IMMFA funds must maintain:

- A maximum final maturity per instrument of 397 days;
- A maximum weight average life of 120 days;
- A maximum weighted average maturity of 60 days;
- A minimum 10% of the portfolio available in cash/overnight;
- A minimum 20% of the portfolio maturing within one week.

Furthermore, each IMMFA fund is required to have a 'liquidity policy' explaining how it manages liquidity. For example, that policy might deal with issues like investor concentration.

So, although MMFs do perform liquidity transformation, they do so subject to tighter controls than are imposed on banks (which is sensible, since, unlike banks, they don't and shouldn't have access to the discount window) and consequently their maturity mismatch is modest.

**MMFs and flawed credit transfer**
MMFs are investment products. Their prospectuses provide a clear description of the risks and rewards attributable to investors, and create no expectation of explicit or implicit underwriting of those risks by the fund manager or any other party. MMFs perform neither credit transformation nor credit transference.

**MMFs and leverage**
MMFs are 'long only' investment funds, and do not employ leverage as part of their investment strategy[21]. By contrast, banks' ability to lever their balance sheets is essential to any meaningful account of their role in the economy, the systemic risks they pose, and the regulatory regime they are subject to. This is just one of a number of fundamental differences between MMFs and banks, which account for the need for a different regulatory approach to each. Other differences include:

- Bank regulation addresses the conflicts of interest that arise between bank shareholders and depositors. Bank shareholders make a profit on the spread they earn between interest payments to depositors and interest receipts from creditors; they are incentivised to maximise profit by maximising that spread, i.e. by making risky loans; but that conflicts with the interest of uninsured depositors (and underwriters of deposit insurance) who would prefer banks to make less risky loans in order to reduce credit risk. Bank regulation manages that conflict in a number of ways, including by imposing capital charges in proportion to the riskiness of a bank's loans to its creditors. MMFs have a completely different incentive structure. The shareholders and depositors of a MMF are one and the same, i.e. the investor in a MMF bears all the risks and rewards of the fund's investments. A MMF manager is remunerated on the basis of a fee, in a fund which cannot appreciate in value. Although conflicts of interest may exist between the manager and the investor, those conflicts are quite different from those that exist in a bank.
- Whereas banks invest their own funds, MMFs invest client money. Consequently, bank regulation comprises a set of incentives and disincentives designed to ensure that banks invest their funds prudently; whereas capital markets regulation (such as the UCITS Directive) comprises much more prescriptive restrictions on how MMF managers can invest their client's money, in order to ensure investor protection.

[21] Some funds are permitted to temporarily borrow in order to meet redemption payments.

### MMFs and regulatory arbitrage

Mr Volker has argued that MMFs "started decades ago essentially as regulatory arbitrage"[22]. This is a reference to Federal Reserve Regulation Q which limited the interest rate payable on deposits with US banks. In the 1970s, the US inflation rate exceeded the regulated nominal interest rate by a material amount and for a protracted period, and so depositors received a negative real interest rate. Consequently, investors started to invest in MMFs which were able to provide a positive real interest rate.

Regulation Q was intended to stop banks from aggressively/uneconomically bidding for deposits: it was not intended to impose negative real interest rates on depositors. The fact that depositors sought to avoid negative real interest rates by investing in MMFs speaks less of their desire to arbitrage regulation, and more of regulators' failure to recognise the unintended consequences Regulation Q was having on depositors and the real economy.

European MMFs evolved in the absence of any rule equivalent to Regulation Q. Nevertheless, regulators have warmed to the theme of MMFs as a form of regulatory arbitrage. For example, it has been argued that MMFs: arbitrage bank maturity mismatch rules (e.g. by depositing with banks at term, even though MMF investors can redeem same-day); and arbitrage of bank capital rules (e.g. by investing in asset-backed conduits which are not subject to bank prudential regulation). We note that the liquidity rules in Basel III address the first concern, and assume the FSB recommendations on asset-backed conduits will address the second.

Therefore, we are unaware of any sustainable argument that MMFs arbitrage bank regulation.

### Conclusion

Mr Volker has developed an analysis of shadow banking and MMFs based on a metaphor; that MMFs are 'bank like'. A metaphor is an inadequate foundation on which to construct regulation. What's more, this particular metaphor is unsustainable given the profound differences between banks and MMFs.

This is not to say that MMFs do not require regulatory reform; simply that 'shadow banking' is a flawed framework to identify reform. We recommend a more traditional approach; to identify reform on the basis of the *actual* economic function, risks and benefits of MMFs. Happily, that appears to be the approach adopted by IOSCO.

[22] "Three Years Later: Unfinished Business in Financial Reform", Paul Volker, 2011, www.group30.org

# APPENDIX B

## The pricing mechanism of CNAV and VNAV funds

In most respects, constant net asset value (CNAV) and variable net asset value (VNAV) money market funds (MMFs) are indistinguishable. Both are collective investment schemes, whose objective is to provide investors with security of capital and high levels of liquidity, and which seek to achieve that objective by managing a portfolio of high quality, low duration money market instruments. There is no guarantee they will achieve that objective, and so investors in either fund face a number of risks, including the risk of loss due to default in a fund's portfolio.

However, there are differences in the way those funds price their shares and value their portfolio, which has given rise to a convention of distinguishing 'CNAV' funds from 'VNAV' funds. Those differences comprise:

- Differences in share price rounding;
- Differences in the use of amortised accounting; and
- The impact of accumulating and distributing shares.

**Differences in share price rounding**

Like any other investment fund, the share price of a MMF is calculated by dividing its net asset value by the number of shares in issue: therefore increases or decreases in the net asset value of the fund, will cause increases or decreases in its share price. The precise relationship between the net asset value and the share price of a fund is determined by the *degrees of significance* to which its shares are priced. This is best illustrated by way of example.

Assume at T1 a newly formed MMF issues 100m shares upon receipt of an initial subscription of EUR100m, and invests the subscription in a diversified portfolio of short term, high quality money market instruments. Assume the NAV of the fund changes over time as shown below. Assume the fund receives no further subscriptions or redemptions during that period, and ignore income and expenses. Then depending on whether the fund prices its shares to six, four or two decimal places, and assuming they round to the nearest number, then they would increase/decrease as follows:

| | NAV (EUR) | Price per share, calculated to... | | |
|---|---|---|---|---|
| | | 6dps | 4dps | 2dps |
| T1 | 100,000,000 | 1.000000 | 1.0000 | 1.00 |
| T2 | 99,999,990 | 1.000000 | 1.0000 | 1.00 |
| T3 | 99,999,950 | 0.999999 | 1.0000 | 1.00 |
| T4 | 99,995,000 | 0.999950 | 0.9999 | 1.00 |
| T5 | 99,500,000 | 0.995000 | 0.9950 | 0.99 |

CNAV funds price their shares to two decimal places – a practice know as 'penny rounding'. As can be seen from the above example, penny rounded shares are sensitive to movements in the funds' NAV of 0.5% (or 50bps). Because it is rare for the NAV of a MMF to move by as much as 50bps, the share price of a CNAV fund *tends* to remain constant, hence the description of the fund as *tending* to have a 'constant' NAV. CNAV funds that fail to maintain a constant price are described as having 'broken the buck', as occurs at T5.

VNAV funds price their shares to more than two decimal places, and for that reason are more sensitive to movements in the funds' NAV. As can be seen from the above example, each additional decimal place causes a ten-fold increase in the sensitivity of the share price to changes in the NAV. This increased sensitivity means that the share price of a VNAV fund *tends*, other things being constant, to be more variable.

In the case of both CNAV and VNAV funds, the tendency of their shares to be constant or variable depends on movements in the NAV.

**Differences in the use of amortised accounting**

Like any other investment fund, the NAV of a MMF is calculated on the basis of the mark-to-market value of its portfolio, which comprises high quality, short dated money market instruments. As money market instruments edge toward maturity, there is little-to-no profit to be made from trading them, and they are largely held to maturity. Consequently, whereas equity and fixed income markets provide a wealth of mark-to-market prices, money markets do not. The lack of market prices is more pronounced in Sterling markets than Euro markets, and in Euro markets than US Dollar markets.

In the absence of regular and reliable mark-to-market prices, MMFs make use of 'amortised accounting' to estimate market prices. Amortised accounting assumes that money market instruments will mature at par, and any difference between their acquisition cost and par value should be realised on a straight-line basis between acquisition and maturity.

Amortised accounting generally produces a reasonable estimate of market price, except in two circumstances:

First, sudden movements in interest rates can cause changes in the market price of money market instruments. MMFs manage interest rate risk by limiting the weighted average maturity (WAM, calculated as the weighted average interest rate reset period) of their portfolio and/or by using interest rate swaps to neutralise the impact of movements in interest rates on the market price of their portfolio. In addition, some VNAV funds use interest rate swaps to mitigate the impact of movements in interest rates.

Second, changes in the credit quality – or the perceived credit quality - of issuers can result in changes in the market price of instruments they have issued. MMFs manage credit risk by employing credit analysts to distinguish relatively strong from relatively weak issuers. In addition, MMFs limit the weighted average life (WAL, calculated as the weighted average legal maturity) of their portfolio, and the final legal maturity of each instrument. By limiting their portfolio to instruments with a very short legal maturity, it is more likely that MMFs' holdings will mature at par – unlike investors who have longer-dated holdings, and are more fully exposed to credit risk.

Notwithstanding their best efforts to manage interest rate and credit risk, there remains a risk that amortised price may not be an accurate estimate of market price. Therefore, the use of amortised accounting is conditional. For example, CESR's Guidelines Concerning Eligible Assets for Investment by UCITS says:

> *With respect to the criterion "value which can be accurately determined at any time", if the UCITS considers that an amortization method can be used to assess the value of a MMI [Money Market instrument], it must ensure that this will not result in a material discrepancy between the value of the MMI and the value calculated according to the amortization method. The following UCITS/MMI will usually comply with the latter principles:*
>
> - *MMI with a residual maturity of less than three months and with no specific sensitivity to market parameters, including credit risk; or*
> - *UCITS investing solely in high-quality instruments with as a general rule a maturity or residual maturity of at most 397 days or regular yield adjustments in line with the maturities mentioned before and with a weighted average maturity of 60 days. The requirement that the instruments be high-quality instruments should be adequately monitored, taking into account both the credit risk and the final maturity of the instrument.*

*These principles along with adequate procedures defined by the UCITS should avoid the situation where discrepancies between the value of the MMI as defined at Level 2 and the value calculated according to the amortization method would become material, whether at the individual MMI or at the UCITS level. These procedures might include updating the credit spread of the issuer or selling the MMI.*

The first bullet in CESR's Guidelines accommodates the pricing practices of French VNAV funds, which apply amortised accounting to instruments with less than three months residual maturity. If the fund manager has any concerns about the credit quality of an issuer of an instrument with less than three months residual maturity, then some other estimate of its market price should be used.

The second bullet accommodates the pricing practices of CNAV funds, which apply amortised accounting to instruments with less than 397 days residual maturity, subject to ensuring this does not result in a 'material discrepancy'. In practice, a material discrepancy is assessed by comparing the amortised price of the portfolio with an alternative estimate of its market price. That alternative estimate comprises actual market prices where they are available, and model prices where they are not - for example, prices modelled off of an issuer's interest rate curve. That alternative estimate of the market price is called the 'shadow price'. If the shadow price differs by more than 0.5% (or 50bps) from the amortised price, then the CNAV fund abandons amortised pricing in favour of the shadow price. This is consistent with pricing its shares to two decimal places, as described above.

Research by the Investment Company Institute[23] shows that the average shadow price of CNAV funds between 2000-2010 was well within the 0.5% (50bps) limit for using amortised accounting – even during the darkest days of September 2008. That average shadow price of US prime MMFs during that period was 0.999977 (i.e. an average variation from the CNAV of 0.23bps); the highest average shadow price was 1.0020 (i.e. +20bps variation from the CNAV); and the lowest average shadow price was 0.999980 (i.e. -20bps variation from the CNAV).

Therefore, CNAV and VNAV funds both make use of amortised accounting to calculate their NAV, due to the lack of market prices at the very short end of the yield curve. The use of amortised accounting is subject to certain reasonableness checks, including the calculation of a shadow price in the case of CNAV funds. However, and due to the lack of market prices, the shadow price is partly made up of model prices.

**The impact of accumulating and distributing shares**

Like any other investment fund, MMFs can offer either accumulating or distributing shares. Distributing shares in MMFs make daily declarations of net income (and, usually, make monthly distributions) whereas accumulating shares retain net income within the fund, which manifests as an increase in its NAV and therefore in its share price.

Investors' preference for distributing or accumulating shares is driven by a combination of taxation issues (i.e. whether investors have a tax-driven preference for income or for capital gains, and whether funds are required to distribute income for tax anti-avoidance purposes) and operational issues (i.e. whether investors find it convenient/inconvenient to process the receipt of income). EU-domiciled[24] CNAV and VNAV funds may offer both distributing and accumulating shares.

The accumulation of income impacts the constancy or variability of a MMF's share price.

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[23] "Pricing of U.S. Money Market Funds", ICI, January 2011, www.ici.org. The ICI collected weekly data on shadow prices from a sample of 53 taxable money market funds. In April 2010, those funds accounted for 11 percent of the number and 27 percent of the assets of all taxable money market funds, about the same percentages as in August 2008.

[24] US-domiciled MMFs only offer distributing shares, due to taxation issues.

In the case of a CNAV fund, assume it offers both distributing and accumulating shares, and has 100m shares in issue. Assume that the annualised yield of the fund is 2%, which results in *net* income of UR5,000 per day. Assume that the NAV of the fund (gross of income) changes between T1 and T5 as shown below, i.e. since the NAV never changes by as much as 0.5% (50bps), the share price of the CNAV fund is based on amortised pricing throughout. Then the price of the shares will be:

| | NAV | CNAV fund price per share... | | VNAV fund price per share... | |
|---|---|---|---|---|---|
| | | Distributing | Accumulating | Distributing | Accumulating |
| T1 | 100,000,000 | 1.00 | 1.000050 | 1.000000 | 1.000050 |
| T2 | 99,999,000 | 1.00 | 1.000100 | 0.999990 | 1.000090 |
| T3 | 99,950,000 | 1.00 | 1.000150 | 0.999500 | 0.999650 |
| T4 | 99,940,000 | 1.00 | 1.000200 | 0.999400 | 0.999600 |
| T5 | 99,980,000 | 1.00 | 1.000250 | 0.999800 | 1.000050 |

The first point to note, is that accumulating shares in a CNAV fund do not maintain a constant price – rather, the price increases each day by virtue of the daily accumulation of income. Of course, investors do not 'read' such volatility in the share price as indicative that the fund has failed to maintain its objective of providing security of capital. That is because the volatility is always positive, since it is caused by the mere accumulation of income.

The second point to note, is that accumulating shares in a VNAV fund exhibit less 'downside' volatility than distributing shares, because the daily accumulation of income offsets (wholly or partially) reductions in the NAV. For example, at T2, daily mark-to-market losses cause a fall in the price of distributing shares, but, since those losses are wholly offset by the daily accumulation of income, the price of accumulating shares increases. Again, these differences do not impact an investors' ultimate economic experience, and so ought not to impact their reading of constancy or volatility. However, and as described below, when one looks at actual differences in the share prices of CNAV and VNAV funds, the accumulation of income may in practice have a bearing on investor experience

## APPENDIX C

## IMMFA guidance on standardised portfolio holdings disclosure

Pursuant to IMMFA's Code of Practice, and in order to enable investors to assess the risk of portfolio holdings, the IMMFA Board recommends that IMMFA funds' portfolio holdings reports should record the following data fields for each holding:

| **Issuer / Counterparty ID** | **Issuer / Counterparty name** | **Counterparty Country** | **Parent name** | **Issuer type** | **Instrument type** | **Moody's ST rating** | **S&P ST rating** | **Fitch ST rating** | **Moody's LT rating** | **S&P LT rating** | **Fitch LT Rating** | **CCY** | **Par Value** | **Pct. of Total Par** | **Final Maturity Date** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Limited | Free form | Limited | Free form | Limited | Limited | Limited | Limited | Limited | Limited | Limited | Limited | Limited | Free form | Limited | Free form |
| ID | | ISO 3166-1 alpha-2 code | | GOVERNMENT | DEPOSIT | P-1 | A1+ | F1+ | Aaa | AAA | AAA | ISO CODE (3 CHAR) | | | |
| | | | | FINANCIAL | REPO | NR | A1 | F1 | Aa1 | AA+ | AA+ | | | | |
| | | | | CORPORATE | TREASURY BILL / NOTE | | NR | NR | Aa2 | AA | AA | | | | |
| | | | | | FLOATING RATE NOTE | | | | Aa3 | AA- | AA- | | | | |
| | | | | | ABCP | | | | A1 | A+ | A+ | | | | |
| | | | | | CERTIFICATE OF DEPOSIT | | | | A2 | A | A | | | | |
| | | | | | COMMERCIAL PAPER | | | | A3 | A- | A- | | | | |
| | | | | | BOND | | | | NR | NR | NR | | | | |