CHIEF EXECUTIVE

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To All AMFI Members

Dear Sir / Madam,

AMFI Best Practice Guidelines Circular No. 51 on Stress Testing of Money Market Mutual Funds and Liquid Funds

Today stress testing has become an integral component of global banking regulators' assessment of the strength of the broad financial services industry as well as that of individual banks. One of the most notable applications in recent years took place in mid-2009, shortly after the height of the 2007-2009 Credit Crisis, when the Federal Reserve conducted stress tests of the leading U.S. banks to assess their levels of capital and ability to withstand further shocks in the economy. By mid-2011 European Union regulators also began to conduct a range of tests to understand the capital strength of the major European banks.

While stress testing has proved important and topical for the global banking industry, it has also increased in visibility and importance for the global money market funds industry. In the recent times, stress testing has become a key feature of the risk monitoring framework requirement for regulators and industry groups for a money market funds.

Stress testing is critical in managing the risks associated with money market funds. It allows asset managers to continually monitor and adjust their portfolios depending on existing and anticipated market conditions and very importantly, helps managers to construct portfolios to withstand severe stress and thereby maintain their stable NAVs under both benign and troubled market conditions.

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There has been a global discussion on the risk to financial markets from the Money Market funds. Globally many of these MMFs have a constant NAV, invest in securities upto one year and also do not value such assets. These global funds have been in existence now for many years and hence, when the financial tsunami hit the markets, they struggled to manage their NAVs. All these years " breaking the buck " for these constant NAV funds have become a taboo.

We, in India, have over the last 2 years changed the way we invest in the Liquid funds and the way we value our assets. To begin with, the maximum maturity of investment in the Liquid funds was capped at 91 days and assets with maturity above 60 days were marked to market at prices provided by a third party source. For assets with maturity upto 60 days, the amortized price is compared with the price arrived at from the yield curve provided by a third party source and such price is aligned within 0.1% of the price derived from the third party yield curve.

Clearly our Liquid fund industry is exposed to very low risk and the transmission of the risk happens effectively to the investors based on an independent valuation exercise on a daily basis. This was amply reflected last year in July when the negative impact of a sudden increase in short term interest rates was passed on completely to the investors.

As part of the Risk Management, most Fund Houses do carry out stress testing of their portfolios, particularly for fixed income products.

However, in order to further strengthen the risk practices AMFI Board has decided to come out with the following Best Practice guidelines_ stress testing of the Money Market / Liquid funds portfolios to provide sufficient signals and early warnings on the health and the underlying risk in the portfolios.

It is pertinent to mention here that the International Organization of Securities Commissions (IOSCO) report on policy recommendations for MMFs also proposes that as part of prudent liquidity risk management and in accordance with IOSCO's proposed Principles for liquidity, money market funds should periodically test their portfolios based upon certain hypothetical and/or historical events, such as a rise in short-term interest rate, an increase in shareholder redemptions, a downgrade or series of downgrades on portfolio securities, or a credit event. If the market conditions require so, MMF should conduct more frequent stress testing. When stress tests reveal specific vulnerabilities, responsible entities should undertake actions to reinforce their robustness. Such actions may concern the assets or the liabilities of the funds.

Stress Testing Guidelines:

The stress testing of a liquid fund shall encompass evaluation of the various risk parameters that can impact the scheme performance. This shall be done through a impact analysis of various risk parameters on the portfolio on a given day basis. The impact numbers will be in terms of impact on NAV for the day.

The scheme should be tested on the following risk parameters:

1. **Interest rate risk** – The portfolio should be subjected to the risk of a significant rise in rates on an overnight basis. The risk calculation is based on the average maturity of the portfolio, and on the assumption that the rise in rates will be felt by all types of assets in the portfolio in a uniform manner.

2. **Credit risk** – The portfolio should be subjected to the risk of downgrades of one notch or more. The rating scales considered are the long term rating of the enterprise.. The probability of downgrade should be calculated using long term migration data from rating agencies like CRISIL and ICRA. This probability should then be used along with the weightage and maturity profile of securities in various rating buckets to arrive at the credit risk in the portfolio.

3. **Liquidity Risk** - This is the risk that becomes critical in the financial markets especially in the 2008-kind of scenario. This also could lead to a run on the fund if not managed well. Fortunately, the liquid funds do not invest in long-dated maturities and hence the liquidity is easier to manage.

The scenario analysis builds the need to liquidate the portfolio on short notice and the impact would vary depending on the nature/credit quality of the assets and the residual maturity.

The above three tests would sufficiently give the impact on the portfolio in case of events of a rise in interest rates or adverse credit migration or a sudden jump in fund redemptions.

Stress Testing Frequency:

The stress test should be carried out internally at least on a montly basis and the results should be presented to the Investment Committee.

Please note:

The attached excel sheet gives all assumptions and calculations for the stress test.

The first sheet gives an illustrative portfolio with ratings, allocation and maturity. Fund houses are expected to use this illustration and apply to their individual portfolios. The impact cost for liquidating a portfolio in case of either of the three risks have been assumed and arrived at, based on the estimates of the committee set-up for formulating the methodology Going forward, the Valuation Committee of AMFI will provide this impact cost to the industry on a quarterly basis.

The second, third and fourth sheets calculate various risks and show an impact number in terms of annualized impact on NAV on a particular day.

All the assumptions in all these sheets are in italics. While the first sheet needs to be populated by individual Fund Houses, the assumptions in the 2nd, 3rd and 4th sheets need to be maintained so that the basis for impact analysis is the same across Fund Houses.

In case of FDs, the liquidity risk impact is the impact of breaking the FD. Hence the time period of holding the FD is considered for impact analysis, instead of the residual time to maturity, which is the case for all other instruments.

Basis for Assumptions:

The assumptions as the basis for the same are listed below:

1) **Illustrative Portfolio**: The illustrative portfolio weightings for various asset classes are based on the current portfolio construct across most of the large liquid funds. However, the fund house depending on their actual portfolio needs to populate the weightings and average maturities which can vary during any given quarter.
2) **Fixed Deposits**: The residual maturity of fixed deposits is taken as 45 days. The Fund Houses can populate individual FD-exposures while replicating actual portfolios.
3) **Liquidity Risk**: In assumptions related to impact cost for calculating liquidity risk, we have considered normal market conditions. Yet, the limiting factor here is that the concerned Fund House has to liquidate the entire portfolio in a short span of time i.e. within a period of one to threedays. It is with this assumption and given the large sizes of liquid funds today, we have assumed larger stress, especially in case of CPs and NCDs.

4) **Interest Rate Risk**: The interest rate movement is considered steep to factor in outlier events such as sudden tightening of liquidity conditions or a steep increase in overnight rates. Since the industry has witnessed it two times earlier in the last few years, it is appropriate to consider these large moves to find impact on the portfolios.

5) **Credit Risk**: Argumentatively, the liquid fund industry does not carry a lot of credit risk as at least 90% to 95% of the portfolio across Fund Houses has assets whose short term rating is A1+ and long term rating is A or better. As such, the statistics used for calculating credit risk uses downgrade probability and its impact rather than default probability. The impact of the downgrade is again arrived at by considering a similar / higher differential between various rating categories, as reflected by independent matrices populated by CRISIL and ICRA on a daily basis. In most cases, we have taken slightly higher impact than what is implied by the matrices, because behaviorally the market would always over- react to a downgrade especially in short term ratings.

It is pertinent to note that in the event of stress test revealing any vulnerability or early warning signal, you are required to bring it to the notice of the Trustees and take such corrective action as necessary. Each AMC should also have a documented internal guidelines, as part of its Risk Management Policy, to deal with adverse situation effectively.

You are requested to confirm having noted the contents of this circular for due compliance. You are also advised place the circular at the next meeting of the Trustees for their information.

Sincerely,

H. N. Sinor