Capability of Stress Tests in the Investment Fund Industry

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Abstract
This paper addresses the relevance of investment funds testing exercises to stress factors related to the significant risks that such entities may face in situations of turmoil in financial markets as well as the extent to which they can improve the capacity to manage potential exceptional situations, mainly.

Dynamics of stress testing concerns are mainly generated by:

(i) increasing the importance of market-based financing (e.g. corporate bonds) in financing the real economy and trusting these funding in liquid and functional markets, and

(ii) the perception that market resistance may become more vulnerable to adverse events.

The specificity of stress tests in relation to other relevant indicators

It is necessary to point out the differences between the tests for certain risks, the early warning indicator and the forecast.

- The ***forecasts*** are based on relevant historical data, and consist of estimating a function composed mainly of historical achievements found in statistical data, which together with other relevant factors are inserted into an expected result vector.
- Compared to the predominantly statistical forecasting approach, ***early warning indicators*** and ***stress tests*** are related to more or less likely future projections which, if materialized, would have serious influence on the financial system.
- While ***early warning*** models focus on estimating the probability of crises, ***stress tests*** attempt to assess the resilience of some components of the investment fund industry in crisis situations. Stress tests estimate the exposure to a predefined event, but are limited to measuring the probability of occurrence.

The primary objective of the stress tests is to identify the impact of potential economic scenarios that could have adverse effects on the exposures to significant risks at both individual, at investment fund levels and across the investment fund industry, and to assess the ability to cope with unfavourable changes in the market conditions.

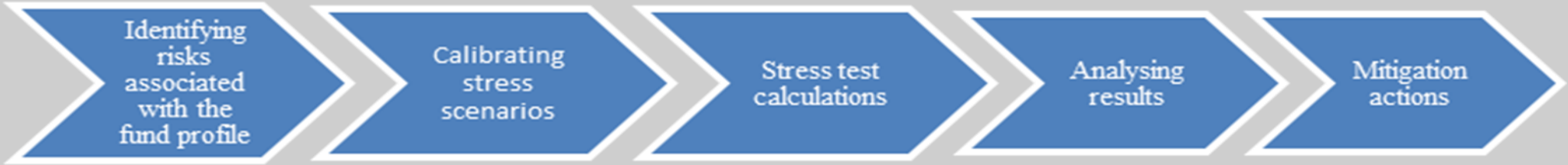
Elements of stress scenarios

- Stress tests should cover all quantifiable risks that significantly influences the value of investment funds' assets, paying particular attention to those risks that are not sufficiently accurately represented by the risk models applied.
- The significant risks that should be addressed through resistance testing in the investment fund industry are: ***liquidity risk*** **-** the risk that may arise in connection with the difficulty of liquidating or closing an asset in the fund 's portfolio cannot be liquidated or closed at a limited cost within a reasonable time frame, and ***investment risk,*** broken down into:

  (i) market risk **-** the impairment risk resulting from the fluctuation in the market value and portfolio fund items, changes that may be attributable to evolution of market variables such as stock and commodity quotation or interest rates;

  (ii) and the ***counterparty risk*** arising from the possibility that a counterparty in a transaction fails to meet its obligations prior to settling the transaction.

- The procedure for applying the tests is predominantly hypothetical-deductive, based on a number of hypotheses capable of generating formalized representations of the analysed market segment. In estimating the magnitude of shocks, econometric calculations appropriate to the respective stressors can be used. Scenarios should be tailored to the specific features of each fund and portfolio and updated periodically for such alerts.
- Stress tests are tools that help analyse the power of strategies that have been implemented. During normal periods without market turbulence, the stress test identifies the shortcomings of an investment strategy and helps the administrator prepare for a crisis; during times of crisis, tests contribute to direct crisis management and resolution strategy. In this way, stress tests can serve as risk management and decision-making tools both when creating a fund and throughout its life.
- Stress tests are part of the general risk management policy applicable to UCITS and AIFMD, in accordance with the broad lines outlined in the two specific European directives and can be implemented by the same approach:



source: https://amf-france.org

For UCITS, liquidity risk may have a high impact, since units are, at the request of the holders, continuously redeemable, directly or indirectly, from the assets of those entities.

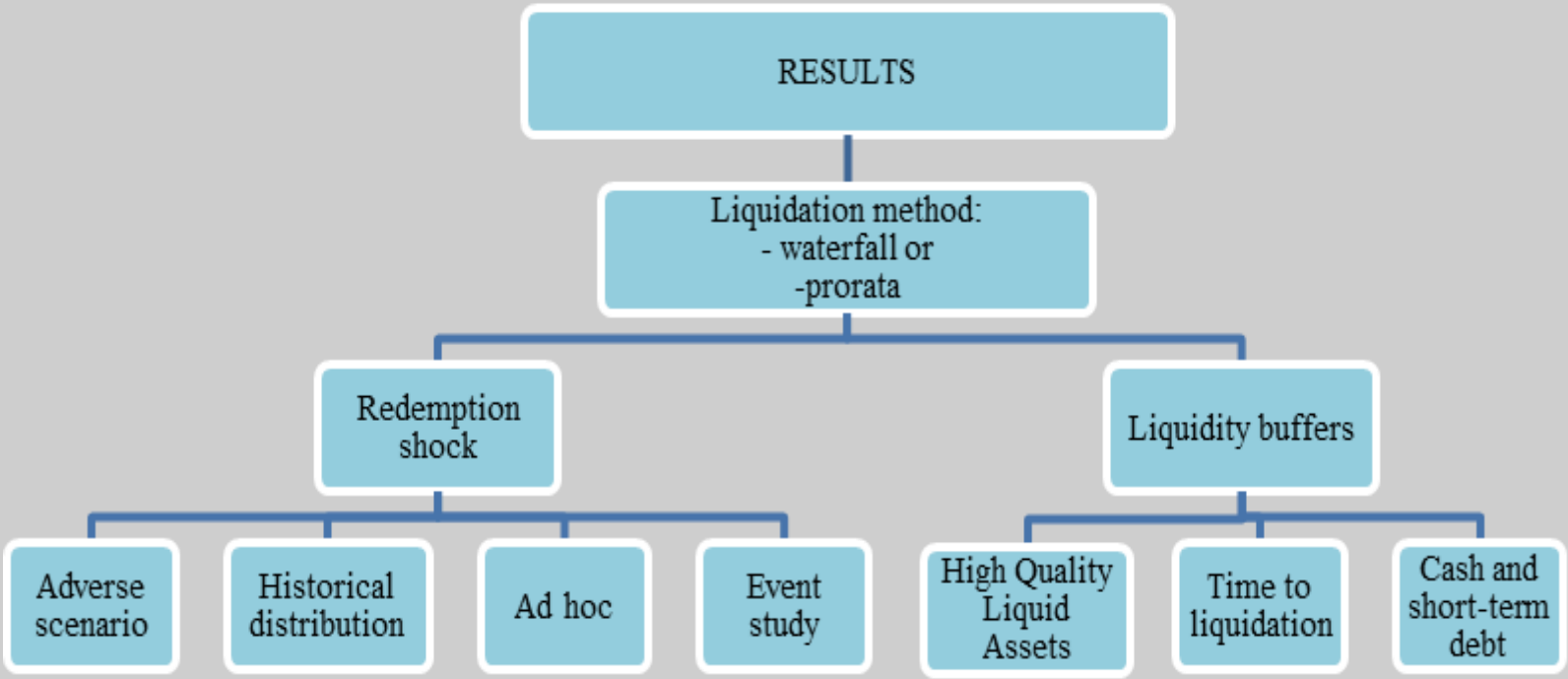
Synthetically, the stages of the liquidity test are:

(i) Choosing a ransom shock;

(ii) Comparison of the redemption shock with the most liquid assets in the fund portfolio;

(iii) Establishing the method of creating a cash stock required for massive redemption.

Bouveret (2017) synthesized the main essential components of the liquidity test:



It is preferable that the demand for the investors redemption requests be ensured by vertically selling asset classes in the fund's portfolio in proportion to the holdings of these investors. The benefits of this method are to maintain the structure of the fund according to the investment policy and to avoid selling the most attractive liquid holdings of the fund.

Measures are also needed to avoid gains from early investors redeeming units in low liquidity conditions to the detriment of investors who remain in the fund and which, in addition to market-driven corrections, are charged with additional costs generated by those redemptions.

The usefulness of stress tests applied to investment funds exceeds the micro-prudential area. Investment funds unstable causes and feeds massive redemptions, which can’t be absorbed without problems by markets and would lead to severe prices corrections.

Concerning the centralization of test results, there may be multiple difficulties if financial institutions are not required to run an exhaustive set of common scenarios. Furthermore, the use in individual methodologies of inconsistent assessment assumptions can generate irrelevant results or significant errors.

In March of this year, for money market funds, ESMA issued guidelines on common benchmark parameters of crisis scenario that will be designed taking into account significant factors that may hypothetically affect assets in the portfolio of investment funds. Thus, the first step towards a common approach to crisis scenarios is promising. From an optimistic perspective, as the best practices are applied in the field, the test results will require their capitalization both in the regulatory framework and in the form of diversification of the tools available to fund managers.

The use of exceptional measures can be considered, such as the possibility of temporary suspending the redemption in the face of a severe volatility recorded over a relatively short time horizon, as it is known that due to the degree of interconnection, market volatility tends to transfer to financial institutions. Also, the correlation between market instability and significant redemptions increases the demand for liquidity relative to its bid. Fire sale spill overs were labelled as a potentially source of contagion in financial markets. In this respect, it would be very useful to determine a priori, in the stress tests, what level of redemptions could generate *‘‘*market dislocation*’’*.

Conclusion

- The relevance of stress test results is directly correlated with the basics of choosing and calibrating stress scenarios.
- Methodologies that track the impact of individual factors on an individual financial instrument or a limited asset portfolio are less relevant than a dynamic approach based on market evolution patterns that combine significant stressors.
- Although in recent years the applied methodologies and techniques have helped to identify identified vulnerabilities, there remain many challenges for future research.