

GUIDE MARCH 2022
PROFESSIONAL

A practical guide to ensuring compliance of the management system liquidity risk

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Please find below an update of the practical guide to complying with the liquidity risk framework. As a reminder, this guide proposes concrete measures for establishing such a framework. In 2020, the AMF carried out a CSA exercise in this area and identified a number of good and bad practices. This update incorporates all of these comments, which relate in particular to the pre-trade system, governance and the taking into account of risks arising from the use of derivatives.

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Introduction

This guide is intended to provide practical assistance for setting up or updating an overall liquidity risk control system within an asset management company. This guide is not intended to be exhaustive and the implementation of the approaches and concepts presented is not sufficient to comply with the new ESMA guidelines published on 2 September 2019 concerning liquidity stress tests applicable to UCITS and FIAs and coming into force¹ on 30 September 2020, which alone are authoritative for judging the compliance of the system.

It is intended above all to be pragmatic, providing a basis for setting up a system that complies with regulations and is as easy as possible to implement. It is therefore limited to general principles and is not intended to detail all the possible approaches for managing liquidity risk. Asset management companies wishing to have an in-depth review of liquidity risk measures may refer, for example, to the document published by ESMA: *“Economic Report” – Stress simulation for investment funds*.
in September 2019.

This guide can be seen as a complement to previous AFG publications, such as the ‘AFG Code of best practice for managing liquidity risk in undertakings for collective investment (UCIs)’ published in January 2016 or the brochure about ‘Liquidity risk management tools for open-ended funds’ updated in March 2020.

¹) Subject to notification by the competent national authority (the AMF in this case) of its wish to comply with these guidelines within two months of their translation into all EU languages.

Regulatory context

Below are some regulatory references concerning liquidity stress tests (LST) in funds:

- ▶ AIFM Directive (Directive 2011/61/EU on alternative investment fund managers) *Article 16(1) of the Level 1 Directive, Articles 47 and 48 of the Level 2 Directive*
- ▶ UCITS Directive (Directive 2014/91/EU) *Article 51 of the Level 1 Directive, Article 40(3) of the Level 2 Directive*
- ▶ Regulation (EU) 2017/1131 of the European Parliament and of the Council of 14 June 2017 on money market funds – so-called “MMFRs” *Article 28 of the Regulation, AMF Guide*
- ▶ The AMF Educational Guide for portfolio asset management companies published in February 2017 on the use of stress tests as part of risk management *Section 2.2 Liquidity risk*
- ▶ ESMA guidelines published on 2 September 2019 on liquidity stress tests for UCITS and FIAs (ESMA34-39-882)

Liquidity risk management policy

The liquidity risk management policy document is a central element of the asset management company's strategy.

Its purpose is to present, in a single document, all the measures put in place to prevent this risk. It forms an integral part of the asset management company's risk management policy.

The policy may cover a wide range of topics, but all of which are related to liquidity risk management. Typically, if the asset management company has implemented mechanisms such as *swing pricing* and/or *gates*, it will describe the logic for their deployment and operation in this procedure, possibly referring to other internal documents (such as the *swing pricing* policy).

All the procedures and due diligence put in place to manage liquidity risk before the investment acts (*pre-trade* alert system, definition of *buy list* of eligible instruments, minimum proportion of liquidity in funds, etc.) must be specified in this document.

It will also indicate the means used to estimate the impact of orders executed on the liquidity of portfolios.

The system may be adapted to suit the instruments concerned, the size of orders and the liquidity profile of the portfolio concerned.

Thus, lighter due diligence may be sufficient, for example, in the case of the purchase of highly liquid government bonds for a small proportion of the fund (cases to be justified and documented). On the other hand, more extensive due diligence should be carried out if the fund is invested in instruments considered less liquid (issuer concentration ratio, high bid/offer spread, low rating, etc.). Pre-trade simulations will then generally be reserved for certain portfolios with more liquidity constraints in stressed period.

The policy will detail the steering of portfolio liquidity according to the different phases in the life of a product:

- At the creation stage,
 - ▶ the determination of valuation frequency and the selection of liquidity management tools (*swing price*, ADL, *gates*...);

- During the life of the product,
 - ▶ the integration into management processes of liquidity criteria when selecting securities such as the issuer concentration ratio, traded volumes, etc. This primarily concerns High-Yield and Small Cap asset classes;
 - ▶ the analysis of the impact on liquidity of any new type of instrument. The risk function must formally authorise the investment of a new type of instrument, setting a maximum exposure, if deemed appropriate per type of portfolio. This limit should be adjusted in the light of the potential deterioration in the risk profile liquidity of the fund (assets and liabilities);
 - ▶ the possible definition of a minimum proportion of cash and liquid financial instruments to be respected, particularly in times of crisis.

The hypotheses used to measure liquidity must be explicitly stated and regularly reviewed in line with the principle of proportionality. As a result, the due diligence required for validation the liquidity of the equity market “Large Cap” investments will generally be simplified. The asset management company regularly checks that it does not have any information that could challenge the assumptions of these models with an appropriate formalisation.

Lastly, this document will detail all the operational and methodological aspects of measuring this risk, providing the necessary details on governance, the *ad-hoc* escalation procedure, the funds or group of funds concerned, the controls frequency, etc. ESMA indicates in point 25 of its guidelines² that the frequency should be at least annual, but that it is recommended that these analyses be carried out quarterly or more frequently.

Determining a higher or lower frequency depends on the characteristics of the funds and be explicit in the liquidity risk management policy with associated limits as well as the definition of the scenarios used to analyse risk under normal and stressed market conditions³.

This document will be reviewed regularly and approved by the asset management company's governing authorities.

²) ESMA34-39-882.

³) Weak market situation.

☰ Measuring liquidity on the asset side

The purpose of measuring asset's liquidity is to have information that can be used to assess a fund's ability to generate liquidity through the sale of assets within tight deadlines, while preserving the interests of shareholders.

The interest of unitholders is generally understood to mean preserving the value of the assets and the risk profile of the fund. It is important to ensure that the sale of assets does not come at a high cost to the fund and does not significantly distort its initial positioning. In the same logic, the sale of assets should not, as far as possible, be sold at a substantial discount, which would penalise the remaining shareholders.

Thus we need to adopt the most balanced approach possible between speed and type of disposal of asset positions and respect for the interests of long-term investors.

The most commonly used approaches are of two types: one is based on estimating marketable volumes on the assumption that there is no significant impact on price, while the other, more advanced approach, aims to estimate marketable volumes subject to cost constraints. This last approach gives a more detailed idea of the disposal capacity of the fund according to the cost linked to transaction volumes. On the other hand, it requires a large amount of data in order to produce quality estimates, and the models used are often complex. Implementing them generally requires recourse to external solutions.

In the remainder of this document, we will detail the method based on the estimation of marketable volumes under the assumption of a limited impact on prices.

The idea is to calibrate, at a granularity deemed relevant, i.e. to identify the lines impacting the level of liquidity of a portfolio and to have a dynamic view over time of the volumes that can be sold under normal market conditions and under 'stressed' conditions.

For the equity market, it is generally accepted to carry out analyses by security by calibrating volumes on the basis of a daily average observed over the last 3 months. Assumptions about the level of participation in average trading volumes calibrated over a given depth of observation are generally used. Whatever assumptions are used, they must be justified and documented, particularly in the case of situations with unusual market conditions. Although these assumptions are left to the discretion of the asset management company, a level of participation of more than 25% may be presumed to be too optimistic. Similarly, a depth of observation greater than 6 months is likely to limit too significantly the impact of changes in market situations on the measurement.

For the bond market, access to traded volumes is unfortunately not as easy. It is therefore possible to use the services of an external data supplier or to rely on a department (trading desk) in charge of executing the trade orders ("expert opinion" approach taking into account for example the rating, the sector, the size of the issue the currency, the possibility of trade per block, etc.). It should be noted that this estimate is specific to each asset management company, as access to the bond market is not the same from one asset management company to another. These hypotheses must be substantiated and reviewed regularly by comparing *a posteriori* by comparing, for example, the volumes estimated with the orders actually executed.

Once these assumptions have been made, it is then possible to assess the liquidity at fund level subject to the constraints of compliance with the risk profile and realistic operational implementation⁴. A way of taking these constraints into account is, for example, to ensure that the structure of a significant part of the fund remains identical.

⁴) A "perfect slicing" hypothesis aimed at proportionally reducing all the fund's lines is not always realistic. The liquidation assumptions adopted must be capable of being implemented operationally by the asset management company.

For example, we could define a maximum percentage of non-proportionality in the liquidation scenario so as to distort the fund's risk profile only marginally.

This approach, deployed for different time horizons and on the basis of normal and 'stressed' market assumptions, makes it possible to obtain liquidity profiles which can be compared with the analyses carried out on the fund's liabilities in order to assess any risk (see section "Estimation of liquidity risk").

It is then possible to set alert thresholds or limits on the minimum expected outflow from a portfolio over a given time horizon (e.g. 1 day, 1 week or 1 month), depending on the asset class and investment strategy. If this limit is exceeded, the risk manager will carry out a specific analysis in accordance with the governance defined in the liquidity risk management policy. These liquidity curves are generally supplemented by other constraints or indicators that also provide a framework for asset liquidity. These include:

- ▶ asset dispersion constraints ;
- ▶ constraints on control/concentration at the underlying asset level (debt, external funds, etc.) ;
- ▶ the percentage of non-transferable assets within a given timeframe (e.g. 1 month) ;
- ▶ the level of the average "bid/ask" spread of the portfolio and its evolution over time.

To complete the analysis of asset liquidity, particular attention should also be paid to funds that may make significant use of derivatives.

In the event of strong market movements, margin calls may have a greater impact on portfolio liquidity. Similarly, a rise in volatility may increase initial margin requirements and therefore have an impact on liquidity. Particular attention must also be paid to the terms of termination of OTC contracts so that their possible impact on liquidity risk is correctly estimated (for example, in the case of specifically contracted termination costs).

These points must be taken into account both during the portfolio construction phase (setting up a liquidity 'cushion', for example) and during the life of the fund, with the introduction of specific stress scenarios to assess, for example, the fund's ability to meet any future margin calls. Lastly, it may be appropriate to extend the study of asset liquidity to a group of funds sharing an identical strategy and/or underlyings, as ESMA states in points 72 and 73 of its guidance (ESMA 34-39-882). The occurrence of a specific crisis may be particularly detrimental for a given strategy and/or asset class; the impact on liquidity should therefore be assessed at a consolidated level. The level of consolidation, if any, is decided by the asset management company on the basis of its relevance.

📊 Measuring liquidity on the liability side

The studies carried out on the liabilities side aim to estimate the risk of redemptions to which the fund may be exposed, using the same logic as that adopted for assets, i.e. under normal market conditions and under “stressed” conditions.

There are generally 2 types of approach:

- ▶ a qualitative approach aimed at analysing the structure of liabilities at fund level or by type of share class (e.g. retail/institutional): who are the largest holders, what is the breakdown by client category, etc. By categorising customers according to redemption risk, it is possible to obtain an indicator of the risk borne by the liability structure, to define hypothetical scenarios for the exit of the main holders, and even to construct redemption curves if knowledge of the liability structure is sufficiently detailed.

This approach requires good quality liability data.

- ▶ a quantitative approach aimed at modelling the dynamics of subscriptions/redemptions in order to calculate Value at Risk⁵ and/or Expected Shortfall⁶ over given horizons. For instance, at 7 days, there is a 99% chance that net redemptions will represent less than x% of the fund's AUM.

This approach, with all the inherent limitations of modelling, nevertheless makes it possible to construct a ‘liquidity curve’ on the liabilities side that can be directly compared with the liquidity profile of the assets.

It should be noted that management companies' current knowledge of liabilities is not perfect and can cause difficulties when it comes to carrying out analyses at a fairly granular level.

Asset management companies must continually improve their knowledge of fund liabilities. However, they are generally dependent on other entities, which can make it difficult to achieve the objective of a detailed and exhaustive knowledge of fund liabilities. In this context, a risk-based approach may be recommended, by starting, for example, to concentrate their liability structure analysis efforts on fund units that may give rise to a certain concentration of liabilities, such as institutional units with high minimum payout amounts. This may be the case, for example, with institutional units with high minimum subscription amounts, rather than units in funds with a retail clientele (and therefore with a high degree of dispersion), where knowledge of the granularity of liabilities on a holder-by-holder basis is of less interest. Finally, in the same way as analyses carried out on an aggregate asset basis (e.g. on a group of funds investing in the same underlyings), it may be relevant to use the same approach on the liabilities side in order to assess the consequences of major movements linked to investor categories (e.g. the withdrawal of one type of investor from an asset class as a result of new regulations coming into force).

During financial market stress, asset management companies are strongly advised to take a proactive stance with investors and distribution networks.

⁵) Value at Risk is a risk measure for the maximum loss on an asset or portfolio given a degree of confidence and a time horizon. With a given level of probability, the risk exposure is estimated to cost more than the VaR level over the time horizon in question.

⁶) Expected Shortfall is a measure of tail risk that can usefully complement a VaR measure as a conditional expectation of losses for a given level of VaR. It is the probable loss when you are in the x% scenario of the tail of the loss distribution over a given time horizon. It is the average of the losses incurred during a shock which only appears in the worst x% of the distribution. The Expected Shortfall is always higher than the VaR.

⁷) However, we should not be mistaken about the marginal effectiveness in this area. Even if the gradual improvement of detailed knowledge of liabilities is a very useful objective and a real challenge over the next few years, exhaustive identification at any given moment holder by holder, which is difficult to obtain and costly, would not be likely to provide, in addition to the costs, a surplus of value-added information that would be invaluable for managing liquidity risk at fund level.

Estimation of liquidity risk and asset/liability matching

The liquidity risk itself is estimated by comparing the analyses carried out on the assets and liabilities sides.

Generally, three factors are taken into account when determining risk.

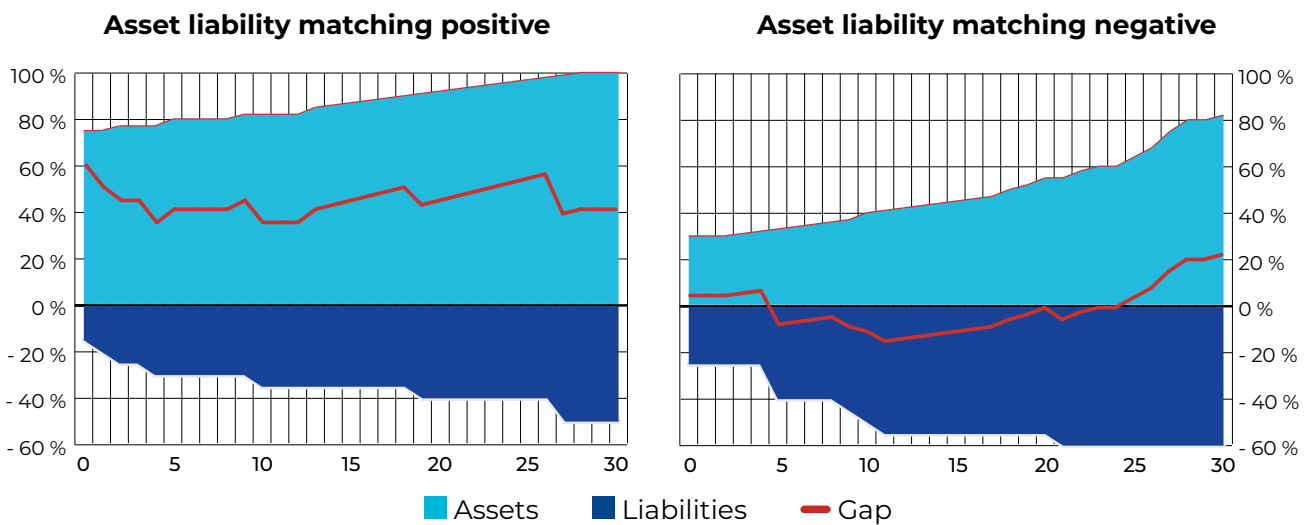
On the one hand, the results of **the analysis of the liquidity of the fund's assets** (typically, its liquidity profile under normal and "stressed" conditions) and **a quantitative analysis** (by *scoring*⁸, or using historical or hypothetical scenarios) **of the liabilities**, generally supplemented by **qualitative elements describing the structure of the liabilities** (e.g. their concentration).

Where the approaches adopted aim to estimate liquidity curves for assets and liabilities, it is possible to calculate an asset/liability matching by ensuring that the fund's liquidation

capacity is greater than the estimated proportion of redemptions for a given time horizon. If this is not the case, an alert will be issued, which may lead to corrective measures being taken. These measures may concern both the fund's assets (e.g. increasing liquidity) and liabilities, with the implementation of specific mechanisms such as notice periods, the swing pricing mechanism (see the AFG Charter of good conduct on swing pricing) or gates (see the AFG guide on liquidity risk management tools).

It should be noted that it is recommended to ensure sufficient **tracability** of the follow-up given to liquidity alerts. A negative match means that the fund is not sufficiently liquid to cope with the redemption scenario used.

Examples of asset-liability matching indicators



To go further in analysing liquidity risk, it is possible to set up reverse *stress tests*, i.e. to try to estimate the scenarios and circumstances (redemption movements, market assumptions, etc.) that could affect liquidity which would leave the fund vulnerable and unable to honour redemptions.

⁸) Scoring: modelling of liability stability levels based on a scale of scores assigned according to predefined criteria.

Focus on money market funds

With regard to the liquidity risk framework, money market funds present a particularity in that they are theoretically subject to the requirements of two regulations: the one discussed first in this guide (ESMA's guidance on Liquidity Stress Tests for UCITS and AIFs – ESMA34-39-882) and the regulation specific to money market funds (Regulation (EU) 2017/1131 of the European Parliament and of the Council of 14 June 2017 on money market funds – the so-called 'MMFR').

As a reminder, the latter requires a strict framework for asset liquidity by introducing specific constraints:

- ▶ for funds with a constant NAV or low volatility, at least 10% of the assets must have a daily maturity, or be redeemed with one day's notice, and at least 30% of the assets must have a weekly maturity, or be redeemed with 5 business days' prior notice;
- ▶ for variable NAV funds, at least 7.5% of assets must mature daily, or redeemed with one day's prior notice and at least 15% of the assets must be weekly, or redeemed with 5 business days' prior notice.

MMFR regulations also require a system to detect vulnerabilities in case of possible events or future changes in economic conditions. This search for unfavourable configurations involves, in particular, the application of *stress tests* predefined by the regulator and others designed by the asset management company. This is because scenarios based on reference parameters published by ESMA are common to all funds and are not necessarily adapted to the portfolio of each money market fund (see question 28 of the AMF's 'Questions and Answers on money market funds' guide for asset management companies, published in November 2018).

The outcome of these scenarios can lead to the asset management company to take corrective measures to reduce liquidity risk.

To avoid any conflict with ESMA's general guidelines on LSTs, it is specified in this document⁹ that the liquidity framework imposed by "MMFR" took precedence over ESMA's more general guidelines.

As a reminder, the main elements relating to liquidity requested as part of the MMFR' reports are as follows (the nomenclature of stress tests in the MMFR regulations are shown in brackets):

■ Impact on NAV of liquidity stress on fund assets (LST-01)

The aim is to measure the impact of stress asset liquidity simulating a change in the level of liquidity of assets whose characteristics are given explicitly by ESMA.

■ Maximum percentage transferable one week, while ensuring compliance with fund constraints (RST-01)

The objective here is to estimate the liquidity that can be generated over a week by the fund while complying with its regulatory constraints. Mathematically speaking, this amounts to an optimisation problem (the aim is to maximise weekly liquidity) subject to compliance with a large number of regulatory limits. This approach is particularly complex to implement. A simpler approach is to adopt a methodology based on proportional liquidation as presented in the section entitled "*Measuring asset liquidity*". Although this approach will produce a lower result than that theoretically obtained by an optimisation method, it guarantees compliance with all the constraints applicable to the fund. It should be noted, however, that such a scenario may be difficult to implement; the approach adopted must be operationally realistic.

⁹⁾ Paragraph 6 in the "perimeter" section of the Guidelines.

- **Ratio of transferable assets to one week and a stressed redemption amount (RST-02)**

More specifically, two ratios need to be calculated.

As a first approximation (please refer to the ESMA guidelines for precise methodological details), the numerator of the first ratio reflects the value of assets assumed to be extremely liquid: mainly money market instruments issued or guaranteed by the European Union of very high credit quality and with a maturity of less than 190 days, assets with weekly maturities and cash. The second adds 85% of the value of high credit quality assets (not already accounted for) to the first. The denominator corresponds to the amount of a weekly redemption scenario for 25% of professional investors and 15% of retail investors.

- **Ratio of transferable assets over one week to the amount invested by the two main holders (RST-03)**

The principle is identical to that of the RST-02, but with net redemptions of all the shares of the two main investors in the denominator.

- **Calculation identical to RST-02 after application of a market shock (MST-02)**

The calculation involves first applying a market shock to the fund which is combined with a liquidity crisis modelled in the same way as the LST-01 scenario. Once these shocks have been applied to the fund, the same calculations as those corresponding to the RST-02 scenario should be performed, with the new CQS1 and CQS2 asset weights after estimation by the market shocks.

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The Committee reports to the AFG's Financial management and Risk management Commission, chaired by Arnaud Faller, CPR Asset management, and vice-chaired by Olivier Corby, Candriam.

Adina Gurau Audibert, director of the Asset management division and Stéphane Aidan, head of Risk management, who coordinated the work.

The AFG has been federating asset management professionals for 60 years, at the service of savings professionals and the economy.

It works for the asset management industry and its growth, defines common positions that it lobbies and defends with public authorities, contributes to the emergence of solutions that benefit all players in its ecosystem and is committed to the interests of all promote the influence of the industry in France, Europe and beyond.

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