Managing fund liquidity risk in Europe - an AMIC/EFAMA report

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The International Capital Market Association's (ICMA) Asset Management and Investors Council (AMIC) was established in March 2008 to represent the buy-side members of the ICMA membership.

EFAMA is the representative association for the European investment management industry. EFAMA represents through its 26 member associations and 63 corporate members about EUR 19 trillion in assets under management of which EUR 12.6 trillion managed by 56,000 investment funds at end June 2015. Slightly less than 30,000 of these funds were UCITS (Undertakings for Collective Investments in Transferable Securities) funds.

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1. Introduction

This document represents the joint work of AMIC and EFAMA. This paper aims to help interested audiences understand the comprehensive set of tools that are currently available in Europe, by law or through industry practices, for asset managers to manage potential liquidity mismatches in their funds.

It is designed as a practical paper with information about existing fund liquidity management provisions. It will also recommend some areas where the current regulatory and supervisory environment could be improved. Given the largely European focus of the AMIC and EFAMA membership, the paper will focus on EU legislation and EU fund structures, namely UCITS funds and AIFs (Alternative Investment Funds).

However, this paper is not directly attempting to address liquidity conditions in financial markets and how fund management companies, among other actors, react to these conditions. This topic is explored in a number of other papers, such as the ICMA paper Liquidity in the European secondary bond market: perspectives from the market.

Furthermore, this paper does not address the decision-making process of individual fund managers when deciding to use or not use available fund liquidity tools in relation to individual funds managed. The paper merely attempts to outline the comprehensive set of policies and tools already available, either through imposed legislation or based on industry standards.

Basel III and other post-crisis legislation have brought about structural changes in the way credit institutions have had to reduce their asset inventories and pare back their long-held intermediary roles as principal dealers. Consequently, public concerns have been raised on whether liquidity, particularly for an asset class like fixed income, has indeed become more fragmented. In parallel, the prolonged accommodative monetary policy of the world's most prominent central banks has significantly impacted fixed income markets, contributing to the perception of a "liquidity scare" in the eyes of some commentators. As a consequence, there has been a public discussion on whether asset managers, offering open-end funds to their investors, are able to reconcile the liquidity of their portfolio with the potential redemption demands of their investors at all times.

In addressing such concerns, AMIC and EFAMA believe that it is important to remember the value and responsibility that the European asset management industry has as a provider of capital for long-term investments. Paradoxically, the above concerns have sparked a regulatory debate on market liquidity which may lead our industry to artificially allocate a greater share of assets into short-term investments, proving detrimental to those investors with long-term interests. It is important to highlight that the existing and robust liquidity risk management requirements, in part also strengthened as post-crisis legislation in the European investment fund market, have been designed to address liquidity management issues in a suitable manner.

2. Liquidity risk management in funds during their lifetime

Before exploring the specific liquidity risk management requirements and liquidity management tools available, AMIC and EFAMA believe that it is important to bear in mind that fund managers manage liquidity risk systematically and consistently throughout the lifetime of the fund, not just by employing one individual tool at a specific moment in time.

Broadly speaking, in terms of risk management, relevant are two stages for a fund management company wishing to set-up and manage a fund: (i) the pre-launch stage, and (ii) the post-launch one. Within each stage, the fund's management will bear fund liquidity in mind and implement a corresponding liquidity risk governance policy – within the overarching framework of regulatory requirements.

(i) Pre-launch: Design and structure of the fund and product

The most important aspect of liquidity risk management for a fund management company is the product design when setting up the fund itself. This stage involves careful consideration of a number of factors, including the strategy of the product, how it will achieve its stated investment goals or outcomes, the expected asset mix that the product will invest in, the product's target audience and that audience's risk appetite, the risk profile that the fund would be expected to maintain, and the suitability of such risk for the target audience. In particular, consideration will be taken of the liquidity of the underlying investments against the liquidity required by the target audience and/or distribution channels of the product.

The product design phase gives portfolio managers, senior management, and control functions (including the dedicated risk management function) the opportunity to assess the appropriateness of the product from the point of view of liquidity. For instance, any structural liquidity mismatch is addressed on the asset and/or liability side. Technical details, such as the frequency of valuations, notice period, cut-off times for subscriptions and redemptions and settlement dates, etc. will be considered. In many cases, national regulators enter into a dialogue with managers before the launch of a new product to understand the proposed fund structure, reviewing a model portfolio and discussing how the manager expects to respond in times of stressed market conditions. Furthermore, the management company will also ensure that the fund liquidity profile is aligned to that of its intended investors on an on-going basis.

The product design phase is also the opportunity to assess, based on portfolio and strategy characteristics, the need for specific liquidity limits, as approved by senior management.

(ii) Post-launch: Liquidity risk management tools during the life of the fund

During the life of the fund itself, the fund manager has a number of internal processes and tools available to manage risks. Whereas at the product launch stage, liquidity and capacity controls are implemented, during the product life, these are performed on a regular basis. All alerts and breaches are managed according to control standards: breaches are addressed in a timely manner while alerts are analysed and lead either to an action plan or an escalation in a timely fashion to senior

management. Regular reporting on liquidity risk is provided to senior management and to regulators as per regulatory requirements. In addition, the overall fund governance setup also includes the issuance and validation by senior management of a contingency plan related to liquidity risk.

In addition, beyond disclosure to investors, ongoing dialogue with investors about their intentions can be a crucial liquidity management tool, particularly with those who have large holdings and where a single large redemption could significantly impact other investors seeking to redeem at the same dealing point.

Specific risk management processes and tools are not the only way that the fund management company manages risk in the fund. The company will also be making sure that the portfolio of assets reflects the appropriate risk profile of the fund, taking into account the risk appetite of the investors and, importantly, the macroeconomic environment. This includes liquidity management (in both UCITS[1] funds and AIFs, respectively subject to the UCITS Directive and the AIFM Directive) and is an important element of the broader area of risk management, forming a "first line of defence" in case of market dislocations. Portfolio managers and their trading desks will react to changes in market conditions e.g. in times of stress, by trading in smaller lot sizes, changing the composition of the portfolio in favour of more liquid securities, decreasing the concentration of particular securities within the portfolio, or by sourcing additional liquidity. Management companies are also aware of their responsibilities to their investors, for example by mitigating any first mover advantage to ensure that the fund maintains its overall risk profile and exposure, for example by selling a vertical slice of the fund's assets (i.e. selling underlying assets across all liquidity profiles), rather than horizontally (i.e. selling the most liquid assets first).

Although beyond the scope of this paper, broadly speaking, fund management companies are also increasingly developing trading techniques to respond to the longer term changes in market liquidity.[2]

3. Existing regulatory requirements in European legislation

The sections below outline the existing regulatory requirements in EU legislation across the AIFM and UCITS regimes[3], both evidence of far-reaching legal requirements regarding fund liquidity, which have been successfully implemented.

3.1. The AIFM Directive

To date, the liquidity risk management requirements of the Level 1 AIFM Directive (2011/61/EU) and its implementing acts have proven their merit since their implementation three years ago, in particular in the context of several significant market dislocations which have occurred since then. Such

[1] In the case of UCITS, portfolio managers manage within the constraints of the product concentration and liquidity rules which are designed to ensure managers can provide ongoing liquidity (see *infra*).

[2] These themes are explored in publications such as the ICMA's corporate bond liquidity survey.

[3] This paper limits itself to legislation that is in force, so therefore does not address the on-going debate on money market funds in the draft EU Money Market Fund Regulation, although future updates of this paper may also include a section on the new money market fund rules.

requirements are specifically aimed at ensuring appropriate liquidity management for alternative investment portfolios containing less liquid assets.

3.1.1. General permanent and independent risk management function

According to Article 39 of the delegated Regulation (No. 231/2013) to the AIFM Directive, implementing Article 15 of the Level 1 text dedicated to Risk Management, an alternative investment fund management (AIFM) company shall establish and maintain a permanent risk management function. This function will have to, firstly, implement effective risk management policies and procedures in order to identify, measure, manage and monitor on an ongoing basis all risks (including liquidity-risk) relevant to each AIF's investment strategy, and secondly, ensure that the risk profile of the AIF disclosed to investors is consistent with the risk limits that have been set in accordance with Article 44 of the Regulation (see *infra*). Moreover, this function must comply with the obligation to monitor compliance with the above risk limits, notifying the management company's management and/or supervisory function when the AIF no longer adheres (or risks no longer adhering) to such limits. Regular updates to the management and/or supervisory function are also required.

3.1.2. Specific liquidity risk management requirements

In addition to the general risk management requirements mentioned above, the AIFM Directive provides specifically for a robust liquidity management framework through its Article 16, notably through the first paragraph which states that AIFMs shall for each fund managed which is not a closed-end fund employ an *appropriate liquidity management system*, including procedures *to monitor the liquidity risk of the AIF and to ensure that the liquidity profile of the investments of the AIF complies with its underlying obligations*. The following sub-paragraph reinforces such requirement by also mandating that the companies *regularly conduct stress-tests, under normal and exceptional liquidity conditions* (…) to assess and monitor the liquidity profile and risk of the AIFs. The second paragraph adds that the companies must also ensure that the AIFs' *investment strategy, their liquidity profile and their redemption policy are consistent*.

The accompanying delegated Regulation (EU) No. 231/2013 – under Article 46 thereof - further consolidates these provisions by requiring that managers demonstrate to the National Competent Authorities of their home Member State that an appropriate liquidity management system and effective procedures referred to in Article 16 of the Directive are in place, and that these are calibrated to the investment strategy, the liquidity profile and the redemption policy of each AIF.

Article 44 of the Regulation introduces quantitative and/or qualitative risk limits for each managed AIF, taking into account all relevant risks. These are to at least cover the following risks: (i) market risks, (ii) credit risks, (iii) liquidity risks, (iv) counterparty risks, and (v) operational risks. When setting these, the management company shall take into account the individual strategies and assets invested in for each AIF it manages, as well as the national rules applicable to each of these.

3.1.3. Specific controls to monitor performance of illiquid assets

Article 47(1) of the delegated Regulation lays out the specific details of the liquidity management system and procedures for each AIF as follows:

(a) *the AIFM maintains a level of liquidity in the AIF appropriate to its underlying obligations, based on an assessment of the relative liquidity of the AIF's assets in the market, taking account of the time required for liquidation and the price or value at which those assets can be liquidated, and their sensitivity to other market risks or factors;*
(b) *the AIFM monitors the liquidity profile of the AIF's portfolio of assets, having regard to the marginal contribution of individual assets which may have a material impact on liquidity, and the material liabilities and commitments, contingent or otherwise, which the AIF may have in relation to its underlying obligations. For these purposes the AIFM shall take into account the profile of the investor base of the AIF, including the type of investors, the relative size of investments and the redemption terms to which these investments are subject;*
(c) *the AIFM, where the AIF invests in other collective investment undertakings, monitors the approach adopted by the managers of those other collective investment undertakings to the management of liquidity, including through conducting periodic reviews to monitor changes to the redemption provisions of the underlying collective investment undertakings in which the AIF invests. (…);*
(d) *the AIFM implements and maintains appropriate liquidity measurement arrangements and procedures to assess the quantitative and qualitative risks of positions and of intended investments which have a material impact on the liquidity profile of the portfolio of the AIF's assets to enable their effects on the overall liquidity profile to be appropriately measured. The procedures employed shall ensure that the AIFM has the appropriate knowledge and understanding of the liquidity of the assets in which the AIF has invested or intends to invest including, where applicable, the trading volume and sensitivity of prices and, as the case may be, or spreads of individual assets in normal and exceptional liquidity conditions;*
(e) *the AIFM considers and puts into effect the tools and arrangements, including special arrangements, necessary to manage the liquidity risk of each AIF under its management. The AIFM shall identify the types of circumstances where these tools and arrangements may be used in both normal and exceptional circumstances, taking into account the fair treatment of all AIF investors in relation to each AIF under management. (…).*

Such requirements are complemented by the obligation for the asset management company to document its liquidity management policies and procedures, as well as review them on at least an annual basis. Appropriate escalation measures have to be necessarily in-built to the above systems and procedures to address anticipated or actual liquidity shortages or other distressed situations of the AIF.

Article 48(1) of the Regulation requires the management company to monitor compliance with the limits of Article 44 and, where these are exceeded or likely to be exceeded, it is to determine a required (or necessary) course of action. In doing so, a manager should consider its liquidity management policies and procedures, the liquidity profile of the AIF's assets and the effect of "atypical" levels of redemption requests.

3.1.4. Stress-testing

Paragraph 2 of Article 48 of the delegated Regulation mandates the conduct of stress-tests, both under normal and exceptional market conditions. Their design is specified as follows, with stress-tests to:

(a) be conducted on the basis of reliable and up-to-date information in quantitative terms or, where this is not appropriate, in qualitative terms;
(b) where appropriate, simulate a shortage of liquidity of the assets in the AIF and atypical redemption requests;
(c) cover market risks and any resulting impact, including on margin calls, collateral requirements or credit lines;
(d) account for valuation sensitivities under stressed conditions;
(e) be conducted at a frequency which is appropriate to the nature of the AIF, taking in to account the investment strategy, liquidity profile, type of investor and redemption policy of the AIF, and at least once a year.

Finally, Article 49 of the delegated Regulation foresees the conditions for a fundamental alignment between the investment strategy, liquidity profile and redemption policy of each AIF managed. Such condition is satisfied when *investors have the ability to redeem their investments in a manner consistent with the fair treatment of all AIF investors and in accordance with the AIF's redemption policy and its obligations*.

3.1.5. Disclosures

Disclosures to regulators and investors help both audiences better understand the funds and their liquidity risks.

3.1.5.1. Disclosures to regulators

In terms of regulatory disclosures, Article 24(1) of the Level 1 Directive provides that a management company must regularly report to the National Competent Authorities of its home Member State to inform them of the principal markets and instruments in which it trades for the AIFs it manages, including a break-down of financial instruments and other assets, the AIF's investment strategies and their geographical and sectoral investment focus. Information shall include the mainly traded instruments, the principal exposures and most important concentrations for each of the AIFs it manages.

The following paragraph mandates that details concerning the liquidity profile of each AIF, including the results of the stress-tests performed, be shared with the National Competent Authorities. More specifically, the management company shall for each managed AIF disclose to the Authorities:

(a) the percentage of the AIF's assets which are subject to special arrangements arising from their illiquid nature;
(b) any new arrangements for managing the liquidity of the AIF;

(c) the current risk profile of the AIF and the risk management systems employed by the AIFM to manage the market risk, liquidity risk, counterparty risk and other risks including operational risk;
(d) information on the main categories of assets in which the AIF invested; and
(e) the results of the stress-tests performed (…).

For those AIFs that employ leverage on a *substantial* basis – defined as a leverage factor above 3:1 relative to NAV – additional reporting requirements are triggered, including information on the overall level of leverage employed by each AIF managed, a break-down between leverage arising from the borrowing of cash or securities vs. leverage embedded in financial derivatives, as well as the extent to which the AIF's assets have been reused under leveraging arrangements to the National Competent Authorities. Such information shall include the identity of the five largest sources of borrowed cash or securities for each of the AIFs and the amounts of leverage received from each of those sources for each AIF.

Finally, where necessary for the effective monitoring of systemic risk, the National Competent Authorities may require additional information on a periodic, as well as on an *ad hoc* basis, and inform ESMA accordingly[4]. The AIFM Directive provides for AIFs and their managers to report this data to National Competent Authorities for onward transmission to ESMA and the ESRB. Once these onwards transmission channels are fully operational, in line with our recommendation in Section 5.2 below, these bodies will be able to review and analyse the enhanced data sets for the purpose of improving their risk assessments of European markets.

3.1.5.2. Disclosures to investors

As a complement to the in-depth regulatory disclosures to their competent authorities as described above, AIF management companies must also comply with an extensive list of investor disclosures. As per Article 23 of the Level 1 Directive, these include *inter alia* a description of the investment strategy and objectives of the AIF (including specific information for AIF master-feeder structures), a description of the types of assets in which the AIF may invest, the techniques it may employ and all associated risks and any applicable investment restrictions. On leverage, the circumstances in which the AIF may have recourse to leverage shall be communicated, as the types and sources of leverage permitted up to a maximum level and the associated risks, along with any restrictions on its use. Collateral and asset reuse arrangements should also be indicated, including any specific treatment for assets of a relatively illiquid nature. Article 108(2), letter a) of the delegated Regulation No. 231/2013 substantiates these information requirements *vis-à-vis* illiquid assets by demanding that investors be offered an overview of any special arrangements in place including whether they relate to side pockets, gates or other similar arrangements, the valuation methodology applied to assets which are subject to such arrangements and how management and performance fees apply to these specific assets. This is to be accompanied by a description of the procedures by which the AIF may change its investment strategy or investment policy.

[4] Please refer to Annex I further below, illustrating the relevant reporting template for the liquidity profile for each AIF, covering both the composition of the asset side (i.e. of the portfolio), as well as of the AIF's investors investor profiles.

Pertinent to liquidity risk management is the description of the AIF's related risk management procedures and systems, including information on redemption rights both in normal and in exceptional circumstances, as well as how the management company plans to ensure the fair treatment of all investors. In this regard, investors may find information on notice periods in relation to redemptions, details of lock-up periods, an indication of circumstances in which normal redemption mechanisms might not apply or may be suspended, and details of any measure that may be considered by the governing body, such as gates or side pockets, as they have an impact on the specific redemption rights of investors in the particular AIF.

The above information shall be disclosed as part of the AIF's periodic reporting to investors, as required by the AIF's rules or instruments of incorporation or at the same time as the prospectus and offering document and — as a minimum — at the same time as the annual report is made available or made public.

3.2. The UCITS Directive

Pre-dating the AIFM Directive by over two decades, the UCITS Directive (2009/65/EC) of 1985 (regularly updated since then) is a unique investment product legislation - justified by the retail nature of the UCITS pan-European passporting. It is characterised by the offer to investors of on-demand liquidity[5] and built around a significant and prescriptive regulatory framework. For the informative purposes of this paper, we wish to stress that the liquidity requirements illustrated above in reality already represent a second "line of defence" against liquidity risk. The first and most important element that has successfully guaranteed the liquidity of the UCITS product in line with its Article 84(1) obligation, from its inception in 1985 until this day, are the specific portfolio diversification requirements under Article 52 *et seq.* of the Directive, as reinforced by a list of eligible and non-eligible assets under the previous Article 50.

Succinctly, UCITS portfolio diversification is based on the so-called "5-10-40 Rule", set out in Article 52(1) and (2). Accordingly, a UCITS shall invest no more than 5 % of its assets in transferable securities or money market instruments issued by the same body. The risk exposure to a counterparty of the UCITS in an OTC derivative transaction shall not exceed 10 % of its assets when the counterparty is a credit institution (or 5 % of its assets in other cases). The above 5 % limit may be raised to a maximum of 10 %, albeit the total value of the transferable securities and the money market instruments held by the UCITS in the issuing bodies in each of which it invests more than 5 % of its assets shall not exceed 40 % of the value of its assets. Notwithstanding these individual limits, a UCITS shall not combine, where this would lead to investment of more than 20 % of its assets in a single body, (i) investments in transferable securities or money market instruments issued by that body, (ii) deposits made with that body, or (iii) exposures arising from OTC derivative transactions undertaken with that body as a counterparty. Articles 53 to 57 allow for adjustments to these limits and prescribe additional ones that we do not address here as they would go beyond the specific scope of this report.

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[5] Please refer to Article 84(1) of the Directive, whereby *a UCITS shall repurchase or redeem its units at the request of any unit-holder*.

As above with the AIFM Directive, we present the corresponding liquidity risk management requirements for UCITS management companies in the following sub-sections.

3.2.1. General permanent and independent risk management function

Article 51(1) of the Level 1 Directive provides that a UCITS management company shall employ a risk-management process which enables it to monitor and measure the risk of the positions and their contribution to the overall risk profile of the UCITS portfolio at any time. Such a process comprises procedures which enable the management company to assess the UCITS' exposure to all material risks including market risks, liquidity risks, counterparty risks and operational risks.

The implementing Directive 2010/43/EU further specifies – under Article 9(2) letter f) - that the senior management of the management company approve and review for each managed UCITS and on a periodic basis the risk management policy, together with the arrangements, processes and techniques for its implementation. The following Article 12(2) requires the permanent risk management function to be hierarchically and functionally independent from other operating units of the management company. *Inter alia*, it shall additionally implement the risk management policy and procedures; ensure compliance with the UCITS' risk limits, including statutory limits concerning global exposure and counterparty risk in accordance with the relevant provisions of the main directive and more recent 2012 ESMA *Guidelines* (see *infra*); advise senior management and/or the supervisory function with regard to the risk profile for each managed UCITS and its consistency with current risk levels, as well as to the adequacy of the risk management process (indicating in particular whether appropriate remedial measures have been taken in the event of eventual deficiencies); and provide regular reports to senior management outlining the current level of risk incurred by each managed UCITS and any actual or foreseeable breaches of their limits.

3.2.2. Specific liquidity risk management requirements

Under the Level 1 Directive, liquidity risk management requirements to which UCITS funds and their management companies are subject stem from the general obligation of Article 84(1), whereby *a UCITS shall repurchase or redeem its units at the request of any unit-holder*. By way of derogation, the following paragraph 2 further provides that a UCITS may, in accordance with the applicable national law, the fund rules or the instruments of incorporation of the investment company, *temporarily suspend the repurchase or redemption of its units* and its National Competent Authorities may *require the suspension of the repurchase or redemption of units in the interest of the unit-holders or of the public*. Moreover, the previous Article 76 requires that a UCITS *make public in an appropriate manner the issue, sale, repurchase or redemption price of its units each time it issues, sells, repurchases or redeems them, and at least twice a month*[6].

More detailed obligations derive from the implementing Directive 2010/43/EU, whereby Article 23(4) obliges UCITS management companies in implementing their risk management policy *to formulate forecasts and perform analyses concerning the investment's contribution to the UCITS portfolio*

[6] The National Competent Authorities may, however, permit a UCITS to reduce the frequency to once a month on the condition that such derogation does not prejudice the interests of unit-holders.

composition, liquidity and risk and reward profile prior to their investment. In terms of risk-management policy, the following Article 38(1) prescribes *procedures as are necessary to enable the management company to assess for each UCITS it manages the exposure of that UCITS to market, liquidity and counterparty risks, and the exposure of the UCITS to all other risks, including operational risks, which may be material for each UCITS it manages*. According to the following paragraph 2, such risk-management policy and resulting activity are to be reported to the UCITS board of directors, senior management, as well as to eventual internal supervisory function. Any material changes to the risk management process are to be reported to the National Competent Authority.

3.2.3. Specific controls to monitor performance of illiquid assets

Article 39(1) of the implementing Directive 2010/43/EU obliges UCITS management companies to assess, monitor and periodically review the effectiveness of their risk management policy, their degree of compliance with it and the adequacy of measures taken to address any deficiencies in the risk management process. Moreover, the companies are to notify to National Competent Authorities any material changes to their risk management process and ensure that the above requirements are subject to regulatory review on an on-going basis even after authorisation is granted.

According to the following Article 40(3) of the implementing Directive 2010/43/EU, UCITS are to employ an appropriate liquidity risk management process in order to ensure that each UCITS they manage is able to comply *at any time* with allowing investors to redeem their units on demand. Paragraph 4 adds that UCITS management companies are *to ensure that for each UCITS they manage the liquidity profile of the investments of the UCITS is appropriate to the redemption policy laid down in the fund rules or the instruments of incorporation or the prospectus*.

Complementary guidelines that address liquidity are also to be found in ESMA's 2012 *Guidelines on ETFs and other UCITS issues* (as revised in 2014), albeit these address the liquidity of collateral received in the context of efficient portfolio management (EPM) transactions and/or OTC derivative ones[7]. For instance, under paragraph 43 letter a) of the *Guidelines*, the liquidity of received collateral – other than cash – is to be ensured by trading it on a regulated market or multilateral trading facility, with transparent pricing, in order for it to be sold rapidly and at a price that is close to pre-sale valuation. Paragraph 45 recommends that a UCITS receiving collateral for over 30% of its NAV conduct regular stress-tests, to be carried out under normal and exceptional liquidity conditions. Such tests should at least specify a) the design of stress-test scenario analysis including calibration, certification and a sensitivity analysis, b) the empirical approach to impact assessment, including back-testing of liquidity risk estimates, c) the reporting frequency and limit/loss tolerance threshold/s, and d) mitigating actions to reduce losses (including a haircut policy and gap risk protection).

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[7] Please refer to the ESMA *Guidelines on ETFs and other UCITS issues*, as revised and published on 1 August 2014; available at : https://www.esma.europa.eu/sites/default/files/library/2015/11/esma-2014-0011-01-00_en_0.pdf

3.2.4. Stress-testing

Although not expressly in the text of the Level 1 Directive, stress-tests have become a core requirement even for UCITS funds, following the implementing Directive 2010/43/EU and the Committee of European Securities Regulators' (CESR) 2010 *Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS*[8].

Implementing Directive, Article 40(2) letters b) and c) prescribe that for each UCITS they manage, companies must conduct periodic back-tests in order to review the validity of risk measurement arrangements (including model-based forecasts and estimates), as well as periodic stress-tests and scenario analyses to address risks arising from potential changes in market conditions that might adversely impact the value of the UCITS portfolio.

In addition, Article 40(3), Member States shall ensure that management companies employ an appropriate liquidity risk management process. In particular, Article 40(3) requires that where appropriate, management companies shall conduct stress tests which enable assessment of the liquidity risk of the UCITS under exceptional circumstances.

With regard to the *Guidelines*, these specify that where the Value at Risk (VaR) approach is used to calculate global exposure, each UCITS should adopt a *rigorous* and *comprehensive* stress-testing programme in accordance with qualitative and quantitative requirements. Such programme should be designed to measure any potential major depreciation of the UCITS value as a result of unexpected changes in the relevant market parameters and correlation factors. Conversely, where appropriate, it should also measure changes to these parameters and factors, which could result in major depreciation of the UCITS value. Such tests should be adequately integrated into the UCITS risk management process and results considered when making investment decisions on behalf of investors in the UCITS, i.e. results should be monitored and analysed by the responsible risk management function and submitted for review to the senior management. Where particular vulnerabilities are revealed, prompt steps/corrective actions should be taken (e.g. hedging or a reduction in the relevant exposure).

The accompanying quantitative requirements of the *Guidelines* (Box 20) specify that tests should cover all risks which affect the value or the fluctuations in value of the UCITS portfolio to a significant degree. In particular, those risks which are not fully captured by the VaR model used. In terms of focus, the stress-tests should address those risks which, though not significant in normal circumstances, are likely to be significant in stress scenarios (e.g. unusual correlations, spikes in market illiquidity, behaviour of complex structured products, etc.). Finally, the accompanying qualitative requirements (Box 21) prescribe that stress-tests be carried out on a regular basis at least once a month, or earlier whenever a change in the value or the composition of a UCITS or a change in market conditions makes it likely that the test results will differ significantly from the ones performed previously. Ultimately, the management company should implement clear procedures relating to the design and ongoing adaptation of the stress-tests.

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[8] Please refer to the CESR *Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS* (CESR/10-788) of 28 July 2010, particularly to Box 19 - 21.

3.2.5. Disclosures

3.2.5.1. Disclosures to regulators

The regulatory disclosures regarding the features of the risk management process – upon authorisation and on a periodic, ongoing basis in the event of material changes – to National Competent Authorities have been described above.

3.2.5.2. Disclosures to investors

As for AIF management companies, apart from the regulatory disclosures, Chapter IX of the Level 1 Directive provides for an extensive list of necessary disclosures to investors to be inserted in fund prospectuses, yearly and half-yearly reports, as well as in key investor information documents. These are complemented by the investor transparency requirements stemming from the above-cited 2010 CESR *Guidelines* insofar as exposure-related information in the fund prospectuses and in the annual reports are concerned.

4. Complementary operational liquidity tools available to asset managers through industry practices

Besides the relevant regulatory requirements under the two relevant EU collective funds frameworks analysed above, there exists a further array of operational tools available to asset managers to manage their liquidity profile. As acknowledged in the International Organization of Securities Commissions' (IOSCO) *Final Report Liquidity Management Tools in Collective Investment Schemes* of December 2015, recourse to these tools is common across many global jurisdictions and has proved successful by enabling fund management companies to counter all sorts of market events.[9] We have provided a brief outline of the results of the IOSCO survey below in sub-section 4.1. Moreover, within important fund domicile jurisdictions, buy-side industry associations have pro-actively provided some practical guidance and marketplace codes of conduct concerning fund liquidity management[10], or on specific aspects of it.[11] In sub-sections 4.2 to 4.9 we briefly describe some among the most common of these tools available in European jurisdictions. For more details about which EU countries these tools are available in, please see Annex II, based on information provided by the 2015 IOSCO survey.

These tools are not necessarily appropriate in all cases and have to be assessed and used depending on the specific circumstances (for instance, some tools are more appropriate when dealing with professional investors rather than retail investors).

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[9] For a series of concrete examples of suspensions in the recent financial history, please refer to the IOSCO *Final Report Liquidity Management Tools in Collective Investment Schemes: Results from an IOSCO Committee 5 survey to members* of December 2015; available at: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD517.pdf

[10] In this respect, please refer to the *AFG Code of Practice on liquidity risk management in Collective Investment Schemes (CIS)*, as adopted in January 2016 by the French asset management industry association (AFG), available at http://www.afg.asso.fr

[11] For an in-depth example on swing pricing specifically, please refer for instance to the recent *Guidelines on Swing Pricing*, issued by the Association of the Luxembourg Fund Industry (ALFI) on 10 December 2015; available at http://www.alfi.lu/sites/alfi.lu/files/Swing-Pricing-guidelines-final.pdf

4.1. The December 2015 IOSCO survey of liquidity management tools in collective investment schemes

We note that IOSCO has issued a report in December 2015, which is relevant to this paper. It contains the results of a survey conducted among some of its members (i.e. those represented on IOSCO's Committee 5, responsible for "Investment Management") and addressing collective investment funds' liquidity management frameworks across 27 member jurisdictions.[12] The survey was designed to specifically look at exceptional situations, such as significant redemptions. It covered topics such as tool availability, use, outcomes, as well as who has the right to activate such tools.

The IOSCO survey results acknowledge the existing widespread availability of liquidity management tools for fund management companies. The survey found that, *inter alia*:

- Fund management companies generally disclose upfront the existence of tools to investors;
- Feedback from various national regulators show examples of good practices funds have adopted to address liquidity concerns as part of their ongoing portfolio and risk management, for example, in terms of fund structuring, portfolio composition or meeting redemption requests[13];
- Asset managers have a fiduciary duty to their investors and have activated liquidity management tools when these are in the best interests of fund shareholders;
- The range of tools available is very significant:
  - There are mandatory regulatory requirements regulating funds, such as limits on asset concentration, counterparties, the availability of short-term borrowing and limits on leverage to name only a few; and
  - Liquidity management tools can also come from industry practices which can be activated optionally and which include, among others, suspension of redemptions, redemption gates, side pockets and swing pricing (see *infra*).

These tools are reinforced in many jurisdictions by the funds' internal risk management and control systems, which help ensure material risks are properly identified, assessed, monitored and controlled, under the supervision of regulators. In Europe there is already prescriptive regulation in place about these aspects (see Section 3 above).

Crucially, IOSCO concluded from its survey that *although the use of such liquidity management tools is rare, there have been occasions in the past where activation is needed to ensure investors are protected. Although the impacts of such actions have been acutely felt by fund investors, the broader, system wide consequences of invoking such tools have been limited.*[14]

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[12] The IOSCO *Final Report Liquidity Management Tools in Collective Investment Schemes: Results from an IOSCO Committee 5 survey to members* of December 2015

[13] One recent example is the UK FCA: Liquidity management for investment firms: good practice - https://www.fca.org.uk/news/liquidity-management-for-investment-firms-good-practice

[14] IOSCO survey page 26

4.2. Swing pricing

The purpose of swing pricing is to protect existing investors in a fund against the negative effects tied to the purchase or sale of underlying securities as a result of investor activity. In practice, a swing pricing mechanism enables a manager to charge, or "swing", the relevant transaction costs tied to the net subscriptions, or net redemptions, respectively on the incoming or outgoing investors. In other words, transactions costs associated with subscriptions and redemptions are allocated to either the bid or offered side of the market, depending on which side is greater (i.e. net inflows or net outflows) for any given fund. In this manner, those fund investors that remain invested do not bear the incoming or outgoing investors' trading costs which would otherwise affect the former's NAV (especially when buying or selling occurs at a volume).

Additionally, there are at least two types of swing pricing, "full" and "partial" swinging. Under full swing pricing, the relative costs are allocated and NAV is adjusted any time there are net inflows or outflows in a fund, as defined above. Under partial swing pricing, the costs are allocated and the NAV is "swung" only when net inflows or net outflows exceed a predefined threshold expressed as a percentage of a fund's NAV. The threshold is calibrated relative to the overall liquidity of the fund.

4.3. Dual Pricing / redemption fees

Like swing pricing, dual pricing (also referred to as redemption fees) constitutes another mechanism by which the subscription or redemption costs are made to fall upon the subscribers or redeemers to or from the fund, rather than on the remaining investors in the fund. Assets held by the fund are priced on a mid-market basis which is used to obtain a mid-NAV per unit/share. Subscriptions and redemptions are matched as portfolio managers trade, so that overall trading and related costs are reduced for subscribers and redeemers. Transaction costs are calculated and then added to the NAV to obtain the subscription price or deducted from the NAV to derive the redemption price, later attributed respectively to the incoming (ask) and outgoing investors (bid). This protects existing investors from the effects of trades triggered by dealing/trading. Dual pricing historically developed in jurisdictions such as the UK where listed securities were themselves dual priced.

4.4. Dilution levy

A dilution levy (sometimes referred to as an "anti-dilution levy") consists of a charge intended to reflect the transaction costs stemming from large investor outflows (or inflows)[15]. The levy is intended to protect existing or remaining investors against the adverse performance impact of new or leaving investors. Additional charges may therefore be levied on investors buying or selling units/shares in a fund, intended to offset any potential effect on the fund NAV resulting from the additional transaction costs (i.e. market spreads, brokerage charges, stamp duties, etc.). Such tools prove useful particularly in funds experiencing sizeable inflows or outflows, or simply passively tracking a market, where

[15] In the case of incoming investors, this levy is more appropriately identified as an "entry fee", as the term "dilution" is more appropriate to define the charge that is levied on outgoing investors to avoid that the share value for those remaining investors be "diluted" through the sale of a part of the fund's assets.

managers would frequently have to buy or sell the fund's underlying holdings to prevent cash overhangs or to be overdrawn.

Per se, the dilution levy is not a standard charge and its application is very much a policy decision at the discretion of the manager, depending on a series of indicative factors, e.g. a fund over a dealing period experiences high net sales or redemptions relative to its size, in the presence of one-off large inflows/outflows, where inflows/outflows are continuously in decline or increasing, etc.

4.5. In-kind redemption

In-kind (or *in specie)* redemptions consist of non-cash payments to the redeeming investor of assets in the fund instead, in whole or in part, of cash. There would therefore be no need to sell underlying assets of the fund, thereby protecting both remaining and redeeming investors from any transaction costs.

Rarely used in the retail fund space, in-kind redemption represents a viable alternative to cash payments to redeeming large institutional investors out of a specific fund vehicle. An important driver behind this type of redemption is the preservation of the underlying portfolio's characteristics which may not necessarily be amongst the most liquid and easily convertible to cash, and which the portfolio manager may wish to preserve to not generate a performance drag for the other remaining institutional investors.

Redemptions in-kind may nevertheless present a series of potential operational challenges. Firstly, the in-kind transfer is not an automated process for transfer agents and registrars. In the UK, for instance, such redemptions require a depositary to sign-off on them, which may considerably delay the process. To the same effect, in Luxembourg, a special valuation from the fund's auditor is usually required. In both cases these protections are designed to ensure that the assets being transferred are not undervalued to the detriment of remaining investors. Moreover, it may become time-consuming for a fund's custodians to re-register the assets into the investors' names, unless processes are already in place between their respective custodians.

Secondly, in some jurisdictions, in-kind redemptions may also require approval from the local tax authority, which again may contribute to lengthen the process. Without such approval, a redemption could in fact be treated as a taxable event. Further tax requirements are aimed at ensuring a fair distribution of assets on a *pro-rata* basis, so that remaining investors are not at a disadvantage and those exiting are not burdened by what in certain jurisdictions is collected as stamp duty reserve tax (SDRT) on a non-proportionate split.

Thirdly, it may not always be possible to process redemptions in-kind, as a fund manager may not possess the details of the underlying investor in whose name the assets should be returned. In practice this implies that in-kind redemptions are limited to institutional clients with whom the manager has a long-established relationship and a high level of existing operational connectivity with the client's custodian. This could be the case where an institutional client invests in the fund as part of a wider discretionary portfolio managed by the manager.

4.6. Out of the money (OTM) gates in fund structures

Facing liquidity pressure, a fund may choose to temporarily "gate" an investor's access to its capital, by either partially or fully restricting investors' ability to redeem their interest in the fund. Such gates may be imposed either at the fund-level or at the investor-level with differing thresholds. For instance, a fund-level gate of 10% would translate into a redemption prohibition from the fund should on aggregate fund redemptions over a given period exceed 10% of the fund's assets. An investor-level gate of the same percentage would prevent any single investor from withdrawing more than 10% of their interest in the fund, regardless of the withdrawal behaviour of other investors. In the case of fund- or investor-level gates, redemption requests that exceed the permitted threshold are met on a *pro-rata* basis and any residual request is carried forward to the next redemption period. In terms of the reputational impact of gates, these are similar to using tools like suspension of dealings, explored in greater detail below in the next sub-section.

4.7. Suspension of dealings

Where open-end fund structures exist, fund managers (sometimes required by regulators) may be allowed to suspend dealings where they deem that the relative transactions would go against the interests of the fund and its investors and make further and potentially larger redemption demands on the fund more likely. Such suspensions – when foreseen by a fund's constituent documents – would allow managers to meet redemptions in an orderly manner, as well as liquidate assets at their full value once pricing conditions improve. Suspensions may be imposed, for instance, where prevailing market conditions do not allow for the fair valuation of the underlying securities, where specific stock exchanges may be closed, or even on occasion of fund mergers or terminations.

In Europe, such practice is also expressly envisaged under the relevant Article 84(2) of the main UCITS Directive, as a derogation to the main UCITS feature of offering investors continuous liquidity. These decisions are taken by senior management of the asset management company and communicated to the national supervisory authority of the fund's domicile, as well as to those in which the fund has been distributed. The possibility to temporarily suspend the repurchase or redemption of the fund's shares/units in fact may even be required by the national authority in the interest of the investors or of the public.

For UCITS (and arguably for funds under other regimes, at least open-ended funds) suspension of dealings ought not to be routinely imposed. Such a tool should only be used where investors may suffer from the fact that present values cannot be realised in the face of rising redemption demands without significant market impacts. For example, when US markets closed after 9/11 many European funds suspended both redemptions and subscriptions to avoid dealing on unfair estimates of prices. The recent financial crisis also saw suspensions in dealings because it was not possible even to obtain fair value for some securities with an appropriate degree of accuracy, let alone price them.

4.8. "Side-pockets"

Where assets remain hard to value and may not be ordinarily liquidated in the market, an asset manager may have recourse to what are commonly known as "side-pockets". These consist of the

segregation of the illiquid portion of a fund's portfolio and their transfer into a separate, illiquid investment vehicle.

From an accounting viewpoint, the remaining liquid securities are reflected in the fund's regular account and are used to derive the value of the fund's unit/shares. As the side-pocket is illiquid and remains so even for lengthy periods until the assets can be sold-off in an orderly manner, the manager may still continue to charge fees on side pockets, though they are typically accrued only once the assets are able to be liquidated again. For those investors that decide to sell out of the fund's regular account, they will still remain invested in the side pocket until the assets can be sold. For new investors to the fund following the creation of the side pocket, these do not share in the side pocket. Both the ongoing and realised returns to old and new investors will therefore differ. As for the suspensions in dealings and out-of-the-money gates, the asset manager would broadly risk the same potential reputational fall-out once side-pockets are activated.

4.9. Temporary borrowing from non-government sources

Most regulated fund structures such as UCITS or regulated retail AIFs allow funds to borrow on a temporary short term basis. Other AIFs may have more comprehensive borrowing facilities. Additionally, as reliance on such short-term borrowings represents some degree of leverage, it is capped in UCITS funds at an amount no higher than 10% of the fund's NAV.

These borrowing facilities are used as a back-up source of liquidity to be drawn upon in a series of very limited circumstances, e.g. to cover settlement failures, rather than to cover a sudden spike in redemption requests in circumstances of extreme tail risk. Historically managers have agreed overdraft facilities with the fund's depositary or custodian. Within the scope of their powers, some managers typically put in place multiple credit lines with diversified credit institutions. Funds typically may have access to three types of borrowing: (i) an informal overdraft (i.e. with no arrangement fee, no commitment fee, of uncertain availability, and to be paid on use); (ii) an uncommitted facility (i.e. includes an arrangement fee, no commitment fee, of uncertain availability, and to be paid on use); and (iii) a committed facility (i.e. includes an arrangement fee, is of certain availability, and to be paid on use).

While it is possible to draw upon such credit lines to cover a sudden spike in redemption requests in one or more funds, this is not considered a sensible course of action by any fund management company for regulated retail funds, even in circumstances of extreme tail risk, and is therefore to be avoided.

5. Recommendations

Consistently with the IOSCO survey, AMIC and EFAMA consider the existing EU regulations and tools available in most European jurisdictions as both comprehensive and appropriate for liquidity management in both normal and exceptional circumstances. However, there are still some areas where we believe that some specific actions might lead to improvements in the general liquidity

management environment. Please note that due to the scope of this paper being limited to Europe, the recommendations are only addressing the European landscape.

5.1. Supervisory convergence

We believe that ESMA could play a more active role in Europe in encouraging the appropriate use of non-regulatory liquidity management tools at national level. We note that the operational tools listed under Section 4 above, such as swing pricing, for example, while not mandatory under the AIFM or UCITS frameworks, are useful liquidity management tools for fund management companies. They are already used and recognised in many European jurisdictions, but could be considered in others alongside possible changes to domestic rules and regulations.[16] ESMA could encourage the National Competent Authorities in certain EU Member States to consider broadening the range of available tools, thereby ultimately contributing positively to the management of liquidity risk. Encouraging common best practices would thus be beneficial. In this regard, it is interesting to note that the US Securities and Exchange Commission (SEC) made positive reference to some national fund market practices, such as swing pricing.[17]

5.2. Improving the use of existing data for systemic risk analysis

AMIC and EFAMA note that their members already have to comply with significant data reporting obligations to their National Competent Authorities. We believe that such data, which includes the type of AIF-level data listed in Annex I below from the relevant ESMA reporting template as an example, should be aggregated by national regulators (which already receive them) in order to share them with ESMA, and eventually, even with the European Systemic Risk Board (ESRB) for the purpose of the latter's broader financial stability analysis based on actual liquidity conditions.
As an alternative, a harmonised European reporting framework would simplify these reporting obligations in Europe and improve the use of this data at pan-European level, while at the same time improve the financial stability analysis (inclusive of liquidity risks) by ESMA and the ESRB. In particular, we suggest that ESMA and ESRB further deepen their knowledge of investor behaviour when these decide on their allocation in and out of funds.

5.3. Encouraging the development of association level best practices

AMIC and EFAMA continue to support and encourage the initiatives of national and European associations to develop guides on liquidity risk best practices. We believe that sharing and promoting such best practices is a powerful tool to enhance the current framework, improving the resilience of funds and their ability to face periods of adverse liquidity conditions.

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[16] For a table listing the availability of various tools in a number of jurisdictions, please see Annex II at the end of this document, drawn from the table on page 4 of the IOSCO *Final Report Liquidity Management Tools in Collective Investment Schemes: Results from an IOSCO Committee 5 survey to members* of December 2015; available at: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD517.pdf

[17] On 22 September 2015 the US Securities and Exchange Commission (SEC) made positive reference to the swing pricing market practices established by national industry bodies in France and Luxembourg. For further information, please refer to page 188, Footnote 417 of the SEC proposed rule on Liquidity Management Rules For Mutual Funds And ETFs https://www.sec.gov/rules/proposed/2015/33-9922.pdf

ANNEX I Extract from the ESMA AIFM Directive's reporting template (2013/1359) for regulatory disclosures under Article 24(2) of the Directive

3. Liquidity Profile	
Portfolio Liquidity Profile	
Percentage of portfolio capable of being liquidated within:	
1 day or less	
2 – 7 days	
8 – 30 days	
31 - 90 days	
91 - 180 days	
181 – 365 days	
more than 365 days	
Value of unencumbered cash	
Investor Liquidity Profile	
Percentage of investor equity that can be redeemed within (as % of AIF's NAV) :	
1 day or less	
2 – 7 days	
8 – 30 days	
31 - 90 days	
91 - 180 days	
181 – 365 days	
more than 365 days	
Investor redemptions	
a) Does the AIF provide investors with withdrawal / redemption rights in the ordinary course?	
b) What is the frequency of investor redemptions (if multiple classes of shares or units, report for the largest share class by NAV) *[Select one]* *Daily* *Weekly* *Fortnightly* *Monthly* *Quarterly* *Half-yearly* *Yearly* *Other* *None*	
c) What is the notice period required by investors for redemptions in days	
(report asset weighted notice period if multiple classes or shares or units)	
d) What is the investor 'lock-up' period in days (report asset weighted notice period if multiple classes or shares or units)	
Special arrangements and preferential treatment	

a) As at the reporting date, what percentage of the AIFs NAV is subject to the following arrangements:		
Side pockets (in %)		
Gates (in %)		
Suspension of dealing (in %)		
Other arrangements type		
Other arrangements for managing illiquid assets *(in %)*		
b) Indicate the percentage of net asset value of AIF's assets that are currently subject to the special arrangements arising from their illiquid nature under Article 23 (4) (a) of the AIFMD including those in items 197 to 201?		
Special arrangements as a % of NAV		
c) Are there any investors who obtain preferential treatment or the right to preferential treatment (e.g. through a side letter) and therefore are subject to disclosure to the investors in the AIF in accordance with Article 23(1)(j) of the AIFMD?		
d) If 'yes' to letter c) then please indicate all relevant preferential treatment:		
Concerning different disclosure/reporting to investors		
Concerning different investor liquidity terms		
Concerning different fee terms for investors		
Preferential treatment other than that specified above		
Breakdown of the ownership of units in the AIF by investor group		
as % of NAV of AIF assets; look-through to the beneficial owners where known or possible		
For each investor group type:		
	208	**209**
	Investor Group Type	**Investor group NAV rate**
Non-financial corporations *(leave blank if not applicable)*	NFCO	
Banks *(leave blank if not applicable)*	BANK	
Other collective investment undertaking (e.g. fund of funds or master) *(leave blank if not applicable)*	OCIU	
Other financial institutions *(leave blank if not applicable)*	OFIN	
Insurance corporations *(leave blank if not applicable)*	INSC	
Pension funds *(leave blank if not applicable)*	PFND	
General government *(leave blank if not applicable)*	GENG	
Households *(leave blank if not applicable)*	HHLD	
Unknown *(leave blank if not applicable)*	UNKN	
None *(leave blank if not applicable)*	NONE	
Financing liquidity		
a) Provide the aggregate amount of borrowing and cash financing available to the AIF (including all drawn and undrawn, committed and uncommitted lines of credit as well as any term financing)		
b) Divide the amount reported in letter a) among the periods specified below depending on the longest period for which the creditor is contractually committed to provide such financing:		
1 day or less		

2 – 7 days	
8 – 30 days	
31 - 90 days	
91 - 180 days	
181 – 365 days	
more than 365 days	

ANNEX II Table of available key policy tools to manage internal fund liquidity in some EU fund jurisdictions[18]

	Jurisdictions								
Tools	**Belgium**	**France**	**Germany**	**Ireland**	**Italy**	**Luxembourg**	**Netherlands**	**Spain**	**UK**
Swing pricing		✓		✓	✓	✓	✓		✓
Dual pricing (redemption fees)		✓	✓	✓	✓	✓	✓	✓	✓
Dilution levy		✓		✓	✓	✓	✓		✓
In-kind redemption		✓	✓	✓		✓	✓	✓	✓
OTM gates		✓		✓	✓	✓	✓	✓	✓
Suspension of dealings	✓	✓	✓	✓	✓	✓	✓	✓	✓
Side pockets		✓		✓	✓	✓		✓	✓

[18] Adapted from the IOSCO *Final Report Liquidity Management Tools in Collective Investment Schemes: Results from an IOSCO Committee 5 survey to members,* December 2015.