

Open-ended Fund Liquidity and Risk Management – Good Practices and Issues for Consideration

Final Report



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Chapter 1 – Executive Summary

At its core, by pooling investors' capital to invest in assets that are less liquid than cash, liquidity transformation is a key structural element to investment funds. Hence, the management of this mismatch is a key area of consideration for regulators and the industry alike.

Many jurisdictions have in place a number of regulations and requirements for asset managers to develop robust liquidity management frameworks, which deal with this issue throughout the lifecycle of a fund, including in the design phase of the fund, its implementation or the day-to-day operation of the fund.

There are a number of techniques and tools available to fund managers to aid in the management of liquidity needs. These include a number of *ex ante* fund features that can either be embedded in the product in the design phase (which can contribute to a better management of liquidity risk) or are part of regulatory requirements:

- pass on the transaction costs to the subscribing/redeeming investor (swing pricing, redemption in kind); or
- restrict or slow down access to investor capital (notice periods, redemption gates, suspension of redemptions etc.); or
- test the robustness of liquidity requirement under different scenarios (stress testing).

Ultimately, when looking at the management of liquidity within a fund, a holistic approach needs to be considered, conditioned on:

- the overall consistency of the fund's redemption terms with its investment strategy; and
- the fund's potential or existing investor base.

In a number of cases, large redemptions from funds have not led to the activation of liquidity management tools, nor has there been any substantial impact on asset prices or the broader financial system. Although the efficacy of existing liquidity management requirements and tools has been tested in previous bouts of market volatility, the policy debate has recently placed increased focus in this area, including in instances where there may be a material mismatch between the redemption features of a fund (in most cases daily redemption) and the liquidity of the underlying assets the fund invests in.

Consequently, many jurisdictions have been reviewing their regulatory frameworks with a view to determine if and how to strengthen existing guidance and / or requirements particularly with regard to open-ended funds. In light of these developments, including the FSB published recommendations, IOSCO has reviewed its 2013 Liquidity Risk Management standards and is making recommendations to enhance them further. In addition, this document outlines a number of practices among regulators and asset managers. As such, it is to be read in conjunction with IOSCO's revised liquidity recommendations, as it provides practical information containing a series of examples and good practices.

Chapter 2 – Context

Considerable attention has been given to liquidity risk management in the asset management sector over the past few years by policy makers (international financing institutions,¹ central banks,² national, regional and international regulators), various observers (e.g., credit rating agencies) and the asset management industry.

While liquidity risk management has long been an important area of consideration for regulators and the industry, this heightened focus has led to an increased awareness of the challenges asset managers face alongside other market participants in certain segments of the markets. It also has supported a constructive dialogue between regulators and asset managers on actual practices and how these could be improved. Regulators have knowledge of, and have observed, a number of industry liquidity risk management policies and procedures across jurisdictions which they consider good practice. Regardless, a number of asset managers have subsequently reviewed their internal liquidity risk management practices to see whether they should be enhanced.³

Meanwhile, many jurisdictions have also been reviewing their regulatory frameworks with a view to determine if and how to strengthen existing guidance and / or requirements, particularly with regards to open-ended funds.⁴ In addition, as discussed below, there have been recent examples of liquidity management during stressed situations that are helpful to consider.

In January 2017, the Financial Stability Board published its final recommendations to address structural vulnerabilities from asset management activities.⁵ Among those recommendations, nine are designed to address the “liquidity mismatch between fund investments and redemption terms and conditions for open-ended fund units”. IOSCO has been asked to review its existing guidance in this area and, as appropriate, enhance it.

IOSCO has dedicated significant time and resources to address this issue over the last five years. In 2012, IOSCO published a report dealing specifically with suspension of redemptions

¹ IMF (2015): Global Financial Stability Report – Navigating Monetary Policy Challenges and Managing Risks, April; BIS (2015): 85th Annual Report; FSB & IOSCO (2015): Assessment Methodologies for Identifying Non-Bank Non-Insurer Globally Systemically Important Financial Institutions.

² ECB (2015): Report on Financial Structures; Bank of England (2016): Financial Stability Report, no.39; Federal Reserve Bank of New York (2016): “*Are Asset Managers Vulnerable to Fire Sales*”, Liberty Street Economics Blog.

³ ICMA & EFAMA (2016): Managing fund liquidity risk in Europe - an AMIC/EFAMA report; Blackrock (2015): “*Addressing Market Liquidity*”, Viewpoint July 2015.

⁴ In October 2016, the US SEC adopted new rules designed to promote effective liquidity risk management for open-end funds; in July 2016, the HK SFC published a circular providing additional guidance to asset managers particularly in relation to liquidity risk management; the UK FCA published additional guidance; the French AMF has published a consultation report on stress testing at investment funds level (August 2106, final report published in February 2017) as well as detailed guidance on the use of newly introduced redemption gates (December 2016); SEBI published a circular (May 2016) in the area of liquidity management. Specifically, in order to bring more clarity on the provisions on restriction of redemption in schemes of mutual funds, and ensure that this tool is not used as a substitute for proper liquidity management processes with a view to protect the interest of the investors.

⁵ FSB (2017): Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities. Refer to <http://www.fsb.org/2017/01/fsb-publishes-policy-recommendations-to-address-structural-vulnerabilities-from-asset-management-activities/>

of investment funds (IOSCO suspension of redemptions report).⁶ Having considered situations where this mechanism had been activated, IOSCO emphasises that suspension of redemptions should only be used in exceptional circumstances and that the overarching principle was that responsible entities⁷ should ensure that the degree of liquidity of the open-ended funds they manage allows them to meet redemption obligations and other liabilities. In 2013, IOSCO published a set of standards on liquidity risk management (the 2013 Liquidity Risk Management Standards) designed to provide international guidance on the steps regulators expect managers and boards to take throughout the life cycle of an investment fund to properly manage liquidity risk.⁸

In 2015, in the context of the broader debate around what tools might be appropriate to deal with liquidity risk management, IOSCO conducted a survey of members of its Investment Management Committee (Committee 5) and reported on the wide variety of tools available to managers in the 26 surveyed jurisdictions (the IOSCO liquidity tools report).⁹ IOSCO has further conducted two specific roundtables, in December 2015 and July 2016, with a broad range of stakeholders to discuss challenges around market liquidity in certain segments of the market and consider if and how its liquidity risk management guidance needed to be updated or complemented. In parallel, IOSCO conducted, through its Secondary Markets Committee (Committee 2), a study on corporate bond markets liquidity that has helped inform international discussions.¹⁰

In light of recent developments, IOSCO has reviewed its 2013 Liquidity Risk Management standards and is suggesting recommendations to enhance them further. (see IOSCO's CIS Liquidity Risk Management Recommendations, hereafter "the Recommendations").

As such, this document is to be read in conjunction with the Recommendations, as practical information containing a series of examples and good practices, which are not all-encompassing. The different scenarios and examples presented within are illustrative of the diversity of approaches by regulators and responsible entities alike. They demonstrate several points:

- how measures to address liquidity risk management take into consideration the specificities of a fund, including:
 - its investment objectives and the implementation of its investment strategy;
 - its dealing frequency;
 - its investor base;

⁶ IOSCO (2012): Principles on Suspensions of Redemptions in Collective Investment Scheme. Refer to: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD367.pdf>.

⁷ Throughout this paper, the responsible entity is meant to be the entity or the entities responsible for the overall operation of the CIS and in particular its compliance with the legal/regulatory framework in the respective jurisdiction. In most cases, the responsible entity will be the asset manager. Depending on circumstances, it can also cover the Trustee or Board of directors.

⁸ IOSCO (2013): Principles of Liquidity Risk Management for Collective Investment Schemes. Refer to: http://www.iosco.org/publications/?subsection=public_reports.

⁹ IOSCO (2015): Liquidity Management tools in Collective Investment Schemes: Results from an IOSCO Committee 5 survey to members. Refer to: <http://www.iosco.org/library/pubdocs/pdf/IOSCOPD517.pdf>.

¹⁰ IOSCO (2016): Examination of Liquidity of the Secondary Corporate Bond Market. Refer to: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD537.pdf>.

- the nature of the assets under management; and
- its liquidity needs under the applicable market conditions;
- the key responsibility of proper liquidity risk management primarily lies with the asset manager, including the calibration as well as the decision to implement any tools; and
- regulators have a role to play to protect investors, to maintain fair, efficient and transparent markets, and to seek to address systemic risks.

Throughout this paper, we will be focusing primarily on open-ended CIS.¹¹ The document is structured in three sections: (i) consistency between the liquidity of a fund's assets and its liabilities; (ii) liquidity risk management tools and (iii) fund-level stress testing.

¹¹ CIS means collective investment schemes.

Chapter 3 – Ensuring consistency between a fund’s redemption terms and its investment strategy

At its core, by pooling investor’s capital to invest in assets that by their very nature are less liquid than cash, liquidity transformation is a key structural element to investment funds. The policy debate has therefore focused on those situations where there could potentially be a material mismatch between the dealing frequency (often daily) of open-ended investment funds and the liquidity of the underlying portfolio assets. As such, ensuring appropriate consistency between a fund’s investment strategy and its redemption terms has long been, and remains, a key objective for regulators and asset managers alike.

Many jurisdictions already have applicable rules and guidance in place. Others are considering strengthening their frameworks or have published guidance to address this question, taking into account the specifics of their markets as well as recent trends (e.g. growth of assets managed through open-ended funds; and development of strategies involving less liquid assets).¹²

In line with IOSCO’s guidance and as reiterated in its Recommendations, in most jurisdictions, asset managers are required to establish liquidity risk management policies and procedures that form an integral part of their broader risk management framework. As part of these policies and procedures, responsible entities are generally expected to:

- have robust procedures at the design phase to determine the appropriate product features to promote/support the fund being able to meet redemption demands as they come due;
- continuously monitor their funds’ liquidity profiles and ensure that appropriate levels of liquidity are maintained in the funds, taking into account the liquidity available in the underlying asset market(s), redemption flows or other liabilities. The relevant thresholds and targets are established to assist them in that process and make adjustments as appropriate;
- ensure they have the ability and capacity to make any appropriate adjustments including, subject to national regulation, the activation of tools to restrict redemptions in exceptional cases; and
- take into account the best interest of investors.

These types of requirements are designed to help ensure redemption requests can be met as they come due with limited negative impact on the funds and the remaining investors. While the primary objective of liquidity management is setting appropriate requirements and guidance designed to help ensure investors are treated fairly, guidance can also help increase the ability of all participants to deal with idiosyncratic or broader market stress. One of the

¹² See US SEC Final rules on liquidity risk management available at: <https://www.sec.gov/rules/final/2016/33-10233.pdf>; Hong Kong SFC circular published in July 2016: <http://www.sfc.hk/edistributionWeb/gateway/EN/circular/doc?refNo=16EC29>;

See description of European framework in the joint report published by the International Capital Market Association’s (ICMA), the Asset Management and Investors Council (AMIC) and the European Fund and Asset Management Association (EFAMA) in April 2016 available at: https://www.efama.org/Publications/EFAMA_AMIC_Report_Managing_Fund_Liquidity_Risk_Europe.pdf

broader goals of such liquidity management tools is also to maintain an orderly market and valuation process.

The Design Phase

National frameworks often contain specific requirements on open-ended CIS designed to ensure retail investors can redeem their investment frequently. For example, the EU UCITS framework outlines that funds authorised as UCITS must provide redemptions facilities at least every two weeks. Similarly, in the United States, the Investment Company Act of 1940 specifies that a mutual fund must make payment on an investor redemption request within 7 days of the request. The ability to redeem one's investment at the fund's net asset value upon an investor's request is a key attribute of open-ended funds. In practice, most funds provide liquidity to CIS investors on a daily basis.¹³

Further, given the commitment to meet redemptions on demand, most regulatory frameworks are designed to ensure that open-ended funds are primarily invested in liquid assets.¹⁴ This is particularly important in light of the significance of open-ended funds that offer daily dealings. In many jurisdictions, there are strict rules around the types of assets open-ended funds can invest in and/or limits on investments in illiquid assets as well as diversification requirements.

¹³ **EU:** UCITS funds are subject to rules on what kind of assets they are allowed to invest in. These are referred to as "eligible assets". The list of eligible assets is generally listed in the investment policy section within the fund prospectus document. Generally speaking, funds must invest in transferable securities or other liquid assets such as:

- exchange traded equities;
 - money market instruments;
 - fixed income products;
 - banks and cash-like deposits;
 - other funds; and
 - any other instrument that offers the right to acquire these securities through subscription or exchange
- Under certain conditions, funds may also use financial derivative instruments, such as futures, options or swaps based on an eligible UCITS asset or an approved financial index for either:
- reducing the risk in the portfolio through hedging purposes; or
 - investment purposes.

The UCITS directive defines eligible assets in general terms, therefore, additional guidelines ensure there is a common understanding of what kind of assets may be acquired by a UCITS fund.

US: The SEC, on October 13, 2016, adopted new rules requiring open-end funds to adopt and implement written liquidity risk management programs.

¹⁴ There are very few examples of situations where regulators have expressed a view regarding the suitability of funds to trade on a daily redemption basis. However, under newly adopted liquidity risk management rules in the US, a fund is required to consider whether its investment strategy is appropriate for an open-end fund. In its final release, the SEC noted that this requirement will likely cause funds to evaluate the suitability of investment strategies that will be permitted under the rule's 15% illiquid investment requirement, but still entail significant liquidity risk – such as strategies involving highly concentrated portfolio, strategies involving investments in portfolio investments that are so sensitive to stressed conditions that funds may not be able to find purchasers for those investments during stressed periods, and strategies involving significant holdings of securities with extended settlement periods (e.g., transactions in certain types of securities, such as certain foreign securities and U.S. bank loan participations).

In many cases, regulators will engage with the asset manager before the product is approved and launched¹⁵ to ensure that is the case.¹⁶

In practice, asset managers have different ways of constructing the portfolio and designing the redemption features to ensure an adequate degree of consistency between the investment strategy, the investor base and the fund's redemption terms and other liabilities.¹⁷

To achieve this, responsible entities could consider a series of factors including the following:

- The CIS's investment strategy, asset class and expected liquidity of the underlying market in various market conditions;
- The target investor base, investor profiles, concentration and expected redemption pattern, and distribution channels;
- The potential size of the fund relative to the underlying market.

Depending on the specific characteristics of a given fund and applicable laws and regulations, asset managers can then determine the appropriate structure, including:

- the type of vehicle (e.g., authorised/public fund vs private fund, open-ended vs closed ended);
- its redemption frequency (e.g., daily, weekly, monthly.);
- the relevant liquidity risk management processes (including, for example, defining relevant thresholds, classifying assets into liquidity buckets, having procedures to improve their knowledge of investors' behaviours); and
- other features (e.g., defining a % of highly liquid assets, a limit on illiquid assets).

¹⁵ See ICMA – EFAMA Report « Managing fund liquidity risk in Europe » - April 2016 “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.”

¹⁶ In the EU, the UCITS Directive imposes a strict list of eligible assets and diversification requirements. It further requires that UCITS can only invest up to 10% of their assets in non-eligible assets. In the US, mutual funds are subject to a 15% limit on the purchases of illiquid investments. The US SEC recently adopted a new liquidity risk management rule that, among other things, provides a new definition of illiquid investments subject to the purchase limit. Singapore has similar “alternative exposure limits” of 10% of NAV for investments in:

- shares or securities equivalent to shares that are not listed for quotation or quoted, and have not been approved for listing for quotation or quotation, on an organised exchange;
- debt securities which are undated, secured by physical commodities, listed for quotation and traded on an organised exchange; and
- underlying schemes which (i) are invested in permissible investments, commodities or real estate, (ii) meets the requirements for transferable securities and (iii) has units that are listed for quotation and traded on an organised exchange.

¹⁷ ICMA & EFAMA (2016): Managing fund liquidity risk in Europe - an AMIC/EFAMA report. Specifically, the report states, “The most important aspect of liquidity risk management for a fund management company is the product design when setting up the fund itself. (...) any structural liquidity mismatch is addressed on the asset and/or liability side. Technical details, such as the frequency of valuations, notice periods, cut-off times for subscriptions and redemptions and settlement dates, etc. will be considered.”

At the design phase, managers should also consider if they might need to foresee specific redemption terms (e.g., lock ups, notice period, swing pricing, redemption fees, redemption gates) that would need to be specified in the fund’s documentation.

The overall consistency of the fund’s redemption terms and conditions with its investment strategy and investor base should be considered holistically taking into account all the parameters that have been built into the product.

Below are examples of ways in which managers can structure their products to build in the appropriate features for the fund to be able to meet redemptions on demand in normal and reasonably foreseeable stressed market conditions.¹⁸ Fund names have been anonymised.

¹⁸ Manager A provides an example of how asset managers consider various factors at the design phase: *Fund A tailors a specific method to each portfolio that considers a number of factors:*

- ***The construction of the portfolio.*** *We evaluate all of a fund’s holdings, calculating the portion of the portfolio that is likely to remain highly liquid even in times of market stress. This may include cash and cash equivalents, highly rated investment grade sovereign bonds, and bonds from supranational issuers such as the World Bank.*
- ***The liquidity of the underlying market.*** *We consider market trading volume statistics and the quality and breadth of diversification in the market. We also rely on qualitative information provided by dealers. The result is an overall assessment of the liquidity of various market segments.*
- ***Levels of peak redemptions.*** *We review historical cash flow data for each ... fund and comparable funds in the industry to evaluate redemption activity during times of stress such as the bond bear market of 1987, the global financial crisis, and the Taper Tantrum. We determine the potential impact of worst-case scenarios based on the construction of the portfolio, liquidity in the underlying market, and the composition of the investor base.*
- ***The composition of the investor base.*** *The investor base for most funds is well diversified, encompassing individuals of various ages and with various investment objectives, institutions and financial advisors. If a large portion of a fund is held by a small number of big investors (as is sometimes the case in new funds), we consider that fund to be more vulnerable to liquidity risk and manage it appropriately.”*

Box 1: Examples of asset classes that are required to be or typically offered through a closed-ended fund structure

In many jurisdictions, regulation requires that certain asset types, e.g. with long settlement periods, if offered through a collective investment vehicle, should be structured as a closed-ended fund.

Brazil	In Brazil, the CVM requires that real-estate funds and private equity funds to be closed ended.
Canada	In Canada, a closed-ended fund (but not a mutual fund) can: <ul style="list-style-type: none"> - purchase a guaranteed mortgage even if, immediately after the purchase, more than 10% of its net asset value would be made up of guaranteed mortgages; - purchase gold or a gold certificate even if, immediately after the purchase, more than 10% of its net asset value would be made up of gold and permitted gold certificates; - purchase, sell or use a specified derivative the underlying interest of which is (i) a physical commodity, or (ii) a specified derivative of which the underlying interest is a physical commodity.
France	In France, funds invested in illiquid assets are generally closed-ended. This is the case for example of private equity funds, securitisation funds, loan participation funds, although subject to very strict conditions, there could offer limited redemption possibilities.
Hong Kong and Singapore	There are no specific requirements on any asset class to be offered only in a closed-ended fund structure for public funds. However, in practice, all publicly offered real estate investment trusts (REITS) are structured as close-ended funds.
India	In India, the following asset classes must be launched in a closed-ended fund structure: Real Estate assets: As per SEBI (Mutual Funds) Regulations, 1996: "Every real estate mutual fund scheme shall be close-ended and its units shall be listed on a recognized stock exchange." Infrastructure Debt Assets: It is also provided that an infrastructure debt fund scheme shall be launched either as close-ended scheme maturing after more than five years or as an interval scheme with lock-in of five years and specified transaction period of not more than forty-five days as may be specified in the scheme information document.
Ireland	The Central Bank of Ireland requires that loan originating Qualifying Investor Alternative Investment Funds must be closed-ended.
Italy	In Italy, a fund which invests more than 20% of its assets in: loans; real estate properties; securities which are not admitted for trading on a regulated market; or other assets whose value can be calculated at least on a half-yearly basis shall be designed as a closed-end fund.
Japan	In Japan, there are general requirements on what assets may be held by a fund but not specific requirements on assets to be held by a closed-end fund.
Luxembourg and The Netherlands	There are no legal or regulatory requirement according to which certain assets can only be offered through closed-ended fund structures. However, Luxembourg and The Netherlands check, on a case-by-case basis, during the authorisation process the investment fund's liquidity management and the necessary alignment of its investment strategy, liquidity profile and redemption policy.
Portugal	The Portuguese Legal Framework allows closed-ended Real Estate Funds to invest in some assets that are forbidden in the case of open-ended funds. These asset classes include, in terms of financial instruments, shares of Real Estate companies which are not traded on a regulated market and units of closed-ended Real Estate Investment Funds.
Qatar Financial Centre	Under the Collective Investment Schemes Rules 2010, a retail property fund which is a real estate investment trust (REIT) scheme must be closed-ended and listed in the Qatar Stock Exchange or any other regulated exchange.
Romania	In Romania, the new proposal for a law is to require real-estate alternative investment funds to be closed ended.
Saudi Arabia	In Saudi Arabia, there are several asset classes that require the fund to be closed ended, such as Real Estate, Capital Protected, and Private equities.

South Africa	Participation Bond Funds that invest in Mortgage bonds, must be structured as a closed ended fund.
Spain	<p>In Spain, there are no asset class which investment is restricted only to closed-ended funds, although some requirements and limitations apply when open ended funds invest in certain kind of assets, for example, open ended mutual funds cannot invest more than 10% of their total assets in securities not traded on a regulated market.</p> <p>Private Equity, Venture Capital Funds and Other Closed Ended CIS are allowed to invest up to 100% in non-traded securities, all of them are always closed ended. Real Estate CIS may be open ended (fund form) or closed ended (investment companies).</p> <p>Hedge Funds may invest in not traded securities and even grant loans, but they might establish lock up periods adequate to the liquidity profile of their investments, the length of the lock up periods is up to one year, but exceptionally in loan funds this lock up period may reach the maturity of the loans.</p>
Turkey	Real estate and venture capital investment trusts should be in closed ended fund type. In respect of real estate and venture capital investment funds, they are regarded as open ended by designing their subscription and redemption structure freely, on the other hand, they can also be considered as closed ended if they indicate in their issue documents that subscription and redemption will not be allowed during the lifetime of a fund and limit total units to be sold to investors.
United Kingdom	The UK has a sizeable closed-ended fund industry managing investments in real estate and other illiquid assets, however, these assets can also be held in certain non-UCITs open-ended fund structures, such as Property Authorised Investment Funds (PAIFs) and Non-UCITS Retail Schemes (NURS) - there are no regulations which restrict certain categories of assets to closed-ended funds.
Israel	<p>Under Israeli regulations, certain types of mutual funds can be managed only as closed end funds.</p> <p>Special funds</p> <p>Are a closed-end fund that is allowed to hold shares of hedge funds, as long as all of the following hold true:</p> <ul style="list-style-type: none"> - the prices of those shares are published at least once a month; - the shares may be redeemed at times known in advance and at least once every three months. (Open end funds are not allowed to purchase and hold securities that are redeemed at such time intervals, considering the liquidity risk entailed in such securities); and - the Fund Manager has current information about the hedge Fund's investment policy or about the composition of its assets. <p>Special funds are allowed to hold up to 30% of their net asset value in hedge funds' shares, and other restrictions are imposed on these funds.</p> <p>High- Tech funds</p> <p>Are closed-end funds that must invest a portion of their net asset value (at least 30%) in non- tradable securities - specifically of Israeli high- tech companies (as defined in the regulations). Specific characteristics of these funds are the involvement of a special advisor to the fund manager, the obligation of the fund manager to directly purchase and hold at least 5% of the units purchased by the public in the initial public offering. The amendment that allowed to offer these funds was approved a few months ago, and the first funds are expected to offer their units in the upcoming months.</p>

Additionally, while it is essential for asset managers to give due consideration to liquidity when structuring a new fund and later managing the liquidity of it, investors should also be made aware of the liquidity risk they could be exposed to. Investors should be given sufficiently detailed material to be able to assess whether the fund is compatible with their risk appetite and make an informed investment decision. The key issue here is to seek to ensure investors understand the type of liquidity risk they are exposed to, how that risk might affect the value of the fund and their ability to redeem their units. Ensuring investors are aware of the potential risks associated with an investment fund should reduce the likelihood that in the event of stress they will redeem their shares in significant quantities. Investment managers also should be aware of how their distribution channels disseminate this disclosure.¹⁹ Good practice suggests that it generally should not be left to investors to read the terms and conditions, but that it should be highlighted by the distribution channels.

As the intensity of the liquidity risk increases, the spectrum of features that may need to be embedded in the product also increases. For example, while liquidity buffers may not be appropriate for all circumstances, as one moves down the ladder of asset liquidity there can be a trade-off between liquidity buffers and daily redemptions features. While liquidity buffers provide a level of cushion in the event of strong redemption requests, they also potentially divert cash from achieving the fund's objective of a return on investment in line with its target investments. Highly liquid investment strategies may allow for smaller cash holdings and daily redemption features. Less liquid investment strategies or strategies that need to meet an elevated demand for margin calls, however, may need cash holdings or a minimum amount of highly liquid assets as part of the fund portfolio, potentially in addition to restrictions on the daily redemption feature. However, this is generally determined by the responsible entity and is difficult to standardise due to the variances in investment strategies as well as the changing nature of liquidity in various asset classes. Consequently, the need for liquidity buffers may also change and this point should remain a consideration for responsible entities. For example:

- **A large cap US equity fund** designed to be marketed to a broad and diverse investor base is likely not to have significant liquidity challenges although it may face volatility. Such a fund is likely to be structured as an open-end fund. The asset manager will implement its liquidity risk management policy in compliance with applicable legal requirements.
- Where the fund **offers exposure to less liquid assets**, such as small cap equities, or emerging markets, the asset manager may have at its disposal a number of provisions it can introduce to be able to adequately address liquidity risk. These may include such things as extending the dealing frequency (considering offering less frequent redemptions such as monthly), building up liquidity buffers (i.e. minimum % of highly liquid assets or cash), introducing lock-up periods and / or notice periods, etc., so long as all or some of these are permissible under applicable law.

¹⁹ Brazilian regulation requires that if a Responsible Entity chooses to use a Distributor to market its quotas, the Distributor is automatically obligated to provide to investor every disclosure that would be provided by the Responsible Entity in the first place.

Box 2: Examples of disclosure regimes in various jurisdictions

Jurisdiction/Regime	Description
<p>PRIIPs – European Union</p>	<p>The Packaged Retail and Insurance-based Investment Products (PRIIPs) Regulation has been introduced to improve the quality and comparability of information provided to retail investors in the European Union (EU) on all possible investments, regardless of whether there are insurance types of products, structured products or investment funds. The need for EU action reflects the difficulties retail investors have faced in comprehending and comparing investments, hampering the emergence of efficient EU markets.</p> <p>The new regulation comes into effect from January 2018 and places requirements on firms manufacturing packaged investment products and on those advising on or selling such products. The manufacturer of such products shall draw up a short and consumer-friendly Key Information Document (KID). The distributor shall provide this KID to the retail client in good time before any transaction is concluded. The format and structure of the KID are prescribed by the regulation. In addition, the information contained in the KID must be produced in accordance with methodologies defined by the Commission delegated acts. Such information shall allow retail investors to answer key questions, which are:</p> <ul style="list-style-type: none"> • What is this product? • What are the risks and what could I get in return? • What are the costs? • What happens if the PRIIP manufacturer is unable to pay out? • How long should I hold it and can I take money out early? • How can I complain? <p>Under the section “what are the risks”, there will be a risk score on a 1 to 7 scale, which reflects the credit and market risk of a product, supplemented by alerts where a product is considered illiquid or to have a materially relevant liquidity risk.</p> <p>An investment would be considered as illiquid whenever redemptions are not possible prior to maturity or:</p> <ul style="list-style-type: none"> • as long as redemptions are subject to significant limiting conditions, such as the prior consent and discretion of a third party (i.e. the directors of a fund), significant penalty fees; or • if the product is not admitted to trading on a secondary market or any alternative liquidity facility; or • the product is admitted to any such trading facility, but selling the product is subject to significant limiting conditions. <p>A liquidity risk is deemed applicable (a) in the absence of committed liquidity on a product (by a market maker as an example), or (b) in the case of mismatch between the redemption date and the average liquidity profile of the product, or (c) should the manufacturer estimates that during the life of their investments, investors may face significant difficulties in terms of time or costs for disinvesting, subject to specific market conditions.</p>
<p>Australia</p>	<p>In Australia ASIC has issued disclosure guidance on a number of types of funds that require disclosure of redemption arrangements and information associated with the liquidity arrangements of the fund. These fund types include mortgage, unlisted property and infrastructure schemes.</p> <p>In the case of mortgage funds the guidance states the responsible entity should disclose information about the current and future prospects of liquidity of the scheme, any significant risk factors that may affect the liquidity of the scheme and the policy of the scheme on balancing the maturity of its assets with the maturity of its liabilities. In addition, responsible entities should disclose whether the scheme meets a specified benchmark about withdrawal arrangements including that the maximum withdrawal period under the constitution is 90 days. The guidance then also requires the disclosure of information about withdrawal arrangements</p> <p>In the case of a unlisted property fund the guidance states that where investors are given the right to withdraw from a scheme the responsible entity should disclose the circumstances in which investors can withdraw, the maximum withdrawal period allowed under the constitution, any significant risk factors or limitations that may affect the ability of investors to withdraw or the unit price at which the withdrawal will be made, a clear explanation of how withdrawals can be made and the material terms of any external liquidity facilities including any rights the provider has to suspend or cancel the facility.</p>

<p>Canada</p>	<p>The Canadian jurisdictions have adopted and implemented the Fund Facts document (equivalent to the KIID in EU) to be delivered to an investor on the purchase of mutual funds shares (instead of the prospectus) before the transaction. The Fund Facts document must calculate the risk rating of a mutual fund based on its volatility and identify it on a prescribed risk scale. The following statements are also mandatory under the risk section of the Fund Facts document template:</p> <p>“In general, funds with higher volatility will have returns that change more over time. They typically have a greater chance of losing money and may have a greater chance of higher returns. Funds with lower volatility tend to have returns that change less over time. They typically have lower returns and may have a lower chance of losing money.”</p> <p>And more specifically under the risk scale:</p> <p>“This rating is based on how much the fund’s returns have changed from year to year. It doesn’t tell you how volatile the fund will be in the future. The rating can change over time. A fund with a low risk rating can still lose money.”</p> <p>“For more information about the risk rating and specific risks that can affect the fund’s returns, see the [insert cross-reference to the appropriate section of the mutual fund’s simplified prospectus] section of the fund’s simplified prospectus.</p> <p>The Fund Facts document template contains a suitability section which states:</p> <p>(1) Provide a brief statement of the suitability of the mutual fund for particular investors under the heading “Who is this fund for?”. Describe the characteristics of the investor for whom the mutual fund may or may not be an appropriate investment, and the portfolios for which the mutual fund is and is not suited.</p> <p>INSTRUCTION</p> <p>If the mutual fund is particularly unsuitable for certain types of investors or for certain types of investment portfolios, emphasize this aspect of the mutual fund. Disclose both the types of investors who should not invest in the mutual fund, with regard to investments on both a short- and long-term basis, and the types of portfolios that should not invest in the mutual fund. If the mutual fund is particularly suitable for investors who have particular investment objectives, this can also be disclosed.</p>
<p>Hong Kong</p>	<p>In Hong Kong, the SFC requires asset managers to appropriately disclose in the fund’s offering documents the following details:</p> <ul style="list-style-type: none"> • the significance and potential impact of the liquidity risk on funds and its investors; • a summary of the liquidity risk management process, and • the tools that may be employed to address these risks. <p>Particularly for tools, the SFC requires asset managers to provide greater transparency to investors by disclosing the following:</p> <ul style="list-style-type: none"> • descriptions of the liquidity risk management tools; • explanation of when the tools may be used; • the tools’ impact on the fund and investors, and • any other risks to investors. <p>In general, the SFC expects asset managers to highlight liquidity risks in the funds’ product key fact statements for funds with substantial investments in less liquid asset classes such as high yield bonds, small cap equities and/or emerging market bonds / equities.</p>
<p>India</p>	<p>In India, monthly disclosure of the portfolio of each mutual fund scheme is mandatory and such information is required to be disclosed on a monthly basis on AMC’s website. Additionally, it is mandated that all advertisements of Mutual Funds and its schemes shall be accompanied by following disclaimer: ‘Mutual Fund investments are subject to market risks, read all scheme related documents carefully. Finally, the fund’s prospectus is required to disclose the following:</p> <ul style="list-style-type: none"> • the liquidity risk associated with the scheme and also required to contain scheme specific risk factors associated with investing in specific markets, sectors, and/or asset classes that the MF scheme will invest in, among others; • details on redemption including maximum time within which redemption proceeds will be dispatched; and • liquidity management tools that may be utilised by the scheme including exit load, the right of Trustees to limit / suspend redemptions in exceptional circumstances.

Japan	<p>In 2014, the FSA amended a guideline on disclosure of open-ended funds, etc. to enhance transparency of funds' liquidity risk. Additional disclosure items to be considered include:</p> <ul style="list-style-type: none"> • liquidity risk associated with funds and its potential impact on investors; • liquidity risk management system; and, if applicable • gates and suspension of redemption.
Singapore	<p>In MAS' product highlights sheet (equivalent to the KIID in EU), the template contains a section on liquidity risks as follow:</p> <p>Liquidity Risks</p> <p>State the risks that an investor would face in trying to exit the product, e.g.: limitations on redemption or factors that may delay the payment of proceeds.</p> <p>Example:</p> <ul style="list-style-type: none"> • The Fund is not listed and you can redeem only on Dealing Days. • There is no secondary market for the Fund. All redemption requests should be made to the Manager.

- Along the same lines, **some fixed income funds** may require additional mechanisms to deal with the challenges around liquidity risk management. There have been intense debates and conflicting views on the availability of liquidity in fixed income markets. While IOSCO has found no evidence of a material deterioration in corporate bond markets, there are signs of a changing market environment. It has been reported, for instance, that trading sizes have diminished and that trades can take more time to execute in some fixed income markets.²⁰ According to Fitch Ratings, this has led a number of asset managers to step up their internal liquidity risk management processes. This has also encouraged investors to enter into a more robust dialogue with their asset managers. Appropriate features will depend on the specificities of the fund and market circumstances.
- **High yield bond funds, in particular, may require additional mechanisms to manage liquidity.** Some market participants have indicated having a policy of building liquidity buffers systematically in their high yield bond funds and favouring the most liquid instruments to gain the desired exposure (e.g., derivatives rather than cash markets or ETFs).
- One particular asset class where offering frequent redemptions can be a material challenge in light of the illiquid nature of the assets, is **real estate funds**. Different jurisdictions have taken different approaches to this asset class. In some cases, such strategies cannot be offered in an open-ended fund. In other jurisdictions, specific requirements apply (See Box 3).²¹
- Where the fund has a **concentrated investor base**, managers may want to consider introducing available mechanisms to protect remaining investors from the impact of potentially large redemptions, such as swing pricing, anti-dilution levies, exit fees or redemptions in kind.²² It could also consider imposing notice periods to have more flexibility in the event of large outflows. In such cases, managers may also want to seek to ensure they have a sufficiently good knowledge of the investor base and its risk appetite to be able to anticipate: 1) potential outflows; and 2) investors understanding of related liquidity factors.

²⁰ IOSCO (2016): Examination of Liquidity of the Secondary Corporate Bond Market. Refer to: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD537.pdf>.

²¹ For example, non-UCITS retail schemes, authorised funds available to UK retail investors, allow investment in property provided it meets qualitative as well as diversification requirements. Where a fund is invested in property it must deal at least once every six months.

²² For example, to reduce concentration of investors in a scheme, SEBI guidelines mandate that each scheme needs to have a minimum of 20 investors and no single investor shall account for more than 25% of the corpus of the scheme. This reduces the likelihood of huge redemption of a scheme's units by single/few investors holding substantial proportion of a scheme's asset.

Box 3: Examples of regulatory requirements for real estate funds in various jurisdictions

Jurisdiction	Regime description
France	<p>In addition to the general European framework, the French regulatory framework includes specific provisions for each type of real estate funds. Real-estate funds offered to retail investors are on a general case basis, closed-end funds. There are not under any obligation to honour redemption/withdrawal requests except at maturity of the funds. However, liquidity mechanisms, allowing investors to redeem prior to expiry of the fund in exceptional circumstances may be introduced (creation of a secondary market, setting aside a redemption fund that can be used to meet withdrawal requests).</p> <p>Other real estate funds can be open-ended funds and allow redemptions on a regular basis. To meet their redemption requests, such funds can hold up to 40% of the assets under management in liquid assets. Such funds also have the ability to use a number of liquidity management mechanisms, such as:</p> <ul style="list-style-type: none"> • Lock-up periods (up to ten years) • Limiting redemptions (gates) • Redemption fees • Redemption notice and settlement periods, up to six months. <p>In practice, such funds are mostly sold to professional investors and work as quasi-closed-end funds: redemptions are locked-up from three to ten years, following which they are limited to 0.1% of assets at each net asset value calculation, with a maximum settlement period of six months. A minority of such funds are accessible to retail, when that is the case, additional requirements apply designed to protect investors. They must comply with a minimum 5% liquidity ratio, which in practice often represents 40% of AuM, and are usually more diversified. The AMF, when processing licence applications, assesses each vehicle's liquidity profile thoroughly and encourages such funds to allow for a reasonable settlement timescale.</p>
Germany	<p>In Germany, it is allowed to structure real estate funds as open-ended funds that can also be marketed to retail investors. However, open-ended real estate funds are subject to special provisions. This is due to the fact that the fund is on the one hand structured open-ended and on the other hand invests primarily in highly illiquid assets. Following the turmoil of the financial crisis in 2008 some open-ended real estate funds were forced to suspend redemptions. At this time investors could request redemption of their share/unit at any time without giving notice. In the course of the global credit crunch institutional investors used this option extensively. Hence, several open-ended real estate funds faced liquidity problems and redemption was no longer possible to investors. As a consequence of these crises, there was a broad consensus that the legal framework for open-ended real estate funds required reform to stabilise the fund and improve protection, particularly for retail investors. The right to redeem shares/units in open-ended real estate funds at any time without notice was deemed not to fit with the long-term nature of property investments. Therefore, the legal framework for open-ended real estate funds was amended. Now, a minimum vesting period applies, starting with the purchase of the share/unit. After this minimum vesting period, the shares/units can be redeemed at least once every twelve months. The redemption must be declared to the responsible entity by an irrevocable declaration of return observing a return period of twelve months. Further to this, 5 % of the fund's NAV must be available on a daily basis for redemption of shares/units. To meet this requirement, this amount must be invested in certain types of assets like bank deposits, money market instruments, shares/units of certain funds and securities which are admitted by the European Central Bank as collateral for credit transactions or are admitted to trading on an organised market.</p>
Hong Kong	<p>In Hong Kong, all publicly offered real estate investment trusts authorised by the HK SFC are close-ended funds and are listed on the stock exchange of Hong Kong.</p>
Israel	<p>The Israeli Joint Investment Trust Law, and the regulations enacted by its power, do not differentiate between closed-end funds and open-end funds in regard to the assets held by them. Nevertheless, these regulations allow closed-end funds to hold certain "securities", that are considered to be less liquid in comparison to other securities, at a higher percentage than the percentage such securities are permitted to be held in open-end funds. More specifically, closed-end funds are allowed to have a larger percentage of the fund's assets invested in fixed term deposits (deposits with predetermined period of time greater than 1 day and lower than 30 days) when compared to open-ended funds. Further, closed end funds are also allowed to hold bank deposits with a predetermined period of time greater than 30 days.</p>

Morocco	<p>Regarding regulated real estate investment funds, the Moroccan legal framework:</p> <ul style="list-style-type: none"> • allows the management company, at the creation of the fund, to choose to restrict and limit the subscriptions and redemptions; and • requires that these restrictions and limitation to be disclosed to investors in the fund's constituent document.
Singapore	<p>In practice, all retail property funds are closed-end funds and are listed on an organised exchange. In the case of unlisted property funds, the manager should offer to redeem units at least once a year, in accordance with prescribed requirements under the Code on CIS. In respect of any offer to redeem units, at least 10% of the fund's deposited property should be offered. Where the total amount of redemption requests received by the manager during the offer period, is for less than 10%, all redemption requests should be met in full.</p>
Spain	<p>In Spain, real estate open-ended funds are allowed under Spanish CIS Law. Net asset value should be calculated at least monthly incorporating the last properties values certified by an authorised appraisal on the basis of strict valuation standards laid down by law. Each property has to be appraised at least once a year. Real Estate units dealing frequency ranges from monthly to yearly.</p> <p>After the crises, most of the Spanish open ended real estate funds were liquidated, being some of them still in the process of liquidation.</p> <p>Spanish CIS Law also allows closed ended real estate companies. As of the end of 2016, there were six real estate closed ended companies, none of them traded in any market. The total volume of assets under management is of little significance (around 700 million €).</p> <p>Finally, real estate collective investment in Spain is currently channelled mainly through REITS (SOCIMIs in Spanish terminology). All of them are traded on Spanish securities markets, either on the regulated market (SIBE electronic trading platform) or on the Alternative Market (MAB).</p>
United Kingdom	<p>In the UK, redemptions of units in open-ended funds invested directly in property are allowed at any frequency, including daily, as specified in the fund's constituting documents. Where the fund operator is subject to the EU Alternative Investment Fund Managers Directive, it must ensure that the investment strategy, liquidity profile and redemption policy of the fund are consistent. As directly-held property assets are illiquid overall, an argument for maintaining daily dealing has been that for the portfolio manager there is little or no difference in practice between knowing it has a certain redemption level daily or a combined periodic amount – portfolio managers have to take responsibility for managing that same volume of flow regardless of how frequently deals are executed.</p> <p>In some respects, daily dealing may be more advantageous as the liquidity needs of the fund are not “stacked” at specific points in the calendar. However, the FCA has decided to review how open-ended funds may invest in inherently illiquid assets and has published a discussion paper (footnote link to paper) inviting views on approaches that might be taken where there is a need to improve investor protection and/or market stability.</p>

Funds in operation

Once the fund is launched, managers should monitor closely liquidity risk in the portfolios they manage, have escalation procedures in place, as appropriate, and be prepared to take action should the situation require it.

In particular, asset managers should monitor liquidity on an ongoing basis on the asset side (considering available data and metrics and where available information from trading desks and other relevant sources) and on the liability side (looking at redemption patterns, inflows and outflows and other liabilities). For the monitoring to be effective, it should be based on up-to-date and reliable data, and be complemented by stress testing and appropriate contingency planning (see new recommendations 16 & 17 in the Recommendations).

Regulatory requirements and practices vary in different jurisdictions. While the degree of sophistication and the definition of what is to be considered “liquid” varies, in most cases, asset managers monitor liquidity on the asset side on a frequent basis. In some jurisdictions, there are detailed requirements on how to assess that liquidity, e.g. in the US, where the recently adopted regulations require managers to establish liquidity risk management programs, among other things. In others (for example, under requirements in the AIFMD in the EU), reporting on the estimated time to liquidate the portfolio is required which encourages managers to examine the adequacy of the portfolio assets’ liquidity and its evolution over time.

A significant challenge for asset managers is to have a sufficiently reliable understanding of key data points, including investors in the fund, their profile, risk appetite, and the size of their investment. As discussed in the Recommendations, at present, there may be limitations to the ability of asset managers to access granular information on their investor base, often as a result of the distribution channel (e.g. use of platforms) and the use of nominee accounts. For example, with the growth of self-directed pension planning and less reliance on defined benefit schemes in many jurisdictions, it is becoming increasingly important that asset managers understand the behaviours of their retail clients, despite that arms-length distance maintained by distribution.

Additionally, appropriate valuation policies and procedures are of paramount importance to guarantee fair treatment to investors in the ongoing liquidity risk management of the fund.

Valuation policies should aim to be harmoniously articulated with liquidity risk management processes. Responsible entities should have policies and procedures in place in advance to manage scenarios in which fund assets are difficult to value. In situations where asset market liquidity deteriorates and redemption pressures arise, fund assets’ valuations should adequately and promptly adjust to the new market liquidity conditions, to ensure that investors who redeem receive a fund price per unit that is in line with the current market price. If this adjustment is not properly done and the allocation of transaction costs as well as market impact is ineffective, it could lead to first-mover effects, harm remaining investors, and could induce further redemptions from investors. In consequence, an improper valuation procedure together with a stressed market scenario could trigger a redemption spiral.

A sound valuation procedure should aim to consider appropriate models to value those assets that are not traded in an active market. The parameters of these models should be promptly updated to any relevant changing situation. For example, fixed income securities that are infrequently traded and valued according to mark- to-model should update market liquidity spreads data incorporated in their model, on each fund dealing date. Where the normal valuation procedure is based on assessment of the net realisable value of the assets assuming a

willing buyer and a willing seller and flexibility over the time required to make the disposal (as for immovable property), the procedure may require adjustment in unusual market conditions. In the period following the EU referendum in the UK, property funds applied fair value adjustments and, in one case, a dilution adjustment to reflect that the current market environment and the fact that short-term sales in the property market have relatively penal consequences.

There are times when a fund may face significant redemption pressures, which may require the sale of underlying assets to meet such a request. If highly liquid assets are sold first, rather than applying a pro-rata approach, to pay redemptions orders, the remaining investors would be harmed, if the fund is left with disproportionate exposure to illiquid assets. This practice could feed first mover advantages. In such a scenario, divestment should be performed according a “slicing approach,” aimed at keeping the fund liquidity risk profile unchanged. Naturally, there are some complexities around implementing such a pro-rata policy, including the fact that not all assets are fungible or transactions costs of slicing maybe so high as to be to the detriment of remaining investors. Thus, slicing may not always be the best option to protect the interest of all investors. Nevertheless, responsible entities will use their best efforts to maintain the investment strategy and portfolio profile of a fund as much as possible and avoid having remaining investors left with a disproportionate share of potentially illiquid assets.

Therefore, it is considered good practice for the fund manager to actively monitoring asset liquidity as well as investor redemption activities across time while having a liquidity risk management process in place to actively adapt to changes in market as well as investor behaviours across time. Having various management options available and being integrated in pre-defined contingency plans to address such changes are helpful practices for fund managers.

Finally, where a fund manager considers that a specific fund has reached a size where its footprint in the market may impair its ability to buy and sell assets in the best interest of its investors, it may want to consider a “soft-closing” of the fund, i.e. closing it to new subscriptions.

Chapter 4 - Liquidity risk management tools

There are a number of techniques and tools available to fund managers to aid in the management of liquidity needs. These include a number of *ex ante* fund features that are either part of regulatory requirements or that can be embedded in the product in the design phase that will contribute to a better management of liquidity risk, as discussed above (diversification, eligible assets, limits on illiquid assets, liquidity buffers etc.). Additionally, funds have available a number of liquidity management tools, both for day-to-day liquidity management and also for use during stressed markets conditions that are specific options that alter the redemption conditions. Various liquidity management tools are activated quite frequently during normal market conditions, such as suspensions of dealing during public holidays. Examples of activation of more extreme measures are rather rare although their efficacy has been tested in a number of bouts of market volatility.

In 2015, IOSCO published a report that outlined the types of tools that are available in member jurisdictions.²³ The International Capital Markets Association (ICMA) and the European Fund and Asset Management Association (EFAMA) jointly released, in April 2016, a report which also found, from a European perspective, the types of liquidity tools that were available to fund managers.²⁴ Finally, in May 2017, the Association Francaise de la Gestion financiere (AFG) published a note that suggests managers may use different tools depending on the degree of liquidity deterioration a fund may be facing.²⁵

In general, open-ended funds have historically been able to manage their day-to-day liquidity requirements even during periods of high redemption demand²⁶ in an orderly manner with the exception of some MMFs.²⁷

In a number of cases, large redemptions from funds have not led to the activation of liquidity management tools, nor has there been any substantial impact on asset prices or the broader financial system (See Box 4 below). Interesting examples are the redemption pressure experienced by Hong Kong public funds exposed to Mainland Chinese stocks in the summer of 2015, the significant outflows from Pimco's Total Return Fund following the manager's departure and the effects of interest rate increase by the Reserve Bank of India (RBI).

²³ IOSCO (2015): Liquidity Management tools in Collective Investment Schemes: Results from an IOSCO Committee 5 survey to members. Refer to:
<http://www.iosco.org/library/pubdocs/pdf/IOSCOPD517.pdf>

²⁴ ICMA & EFAMA (2016): Managing fund liquidity risk in Europe - an AMIC/EFAMA report

²⁵ AFG (2017): Liquidity Risk management Tools in Open-ended Funds, available at:
http://www.afg.asso.fr/wp-content/uploads/2017/05/2017_05_Liquidity_risk_management_tools_open-ended_funds-1.pdf

²⁶ See Appendix to ICI response to the FSB consultation on asset management vulnerabilities, available at:
<http://www.fsb.org/wp-content/uploads/Investment-Company-Institute-ICI1.pdf>

²⁷ In light of the policy recommendations developed by the FSB and IOSCO, regulatory reforms with respect to MMFs have been implemented (or are currently in process of being implemented) in many jurisdictions to address financial stability issues that arose during the 2007-09 global financial crisis. For details, see, for example, http://www.fsb.org/wp-content/uploads/shadow_banking_overview_of_progress_2015.pdf and <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD502.pdf>.

Box 4: Examples of market events and fund responses

Experience of HK public funds in the summer 2015

The Mainland stock market volatilities in the summer of 2015 put significant liquidity pressure on many Hong Kong public funds with Mainland Chinese stock investments. In June to August 2015, there was widespread suspension of Mainland equities, either voluntarily or after hitting the 10% suspension limit. Many Hong Kong public funds with Mainland Chinese stock investments experienced higher than normal redemptions during that period. From early July to mid-August 2015, among the 64 SFC-authorized equity funds that had substantial exposure to the Mainland stock market, 6 of them experienced redemption of more than 20%.

These funds employed a range of tools so that redemption requests could be met in a fair and orderly manner:

- Mainland equity funds were squeezed by both redemption and illiquid underlying investments as a result of the stock suspensions. Some Mainland equity funds, particularly ETFs, met redemption requests in specie (or in-kind redemption), which reduced selling of assets and potential forced sales.
- Another commonly used tool was fair value adjustment or swing pricing, which allow managers to reflect the deteriorated market conditions when calculating redemption pay outs. These arrangements protect existing/remaining investors while discouraging and reducing the impact of redemption.
- Finally, managers have the discretion to suspend or defer redemption, though these final tools were not used in Hong Kong during this round of market correction.

In view of this significant market event, the SFC closely monitored the liquidity of the Hong Kong public funds and issued a circular in July 2015 to provide guidance to the fund managers of fair valuation policies on fund assets.

Outflows from PIMCO's Total Return Fund

Following the departure of its founder and manager from the fund manager, PIMCO experienced significant redemptions, particularly from its flagship fund, the Total Return Fund. The fund, which at its peak held some \$US292 billion in AUM (April 2013), now stands at \$US73.6 billion (correct as at April 2017), and has regularly experienced monthly outflows in excess of \$US 1 billion. During this period of net outflows from the fund, no use of extra-ordinary liquidity tools, as described in these good practices, was enacted by the fund. Additionally, there has been little to no market impact on fixed income markets as a result of the divestment of the fund.

Interest rate rises in India

In July 2013, the RBI raised short-term interest rates and reduced the liquidity adjustment facility (LAF) for each bank from 1% of total deposits to 0.5%, which led to a decrease in bond prices and resulted in increased redemption especially in liquid schemes, to the extent of over 40% of AUM. As a contingency measure, RBI, in consultation with SEBI provided a special re-finance window to commercial banks, and SEBI decided to increase funds borrowing limit, on a case-to-case basis, in order to address the liquidity requirements of mutual funds. However, since the valuations are done based on the principles of fair valuation (realisable value), the incentive for investors to redeem first was not available and thus, mutual funds were not susceptible to runs. It may be noted that no asset management

company needed to utilise additional borrowing limit nor RBI's special liquidity window and the mutual fund industry was able to sail through this period.

Although not frequent, there are circumstances where a confluence of market forces may cause a fund to use the toolkit that is available to it to aid in the ongoing liquidity management of the fund. In such scenarios, the activation of such tools/ options should be subject to the consideration of several overarching principles:

- **Exceptional circumstances** – the use of a mechanism that affects redemption rights is only justified in open-ended funds in exceptional circumstances. Generally, they should be used sparingly and be temporary in nature. Moreover, exceptional circumstances are rare, such as where a fair and robust valuation of the assets (e.g. because of lacking liquidity in the market place which could include certain forced asset sale scenarios), in which the fund is invested is difficult or impossible to carry out, or where redemption demands are so large/exceptional that liquidity cannot be raised in the timescales required to meet the demands.
- **Best interest of investors** - the use of such extraordinary tools must be in the best interest of the fund investors collectively. The fund should only use such tools when it is in the interest of investors and when the fair and equal treatment of incoming, on-going and outgoing investors is maintained. Firms should always consider what is best for investors (new and old) when making the decision to implement such tools and not for the asset management firm's personal franchise reputation.

Set forth below is a description of the types of liquidity risk management tools that are available (their impact, advantages and drawbacks), and that consider investor protection and financial stability considerations. We also provide examples of how they have been implemented. The list of tools and examples given should not be considered exhaustive and be informative in nature only. This section will distinguish between:

- tools that have the aim of passing on the transaction costs to the subscribing/redeeming investor (for example, swing pricing, redemption in kind);
- tools that restrict access to investor capital;
- other tools that serve to slow or stop redemptions (e.g., redemption gates, suspensions, etc.); and

While some tools discourage investors (or groups of investors) from making large redemptions, in some circumstances, they may not actually prevent this from happening. Also, it is important to note that some tools (e.g. swing pricing) are not directly liquidity tools per se but aim at ensuring an equitable treatment of investors, hence limiting potential run or first mover advantages. Consequently, it might impact the redemption decisions of investors which in turn may have a positive effect on the liquidity profile of a fund.

Tools that aim at passing on transactions costs to redeeming investors

In terms of their effect, the first category of tools is aimed at reducing any disproportionate allocation of the cost of redemption activity on the remaining investors of the fund and preventing a situation where remaining investors could be left with a less liquid portfolio whose risk exposures may have become distorted. As such, a number of the tools available to fund

managers provide a mechanism to allocate transaction including, in some cases, market impact costs associated with the sale (purchase) of fund assets to redeeming (subscribing) investors as a way to reimburse or economically buffer a fund's remaining investors. These tools do not preclude investors from redeeming or subscribing, rather they seek to apportion the true economic cost of trading. Tools in this category include swing pricing, anti-dilution levies, and valuation according to bid or ask prices.

Swing Pricing

What is it?

Swing pricing refers to a process for adjusting a fund's net asset value (NAV) to effectively pass on transaction costs stemming from net capital activity (i.e., flows into or out of the fund) to the investors associated with that activity during the life of a fund, excluding ramp-up period or termination. In a liquidity-challenged environment, quoted bid/ask spreads and overall trading cost can widen and may not be representative of the executed prices that can be achieved in the market. In such circumstances, swing pricing can be a useful mechanism to:

- contribute to protect the interests of existing investors, specifically from the dilution of their holdings; and
- contribute to protect the value of the investors capital.

It is also a useful mechanism to protect remaining investors when:

- one or more large investors choose to redeem in “normal times” where their actions would have material market impact costs;
- more active trading takes place; and/or
- funds hold illiquid assets.

Swing pricing has two forms. The first (the “full” swing pricing) is whereby the NAV of a fund adjusts up or down every calculation day based on the direction of net capital activity, regardless of the size of investor dealing. The second method (the “partial” swing pricing) is only invoked when the net capital activity is greater than a pre-determined threshold (often referred to as the “swing threshold”), which is usually set in terms of a percentage or basis point impact.²⁸

In such cases, the implementation of a swing price mechanism is appropriate where there is a material cost for accessing liquidity. The trading of frequent (and large) amounts of fund shares, as well as the corresponding underlying assets, imposes costs on the fund that results in

²⁸ For example, some asset managers have opted for a swing pricing mechanism based on a trigger threshold. These thresholds are determined by a committee within the asset management company with the swing factor varying depending on the type of fund. For example, a high-yield fund will likely have a higher swing factor than a euro sovereign debt fund given the higher spreads and costs associated with buying and selling securities in these particular markets. The threshold trigger is also reviewed at least quarterly. The Committee thus sets the threshold trigger at a level that protects holders, while minimising NAV volatility and ensuring that the NAV does not swing where the dilution impact on the fund is deemed to be immaterial. As an example please see: Natixis Asset Management (July 2015): “*Frequently Ask Questions – Swing pricing Protecting holders from fund dilution*” [http://www.nam.natixis.com/Content/Documents/Engagements/EN/FAQ%20Swing%20Pricing_vfinale\(EN\).pdf](http://www.nam.natixis.com/Content/Documents/Engagements/EN/FAQ%20Swing%20Pricing_vfinale(EN).pdf)

inequitable outcomes since long-term investors subsidise those who trade more actively. The same effects are true for funds that hold more illiquid assets. Consequently, the externalities can become significant.

Swing factors are often limited in magnitude in the fund prospectus (e.g. a cap of 2%).²⁹ Although, as pointed out by the Association of the Luxembourg Fund Industry (ALFI), beyond the fund prospectus, it is advisable that an asset manager has in place further swing pricing policy documents to highlight a number of other characteristics and parameters of the swing pricing mechanism.³⁰

*Box 5: Examples of swing pricing as outlined in selected fund prospectuses*³¹

Based on the IOSCO report,³² 11 jurisdictions make swing pricing available as a liquidity management tool. Below are a few examples taken from prospectuses illustrating how the swing pricing process is set up:

- **Fund B:** “If the total subscriptions or redemptions of all the unit classes of a Subfund on a single trading day come to a net capital inflow or outflow, the respective Subfund’s net asset value may be increased or reduced accordingly (so-called single swing pricing). The maximum adjustment amounts to 2% of the net asset value.”
- **Fund C:** “...the Directors may, where they so determine, “swing” the Net Asset Value of a Portfolio to attempt to mitigate the potentially dilutive effects of dealing on the Net Asset Value on any Dealing Day on which there are net subscriptions or redemptions in the Portfolio.”
- **Fund D:** “If on any Valuation Day, the aggregate net investor(s) transactions in a Sub-Fund exceed a *pre-determined threshold*, the net asset value per Share may be adjusted upwards or downwards to reflect the costs attributable to the net inflows and net outflows respectively.” [*Emphasis added*] “The percentage by which the net asset value is adjusted will be set by the Board of Directors and subsequently reviewed on a periodic basis to reflect an approximation of current dealing and other costs. The extent of the adjustment may vary from Sub-Fund to Sub-Fund due to different transaction costs in certain jurisdictions on the sell and the buy side, but may not exceed 2% of the original net asset value per Share.”

Where it is available, managers may use swing pricing as part of an overall toolkit available to manage liquidity risk. In particular, the specific characteristics (swing factor, swing threshold, etc.) are generally defined at the design phase and implemented throughout the life span of the fund and not only in stressed situations. There are a number of factors, however, that should be taken into account when deciding on the introduction of swing pricing in a fund or across a family of funds. In particular:

²⁹ Please see **BOX 5** for further examples of how swing pricing is outlined in prospectuses.

³⁰ ALFI (2015): Swing Pricing Update 2015.

³¹ Fund names have been anonymised.

³² IOSCO (2015): Liquidity Management tools in Collective Investment Schemes: Results from an IOSCO Committee 5 survey to members. Refer to:
<http://www.iosco.org/library/pubdocs/pdf/IOSCOPD517.pdf>

- the swing pricing policy defining parameters (swing factor, swing threshold) and the scope of funds it will be applied to should be clearly defined ex ante and communicated to those administering the swing price policy;
- the swing pricing policy should be applied consistently and systematically.

Like all policy tools, there remains a number of advantages and disadvantages that should be considered when enacting this type of anti-dilution mechanism.

Table 1: Pros and Cons of Swing Pricing

<i>Advantages</i>	<i>Disadvantages</i>
<i>A straightforward, well-established and cost effective anti-dilution technique to apply to single-priced funds.</i>	<i>As swing pricing is mostly applied on net capital activity at the level of the fund, it does not address the specific circumstances of each individual investor transaction. For example, if the swing price mechanism is activated by a large redemption from a redeeming investor, any other investors looking to redeem shares/units may be disadvantaged.</i>
<i>Protects against dilution at the fund level.</i>	<i>As currently implemented, can only contain part of the costs of redeeming investors. The percentage value of the “swung” price is generally capped in many jurisdictions and therefore may not pass on all transaction costs. There may well be a material residual cost that will be borne by remaining investors in stressed conditions.</i>
<i>Reduces the drag on performance from capital activity and therefore protects existing investor.</i>	<i>Ordinarily increases performance volatility in short term as expressed in the accounting NAV calculation.</i>
<i>Can act as a deterrent against frequent trading and market timing activity; as well as to a certain extent against potential large redemptions when liquidity cost increases.</i>	<i>There can be some operational hurdles that need to be addressed before it can be implemented in some jurisdictions.</i>
<i>By protecting remaining investors from dilutive impact of other investors’ redemptions, mitigates first-mover advantage.</i>	<i>The calculation of the swing price is not as transparent as the other mechanisms that aim to pass the cost of trading onto the redeeming investor.</i>

Despite certain limitations, swing pricing has become a widely used anti-dilution tool. It can be adopted by funds as it aligns investors’ interests over the longer term. Additionally, swing pricing can positively impact the performance of the fund.³³

³³ BlackRock (2011): “Swing Pricing: The Dilution Effects of Trading Activity.” Also, recreated in “*Fund structures as systemic risk mitigants*, Appendix B (2014). In analysing a number of their UCITS funds between 2010 and 2011, BlackRock highlighted that without the operation of a swing pricing mechanism, the performance of many of their funds would have been impaired.

Box 6: Examples of swing pricing

Swing pricing is a common anti-dilution measure employed by UCITS-regulated funds in several EU jurisdictions, such as Ireland and Luxembourg. Recently, the SEC has adopted rules that allow for swing pricing in the US following a delayed effective date. Over time, the use of swing pricing has increased as education about swing pricing has garnered increased acceptance for the practice and more countries in Europe have permitted swing pricing. For example, in France swing pricing has only been recently introduced.³⁴

Luxembourg	<p>Swing pricing has been applied in Luxembourg for the past 15 to 20 years and has proven to be an efficient mechanism to protect existing investors from dilution associated with investor purchases and redemptions.</p> <p>A survey by the ALFI found that two out of three managers who manage a combined \$1,900 billion (€1,747 billion pricing.) of net assets – or 54% of total assets under management in Luxembourg funds – apply swing. The survey also highlights a trend towards greater adoption of the mechanism, with a number of asset managers applying swing pricing to a varied range of fund types and asset classes. The majority of asset managers apply swing pricing on equity, fixed income, and multi-asset fund in addition to fund-of-funds and sharia-compliant funds.</p> <p>The survey also sought to understand reasons why swing pricing was not applied to some or all of the practitioners’ fund ranges. The main driver mentioned were the challenges in applying a swing pricing regime to certain asset classes that were harder to value. Additionally, the cost and benefit of such a tool were also sighted as being reason for not implementing such a mechanism.</p> <p>Finally, the survey also noted a trend towards greater transparency in swing pricing regimes, with many respondents indicating that that they choose to disclose swing pricing information upon client request. However, there can be a problem with such transparency. It can be counter-productive as such sensitive information may be used to manipulate such anti-dilution methods. For example, if the threshold of a partial swinging fund was known, investors could change their trading behaviour to invest or redeem via several smaller deals in an attempt to game the system. Similarly, publically revealing exact details of the components that compute a swing factor could lead to a situation where proprietary information, such as a portfolio manager’s trading patterns or broker arrangements, could be back-out. Consequently, some investors may be in a position to build up a pattern of trading strategies and processes that could be used unfavourably against the fund. This could explain why a similar number of respondents to the survey choose not to disclose these details.</p>
United States	<p>The SEC recently adopted rule amendments to allow open-ended funds (except money market funds or ETFs) to use swing pricing. To use swing pricing, a fund must establish and implement swing pricing policies and procedures that adjust a fund’s NAV under certain circumstances. Before doing so, the fund’s board, including a majority of independent directors, must have approved policies and procedures.</p>
Hong Kong	<p>In Hong Kong, swing pricing is permitted for SFC-authorized funds provided that clear disclosures are set out in the funds’ offering documents including information on how the swing pricing measure works, under what circumstances it is triggered and the effect on the NAV upon subscription or redemption as a result. In general, an SFC-authorized fund may apply swing pricing measures in order to mitigate the effect of transaction costs in meeting the subscription or redemption requests and to safeguard the interest of those investors remaining in the fund. In making such decisions, the fund manager generally takes into account various factors such as the type of fund, costs of transacting the underlying investments, administrative costs, implementation considerations and/or the fund’s cash management strategy</p>

³⁴ The French trade association, AFG published a Charter on the use of swing pricing and anti-dilution levies in 2014 clarifying that managers could introduce these tools in their funds and providing a set of good practices. To date, only a limited number of funds have chosen to introduce the ability to use swing pricing and those are generally funds, which operate in markets where liquidity issues may widen spreads significantly but the number is growing.

Anti-Dilution Levies

What is it?

There are other tools that have a similar objective to swing pricing. Anti-dilution levies are one such tool, which the industry has considerable experience in utilising. It is solely applied to protect the value interest of remaining fund investors from any dilution through large transactions. Simply put, an anti-dilution levy is a single charge the fund’s NAV price. It is applied by fund management companies simply to protect existing investors from bearing the costs of buying or selling the underlying investments as a result of large inflows into or outflows from a fund. It is not used for creating a profit or avoiding a loss. Compared to the swing pricing mechanism, it does not involve any adjustment to the value of the portfolio (e.g. NAV) and allows a more transparent communication towards the investors. It is also more flexible and can be adapted to the specific stressed situation whereas swing pricing mechanism is usually defined *a priori* during the design phase of the fund.

As an example, Fund E describes the possibility of using an anti-dilution levy for its range of UK authorised funds:³⁵ *“We may, in exceptional circumstances apply an Investor Protection Fee to ensure fairness between all investors in a fund. Any Investor Protection Fee is retained in the fund for the benefit of all remaining investors. If an investor wants to buy or sell a significant number of shares in a fund, the fund manager may be required to buy or sell appropriate investments, which would mean additional costs to a fund. The Investor Protection Fee is applied by:*

- *Reducing the money paid to an investor selling shares or*
- *Deducting the fee from the money being invested by an investor buying shares.”*

For examples on how such tools have been used, please see Box 7.

Table 2: Pros and Cons of Anti-dilution levies

<i>Advantages</i>	<i>Disadvantages</i>
<i>Only applies to individual investor posing large subscription or redemption that trigger(s) the anti-dilution levies but not to other investors transacting in the fund at the same time.</i>	<i>Some practical issues in implementation - There can be some operational hurdles that need to be addressed before it can be implemented in some jurisdictions.</i>
<i>Protects against dilution at the fund level.</i>	<i>The fund may still have a liquidity problem if investors are willing to pay the levy to exit.</i>
<i>Reduces the drag on performance from capital activity and therefore protects existing investor.</i>	<i>The levy can be arbitrarily applied (as mentioned in example) and thus not in all circumstances; this unsystematic application can lead to disadvantages/ advantages for certain investors</i>
<i>Can act as a deterrent against frequent trading and market timing activity; as well as to a certain extent against potential large redemptions when liquidity cost increases.</i>	<i>Transparency might make “gaming” of the system by investors possible (with known limits before application of levy).</i>
<i>No adjustments in the NAV of the fund.</i>	<i>The fund manager may be reluctant to impose a levy in all cases where it is entitled to, e.g. because doing so might generate complaints from investors.</i>

³⁵

Fund name anonymised

Box 7: Anti-Dilution levies

What are anti-dilution levies? - An example

Assumptions:

- Transaction costs for subscriptions and redemptions equal 0.5%

Subscription example

Time: T
 Preset Dilution Levy:
 0.5%
 Number of Investors
 in Fund: 100
 Each Investor's
 Holding: €10,000
 Units in Circulation:
 11,000,000
 Unit Price: €1.00
 Fund Value:
 €11,000,000

→ New Investor A
 subscribes €10,000
 cash

→ New Investor A
 incurs 0.5% preset
 dilution levy
 totalling €50 which
 is taken from the
 €10,000

→ The application of
 this preset dilution
 levy ensures the unit
 price remains at
 €1.00, and that new
 Investor A buys
 109,450 units worth
 €109,450.

Redemption example

Time: T+1
 Preset Dilution Levy: 0.5%
 Number of Investors in Fund
 (including Investor A): 101
 Each Investor's Holding
 (excluding Investor A): €10,000
 Investor A's Holding: €09,450
 Units in Circulation (including
 Investor A): 11,109,450
 Unit Price: €1.00
 Fund Value (including Investor A):
 €11,109,450

→ Investor A redeems
 her 109,450 units for
 cash

→ Investor A incurs
 0.5% preset dilution
 levy totalling €47
 which is taken from
 the €109,450, and
 thus Investor A
 receives €108,903

↓
 The application of this
 preset dilution levy ensures
 the unit price remains at
 €1.00, and that existing
 investors holdings remain
 unaffected.

Examples of implementation of anti-dilution fees

Japan

Anti-dilution levies are employed by open-ended funds in Japan on a permanent basis. The use of anti-dilution levies imposes transaction costs and other costs associated with redemptions on redeeming investors. This aims to mitigate potential dilution arising from redemption activity.

Anti-dilution levies are usually expressed as a fixed-percentage to the NAV. The rate varies depending on the nature of asset classes and expected investor types.

Responsible entities that use anti-dilution levies are legally required to disclose the use of anti-dilution levies and how much is charged to the NAV as anti-dilution levies in the fund's prospectus and other disclosure materials.

Morocco

Equity and balanced UCITS are subject to mandatory subscription and redemption fees (minimum of 0,2% and 0,1%, respectively). These fees are aimed to bear the cost of purchases (or sales) of listed securities induced by subscriptions (or redemptions).

Valuation according to bid or ask prices

What is it?

In fixed-income securities, transaction costs are implicit in bid/ask spreads quoted by intermediaries. Low liquidity in fixed-income markets usually implies wide bid/ask spreads. In a situation with neutral investor activity, i.e. without significant net inflows or outflows, funds usually value their assets using market mid-prices. However, in a situation where there is a significant amount of net subscriptions or redemptions, switching valuation pricing to ask³⁶ (with net inflows) or bid³⁷ prices (with net outflows) would allow the incorporation into the NAV calculation of the effect of transaction costs the fund will face when investing or disinvesting due to investor activity.

Similar to swing pricing, switching valuation from ask (if net inflows) to bid (if net outflows) prices allows a similar adjustment in NAV calculation. Whereas in swing pricing a fixed swing factor applies and is added or deducted after NAV calculation, switching from ask to bid price has a similar effect for the fund but is implemented in the NAV calculation on a security-by-security basis.

Table 3: Pros and Cons of Bid-Ask Valuation

<i>Advantages</i>	<i>Disadvantages</i>
<i>Takes into account the entire market impact and fully reflects market movements</i>	<i>Some practical issues in implementation - There can be some operational hurdles that need to be addressed before it can be implemented in some jurisdictions.</i>
<i>Protects against dilution at the fund level.</i>	<i>The fund may still have a liquidity problem if investors are willing to pay the "levy" to exit.</i>
<i>Reduces the drag on performance from capital activity and therefore protects existing investor.</i>	<i>If the bid-ask mechanism is activated by redeeming investors, any investors looking to sell shares/units may be disadvantaged.</i>
<i>Can act as a deterrent against frequent trading and market timing activity; as well as to a certain extent against potential large redemptions when liquidity cost increases.</i>	

³⁶ Price at which an intermediary is willing to sell an asset, therefore it is the price a fund will pay when buying.

³⁷ Price at which an intermediary is willing to buy an asset, and consequently, it is the price a fund will get when selling.

Box 8: The Spanish experience with bid-ask pricing

The Spanish CNMV requests the management companies to establish and comply with written procedures on CIS assets valuation. These procedures should set out under which circumstances the fund would value according to ask or bid prices. These circumstances should be objectively set out, for example when net subscriptions or redemptions exceed a pre-defined threshold.

In any case, these procedures should be applied consistently, managing properly the conflict of interest between investors who redeem and those who remain in the fund.

Tools that restrict access to investor capital

Other tools such as suspension of redemptions, redemption deferrals/gates and side pockets are more disruptive as they restrict investor access to their invested capital either proportionally or in its entirety.

Redemption Gates

What is it?

Redemption gates are partial restrictions to investors' ability to redeem their capital, generally on a pro-rata basis. For example, a five per cent redemption gate on a fund would mean that if orders at a given cut-off exceed five per cent of the net assets of the fund, then the orders, based on the decision of the responsible entity, are only partially executed, with the non-executed part either being cancelled or automatically carried over to the next valuation/dealing day. Redemption gates are an accepted common market practice in some jurisdictions and can be used in normal market conditions and should not automatically be considered as a crisis-type policy option.

In the event of significant redemption orders, a fund may be forced to sell its assets or distort its portfolio by selling only the most liquid assets, which would be detrimental to remaining investors in the fund who will end up with a less liquid asset portfolio. The possibility for a portfolio manager to gate redemptions can prevent this situation because it allows both the redemptions and any assets sales to be spread over time in the best interest of all investors.

Normally, redemption gates are defined in the fund prospectus. The calibration is crucial in order to avoid any first-mover advantage which might lead to runs by investors and reinforce the crisis instead of smoothing the fund's asset sale. In addition, redemption gates may give rise to contagion risk caused by the reputational effect for the asset manager who first uses gates.

Table 4: Pros and Cons of Redemption Gates

Advantages	Disadvantages
Alleviates redemption pressures as it allows the funds to spread redemptions over time	May signal a fund in trouble and may have broader consequences
A liquidity smoothing mechanism, which allows for better liquidity management in the fund	May not solve the liquidity problem. If investors wish to redeem, they will do so although over a longer period of time,
Provides for additional time for information dissemination (to investors, asset managers, market participants) which might change investor redemption motives	Non-equal treatment of investors if redemption requests above the threshold are being treated on a priority basis above any new redemption requests.
A step before suspension, which may help a fund manage a liquidity issue without resorting to suspension of redemptions	Restricts the capacity of the investors to redeem if the gating period is not temporary.

Box 9: Examples of redemption gates

A specific Irish example

In the prospectus for their Irish based funds (Fund F, fund umbrella)³⁸, Fund F specifies that redemption gates can be used when a certain redemption threshold is reached : *“If the total requests for redemption on any Dealing Day for any Fund exceed 10% of the total number of Shares in that Fund outstanding, each redemption request in respect of Shares in such Fund may, if in their sole discretion the Directors acting in good faith believe it shall be necessary or desirable in order not to prejudice the interests of the investors not requesting redemption or on grounds of liquidity or other like reason, be reduced "pro rata" so that the total number of Shares of each Fund for redemption on that Dealing Day shall not exceed 10% of the Shares in issue in the Fund. Accordingly, all investors wishing to have Shares of that Fund redeemed on that Dealing Day shall realise the same proportion of such Shares. Shares not redeemed due to the imposition of the redemption gate will be carried forward for redemption on each subsequent Dealing Day until all Shares to which the original redemption request related have been redeemed. If requests for redemption are so carried forward, the Directors will ensure that the investors affected thereby are promptly informed.”*

While in France...

France recently changed its legislation to introduce the ability for funds to use gates. The "Sapin II" bill, passed in November 2016, allows a large range of funds including UCITS and professional investment funds to introduce temporary redemption gates, under exceptional circumstances and if the interest of the unit holder or of the public so require.

The AMF’s General Regulation specifies the conditions under which asset management companies can use redemption gates in order to allow for a fair treatment of all investors, avoid any first mover advantage and ensure that redemption conditions aren’t used as commercial arguments.

The gates can only be activated in exceptional circumstances and if the interest of the holders or the public requires it. This applies where, irrespective of the management strategy, the redemption requests are such that, given the liquidity conditions of the assets of the fund,

³⁸ Fund name anonymised

they could not be executed under conditions that preserve the interests of the holders and ensure fair treatment of the latter. If the AMF deems a misuse of redemption gates it has the power to lift the gate.

Redemption gates provisions in prospectuses are approved by the AMF which will foresee that the following rules are applied:

- When redemption orders are gated, orders from all unit holders are capped in the same proportion;
- No priority rights are granted to a unit holder whose order has been gated and then presented again at the subsequent net asset valuations;
- asset management companies that decide to activate a redemption gate must inform the AMF, the unit holders as well as the public on their website;
- The threshold for triggering the gate must be adequate to the strategy, the dealing frequency and the assets' liquidity (for a fund with daily redemptions, 5% gates is the indicative threshold); and
- The use of gates is capped in time (20 NAVs over three months for a daily redemption fund) in order to reduce uncertainty for investors.

Romania

In the prospectus for a Romanian UCITS, the responsible entity can specify that redemption gates can be used when a certain redemption threshold is reached (for a fund with daily redemption, 5% gates is the indicative threshold recommended in the national legal framework, but the manager has the final call according to the provisions set in the prospectus regarding the investment strategy and liquidity profile of the UCITS)

Side pockets

What is it?

In any mutual fund, investors buy units that represent a proportional claim across all the assets of the underlying portfolio. These investments can be across multiple assets and markets with varying levels of risk, return and liquidity.

Generally, side pockets are a mechanism by which a fund manager establishes a separate account for the sole purpose of segregating specific assets from the fund's overall portfolio. Often, side pockets are used hold illiquid securities and used in times of uncertainty where fair valuation of an asset is temporarily very difficult or impossible. They are most often used in funds investing in less liquid assets, such as private equity, venture capital or hedge funds.

The side pocket concept is simple in that units are divided into two holdings: one representing the segregated assets, and another the rest of the portfolio. As such, the fund manager, through unit segregation can better manage the unique liquidity of the different underlying assets. The advantage is that the fund holding the liquid assets remains open to subscriptions and redemptions, while the illiquid part in the side pocket can be dealt with separately.

However, there are a number of considerations when using such a mechanism. First, assets of the fund are split between two segregated or separate legal investment vehicles. Only the NAV

of the fund, other than the side pocket, may be known to the investors. Second, side pocket terms may be more onerous on the redemptions terms for investors, so as to treat investors equally. Third, side pockets have the potential for abuse. There have been some examples of illiquid assets being segregated into side pockets accounts to protect managers' fees on the more liquid part of the investment strategy.

Consequently, it is essential that a robust framework for how and when side pockets can be used is disclosed to investors (e.g. via the prospectus and additional disclosure) so as to avoid contentious issues arising from the extent of the manager's discretion to designate investments into a side pocket. Fund documents may specifically permit the use of side pockets and the scenarios under which they can be enacted. To this end, the prospectuses of a number of funds highlight that many do disclose that they have the ability to side pocket assets. For example, one prospectus includes the following language outlining how they can be used, investment limits and how they relate to redemption requests:

“Some of the Portfolio Funds may hold a portion of their investments, in particular investments that are illiquid, in so-called “side pockets.” Side pockets are sub-funds or other special allocations within a Portfolio Fund that create a structure to invest in illiquid or hard to value securities or other investments and are valued independently from the general portfolio with distinct allocation, distribution and redemption terms and are generally held only by those investors existing at the time of investment or at the time the side pocket is created. There is no limit to the amount that the Fund may invest in Portfolio Funds with side pockets nor on the aggregate size of side pockets. Were the Fund to request redemption from a Portfolio Fund that distributed side pocket(s) to satisfy a portion of such redemption, the portion of the Fund’s interest in the Portfolio Fund’s side pockets would generally require a much longer period of time to realize than the redemption from the main portfolio and, during the period of liquidation of the side pockets, the Fund would remain invested in the side pockets and subject to subsequent market fluctuation in the value of the side pockets. In addition, Portfolio Funds may also establish side pockets or other liquidity management allocations at the time a redemption request is made that are intended to reflect that portion of the Portfolio Fund’s investments that are deemed illiquid at that time. To the extent such redemption side pockets are created, the Fund would similarly be subject to an extended liquidation period, market risk and valuation risk.”

Table 5: Pros and Cons of Side Pockets

<i>Advantages</i>	<i>Disadvantages</i>
<i>Protect investors by avoiding the last man standing scenario.</i>	<i>Side pockets limits when and how investors can withdraw part of their investment.</i>
<i>Ensure that only existing investors, and not investors who subsequently join the partnership, benefit from the appreciation of an illiquid side pocket investment.</i>	<i>Such mechanisms prevent investors from fully redeeming their interests</i>
<i>Fund managers avoid forced sales at (artificially or temporarily) distressed prices.</i>	<i>Increased opportunity cost for investors as it removes their option to “vote with their feet” by removing capital from poorly performing funds.</i>
<i>The use of side pockets facilitates new investment in the fund without new investors having to take exposure to illiquid assets.</i>	
<i>Help provide access to the liquid component of a portfolio without compromising the integrity of the entire portfolio.</i>	
<i>Ensure fair treatment among investors as they receive and equal share on the illiquid/distressed portion of the portfolio</i>	

Box 10: Examples on the use of Side Pockets

Spain

Side pockets were used by several Spanish Investment Funds (23 funds in total) affected by the insolvency of a small Spanish Bank (Banco de Madrid) whose parent company was an Andorran Bank. These investment funds kept cash and deposits with Banco de Madrid, which were put aside in 23 special purpose vehicles (side pockets) segregated from the original funds. As the appointed Banco de Madrid’s liquidator was paying back the money to these investment funds, the side pockets were receiving the money and paying back to investors. These side pockets were a valuable tool that contributed to a smooth and ordered process. The original funds, from which the side pockets were segregated, continued working with normality and were able to honour redemptions orders along the process without any problem.

France

In France, side pockets are authorised for all funds. In case of strong difficulty in evaluating an asset and after approval of the AMF, the portfolio manager can isolate in a new fund the distressed asset. This new fund is then managed towards extinction and in the case of a pick-up in valuation, capital gains are shared pro rata among the fund investors. In 2009 in France, following the Madoff scandal, the AMF authorised the creation of side pockets for the funds invested in the Lux Alpha fund. Among others (48 French funds decided to use this tool on this occasion), Manager B decided to value the Lux Alpha position contained in its Central Valour fund at 1% of its last closing value. The fund was then split into 2 new funds, one containing the Lux Alpha position and the new fund being renamed Fund X continued to pursue the same investment strategy as the initial Central Valour fund. Each investor of a share of the Central Valour fund received a share of each of the two new funds. The fund containing the Lux Alpha position has been liquidated as soon as market conditions allowed the portfolio manager to exit his position. Any proceeds have been redistributed pro rata to the fund investors.

Notice periods

What is it?

Notice period outlines the length of advance notice that an investor must give to a fund manager of his/her intention to redeem their investment from the fund. Although used in conjunction with redemption periods and lock-ups to manage liquidity needs in the hedge funds industry, there are also some examples of this mechanism being used with open-ended mutual funds.

From an investor's perspective, such notice periods reduce, to a certain extent, the liquidity of an investment in a fund. From the fund's perspective, the use of notice periods allows the fund to meet the redemption request in an orderly fashion without the need to sell assets at discounted prices (which would disadvantage remaining investors in the fund).³⁹

Table 6: Pros and Cons of Notice Periods

<i>Advantages</i>	<i>Disadvantages</i>
<i>Help to better align the liquidity redemption needs with the underlying liquidity of the investments</i>	<i>From the investors' perspective, their capital cannot be withdrawn from the fund when needed thereby increasing the opportunity cost of investing</i>
<i>Provides additional flexibility to the asset manager where liquidity is more challenging to source</i>	<i>Investors may not wish to invest in a daily dealing fund where an extended notice period exists, it could be perceived as contradicting the dealing frequency offered</i>
<i>Enable a smooth and orderly dealing of the situation without sending a negative signal to the market</i>	<i>With notice periods in place, some managers may have an incentive to invest in assets with longer settlement date that are usually less liquid.</i>

Source: IOSCO

Some managers use a slightly different form of notice period whereby investors are subject to a redemption fee unless the investor provides notice of the redemption. For example, a daily dealing fund invested in credit markets had indicated in its key investor information document that it applied 3% redemption fees on redemption payments related to requests sent with less than 2 days' notice but that no fee applied for payments related to requests sent with 2 days or more notice.⁴⁰

Box 11: The Spanish example of notice periods

Notice periods are permitted by Spanish legal framework, they can be used by open-ended mutual funds as long as it is stated in the fund rules and prospectus.

Asset managers may stipulate in the fund constitutional documents, a 10 days' notice period for redemption requests that exceed €300,000 from a single investor. The net asset value per unit applicable to these redemption requests will be the one corresponding to the tenth working day after the day the investor noticed his intention to redeem. The prospectus usually states the possibility that this notice period be shortened if the asset manager gets to

³⁹ The ability to enforce a notice period may be limited in some jurisdictions.

⁴⁰ From Fund F key investor information document: "Redemption conditions: The NAV will be calculated daily. The NAV is calculated each trading day, excluding holidays and will be dated the same day. Investors have the option to purchase or obtain a refund of their units with the depositary upon request every day before noon on the day before the calculation of NAV. Dividends are capitalised. Redemption fees will be charged under the following conditions:

- redemption request made with less than two working days' notice: 3% will be charged by UCITS; and
- redemption request made with two or more working days' notice: none"

sell enough assets to pay the redemption orders before the expiration of the 10-day period. When the notice period is shortened, the net asset value per unit paid to investors who redeem would be the one corresponding to the date on which the needed assets were sold by the fund.

During the financial crises, Spanish funds faced large outflows. Total CIS NAV dropped more than 50% from the end of 2007 to the end of 2012, which forced fixed income sales amounting to €65 billion, representing 45% of the total fixed income pre-crisis amount. During on-site inspections, the CNMV oversaw cases where the notice periods had been used. It was determined that notice periods were a moderately-used tool since many funds have enough liquidity to face redemptions. In those cases where the notice periods were used, the whole ten-day redemption notice was seldom required. Instead, the length of the notice period has been limited to a shorter period, usually one or two days.

Suspension of redemptions

What is it?

Suspension of redemptions is an action taken by a fund or its manager which prevents investors in the fund from withdrawing their capital. In most cases, it is a temporary measure for a short period of time. Its purpose is to prevent a run on a fund in times of market stress. It can also be necessary when the valuation of the portfolio cannot be properly performed (e.g. during exceptional market events affecting a large proportion of the underlying assets).

There are many reasons why a fund would choose to suspend redemptions. In some circumstances, a suspension of redemptions may be implemented when the market trading the underlying assets is closed. One other commonly cited reason to suspend is to prevent a sudden outflow of capital, which may have further adverse consequences for the fund, such as:

- the forced sale of assets at prices that would disadvantage remaining funds investors;
- a resulting portfolio for non-redeeming investors that is deeply concentrated in illiquid assets and is outside the risk tolerance of the fund; and
- a resulting portfolio that may be too small for the intended strategy of the fund.

Outside of market closures, a suspension of redemptions is generally considered to be a last resort tool that is only activated when no other option is available.

In implementing redemption suspensions, there are a number of factors that should be taken into account. Generally speaking, in many jurisdictions, suspension of redemptions is normally at the discretion of the fund manager and is implemented to ensure equitable treatment of all investors in a fund and motivated by the need to act in the investors' best interests. Additionally, in some instances, suspension of redemptions can be invoked when the daily redemption requests of a fund exceed a predefined threshold as a percentage of assets under management (AuM).

Consequently, suspension of redemptions has many advantages as an extraordinary liquidity management tool. Amongst others, it allows time for the manager to determine fair valuation,

to determine how best to meet redemptions in a period of uncertainty, or to see whether the uncertainty is lifted from the underlying markets.⁴¹

Authorities may address suspension of redemptions in various ways. First, in some jurisdictions, suspension of redemptions may be imposed by the regulator if it is deemed in the public interest or for financial stability reasons (e.g. in the EU). Second, if a fund manager deems it necessary to suspend, it may require authorisation from the competent regulator, which may require more intensive oversight and prescriptive requirements by the regulator.⁴² Third, where regulators deem it appropriate, non-prescriptive guidance can be given to fund managers highlighting their responsibilities to fund investors.⁴³

In utilising such a tool, however, regulators and asset managers should be mindful of the risks associated with using suspension. Historically, implementing a suspension provision was perceived as a more drastic measure than using other tools such as gating. In some circumstances, it may be perceived by investors to indicate significant or even unresolvable problems in the fund and the prospect of substantial falls in the value of the fund's assets. Consequently, there was significant stigma associated with the use of such a tool.

In light of the possible impact that suspension of redemptions can have on investors and the broader market, IOSCO developed standards for the use of such a tool.⁴⁴ The standards outline a number of considerations, including that suspensions are an exceptional tool and not to be used lightly. Further, as noted in the IOSCO Suspension of Redemptions Report, a fund should ensure that the degree of liquidity in the fund allows it to meet redemption obligations and other liabilities. As such, suspension of redemptions should not be a solution to poor liquidity management within a fund. Also, the same report outlines that the suspending of redemptions can have pecuniary effects, through:

- direct impact on investors - the tool prevents access by investors to their assets, which may have serious consequences for investors if not prepared for such suspensions.
- secondary impacts on markets - if institutional investors or, in particular, another CIS is significantly invested in a suspended CIS, the suspension directly impacts this CIS and leads to further liquidity or pricing issues throughout the related market(s).

⁴¹ For example, when equity markets are closed. In many jurisdictions funds can automatically suspend redemptions if the underlying markets they invest in are closed. As a practical example, please see Credit Suisse communique dated 20th December 2013, which announced the suspension of a number for Luxembourg domiciled funds due to the closure of underlying markets. (https://www.credit-suisse.com/pwp/am/downloads/general/ft_suspension_fundtrading_en.pdf).

⁴² For example, in December 2015, Third Avenue Management received exemptive relief from the SEC to suspend investor redemptions from an open-end fund, following a period of heavy redemption requests. The SEC order includes several conditions intended to permit an orderly liquidation. For more information, please consult SEC Temporary order release Nos. IC-31943; 812-14593.

⁴³ For example, following the result of the EU referendum in Britain, some asset managers experienced higher-than-normal levels of redemption requests from investors in their funds. In response, the FCA issued guidance, via a press release, outlining the roles and responsibility that fund managers had to their investors in relation to fair treatment, asset disposal and fund suspension. Please see FCA Press release: "Guidance on fund suspensions" 08 July 2016: (<https://www.fca.org.uk/news/statements/guidance-fund-suspensions>)

⁴⁴ IOSCO (2012): Principles on Suspensions of Redemptions in Collective Investment Scheme. Refer to: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD367.pdf>

- impacting confidence –confidence is key to financial markets and their stability, so suspension leading to a loss of confidence in a single fund, or class of funds, may impact other markets.
- reputational issues – by raising questions about the operations of the asset manager, which may lead to a run on the fund once it resumes operations, or on other funds operated by the same asset manager.
- further market impacts - suspension of redemptions could also exacerbate market uncertainty and cause investors in other funds to redeem, fearing that more funds will suspend redemptions.
- counterparties - Liquidity problems due to extraordinary withdrawals caused by significant suspensions of other funds (but also liquidity problems in general) may not only prevent CIS from meeting redemptions but also other payment obligations (e.g. margin calls). Liquidity problems therefore not only impact investors but also may impact counterparties.

Table 7: Pros and Cons of Suspension of Redemptions

<i>Advantages</i>	<i>Disadvantages</i>
<i>Allows for a certain delay in valuation so assets can be priced in markets that better reflect the assets intrinsic value</i>	<i>Welfare implications of investors' inability to withdraw capital when they need to</i>
<i>Better meet redemptions requests in times of uncertainty</i>	<i>Possible impact on other funds managed by the same asset manager, or on other funds in the same asset class</i>
<i>Provides time to allow the fund manager to address liquidity challenges</i>	<i>Possible further market impacts along with the suspension being difficult to roll back</i>
<i>Ensures fair treatment of all investors in the fund</i>	
<i>Limit/stop spill over/contagion of possible stresses</i>	

Source: IOSCO

Box 12: Examples of suspension of redemptions

Under exceptional market conditions, in many jurisdictions, investment funds can suspend redemptions. This has happened on several occasions over time and for a variety of reasons, ranging from market closures, cyclones, custodian liquidation, cyber-security related incident affecting the manager or difficulties in valuing a large portion of the assets and significant redemptions.

UK property funds

Following the result of the referendum on the UK's membership of the European Union in June 2016, there was increased demand by investors to redeem their investments in UK property funds, which had already experienced significant outflows earlier in the year. Several fund managers of open-ended property funds suspended dealing in their fund and/or applied adjustments to its asset valuations. The funds that were affected by these measures were collectively worth about half of the authorised property funds. Some of the affected funds were able to resume normal trading within a few weeks while others took longer, in one case not resuming dealing until December 2016. Those that had suspended resumed trading after selling properties to increase cash positions (typically, cash holdings were in

the 15-20% of NAV range on re-opening). Implementation of these tools avoided fire-sales by funds and meant that contagion to the wider UK commercial property sector was avoided and there was no significant impact on financial stability.

The Australian experience with Mortgage funds

The serious credit and liquidity crunch caused by the 2008 Global Financial Crisis, together with the introduction of bank deposit guarantees by the Australian government, resulted in heavy investor outflows from a number of mortgage funds to lower risk guaranteed bank deposits from October 2008 and subsequent years.

A number of these funds had been promoted to investors on the basis that they offered regular liquidity to investors when given the nature of the assets this could not be achieved, particularly, when there were significant defaults on loans and a drop in value of the underlying assets.

Responsible entities froze various funds. The freeze on repayments prevented assets from being sold off cheaply to meet redemption requests. It also helped to ensure that all fund members were treated fairly and that their capital was protected. Some funds also arranged limited access to investments through quarterly withdrawals to all members only when there was cash available for redemptions.

In addition, the responsible entities of the funds are required by the Corporations Act to freeze redemptions if the fund ceases to be 'liquid'. A fund is liquid if at least 80% of its assets comprise cash, bills, marketable securities or other property that the responsible entity reasonably considers able to be realised for its market value within the period provided for in the Fund's constitution for satisfying withdrawal requests.

Regulatory tools were also employed such as the introduction of the Regulatory Guide 45: *Mortgage Scheme: Improving disclosure for retail clients* (RG45) and hardship redemptions to facilitate early withdrawals by members who were experiencing hardships.

In addition to the liquidity risk management tools that were available to the various responsible entities, ASIC monitored and consulted with the relevant responsible entities prior to and during the freeze. The responsible entities were encouraged to continue exploring options for a faster return to liquidity for investors, in addition to ongoing regulatory assessment of the various fund's performance during the entire period.

In France, suspension is a rare but useful tool in exceptional circumstances

In France, there have been a number of suspensions of redemptions since 2001, in most cases as a result of external events 2001 terror attacks, 2007-08 global financial crisis, etc. and generally the funds reopened to suspensions after some time. For example, around the 11 September 2001 attacks, some funds that were significantly invested, directly or indirectly, in US stocks suspended redemptions for a few days. All these funds reopened to redemptions afterwards.

Further suspensions occurred on five occasions during the summer of 2007: In the case of three funds, a decision was taken to liquidate each one by the relevant asset management company; the remaining two funds reopened to subscription and redemptions three weeks later. The suspensions were caused by the difficulties of assessing the value of securitised assets at the beginning of the subprime crisis. In April 2008, two funds with exposure to asset-backed securities suspended redemptions for similar reasons. One of the funds

reopened one month later. The second was liquidated four months later after consultation of the investors.

In autumn 2008, about 20 funds of hedge funds that suffered an unusually high level of redemptions faced significant liquidity issues when underlying funds started suspending. All funds reopened to redemptions afterwards.

Other examples

In Germany, in 2008, a number of open-ended real estate funds were forced to suspend redemptions because of insufficient liquidity against the background of a sudden hike of demand on redemption. Consequently, Fund of Fund of real estate investments were also forced to suspend. A total of 18 open-ended real estate funds have failed to re-open after suspending their redemption and are put into liquidation. These funds will now be wound up by selling the real estate properties, repaying the bank loans and finally paying out the remaining capital to investors at regular intervals.

In Spain, two real estate funds suspended redemptions for a period of two years. At which time, one fund reopened redemptions and the other liquidated. More recently, due to the insolvency of a Spanish Bank, the CNMV ordered the suspension of redemptions of 21 funds for which the bank was the depositary. Just recently, a new asset manager and depositary were appointed, enabling redemptions to resume.

In Hong Kong, during the period from September 2007 to September 2015, eight short-term suspensions involving SFC-authorized Hong Kong-domiciled funds were reported, due to the temporary closure of markets in which substantial parts of the funds' investments were invested or pending final closure of the relevant funds.

Also in China, the HuaAn International Allocation Fund suspended redemptions in the wake of Lehman's collapse. The structured principle-guaranteed notes it held in relation to Lehman could not be valued accurately, so the fund took the decision to suspend redemptions for three years. In 2011, the fund entered liquidation.

The Romanian experience with the suspension of redemptions is quite recent. In 2014, three UCITS funds, all managed by the same investment management company, decided to temporarily suspend redemptions (and subscriptions) for a period of two months in order to restructure their portfolios. The funds needed to sell their holdings of municipal bonds, which represented 20% of their assets under management. Currently, the funds are still available to investors, although the manager plans to merge all three into a single UCITS fund in the near future.

In Morocco, subscriptions and redemptions on a UCITS may be suspended on a provisional basis by the management company when exceptional circumstances so require and if the interests of the investors so command (for instance: exceptional closure of the Casablanca Stock Exchange or in case of obvious illiquidity of the securities held by the fund).

Other tools

Redemptions In-kind

What is it?

In-kind redemptions (or sometimes referred to as in specie redemptions) are a mechanism by which funds can distribute the underlying assets generally on a pro-rata basis to investors,⁴⁵ as opposed to paying cash to honour redemptions.

In-kind redemptions may allow a fund to avoid the sale of a sizable block of securities to effect a redemption in cash, thereby avoiding significant transactions costs and market price impacts which may disadvantage remaining investors.

There is an argument that in-kind redemptions provide the fund manager with a form of protection. That is, by having the ability to honour redemptions with physical delivery of securities, it allows the fund manager to deploy a greater portion of the portfolio into investments and hold less cash in reserve to fund potential redemptions, thereby matching the underlying investments and liquidity needs of the funds better.

However, there are a number of considerations when implementing such a tool. First, in-kind redemptions are not suitable for every investor category. Specifically, it is more appropriate for an institutional investor rather than retail investors. Second, it is not a tool that lends itself to fund strategies that trade in less fungible securities. For example, a large S&P 500 equity fund could more easily give a redeeming investor a vertical slice of the portfolio than a fixed income fund or property fund given the nature of the fund's underlying assets. Third, the practice can, in some circumstances, be considered discriminatory where thresholds are involved that trigger automatic in-kind redemptions. Fourth, a transfer of securities to an investor who will sell them on the market anyway may adversely impact the value for the remaining investors if such a sale had significant market impacts consequences.

Finally, from a financial stability standpoint, such a tool does not necessarily deal with contagion issues. It merely transfers the securities, and the associated liquidity problems, to an investor who may sell them into a falling market.

⁴⁵ In some contexts (e.g., where it would lead to distribution of odd lots/restricted securities), these may not be pro-rata.

Table 8: Pros and Cons of In Kind Redemptions

<i>Advantages</i>	<i>Disadvantages</i>
<i>Allows funds to remain more fully invested pursuant to investment strategy without cash drag.</i>	<i>Does not alleviate acute liquidity issues in the underlying market, as it transfers the problem to end investors</i>
<i>May better align the liquidity of the fund with the liquidity of underlying assets.</i>	<i>Certain asset classes cannot be split, therefore a full, representative vertical slice of the underlying portfolio may not be possible for all funds.</i>
<i>Deterrent to large institutional investors</i>	<i>Can be a discriminatory policy when a fund adopts a policy of in-kind redemptions over a specific threshold.</i>
	<i>Large-scale operational impacts in processing the delivery of physical assets to clients</i>
	<i>Equal treatment of investors comes into question as there will always be some losers</i>

Source: IOSCO

Box 13: Examples of Redemptions in Kind

United Kingdom

As an example, Firm Y describes the possibility of using in specie transfers for its range of UK authorised unit trust funds. “A Unitholder who requests the subscription or redemption of a number of Units representing in value not less than £1,000,000 may (either at his request or by election of the Manager) receive in respect of such redemption an in-specie transfer out of the property of the Fund in question in accordance with the Regulations. This minimum may be waived at the Manager’s discretion, in respect of subscriptions or redemptions. All in-specie transfers will be at the discretion of the Manager and Trustee, and the Manager must have taken reasonable care to ensure that the property concerned would not be likely to result in any material prejudice to the interests of Unitholders”.

United States

In the U.S., open-end funds have the right to redeem shareholders in cash or in kind (that is, by delivering certain assets from the fund’s portfolio, rather than cash, to a redeeming shareholder). Along with ETFs, which commonly redeem shares in kind, many mutual funds reserve the right to redeem their shares in kind instead of in cash. Mutual funds that reserve the right to redeem in kind may use such redemptions to manage liquidity risk under exceptional circumstances.⁴⁶ A mutual fund, for example, could choose to redeem in kind when faced with significant redemptions, because this would result in the redeeming shareholder (and not the fund and its remaining shareholders) bearing any liquidity costs associated with dispositions of portfolio assets. A mutual fund that engages in or reserves the right to engage in in-kind redemptions is required to adopt and implement written policies

⁴⁶ See Karen Damato, ‘Redemptions in Kind’ Become Effective for Tax Management, WALL STREET JOURNAL (Mar. 10, 1999), available at <https://www.wsj.com/articles/SB921028092685519084>(“‘Redemptions in kind’ are typically viewed by fund managers as an emergency measure, a step they could take to meet massive redemptions in the midst of a market meltdown.”). Besides using in-kind redemptions as an emergency measure to manage liquidity risk, mutual funds may also use in-kind redemptions for other reasons. For example, mutual funds may wish to redeem certain investors (e.g., large, institutional investors) due to favourable tax treatment over selling portfolio securities in order to pay redemptions in cash, which also could benefit remaining shareholders in the fund. In-kind redemptions may also be useful if a large shareholder is redeeming to transition to a separately managed account with a similar investment strategy.

and procedures regarding in-kind redemptions as part of the management of its liquidity risk. These policies and procedures generally should address the process for redeeming in kind, as well as the circumstances under which the mutual fund would consider redeeming in kind.

Chapter 5 – Stress Testing

Background ⁴⁷

Stress testing can be an important component of a responsible entity's liquidity risk management process for certain funds. Stress testing should support and strengthen the ability of the responsible entities in managing liquidity risk appropriately in the best interests of investors.

Performing stress testing is the responsibility of the responsible entity. Stress testing can be used by responsible entities to assess the liquidity characteristics of the CIS's assets relative to the CIS's anticipated redemption flows under stressed market conditions and to tailor the CIS's asset composition, liquidity risk management, valuation procedures and contingency planning accordingly.

For many asset managers, stress testing is not a new concept and has been an established fundamental risk management practice that supports the good operations of their funds for a number of years. The results from such risk management practices are used to inform investment decisions and, where appropriate, the level of limits on portfolio liquidity.

The practice of stress testing in investment funds has also been recognised by markets regulators as an effective means to ensure proper risk management practices are used, although this tool supplements other liquidity management processes. For example, under European UCITS and AIFM directives, a fund manager should be able to demonstrate that appropriate and effective liquidity management policies and procedures are in place. In particular, the liquidity of the fund and the instruments used need to take into account various factors such as trading frequency, volume, the number of transactions, the availability of market prices, bid-ask spreads and whether selling will have any market impacts. Further, stress testing the portfolio under various market scenarios is cited as a way to identify corresponding risks. In this regard, the AIFMD goes one step further than UCITS and introduces a formal requirement for funds to undertake regular stress tests. As highlighted by the IOSCO liquidity tools report, many other jurisdictions outside of the European Union indicated that fund risk needs to be properly identified through the use of different stress test scenarios. However, unlike banking stress tests, which are levelled both at the individual bank level and the banking system at large, the current focus of stress testing efforts is at the individual funds level only. Stress testing of CIS' liquidity to meet potential investor redemptions is formally required in some jurisdictions⁴⁸ and may be used as a component of liquidity risk management in other jurisdictions.⁴⁹

⁴⁷ Various authorities in IOSCO member jurisdictions have issued specific guidance and requirements on stress testing of CIS. For examples, the July 2016 SFC circular on liquidity risk management, the March 2017 ASIC Regulatory Guide 259 on risk management systems of responsible entities, the August 2016 AMF consultation on use of stress tests and the November 2016 Asset Management Association of China (trial) stress testing guidelines for managers of public funds.

⁴⁸ For examples, the AIFM Directive requires managers in the European Union to run periodic stress tests. Additionally, Article 40(3) Subparagraph 2 of the UCITS Implementing Directive, UCITS management companies shall, where appropriate, conduct stress tests which enable assessment of the liquidity risk of the UCITS under exceptional circumstances and the November 2016. Finally, the Asset Management Association of China (trial) stress testing guidelines for managers of public funds require public funds in Mainland China to undertaking stress testing regularly and on an ad hoc basis.

⁴⁹ For examples, the UK, Hong Kong, Australia and the Netherlands.

Given the diversity of the CIS universe in terms of strategy, size and nature of underlying investments, not all stress testing good practices are equally relevant to every CIS or responsible entity, and specific good practices may have to be modified before being applied to a CIS by a responsible entity. Responsible entities should appropriately tailor the good practices in this section before applying them to their CIS, taking into account the specific circumstances of the CIS, including its size, investment strategy, underlying assets and investor profiles; the current and expected market conditions; and the standards set out in the 2017 Recommendations; as well as the requirements and guidance issued by their local authorities.

An authority may decide to be more involved in liquidity stress testing in view of their local market conditions or other regulatory considerations and priorities.⁵⁰ Although the good practices below are intended for responsible entities, authorities may make reference to them when formulating their stress testing requirements, or to tailor the good practices to adapt to their local market conditions and regulatory approaches where appropriate.

Governance and documentation

Stress testing should be supported by strong and effective governance. Some regulators, such as the Hong Kong Securities and Futures Commission (HKSF), have put forward requirements that the performance and oversight of stress testing should be sufficiently independent from the portfolio management function. This is generally understood to mean that stress testing should be performed by the risk management function of the responsible entity, with inputs from other relevant functions such as portfolio management and trading, and that stress testing results should be reviewed by the fund board, committee or senior management responsible for liquidity risk management.

A number of regulators, such as the AMAC, the French Autorite des Marches Financiers (AMF France) and HKSF, require that the responsible entity should maintain appropriate documentation of stress testing, particularly regarding whether any actions are taken in light of the stress testing results. Some regulators also require responsible entities to be able to provide the relevant information to authorities upon request.

Design of scenarios

A number of regulators, including AMAC, AMF France and HKSF, have issued guidelines on the design of appropriate stress testing scenarios. Regulators typically require that stress test should be carried out based on normal and stressed scenarios (for example, atypical redemption requests). Scenarios could include backward-looking historical scenarios and forward looking hypothetical scenarios, and could be based on parameters calculated using statistical techniques or concrete stress events. This approach for developing stress testing scenarios is also adopted by most of the responsible entities IOSCO members discussed the issue with. Some of the concrete methods that responsible entities employ to develop stress testing scenarios are set out below in Box 14.

⁵⁰ For example, the Asset Management Association of China (AMAC) has issued trial guidelines in November 2016 in which it would produce stress testing scenarios, and require its members to perform stress testing on their CIS based on such scenarios and to report the results. In these guidelines, AMAC also set out the requirements for its members to regularly report to it the parameters and results of the entities' in-house stress testing.

Box 14: Stress testing method employed

Backward-looking scenarios

Examples of methods for constructing backward-looking historical scenarios include:

Statistical techniques

Under this method, a stressed scenario is defined by quantitative parameters calibrated based on historical data.

The parameters that define a scenario are computed using statistical techniques. The key parameters may include market turnover, bid-ask spread and redemption rates, and they may be calibrated to be consistent with certain confidence intervals (e.g. one-tailed 99% and 95%) or the maximum or minimum values observed during the historical period.

The data used for calculating the parameters are typically based on a historical period that includes episodes of significant market stress.

Concrete stress events

Under this method, actual historical stress situations are used for stress testing. The historical situations may include:

- Market-wide or economy-wide events, such as the global financial crisis that began in 2007-2008, or the European sovereign debt crisis that began in 2009.
- Events that are relevant for specific types of funds, such as the 2013 “Taper Tantrum” for bond funds, or the summer 2015 China stock market correction for funds that primarily invest in the China A-share market.
- Events that are specific to the responsible entity or the CIS, such as redemptions by the CIS’s largest investor.

Forward-looking scenarios

Responsible entities, when constructing forward-looking hypothetical scenarios, may seek to include extreme events that may plausibly happen given the latest and expected regulatory, market and technological developments.

As in the case of backward-looking historical scenarios, forward-looking hypothetical scenarios may include:

- Market-wide or economy-wide events, such as events resulting from changing behaviour of market participants (e.g. the increasing adoption of algorithmic trading) or the introduction of certain rules or regulations (e.g. the launch of circuit breaker in certain market that makes it possible for the suspension of the trading of all of a fund’s underlying assets);
- Events that are relevant for specific types of funds, such as larger-than-expected changes in interest rate that will likely cause major changes to the value and the widening of spread of the underlying assets of bond funds; and
- Events that are specific to the responsible entity or the CIS, such as expected change of redemption pattern as a result of change in CIS’s investor profile and/or responsible entity’s distribution strategies.

Various responsible entities have highlighted the difficulties in quantifying the impact of the above events. Responsible entities often extrapolate the historical relationships between these events and liquidity parameters, with necessary adjustments. They may also take into account the professional opinion of their traders or other market practitioners.

Tailoring stress testing scenarios to the CIS

Some regulators, such as ASIC, French AMF and HKSF, encourage responsible entities to tailor stress testing scenarios to ensure that they are appropriate to the CIS. Examples of how responsible entities tailor stress testing scenarios include:

- Securities traded over-the-counter may not have reliable and transparent trading data. For CIS that invest in these securities, instead of applying statistical techniques to historical trading data to construct backward-looking scenarios concerning the CIS's assets, the responsible entities often place more reliance on forward-looking hypothetical scenarios and the professional opinion of the responsible entities' traders or other market practitioners.
- Nominee holding arrangements tend to reduce responsible entities' visibility over the investor profile of a CIS. For CIS that adopt a nominee holding arrangement, various responsible entities find it impractical to construct certain forward-looking investor redemption scenarios that require granular investor profile information, such as scenarios that assume the redemption of the CIS's largest investors. As an alternative, these responsible entities may assume that the CIS faces redemption for all the units sold through a particular distributor or faces overall redemptions of a certain magnitude reflecting the possibility that a large share of its investor base will decide to redeem at the same time.
- Collateral posted by a CIS's counterparties in derivatives and securities lending transactions may affect a CIS's liquidity, such as when the counterparties are unable to meet their obligations under stressed market conditions, and that the responsible entity has to liquidate the collateral to meet the counterparties' outstanding obligations. For CIS of which collateral comprises a significant proportion of assets, various responsible entities find it useful for stress testing to also cover the collateral.

Market stress may come from multiple sources and along different dimensions, and may affect more than one CIS or responsible entity. For example, investors may exhibit abnormal behaviour during stressed market period, causing a simultaneous squeeze on both the asset and liability sides; factors such as changes in investment outlook or reputational issues may affect all CIS managed by the same responsible entity or all responsible entities specialising in a particular investment strategy. As such, some regulators, such as French AMF and HKSF, as well as various responsible entities seek to take this into account by:

- incorporating in stress testing scenarios simultaneous deterioration in multiple liquidity parameters, such as a significant decline in the liquidity of the CIS's underlying assets coupled with a significant increase in the CIS's redemptions; and
- where practical and appropriate, when conducting stress testing, considering the actions of other market participants or at the very least, other CIS under the same responsible entity's management that employ the same or similar investment strategy or analytical framework, invest in similar underlying assets, or are exposed to similar risk factors.

Regulatory guidelines and responsible entities' internal risk management policies typically require stress testing scenarios to be reviewed and updated periodically and when there are major changes, such as to the size, investment strategy, underlying assets and investor profile of a CIS, or to the market of the underlying assets. Responsible entities often take into account feedback from any real situations and adjust the assumptions used for future stress testing.

Use of stress testing results

Use of stress testing results in general

Guidelines issued by a number of regulators, such as French AMF and HKSCFC, contain explicit requirements that stress testing results should be integrated into all stages of the CIS's product life cycle, including in the product design stage when determining the dealing and distribution arrangements and asset composition, and in performing investment and liquidity risk management on an ongoing basis. Some of the key ways that stress testing results could be used include:

- to determine and assess the appropriate dealing arrangements for each CIS in light of its investment strategy and underlying assets, even under stressed scenarios;
- to consider if any adjustments to the CIS's dealing arrangements, investment strategy and underlying assets (including the holdings of liquid assets) are necessary; and
- to formulate action and contingency plans to deal with plausible stressed market conditions by the use of different liquidity risk management tools.

Determining the appropriate follow-up actions

When analysing stress testing results and determining appropriate follow-up actions in view of the stress testing results, examples of factors considered by responsible entities include:

- The risk and impact to the CIS under stressed scenarios:
 - Some responsible entities adopt the approach that, if stress testing indicates that the risk to the CIS is below a certain threshold or impact to the CIS under stressed scenario is "low," no immediate actions will be required. If the risk is around the threshold or impact is "medium," they may undertake further review to consider potential actions. If the risk is above the threshold or impact is "high," adjustments to a CIS's portfolio within specific time frame will be needed.
 - The risk and impact may be measured in terms of the size of the shortfall in liquid assets when measured against potential redemption, or the extent that the disposal of assets to meet redemption in stressed scenarios may affect the strategy and risk profile of the CIS.
- The likelihood of stress market scenarios materialising:
 - Stress testing results based on scenarios that are considered more likely to materialise are typically examined more closely and will more likely lead to immediate follow-up actions, such as portfolio adjustments.
 - Scenarios that are less likely to materialise are often dealt with through contingency planning or liquidity risk management tools.
- The availability of liquidity risk management tools and plans, and whether such tools and plans are able to address the risks.

Even if a responsible entity decides that no immediate actions are warranted in view of the stress testing results, it normally still put in place action plans regarding how it will meet a CIS's liquidity needs should any of the stressed scenarios materialise.

Stress testing frequency

Responsible entities must take into account factors relevant to the specific CIS when determining the stress testing frequency. These factors include the size, investment strategy, underlying assets and investor profile of the CIS; and the nature, complexity and resources required of the stress testing. Examples of how some responsible entities determine stress testing frequency include:

- Stress testing based on backward-looking scenarios constructed using statistical methods can often be refreshed by including new data and updating the stress testing parameters (e.g. correlations, redemption level, underlying asset liquidation time frame) in an existing model. This is often a mechanical process and should thus be performed more frequently.
- The liquidity profile and risk of a fund will likely be more volatile if it has a more rapidly changing portfolio or investor base, or if the market of its underlying assets is more volatile. Stress testing should be performed more frequently for such funds.
- On the other hand, stress testing based on forward-looking hypothetical scenarios may require the assessment of the specific regulatory, market and technological factors affecting a CIS. This may require more extensive analysis, as well as inputs from multiple business functions and senior management. Such stress testing may thus be performed less frequently.

In addition to regular stress testing above, various responsible entities perform stress testing in anticipation of reasonably foreseeable stressed situations to which the CIS would be sensitive.

Appendix 1 – Availability of liquidity management tools by jurisdiction

Table 9: Availability of policy tools to manage internal fund liquidity in selected jurisdiction

Availability of tools																											
Tools ↓	AU ¹	BE ¹⁶	BR ²	CA ³	CN	FR ⁴	DE ⁵	HK ¹⁵	IN	IR	IS	IT ⁶	JP	JE	LU	MX	NL	PO ⁷	RO ¹⁷	SG ⁸	SA ⁹	ES ¹⁰	CH ¹¹	TU ¹²	UK ¹³	US ¹⁴	
Swing pricing						✓		✓		✓		✓		✓	✓	✓	✓			✓			✓		✓		✓
Redemption fees	✓		✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Anti-dilution levy						✓		✓		✓	✓	✓	✓	✓	✓		✓		✓	✓					✓		✓
Redemption gates	✓		✓			✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
Redemptions in kind	✓		✓	✓		✓	✓	✓		✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			✓	✓
Side pockets	✓		✓		✓	✓		✓		✓		✓		✓	✓	✓				✓	✓	✓				✓	✓
Suspension of redemptions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Source: reproduced and updated from the IOSCO Liquidity tools report 2015

Notes:

1. Applies to retail funds and alternative funds including closed-end funds. Limits on illiquid investments apply where the fund offers ongoing redemptions.
2. Maturity restrictions apply only to MMFs; Buybacks are available for specific types of funds, in particular a recently created type that invests in equity of small and medium companies.
3. In Canada, some of the tools available are not applicable to closed-end funds. Maturity restrictions apply to MMFs.
4. Maturity restrictions apply only to MMFs. Some of the tools mention such as the limits on asset concentration may vary depending on the type of funds considered.
5. Minimum investment periods and liquidity buffers apply to open-ended real estate funds. For funds with more than one investor, redemptions in kind are subject to the conditions of vertical slicing (i.e. the redeemed assets have to mirror proportionally the composition of the fund's portfolio).
6. In the case of Italy, gates and side pockets can only be used in other (non-retail) funds, as long as the interests of the funds' participants are upheld.
7. In the case of Portugal, redemption gates apply only in the case of real estate CIS.
8. Gates and side pockets have been observed in alternative investment funds.
9. Liquidity buffers and maturity restrictions only apply to Money Market Funds in South Africa.
10. Gates and timing restrictions between subscriptions and redemptions only apply to Alternative investment funds in Spain.
11. Depending on the type of fund and its intended investment strategy, FINMA disposes of different other liquidity management tools which apply on a case by case basis.
12. In Turkey, the general rule is to invest only in exchange traded products. On the other hand specific exemptions exist, such as OTC derivatives, OTC repos up to 10% of the fund's NAV
13. In the UK, gates are allowed for non-retail funds only, however deferred redemption may be used for retail funds.
14. In the case of the USA, the responses above are generally applicable to open-end funds. However, the use of side pockets is generally applicable only to hedge funds and not open-end or closed-end funds. Responses corresponding to suspension of redemptions, redemption fees, redemption gates and redemptions-in-kind are generally not applicable to closed-end funds because they do not generally offer redemption privileges.
15. In Hong Kong, tools are generally available provided that clear disclosure has been made in the funds' offering documents. Approval from the regulator is required for the use of side pockets.
16. Applies to retail funds, other type of funds can contractually determine the policy tools available.
17. In Romania, maturity restrictions apply only to MMFs. Illiquid asset investments generally refer to unlisted companies.