MACROPRUDENTIAL TOOLS FOR OPEN-ENDED INVESTMENT FUNDS

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COMISIÓN NACIONAL DEL MERCADO DE VALORES

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Abstract

Over financial stability concerns, supervisors and regulators have turned their attention to non-bank financial institutions and activities because of the importance they have taken on in recent years. Discussions have started globally over whether macroprudential policy should be conducted in the investment fund sector. The most important risks that these institutions may pose to financial stability mainly arise from the liquidity mismatch between their portfolio assets and their redemption terms, or because they are highly leveraged. There are many different macroprudential tools available in this area which vary greatly across jurisdictions. Important international initiatives are currently under way, driven by the International Organization of Securities Commissions and the Financial Stability Board, aimed at promoting and standardising the available toolkit and how it is used. This article describes the existing tools in Spain, detailing their aim and possible actions by the regulator. It also compares the situation in Spain with other European jurisdictions, revealing that data and risk management tools are widely available in Spain.

Keywords: investment funds, liquidity management tools, financial stability, macroprudential policy.

1 Introduction

Macroprudential policy, which aims to preserve the stability of the financial system as a whole, was first developed for the banking sector. Recent years have seen its scope extended to include other sectors of the financial system, with attention being paid to the potential risks to financial stability from the non-banking sector. This shift was prompted by the last global financial crisis, which revealed, among other aspects, how under certain circumstances other actors and activities outside the banking sphere can cause systemic risk. In addition to the now traditional macroprudential policy dimensions, such as the size of participants or interconnections, the latest developments also consider other variables, e.g. the lack of transparency, matters related to asymmetric information and moral hazard.[1]

Globally, the non-bank financial intermediation (NBFI) sector has grown significantly in recent years, rising from €72 trillion in 2008 to €212 trillion at end-2021.[2] The NBFI sector currently accounts for approximately half the global financial system, and the banking sector for the other half. Its share of the financial system is smaller in Spain (25.4%).

1 Comisión Nacional del Mercado de Valores (CNMV, 2019).

2 According to the Financial Stability Board (FSB, 2022a), which comprises the 19 euro area countries plus a further 21 jurisdictions. NBFI is understood in its broad sense, including all financial institutions except central banks, banks and public financial institutions.

By definition, NBFI covers a wide range of market participants with very different levels of risk and regulation. It comprises spheres such as investment funds, private funding and venture capital, insurance and commodity funds, among others. Open-ended investment funds are one of the most regulated NBFI participants, insofar as they are subject to multiple rules from a standards of conduct and investor protection standpoint. The investment fund sector has boomed in recent years. Further, recent episodes, such as the high redemptions[3] on some funds at the onset of the COVID-19 crisis and the United Kingdom's liability-driven investment crisis in December 2022, have exposed investment funds' potential to transmit risks to the financial system. The main international – the Financial Stability Board (FSB) and the International Organization of Securities Commissions (IOSCO) – and European – the European Systemic Risk Board and the European Securities and Markets Authority (ESMA) – fora and committees have analysed the potential sources of risks to financial stability stemming from investment fund operations and the most appropriate tools to mitigate these risks.

The starting point for all macroprudential policy design should be the availability of adequate, high-quality data. According to FSB (2022b), which presents the Spanish system for reporting data to the regulator as an example of good practice, Spain excels on this front. The volume of data available to the CNMV has for years enabled it to perform, among other tasks, different recurring analyses of these undertakings' liquidity risk and leverage risk, which are the most concerning from a financial stability perspective. The CNMV, through its Supervision Department, closely monitors those funds that invest in less liquid assets. The CNMV also publishes an annual report on NBFI in Spain, which describes the latest trends of the institutions pursuing such activities and assesses the sector's most important risks. In the case of open-ended investment funds,[4] liquidity risk, credit risk, maturity transformation risk and leverage risk are all analysed.

The main objective of macroprudential policy in the investment fund sector is to boost the funds' resilience to episodes of stress and make them less likely to transmit risks to the rest of the financial system. Microprudential supervision focuses on solvency and the risks taken by individual institutions (investment funds and/or management companies). Meanwhile, macroprudential policy complements it and should be designed from a broad and system-wide perspective, considering the effects of the collective activity of investment funds as a whole or of certain groups of them.

Ex ante measures, aimed at mitigating vulnerabilities before a stress event emerges, are the most aligned with macroprudential policy's main objective. However, ex post interventions, geared towards limiting the severity, duration and impact of the crisis once triggered, should also be considered.

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3 See the CNMV's publication series Non-banking financial intermediation monitor for a detailed analysis of this sector's size and associated risks.

4 Except for equity funds and hedge funds, which do not fall within the FSB's definition of funds pursuing credit intermediation activities. In any event, all open-ended investment funds are subject to frequent risk analyses by the CNMV's Supervision Department. The reports containing the conclusions from these analyses are not publicly available.

The investment fund regulatory framework is designed with the main aim of protecting investors. Many of the rules in the European regulations, in addition to others specific to Spanish legislation, seek this goal. Some examples of these rules include: reporting requirements, rules on eligible assets and risk diversification, policies to manage liquidity risk and conflicts of interest, and asset custody and oversight requirements for custodians. They are largely macroprudential rules that limit the risks investment funds can take on individually. When applied across the board to the investment fund sector, they ultimately have a macroprudential impact.

Developing a sound macroprudential policy requires that a comprehensive and global view of systemic risk be incorporated into the regulatory framework. This can be achieved both by using the existing microprudential tools and measures for macroprudential purposes and by designing new ones. Further, it does not seem appropriate that their implementation should depend solely on management companies. Supervisory authorities are better placed to assess the risks of market participants' collective action and the interconnections between the different financial system institutions. Authorities therefore play a pivotal role in the implementation of macroprudential policy, both through ex ante monitoring of risks and through intervention when deemed necessary.

This article discusses, from a Spanish perspective, the potential risks that investment fund activity can transmit to the financial system and the existing tools to tackle these risks, placing particular emphasis on the availability and use of liquidity management tools. As mentioned above, these tools were in most cases established to protect investors. However, when applied to management companies and open-ended investment funds as a whole, the tools act on the potential risks that they can transmit to the overall financial system. Section 2 sets out these potential risks. Section 3 takes an in-depth look at the tools available in Spain that may be used for macroprudential purposes. To do so, we describe how they work and the risk they are intended to mitigate, distinguishing between those available to fund managers themselves and those which the CNMV can activate directly. In the investment fund sphere, more tools are available to both management companies and the CNMV than in other reference European jurisdictions. In recent years, Spanish legislation has introduced new tools the use of which has been encouraged, both at times of market turmoil and in calmer periods. Section 4 describes the most important European and international initiatives, focused mostly on liquidity management tools and the availability of tools in other European jurisdictions. Lastly, Section 5 presents the conclusions and the pending challenges.

2 Potential risks of open-ended investment fund activity

Investment funds are just a portfolio of financial/non-financial assets belonging to a group of investors. When investing in an investment fund, investors buy a unit in this portfolio that is proportional to their share of the fund's net asset value (NAV). The value of these units will be affected by fluctuations in the market price of the securities in the portfolio. Market risk is thus absorbed by the fund and, ultimately, by its unit-holders, as the units' value fluctuates depending on the market closing prices of each asset in the portfolio. Beyond market risk, investment fund activity and its impact on the financial system are mainly subject to two types of risk: liquidity risk and leverage risk. Both can exacerbate market movements and may affect financial stability.

2.1 Liquidity mismatch between portfolio assets and redemption frequency

Liquidity mismatch risk is defined as the difference between the time that elapses between investors requesting a redemption and receiving the payment for their units and the time that the fund manager needs to realise the investments for the orderly payment of such redemptions. This mismatch will be greater in those funds that offer their investors daily redemptions while investing a considerable portion of their portfolio in assets that take several days to be sold on the market at a price that does not deviate substantially from the price incorporated into the units' valuation.

An investment fund's asset valuation procedures are particularly important for ensuring that the price at which unit-holders buy and sell their units reliably reflects the fair value of their share of the fund's portfolio. If the valuation does not adjust appropriately to the market situation, as may be the case with less liquid assets, drops in prices may confer an advantage on redeeming unit-holders, potentially encouraging higher redemptions than would occur were the unit-holder to invest directly in the assets. In other words, in situations of falling asset prices, a poor asset valuation policy (closely linked to liquidity risk management) not only has investor protection implications, but also financial stability ones, insofar as it may encourage redemptions and exacerbate such price drops.

In market liquidity crises, exacerbated redemption dynamics may arise at funds with liquidity mismatches. Such dynamics are triggered by the first-mover advantage phenomenon, i.e. by the advantage those investors redeeming first gain by not assuming the cost associated with the illiquidity of the assets in the portfolio, as the NAV when they redeem does not include such cost. The investment fund and the remaining unit-holders will bear that cost when the assets are sold.

This risk is mitigated by levying the cost of such illiquidity on redeeming investors (see Section 3.1). Portfolio assets are typically valued at the mid-price. However, when the fund sells some assets it will get the bid price from the dealer. The bid/ask spread reflects the transaction cost and incorporates the illiquidity cost. When liquidity decreases, this spread widens. This warrants the creation of mechanisms aimed at passing on this transaction cost (i.e. the cost that the fund will have to bear when unwinding the investments required to meet the redemptions) to all redeeming investors.

First-mover advantage may also induce fund managers to meet redemption requests by selling the most liquid assets in the portfolio (rather than proportionally selling assets with differing degrees of liquidity). This can lead to those less liquid assets ultimately accounting for a greater share of the fund's remaining portfolio and, therefore, to the investors remaining in the fund being subject to higher liquidity risk.

In both cases, if liquidity risk is not managed properly investors will have an incentive to redeem early when market liquidity is tight, which may exacerbate the liquidity problems and further heighten the risk on the market.

2.2 Leverage risk

Leverage is a strategy that enables institutions to increase their exposure above their capital. If used excessively, it can put both the over-leveraged institution itself and the rest of the system at risk. The risk of excessive leverage, which is also present in the banking sphere, has been at the root of some crisis periods in the past. In general, there are two ways to increase leverage: via debt (financial leverage) and derivatives (synthetic leverage).

Excessive use of leverage amplifies existing risks such as liquidity and market risk. Using derivatives to obtain synthetic leverage can give rise to sizeable margin requirements when asset prices fall significantly and prompt forced sales to meet those margins. The process may ultimately trigger negative price spirals and increase the losses stemming from market risk. Further, the use of derivatives increases counterparty risk and contagion risk (through interconnections with other market participants).

Leverage is regulated in the legislation on investment funds from an investor protection standpoint, insofar as it makes the investment product more complex and magnifies exposure, particularly for retail investors who may not fully understand the effects and the actual risk taken on. In any event, its financial stability implications should also be analysed in order to assess the suitability of the current tools, which are detailed in the following section.

3 Macroprudential tools for the investment fund sector in Spain

3.1 Availability in the regulations and possibility of activation

There are quite a few tools and measures for investment funds in Spain that could potentially be used for macroprudential purposes. Table 1 lists the existing measures by the risk they aim to mitigate, their intermediate objective, their possible activation by the management company or the CNMV and even whether CNMV authorisation is required to activate some of them. Most of them relate to liquidity mismatches. These tools, as we will see in the following section, are being discussed and developed at international level.

As stated above, most of these measures were adopted to protect investors, i.e. while they have macroprudential applications, they were initially conceived for microeconomic purposes.

Table 1

Tools available under Spanish legislation for collective investment undertakings

Tool	Intermediate objective	Available under Spanish legislation	CNMV authorisation required	Possibility of activation by the CNMV	Observations
Redemption fee	Liquidity mismatches and maturity	Yes	No	No	Activation entitles unit-holders to depart
Redemption gate	Liquidity mismatches and maturity	Yes	No	No	For alternative and real estate investment funds
Redemption in kind	Liquidity mismatches and maturity	Yes	Yes	No	Cannot be used under normal circumstances
Side pockets	Liquidity mismatches and maturity	Yes	Yes	No	Cannot be used under normal circumstances. Not available for real estate funds
Redemption suspension	Liquidity mismatches and maturity	Yes	Yes	Yes	Cannot be used under normal circumstances
					Real estate funds can suspend redemptions for up to two years. No limits for other funds
Valuation at bid/ask price	Liquidity mismatches and maturity	Yes (*)		No	Included in Technical Guide 1/2022
Swing pricing	Liquidity mismatches and maturity	Yes (*)	No	No	Included in Technical Guide 1/2022
Partial redemptions	Liquidity mismatches and maturity	Yes	No	No	
Asset concentration limits	Excessive concentration of risks in certain assets or sectors	Yes			Regulatory requirement
Limits on the use of derivatives	Excessive leverage	Yes			Regulatory requirement
Limits on leverage	Excessive leverage	Yes		Partial	Regulatory requirement for UCITS. The CNMV can establish specific limits for alternative funds
Liquidity ratio	Liquidity mismatches and maturity	Yes			Regulatory requirement
Liquidity management policies	Liquidity mismatches and maturity	Yes			Regulatory requirement
Strengthening of liquidity	Liquidity mismatches and maturity	Yes		Yes	On financial stability grounds, the CNMV may temporarily request an institution or set of institutions to increase its percentage of investment in highly liquid assets (this tool can be applied to open-ended and closed-ended CIUs and venture capital firms)
Notice periods	Liquidity mismatches and maturity	Yes	Yes	Yes	Possibility of establishing notice periods for redemptions not subject to the notice, minimum amount and prior amendment of the management rules requirements that are ordinarily applicable. These periods may be established by the management company or by the CNMV

SOURCE: CNMV.

(*) Not expressly envisaged in the legislation, but referred to in Technical Guide 1/2022 on the management and control of the liquidity of CISs (see the following section).

Logically, the set of tools is not static; the tools have gradually been adapted to meet the new needs identified. Specifically, in recent years two new tools that the CNMV can activate have been added: the possibility of temporarily requiring an institution or a set of institutions to meet ratios for investment in highly liquid assets;[5] and the possibility of establishing notice periods even if they are not stipulated in the fund's management rules, which was incorporated at the height of the pandemic crisis.[6]

It is important to highlight that the table includes two major groups of tools: the first is, in reality, a set of structural measures laid down in the legislation, aimed at limiting the risks that open-ended investment funds can take on;[7] the second comprises those liquidity management tools available under Spain's regulatory framework. When managing investment fund assets, management companies are required to observe all legal provisions, including those limiting risks. They are also responsible for establishing and applying an appropriate liquidity risk management policy that shall include, among others, the use of liquidity management tools. The CNMV has a dual role: it supervises management companies' compliance with the risk limits established in the legislation and correct application of the liquidity management tools; and, in the name of financial stability, in exceptional circumstances it can activate, or urge management companies to implement, some of these tools. As we will see in the following section, at a given point in time the CNMV can activate a comparatively higher number of measures than may be activated in the rest of the reference European jurisdictions.

More data on funds' activity is also available to the regulator.[8] The CNMV receives highly detailed monthly information on the funds' portfolios, their valuation, the purchases and sales during the month, the liquidity held in the depositary's account or in other highly liquid assets, in addition to operations with derivatives. With regard to funds' liabilities, the regulator receives information on the number of units subscribed and redeemed each day, unit concentration and type of investors. This information enables the CNMV to fulfil its role of supervising compliance with the limits established in the legislation, including analysing the risk taken on by each fund individually – such as liquidity risk and leverage risk – and identifying those funds taking on greater risk. Management companies' internal liquidity management procedures are monitored closely and sometimes they may be urged to adopt certain liquidity management measures and tools. These supervisory actions fall within the CNMV's investor protection mandate. However, when conducted across the board on all investment funds, they ultimately have a macroprudential impact, by preventing ex ante the build-up of risks in the sector.

5 Royal Decree-Law 22/2018 of 14 December 2018, establishing macroprudential tools.

6 See Royal Decree-Law 11/2020 of 31 March 2020, adopting urgent complementary social and economic measures to address COVID-19.

7 There is a category of hedge funds with a more flexible set of rules that is not subject to these limits. It accounts for a very negligible share of the open-ended investment fund sector in Spain (around 1%).

8 See FSB (2022b). The model for reporting data to the Spanish regulator (the CNMV) is presented as an example of good practice, as it is one of the most comprehensive of those assessed.

The tools available for funds domiciled in Spain[9] (see Table 1) are briefly described below:

1 *Anti-dilution tools.* Their aim is to pass on to redeeming investors (in some cases also to subscribing investors) the transaction and illiquidity cost that the fund will bear upon the asset sale/purchase stemming from the redemptions/subscriptions. The aim of these measures is to mitigate the risk of liquidity mismatch. Three types of tools with this purpose can currently be applied in Spain:

— *Subscription/redemption fee.* A fee applied to the amount redeemed/subscribed by the unit-holder. It is paid into the fund's account to offset the possible transaction cost that the fund will bear on the sale (or purchase) of assets necessary to meet the redemptions (or subscriptions). This fee is a fixed percentage, capped at maximum of 5% of the redeemed amount).

— *Swing pricing.* This refers to a process for adjusting a fund's NAV upwards (for subscriptions) and downwards (for redemptions) by applying a swing factor that reflects the effect of the transaction costs the fund will bear as a result of the asset purchases and sales stemming from these subscriptions and redemptions. This mechanism is normally activated when net subscriptions or redemptions exceed a certain threshold. Management companies shall establish in an internal procedure the criteria, swing factors and thresholds to be applied to each fund, following the recommendations in CNMV Technical Guide 1/2022 on the management and control of the liquidity of CISs.

— *Valuation at bid or ask prices.* This consists of incorporating into the management company's internal procedures the possibility of modifying the valuation criteria, switching from using the mid-price to using the bid or ask price, depending on the direction of net fund flows (bid price in the case of net redemptions and ask price in that of net subscriptions). As with swing pricing, the mechanism can be tied to a threshold of daily net redemptions or subscriptions, taking into account the characteristics of the fund and the criteria established in CNMV Technical Guide 1/2022.

2 *Tools limiting or restricting redemption.* They seek to mitigate the risk of liquidity mismatch.

— *Redemption gates.* These are limits on the maximum redemptions permitted on each redemption date. For example, if a gate of 5% of NAV is set, redemptions requested below that threshold are met by the fund normally. Above that threshold, orders will be met pro rata up to 5% of the NAV, and the excess shall

9 Their use is governed by Collective Investment Institutions Law 35/2003 of 4 November 2003, its implementing regulations (Royal Decree 1082/2012) and CNMV Technical Guide 1/2022 on the management and control of the liquidity of CISs. Other funds marketed, but not domiciled, in Spain may apply the tools available in the home jurisdiction.

be left pending for the following redemption date. In Spain, gates can currently be imposed on real estate funds and hedge funds.

— *In-kind redemption.* This consists of meeting the redemption requests by allocating the securities in the fund's portfolio, rather than by cash payment. The fund thus avoids having to sell the securities in the event they are illiquid.

— *Side pockets.* These are vehicles created to segregate illiquid assets from an investment fund. The unit-holders of this vehicle will be the same as the original fund, and they will be assigned units in it equivalent to their share in the original fund at the point of segregation. The purpose of this mechanism is to segregate the illiquid assets so as to realise them in the future, when market conditions permit. Meanwhile, the original fund will hold the remaining liquid assets and continue with its normal activity, accepting subscriptions and redemptions as normal.

— *Redemption suspensions.* Management companies may, in exceptional circumstances, temporarily suspend fund subscriptions and redemptions when it is impossible to determine the fair value of the units or on other force majeure grounds, and always in the unit-holders' interest.

— *Partial redemption suspensions.* This mechanism has a very similar effect to the side pockets, but it can be more nimbly implemented. It can be used when market trading is suspended for some of the portfolio assets. In these cases, units will be subscribed and redeemed in cash in proportion to the percentage of the unit price that does not correspond to the suspended securities, with the difference being made up when trading resumes, having regard to the market price of the first day it takes place.

3 *Tools providing additional temporary flexibility for meeting redemptions.* These tools also mitigate the risk of liquidity mismatch.

— *Notice periods.* Unit-holders are required to give notice of their intention to redeem a specified time in advance of the redemption date. This gives the management company more time to disinvest in an orderly manner the assets needed to cover the redemption payment. Spanish legislation envisages a general notice period of up to ten days from the redemption date for redemptions from a single unit-holder exceeding €300,000. As mentioned above, during the COVID-19 crisis the Collective Investment Institutions Law was amended to provide for a more flexible notice regime in exceptional situations, allowing the management company to set a notice period of any length for any redemption amount. It also empowers the CNMV to direct management companies to require such notice.

— *Longer settlement period for redemptions.* Redemption orders are usually settled within a maximum of three working days from the reference date. This period may be extended to up to five days in exceptional situations. In any event, the unit redemption price to be paid to the unit-holder will be that corresponding to the redemption request date, unlike when there is a notice period, where redemptions are settled at the unit redemption price on the date on which the notice period ends.

4 *Structural measures included in the collective investment undertaking (CIU) legislation in Spain.* In terms of assets, 99% of all open-ended CIUs domiciled in Spain are harmonised (i.e. they are subject to the provisions of the Directive on undertakings for collective investments in transferable securities (UCITS))[10] or else they are "quasi-UCITS".[11] In practice this means that they must all comply[12] with the UCITS requirements in terms of liquidity, eligible assets, indebtedness and maximum synthetic leverage. These requirements limit the risk that investment funds may individually assume, helping to mitigate liquidity, leverage and contagion risks globally in the investment fund sector. The main requirements are as follows:

— *Liquidity requirements.* Financial investment funds must invest in assets admitted to trading on a regulated market or a multilateral trading facility. Investment in unlisted assets is capped at 10% of their total assets.

— *Liquidity management.* Management companies must have appropriate internal procedures in place to permanently monitor managed CIUs' level of liquidity risk. The following section describes the principles that this procedure must follow, as laid down in a recent CNMV guide (see Box 1).

— *Liquidity ratios.* Funds must at all times keep a sufficient level of highly liquid assets to meet redemption requests and other obligations, such as those arising from their derivatives activity. This ratio shall be at least 1% of the fund's net asset value. In order to protect investors or avoid systemic risk, the CNMV may also require certain management companies or investment funds to increase the liquid assets in their portfolio.

— *Risk diversification.* The UCITS Directive sets maximum investment ratios in securities issued by the same body.

— *Limits on indebtedness.* Investment funds may only resort to borrowing on a temporary basis, to meet transitory liquidity needs and for no more than 10% of their assets.

10 The UCITS legislation is a set of harmonised European rules on, inter alia, eligible assets, diversification requirements and different risk limits that CIUs authorised as UCITS must observe. These rules seek to afford a high level of protection to retail investors investing in these institutions.

11 Although this is not an official designation, this term refers to those funds which, under Article 72 of the Regulation implementing the Collective Investment Institutions Law, are afforded some additional flexibility compared with harmonised CIUs or UCITS.

12 Quasi-UCITS CIUs are exempt from a very small number of UCITS Directive requirements. However, this flexibility does not result in substantially different risks from those of harmonised CIUs.

Box 1

CNMV TECHNICAL GUIDE 1/2022 ON THE MANAGEMENT AND CONTROL OF THE LIQUIDITY OF COLLECTIVE INVESTMENT SCHEMES (CISS)

The legislation described in the previous section of the main text is complemented by the supervisory activity of the Spanish National Securities Market Commission (CNMV by its Spanish abbreviation) and the recommendations it has issued to institutions over the years. These supervisory criteria are included in Technical Guide 1/2022 on the management and control of the liquidity of collective investment schemes (CISs),[1] approved by the CNMV at end-January 2022. In addition to unifying supervisory criteria in recent years, this initiative also took into account the outcome of recent supervisory actions carried out across Europe (such as the Common Supervisory Action carried out by the European Securities and Markets Authority in 2020).

In particular, the technical guide lays down the content that CIS management companies should include to ensure that their CISs' liquidity risk is properly monitored and managed, with the aim of avoiding adverse effects on, and conflicts of interest among, investors. Specifically, the guide lists:

— The analyses to be conducted and limits to be borne in mind in the design stage for each CIS and the checks that should be performed prior to any investment.

— The recurring analyses and controls needed to ensure that the liquidity profiles of each CIS's assets and liabilities are properly aligned. The slicing approach, whereby liquid and less liquid assets are sold in the same proportion, shall be used to this end within a reasonable margin. Detailed guidelines are included on the methodologies to determine the financial instruments' liquidity ratios or levels and to estimate the time horizons for sales, the scenarios relating to redemptions and other payment obligations, and the stress tests. The final wording specifies that it shall be for the management company to define the proportion of liquid and less liquid assets in the event of redemptions in the CIS.

— The different tools that may be used for properly managing CIS liquidity. In this connection, CIS management companies should envisage in their procedures the circumstances under which the different tools set out in the legislation are applicable (notice periods, temporary borrowing, partial subscriptions and redemptions, side-pockets, etc.), ensuring that they are properly implemented. They should also envisage the use of anti-dilution mechanisms (including most notably portfolio valuation at bid/ask prices and swing pricing) to avoid conflicts of interest during particularly complex market situations between subscribing or redeeming unit-holders and those who remain. The factors that should be borne in mind when designing the anti-dilution mechanisms are also listed.

— The functions of the different areas of the management company, the involvement of the Board of Directors and additional analyses of the delegation of functions.

The proposal, published at end-November 2021, to amend the Alternative Investment Fund Managers and the Undertakings for Collective Investment in Transferable Securities Directives,[2] which for the first time incorporates at EU level elements similar to those contained in this Guide for Spain, is an example of the growing attention liquidity management is receiving in the EU.

1 Available at CNMV. Technical Guides.

2 Proposal for a Directive of the European Parliament and the Council amending Directives 2011/61/EU and 2009/65/EC as regards delegation arrangements, liquidity risk management, supervisory reporting, provision of depositary and custody services and loan origination by alternative investment funds.

— *Limits to derivatives trading.* The UCITS Directive caps the exposure relating to derivative instruments to 100% of the net value of the portfolio. Counterparty risk in over-the-counter (OTC) transactions is limited to 10% of assets. Quasi-UCITS funds may exceed the 100% exposure limit provided that the derivatives are traded with the purpose of achieving a specific return objective guaranteed by a third party.

Non-harmonised CIUs (i.e. those not under the UCITS Directive) are subject to the EU's Alternative Investment Fund Managers Directive (AIFMD), which provides a more flexible framework in terms of the investments and maximum leverage permitted. In Spain, alternative investment funds (AIFs) include four categories of funds: quasi-UCITS (which, as mentioned, meet most of the UCITS requirements); hedge funds and CIUs investing in hedge funds;[13] real estate CIUs; and private equity funds.

Currently, alternative real estate CIUs and private equity funds in Spain are both closed-ended and do not present liquidity mismatch risks that may affect a large volume of unit-holders and generate effects in the financial system. Hedge funds are open-ended, although the applicable Spanish legislation allows them to use a wider range of tools to limit redemptions compared with UCITS, such as gates, longer notice periods, lower redemption frequencies and the establishment of lock-up periods during which no redemptions can be made.

In terms of leverage risk, Article 25 of the AIFMD requires national competent authorities to conduct quarterly analyses of alternative funds' leverage levels, in order to identify potential systemic risks arising from these transactions. ESMA must be notified of the outcome of these analyses at least annually, or more often if significant risks are identified. Likewise, the AIFMD empowers national authorities and ESMA to set leverage limits on individual funds or groups of alternative funds if it is detected that their leverage level may pose risks to the stability or integrity of the financial system.

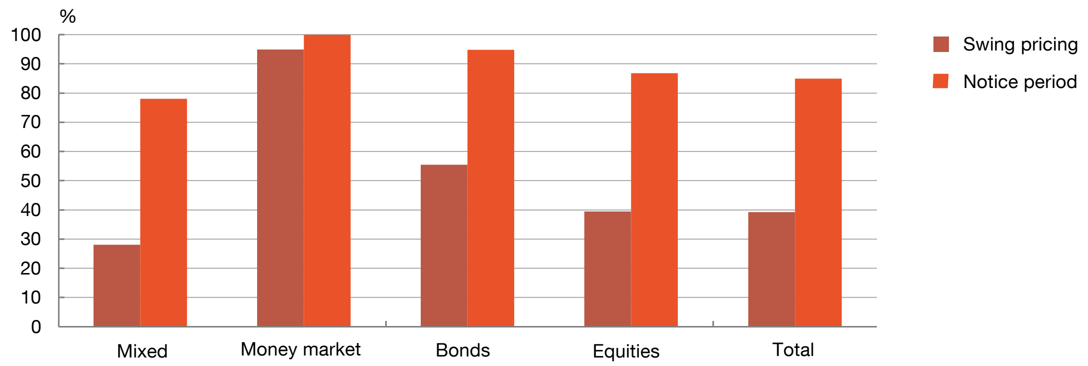
3.2 Implementation and use of tools in investment funds

On the available information, it is difficult to ascertain how much liquidity management tools are used in practice. A priori, the tools should be included in funds' prospectuses or management rules. However, management companies do not generally have to communicate when they are using a particular tool. Some tools, like valuation at bid prices or swing pricing schemes, have certain particularities. They are often activated when net redemptions exceed a certain threshold defined by the management companies. Management companies must also disclose swing pricing in their prospectuses or notify the CNMV, by means of a material event, the first time that this mechanism is set up (but not when it is effectively used).

The data suggest that the CNMV policy of promoting active use of liquidity management tools by CIUs has resulted in a significant number of investment funds (85% of the total in net asset terms) now establishing in their prospectuses the possibility of requiring advance notice of up

13 Alternative CIUs account for approximately 1% of all open-ended CIUs in Spain. The remaining 99% are UCITS and quasi-UCITS.

Chart 1
Availability of liquidity management tools for investment funds



SOURCE: CNMV.
NOTE: Percentage of NAV of each type of fund analysed.

to ten business days where redemptions exceed €300,000. Moreover, 39% of funds (in net asset terms) have established, whether in their prospectuses or by notifying a material event, the possibility of using a swing pricing mechanism. This mechanism is envisaged most often by money market and fixed-income funds. Thus, 95% of money market funds and 55% of fixed-income funds (in net asset terms) are equipped to deploy it (see Chart 1).

Information on how these tools were used in recent years has coincided with two extraordinary circumstances: the pandemic and the war between Russia and Ukraine. An analysis of this information yields the following trends:

With regard to the pandemic, significant redemptions were requested on Spanish investment funds at the onset of the pandemic, particularly the second half of March, accounting on aggregate for 2% of their assets. In subsequent months, with a somewhat irregular pattern, funds recovered part of these fund outflows, such that net aggregate redemptions between March and November were estimated at 1.7% of assets. The supervisory work conducted by the CNMV did not identify any cases where such redemptions were made with difficulties. In fact, no Spanish funds had to activate any extraordinary liquidity measures, such as suspension of redemptions or side pockets. However, five funds had to resort to partial redemptions.[14] These are similar to side pockets, but their implementation is more agile. As explained above, with this tool only part of the fund is affected by the suspension. Under Spanish legislation, management companies must activate this measure when the proportion of assets whose trading has been suspended represents more than 5% of the undertaking's portfolio, although it may also be activated below this threshold at the discretion of the management company. The largest fund affected by a partial suspension of redemptions was a fund of funds with total assets of €420 million, which had 7% of its assets invested in a Luxembourg investment fund that suspended redemptions and stopped calculating the value of its units. In this case,

14 See the 2020 NBFI monitor and the Technical Guide on the management and control of the liquidity of collective investment schemes.

any investor wishing to make a redemption from the affected fund of funds would receive a partial redemption of 93% of the price of the redeemed units. Upon termination of the suspension of the underlying fund, investors would receive the rest of the redemption, based on the fund's valuation.

This same mechanism was adopted by four other smaller funds (with combined assets of €19 million). One of them was also a fund of funds affected by redemptions being suspended at one of the underlying funds, while the rest had investments in high-yield bonds. Two of them were significantly affected by a high level of uncertainty surrounding asset valuation and by some investments becoming less liquid. In these cases, these bonds accounted for less than 6% of the fund's assets.

The CNMV significantly strengthened its coordination with management companies during the pandemic, encouraging them to use, where appropriate, the available liquidity management tools. In particular, it strongly recommended using mechanisms to prevent the increase in redemptions from negatively affecting unit-holders who remained in the fund (also known as anti-dilution mechanisms). One of the most commonly proposed mechanisms was the valuation at bid prices of assets, to ensure that the price paid to redeeming investors would be in line with the price that the fund would obtain from selling the assets. Another widely recommended mechanism was swing pricing, which also helped to pass part of the transaction costs on to redeeming investors.

In 2021, after the worst of the pandemic's impact on financial markets had passed, Spanish funds' use of liquidity management tools was much lower than in 2020. However, in 2022 the outbreak of the war in Ukraine and further episodes of market turmoil led the CNMV to step up communication with management companies once again, especially those potentially most affected by the consequences of the conflict. In 2022 Q1, with the outbreak of war and the resulting suspension of trading of assets linked to the two countries, five institutions activated their partial redemption mechanisms. The exposure of such institutions to the suspended securities ranged from 4.2% to 16.3%. Otherwise, these institutions continued to meet redemptions requests as normal.

These tools have been used during the different crisis periods with a microprudential approach, and it has not been deemed necessary to adopt or launch any tool for macroprudential reasons (i.e. because of perceived risks to the stability of the financial system).

4 European context and initiatives at the international level

4.1 Availability of tools across Europe and recent use

In describing the tools available to investment funds in Europe, a distinction should be drawn between harmonised CIUs (UCITS) and alternative funds. The use of these tools is not yet regulated at European level, although there is currently a proposal to amend the UCITS

Table 2
Tools available for funds subject to UCITS legislation

	Spain	Germany	France	Italy	Ireland	Luxembourg	Netherlands
Redemption suspension	✓	✓	✓	✓	✓	✓	✓
Gates	×	✓	✓	×	✓	✓	✓
Side pockets	✓	×	✓	×	×	✓	✓
Redemption fees	✓	✓	✓	✓	✓	✓	✓
Redemptions in kind	✓	✓	✓	×	✓	✓	✓
Swing pricing	✓	✓	✓	×	✓	✓	✓
Mandatory liquidity ratios	✓	×	×	×	✓	✓	×
Side letters	×	×	×	×	×	×	✓

SOURCES: CNMV and ESMA.

Table 3
Tools available for funds subject to the AIFMD (AIFs)

	Spain	Germany	France (a)	Italy (a)	Ireland	Luxembourg	Netherlands
Redemption suspension	✓	✓	✓	✓	✓	✓	✓
Gates	✓	✓	✓	✓	✓	✓	✓
Side pockets	✓	×	✓	✓	✓	✓	✓
Redemption fees	✓	✓	✓	✓	✓	✓	✓
Redemptions in kind	✓	✓	✓	×	✓	✓	✓
Swing pricing	✓	✓	✓	×	✓	✓	✓
Mandatory liquidity ratios	✓	✓	×	×	✓	×	×
Side letters	×	✓	×	×	✓	✓	✓

SOURCES: CNMV and ESMA.

a Availability of these tools depends on the type of AIF. Gates and side pockets are available for open-ended AIFs reserved for professional investors.

Directive and the AIFMD which will make it compulsory for management companies to be prepared to implement some of these tools if needed.

At present, European national authorities determine the framework for applying these tools. Tables 2 and 3 show that the availability of these tools varies considerably across seven EU Member States. Suspension of redemptions and the possibility of charging redemption fees are the only tools available in all of the countries analysed and for both types of funds. Other tools, such as swing pricing or redemptions in kind, are also widely available, although not in all countries. Finally, although the availability of a further set of tools is limited, it is greater in the case of alternative funds. This is the case of gates. Spain is one of the European countries with the highest number of available tools, alongside Ireland, the Netherlands and Luxembourg.

In addition, new tools have recently been incorporated that can be activated in crisis situations by the CNMV, making it one of the regulators with the most powers in this respect.[15]

Extraordinary events, such as the pandemic or the Russian invasion of Ukraine, have led to fund managers using these tools more often. In the case of the pandemic, fund managers in Europe used similar tools at times of heightened financial market turmoil (primarily redemption suspensions, swing pricing and gates), albeit heterogeneously across jurisdictions. In the case of UCITS, redemption suspensions mainly affected funds with significant exposures to corporate bonds, with aggregate assets of €22 billion in March 2020. This amount fell to 0.4 billion in June 2020. In the case of AIFs, the combined assets of institutions with redemption suspensions was €40 billion at end-June 2020, mainly from suspensions in real estate funds. In general, UCITS and AIF suspensions were not caused by the difficulty in meeting the increase in redemptions, but by problems in the valuation of some assets (in particular, corporate bonds, OTC derivatives and real estate market assets).

4.2 Recent initiatives of the Financial Stability Board and the International Organization of Securities Commissions

In a context where having appropriate liquidity risk management processes for investment funds was becoming increasingly important, the FSB published a set of recommendations in 2017 (FSB, 2017) aimed at mitigating possible risks to financial stability arising from four vulnerabilities in the field of investment management: liquidity mismatch in open-ended funds; leverage risk in investment funds; operational risk from the management activity, particularly during stress events; and, lastly, risks arising from fund managers' and investment funds' securities lending activity.

Most recommendations relate to the first vulnerability, i.e. they seek to mitigate liquidity mismatch risk. In this regard, it is recommended that open-ended funds' regulatory reporting and public disclosure be strengthened in order to make it easier to assess their liquidity risk. Furthermore, good liquidity management practices are promoted, both in the initial fund design phase and in the day-to-day operation of funds. These good practices include the use of liquidity management tools, in both normal and stressed market situations. Lastly, stress tests are promoted at fund and system level. In addition, and with the aim of putting some of these recommendations into practice, in 2018 the International Organisation of Securities Commissions (IOSCO) published a set of recommendations for liquidity risk management for CISs (IOSCO, 2018a). The degree of compliance with these two sets of recommendations was assessed in two exercises conducted in 2022.

The findings of the evaluation of the IOSCO recommendations,[16] which focused on assessing the extent to which they had been implemented in the regulatory frameworks of 14 participating

15 FSB (2022b) mentions Spain as one of the few jurisdictions where the authority (the CNMV) has the power to activate tools that go beyond suspending redemptions.

16 IOSCO (2022).

Table 4
Results of the jurisdictional regulatory review of IOSCO's liquidity recommendations

	Design phase					Day-to-day operation			Contingency planning	
	R.1	R.2	R.3	R.4	R.7	R.10	R.12	R.14	R.16	R.17
Australia	yellow	green	orange	yellow	yellow	yellow	yellow	yellow	green	green
Brazil	green	green	green	green	yellow	green	green	yellow	orange	yellow
Canada	green	green	green	green	green	yellow	yellow	yellow	green	yellow
China	green	green	green	green	green	green	green	green	green	green
France	green	green	green	green	yellow	green	green	green	green	green
Germany	green	green	green	green	green	green	green	green	green	green
India	green	green	green	yellow	yellow	green	yellow	green	yellow	green
Ireland	green	green	green	green	yellow	green	green	green	green	green
Japan	green	green	green	green	green	green	green	green	green	green
Luxembourg	green	green	green	green	green	green	green	green	green	green
Spain	green	green	green	green	green	green	green	green	green	green
Switzerland	green	green	green	green	green	orange	orange	orange	green	green
United Kingdom	green	green	green	green	green	green	green	green	green	green
United States	green	green	green	green	green	green	green	green	green	green

SOURCE: IOSCO.
NOTE: Green: fully consistent; yellow: broadly consistent; orange: partly consistent; red: not consistent.

jurisdictions accounting for 92% of the global assets under management, were published first. Ten of IOSCO's 17 recommendations were chosen for the evaluation: five (1, 2, 3, 4 and 7) referring to the initial fund design phase; three (10, 12 and 14) to the day-to-day liquidity management; and two (16 and 17) to contingency planning and the availability of liquidity management tools. Table 4 below shows that, of the 14 participating jurisdictions, seven (including Spain) were considered fully compliant with all ten recommendations assessed, including the recommendation on the availability of tools.

In the case of the FSB, over the course of 2022 a joint task force comprising members of the FSB's Standing Committee on Supervisory and Regulatory Cooperation and IOSCO's Committee 5 on Investment Management assessed the effectiveness of the FSB's recommendations.[17] 16 jurisdictions,[18] including Spain, were evaluated. The CNMV also participated in the task force. The assessed recommendations were divided into four groups depending on their objective:

(i) those geared at reducing structural liquidity mismatch risk in open-ended CIUs;

(ii) those encouraging the use of liquidity management tools;

17 FSB (2022B).

18 Australia, Brazil, Canada, China, France, Germany, Hong Kong, India, Ireland, Italy, Japan, Luxembourg, Spain, Switzerland, United Kingdom and United States.

(iii) those intended to enhance regulatory reporting and data availability to ensure that CIUs' liquidity risk can be properly monitored; and

(iv) those aimed at extending stress testing exercises at both individual CIU and macro level, taking into account CIUs' interconnections with other financial system institutions.

The evaluation work reflected that, despite the progress made in the jurisdictions analysed since the publication of the FSB recommendations in 2017, certain vulnerabilities persisted and needed to be addressed by strengthening some of the recommendations. Spain is already largely compliant with the FSB recommendations, including the aspects with room for improvement.

The FSB's final report proposes improvements in the four areas analysed:

1 *Liquidity mismatch.* With the aim of reducing this mismatch, a bucketing approach is proposed that classifies open-ended investment funds into three buckets depending on their portfolio's liquidity profile. The redemption conditions (frequency, notice periods and long settlement periods) set for each bucket should be in line with the degree of liquidity of each bucket's assets. Thus, for funds investing mainly in liquid assets, daily redemptions are considered appropriate. In the case of funds that invest a significant percentage in illiquid assets, daily redemptions are not considered appropriate unless long notice or settlement periods are established for redemptions. Lastly, for the third bucket (funds investing mainly in less liquid assets), daily redemptions are only appropriate if anti-dilution measures are applied or if notice or settlement periods are established.

2 *Liquidity management tools.* It is recommended that supervisory authorities encourage the use of these tools in their jurisdictions, particularly those with an anti-dilution effect, which seek to pass the transaction costs of subscriptions and redemptions on to the transacting investors. Swing pricing is one of the best-known measures. It is considered appropriate for regulators to issue guidelines setting out clear criteria for the proper and consistent application of these tools.

3 *Availability of data on investment funds.* The report proposes to improve the data available on liquidity mismatch and the use of liquidity management tools, and to strengthen the information provided to investors on the effects of using these tools.

4 *Stress tests.* It is recommended that stress tests and the exchange of information between jurisdictions on their design and use be encouraged.

A new joint FSB/IOSCO task force was set up to review the FSB's recommendations in line with the improvements proposed. The review was carried out as the IOSCO guidelines on the use of anti-dilution tools were being developed.[19] Work is also under way to identify which data should be included in supervisory reporting in order to monitor investment funds' liquidity risk.

As mentioned above, Spain is already largely compliant with the FSB Recommendations, including the aspects with room for improvement. In this regard, the CNMV has been receiving monthly data on fund portfolios for several years. This allows it to continuously monitor the liquidity risks incurred by investment funds. Moreover, as far as liquidity management policies and tools are concerned, the recently published Technical Guide 1/2022 on the management and control of the liquidity of collective investment schemes (see Box 1) specifies and further details the principles laid down in CNMV Circular 6/2009 on internal control of collective investment scheme management companies and investment companies.

Irrespective of the individual stress tests that fund managers must conduct to comply with the ESMA guidelines[20] and the above-mentioned CNMV guide on liquidity management, the CNMV carries out macro stress tests every six months. These exercises are carried out using a methodology initially devised by ESMA (the STRESI framework) (ESMA, 2019b) and later expanded by the CNMV (Ojea Ferreiro, 2020) to assess investment funds' resilience to significant theoretical increases in redemptions. This is a pre-emptive tool that helps identify ex ante funds that might show some vulnerability in the future.

5 Conclusions

Open-ended investment funds are attracting growing interest internationally from a financial stability standpoint. Until recently, national supervisors had regulated their activity to protect investors and avoid conflicts of interest, that is, from a primarily individual or microeconomic and investor protection perspective.

However, their growing importance in the financial system and the potential liquidity, leverage and contagion risks have sparked analyses, debates and policy proposals aimed at mitigating possible risks to the financial system overall, i.e. from a macroprudential perspective.

In the case of Spain, despite their development, investment funds account for a smaller share of the financial system than in the main world economies overall. The potential for Spanish investment funds to affect and destabilise the system is therefore more limited. Moreover, a high percentage of the open-ended investment funds in Spain are highly regulated, as they are subject to the UCITS Directive. This structurally limits the risk these institutions can take on.

In Spain there are already a great deal of tools to help measure, monitor and mitigate possible risks of investment funds at individual level. Taken together, these tools also contribute to

19 The two documents were subject to consultation from 5 July to 4 September 2023.

20 ESMA (2019a).

financial stability. The CNMV, as supervisor, also has tools to activate additional measures. In this regard, the international debate should be closely monitored. Although Spain is already largely aligned with the recommendations and guidelines proposed, it is committed to continuously striving to transfer to the Spanish legal framework any possible changes or improvements that are deemed necessary in the light of the final texts agreed internationally.

Lastly, in terms of the existing legal framework, it should be noted that although investment funds do not currently pose any important risk to financial stability and despite the large number of tools available to Spain, non-bank macroprudential policy is in its infancy and currently lacks an umbrella integrating all the elements that should be part of this policy. These elements include properly designing: (i) processes for assessing risk that take into account interconnections with the financial system as a whole and for evaluating the effectiveness and efficiency of the tools needed to achieve the desired objectives; and (ii) internal coordination and decision-making models, which are particularly important in times of heightened risk.

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