Non-bank financial intermediation in Spain

Financial year 2022

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The report on non-bank financial intermediation (NBFI) in Spain describes the most recent trends of the entities and activities that form part of the process and assesses their most important risks. It forms part of the annual publication CNMV Non-Bank Financial Intermediation Monitor: (http://cnmv.es/portal/Publicaciones/Publica- cionesGN.aspx?id=56).

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1 Executive summary

This publication describes the performance of the entities that form part of non-bank financial intermediation (NBFI) in Spain in 2022 in relation to their size and also to their degree of exposure to certain risks. In the specific case of investment funds, the most quantitatively relevant NBFI entities, information is provided on the available risk management tools, with particular emphasis on liquidity management tools and on the latest results of the stress tests which are conducted periodically on the sector:

- The size of the Spanish financial system decreased by 6.9% in 2022. Its assets stood at €5.17 trillion, nearly four times the size of GDP. All the major subsectors of the system decreased, from 2.2% in banking industry assets to 8.6% in pension funds.

- Assets of other financial institutions (OFI), the group used to delimit NBFI, decreased by 4.3% to €891 billion in 2022. The evolution of their components was uneven, since decreases were observed in the outstanding balance of securitisations and in the assets of non-monetary investment funds, and increases in the assets of finance companies and monetary funds. The most relevant OFIs continued to be investment funds (40%), captive financial institutions (31%) and securitisations (17%).

- The degree of direct interconnection between banks and OFIs continued to decline in 2022, measured on the basis of banks' rights in relation to OFIs and obligations to these entities. In both cases, this interconnection fell from 8% of total bank assets to 7%, continuing the downward trend that began in 2010. The channel for risk contagion between the two types of entities, at least through direct exposure, tends to be limited.

- The amount of the narrow measure of NBFI in Spain, in accordance with the criterion defined by the Financial Stability Board (FSB) a few years ago, decreased by 8.6% in 2022 to €300 billion. This amount accounts only for 6% of the total financial system, a proportion that has remained stable since 2014 and which is much lower than the average observed in the countries analysed annually by the FSB in its report on NBFI (close to 14%). 93% of the assets of this measure correspond to Collective Investment Schemes (CIS, 91% the previous year), followed at a distance by securitisations (3.8%), finance companies (2.4%), mutual guarantee companies (0.5%) and broker-dealers (0.3%).

- Significant vulnerabilities were not observed from the standpoint of financial stability in the institutions that form part of NBFI. Indeed, in the case of investment funds, some risk indicators related to credit and liquidity risk point to an improvement compared to 2021 data. This improvement is due mainly to the increase in public debt holdings in fund portfolios, in line with the substantial increase in the return of these assets in 2022. Investment portfolios with a higher proportion of public debt are subject, in general terms, to lower credit risk and show more favourable liquidity conditions. Furthermore, the average estimated leverage for NBFI funds continued to be very low and far from the maximum values established by the regulation. The widespread or intensive use thereof was not observed, due to which the degree of sector leverage is not currently relevant in terms of financial stability.

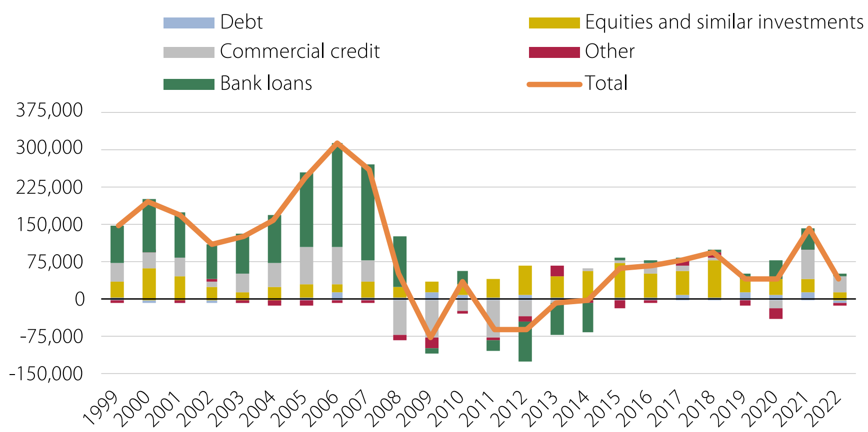
– In relation to the availability and use of liquidity management tools by Spanish investment fund managers, worth noting is: i) the high availability of tools in fund documents and ii) the appropriate use thereof when necessary, always within a framework of permanent and fluid communication between the CNMV and management companies. As regards tool availability, recent data show, for example, that 84% of investment funds (in terms of equity) establish the possibility of requesting advanced notice of up to 10 business days for redemptions exceeding €300,000 in their prospectus and that 41% establish, either in their prospectus or via significant event communication, the possibility of using a swing pricing mechanism. As regards the use of fund liquidity management tools in Spain in 2022, it should be noted that, in the context of the Russo-Ukranian war, a total of five institutions activated the partial redemption mechanism as a consequence of the exposure to assets suspended from trading. Promoting the availability and use of fund liquidity management tools, particularly those called antidilutive tools, remains a priority among international work on NBFI, namely that of the FSB and the International Organisation of Securities Commissions (IOSCO).

– Investment funds continue to show a high degree of resistance, in accordance with the results of the periodic stress tests that the CNMV conducts on these institutions. These tests simulate very severe theoretical redemption scenarios and assess how many funds can meet the theoretical increase in redemptions with the proportion of liquid assets estimated for each. The last financial year reveals that under the most severe scenario (up to 19 times more severe than that observed during the worst week of the COVID-19 crisis) only eight funds, four of which in the high-performance fixed-income category and a further four in the "Other" category, may experience difficulties in meeting said redemptions. The assets of these funds account for 0.24% of the total assets of the funds in the sample.

2 Evolution of the main indicators

In 2022, the financing of non-financial companies was affected by the sharp rise in interest rates. The general increase in the cost of financing[1] gave rise not only to a decline in the volume of resources obtained by companies (in net terms) during said financial year – which stood at €43.5 billion, compared to €142.85 billion in 2021 –, but rather to a recomposition of sources of financing. Therefore, as can be observed in Figure 1, there was a sharp drop in resources from bank loans, such that corporate financing was supported mainly by trade credit and "Shares and other equity interests". The pattern observed in 2022 is similar to that seen in previous periods of uncertainty, characterised by a moderation or decline in traditional financing obtained through banking channels and majority recourse to intercompany credit. It also confirms the less procyclical nature of market-based financing which, in the form of shares and equity interests,[2] accounted for more than 30% of the total financing[3] of these companies.

Financing of non-financial companies FIGURE 1



Source: Bank of Spain. Data in millions of euros.

1 The interest rate applied by monetary financing institutions to new credit transactions of non-financial companies grew from 1.24% in 2021 to 3.37% in 2022 and to 4.96% in 2023 (September data). Furthermore, interest rates on promissory note issues grew by 200 basis points (bp) during the year and interest rates on 10-year bond issues grew by more than 250 bp

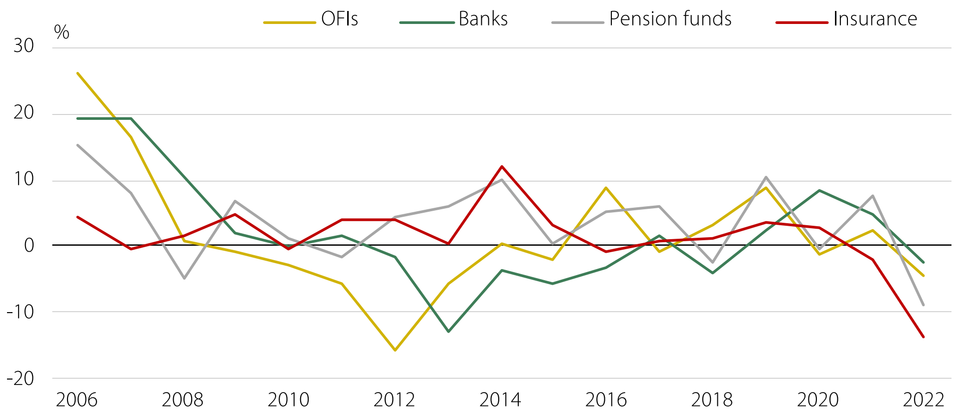
2 This line item also includes financing obtained through retained earnings of entities.

3 This is not the case of financing obtained in debt markets which, in net terms – i.e. deducting the maturities produced during the year –, was negative.

At 2022 year-end, the size of Spain's financial system stood at €5.17 trillion (nearly four times its GDP), down 6.9% on 2021. The decrease in the volume of assets of the financial system as a whole is explained by the decline in most of the major sectors, i.e.: banks, insurance companies, pension funds, financial auxiliaries and the aggregate "Other financial institutions", known as OFIs. As can be observed in Figure 2 and Table 1, the falls ranged between 2.2% in the banking sector and 8.6% in pension funds.[4] However, assets of financial auxiliaries grew by 2.3%, although they continued to account for barely 0.7% of the system's total assets.

In absolute terms, the most significant variations were observed in depositary institutions, insurance companies and OFIs. The decreases in the volume of assets of these sectors range between the €40.37 billion of OFIs and the nearly €55 billion of depositary institutions. Even so, the sector continued to be the most important of the system in quantitative terms and increased in relevance between 2021 and 2022 (growing from 52.2% to 54.8%). The next most important sector (except the assets of the central bank) was that of OFIs, with a volume of assets that accounts for nearly 17% of OFIs, with an asset volume which accounts for nearly 17% of the total system at 2022 year-end, slightly higher than the percentage for 2021. The evolution of this last sector is of particular importance, since it is the basis for delimiting NBFI.

Annual growth rate of assets in the financial system FIGURE 2



Source: Bank of Spain.

4 The assets of the central bank are excluded from the analysis, which decreased by 18.4% in 2022, since its changes are explained by monetary policy transactions.

Structure of the Spanish financial system TABLE 1

Millions of euros

	Central bank	Banks	Insurance	Pension funds	Financial auxiliaries	OFI	Total
Size in 2022 (millions)	979,501	2,835,078	279,360	147,295	37,025	891,522	5,169,782
Size in 2021 (millions)	1,200,033	2,899,352	323,191	161,241	36,187	931,895	5,551,900
% of total (2022)	18.9	54.8	5.4	2.8	0.7	17.2	100.0
Growth 2022 (%)	-18.4	-2.2	-13.6	-8.6	2.3	-4.3	-6.9

Source: CNMV and Bank of Spain.

As is customary in this series of reports, the NBFI presented follows the approach proposed by the FSD, which starts out from a broad non-bank aggregate and goes on to identify entities according to whether they perform any of five previously defined economic functions.[5] This approach differs from others, for example that of the European System Risk Board (ESRB), which treats NBFI as a broader and more generic aggregate that corresponds basically to OFIs.[6] Also, the European System Risk Board (ESRB) not only describes which entities can be considered part of NBFI, but also describes activities which are also part of the same.

Continuing with the analytical process that starts with the financial system as a whole and continues with NBFI, we describe the evolution of the non-bank aggregate of the system in Spain, formed by all financial entities except those of the banking sector (and the central bank). The asset volume of this aggregate stood at €1.35 trillion in 2022, down 6.7% on 2021. The fact that the rate of decline was similar to that of the financial system as a whole maintained the weight of the aggregate in the system stable, slightly above 26%. This stability contrasts with the aforementioned increase in weight of the banking sector (from 52.5% to 54.8%) and the decline in assets corresponding to the central bank (from 21.6% to 19%). The importance of the non-bank financial aggregate in other jurisdictions is higher than in Spain, where the degree of bankarisation of the economy remains very high. Thus, for example, the weight of the banking sector observed in the advanced economies analysed annually by the FSB in its NBFI report is 32.5%[7] on average.

OFIs, the basis of the NBFI, continue to be the most relevant entities of the non-bank aggregate, with assets amounting to €891.5 billion in 2022, 66% of said aggregate. Within the OFIs, investment funds continue to stand out for their volume of assets (with more than €353 billion), captive financial institutions (€274 billion) and securitisations (€149.5 billion). In relative terms they account for 40%, 13% and 17%, respectively, of total OFIs. The evolution of the types of entities that make up the OFIs was heterogeneous: the most significant declines took place in securitisations (-9.2%), in line with the behaviour observed in previous years, and in non-money market investment funds (-6.5%), which saw a significant decline in the market value of their portfolio in 2022.[8] A reduction in the volume of assets of captive financial institutions was also observed. On the contrary, finance

5 These functions are described and quantified in the case of Spain in Table 3 of this report.

6 See the latest available report on: esrb.nbfi202306~58b19c8627.en.pdf (europa.eu)

7 2021 data.

8 The performance of investment funds in 2022 as a whole stood at -9% and ranged between -5% of absolute return funds and -13.1% of international equity funds.

companies and money market funds (more limited in the case of the latter) grew in 2022 (see Table 2).

Structure of other financial institutions in Spain

TABLE 2

Millions of euros

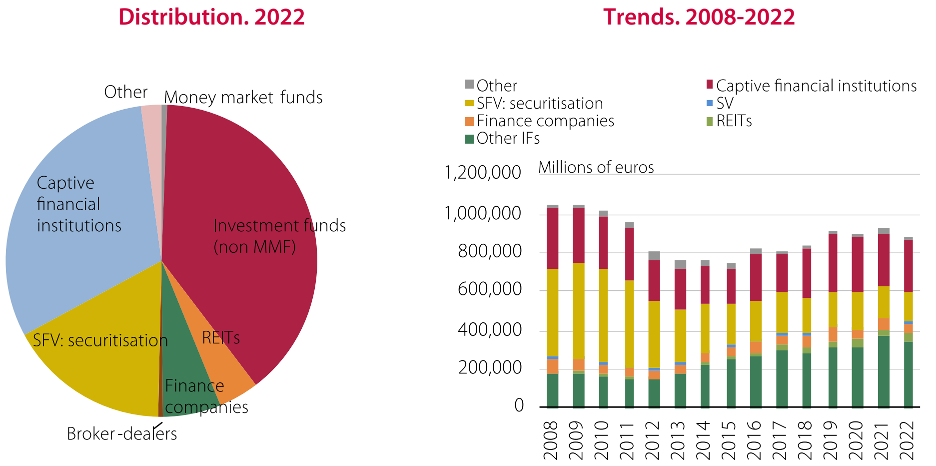
	Non-money market investment funds	Money market investment funds	Captive financial institutions	SFV: Securitisation	Broker-dealers	Finance companie	REIT	Other	Total
Size in 2022 (millions)	348,140	5,237	274,233	149,543	4,339	53,756	37,330	18,945	891,522
Size in 2021 (millions)	372,205	4,459	276,450	164,723	4,372	50,795	37,048	21,843	931,895
% of total (2022)	39.1	0.6	30.8	16.8	0.5	6.0	4.2	2.1	100.0
Growth 2022 (%)	-6.5	17.4	-0.8	-9.2	-0.8	5.8	0.8	-13.2	-4.3

Source: CNMV and Bank of Spain.

Internationally too, there is a clear preponderance of investment funds and captive financial institutions, although with a much greater difference between them than in Spain, since they account for slightly less than 50% and 20%, respectively, of aggregate OFI assets.[9] On the contrary, other entities such as broker-dealers have a greater weight than in Spain, accounting for nearly 10% of this sector, in contrast to securitisations, which barely account for 4.5%.

Distribution and trends of the OFI sector in Spain

FIGURE 3



Source: CNMV and Bank of Spain.

The OFI entities considered part of NBFI in the strict sense because they perform certain economic functions defined by the FSB (and which are described in the

9 In the case of investment funds, it should be noted that in Spain the weight of money market funds and hedge funds is much lower than in other jurisdictions (in average terms), accounting for only 0.6% and 0.5% of OFIs, respectively, while in the international sphere these percentages are approximately 6.5% and 5%.

following section) are investment funds (although not all of them),[10] structured finance vehicles (SFVs) for securitisation, broker-dealers and finance companies. In contrast, the OFIs that do not fall within the narrow measure of NBFI are captive financial institutions and money lenders, REITs,[11] central counterparties (CCP) and venture capital firms. Of the total volume of OFI assets (€891.5 billion), €405 billion correspond to entities that are not part of NBFI. From the remaining amount, more than €188 billion must be deducted for consolidation in bank balance sheets to reach the narrow measure of NBFI (which in 2022 stood at €300 billion, see Figure 8).

2.1 Credit intermediation and financing of entities included in NBFI

The aim of this section is to offer an overview of the degree of involvement of non-bank financial intermediaries in credit intermediation. Thus, both the figures corresponding to financing granted by these entities and financing received are presented. In the latter case, special emphasis is placed on the use that these entities make of wholesale financing.

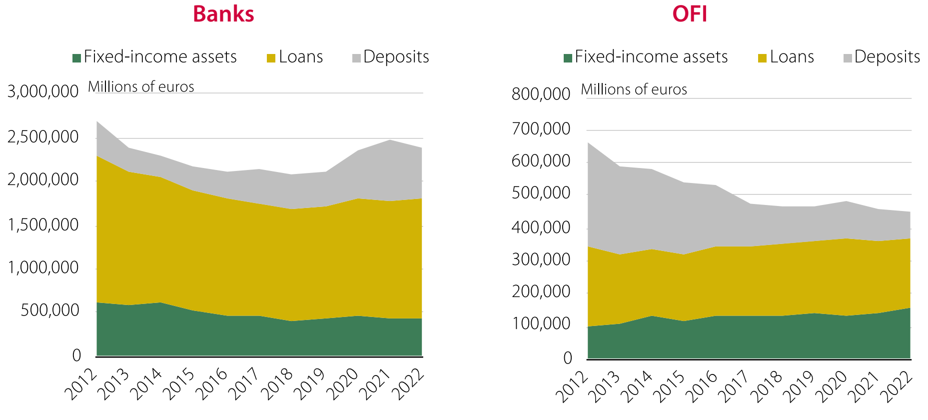
In 2022, credit intermediation of the financial system as a whole decreased by 4% to just over €3.1 trillion. A decline in this variable was observed in all sectors, although with significantly different figures, caused, at least in part, by the decrease in value of fixed-income assets. Of all the sectors, the banking sector is, by far, the subsector with the largest volume of credit assets, reaching almost €2.4 trillion in 2022 (-3.4% in one year), with loans accounting for a higher percentage (57.2%, see left-hand panel of Figure 4). In the case of OFIs, credit assets fell by only 0.9% in 2022 to €453.99 billion at year-end, 50.8% of their total financial assets. Within OFIs, the most important entities in terms of credit intermediation are investment funds and securitisation vehicles, accounting for 38.4% and 32.3% of the total, respectively. However, the composition is very different between the two types of vehicles: while in investment funds it corresponds almost entirely to fixed-income assets (more than 85%), in securitisation credit assets correspond to the loans securitised by these entities.

10 Equity funds are not part of the narrow measure of NBFI.

11 Real Estate Investment Trusts.

Trends in credit intermediation

FIGURE 4

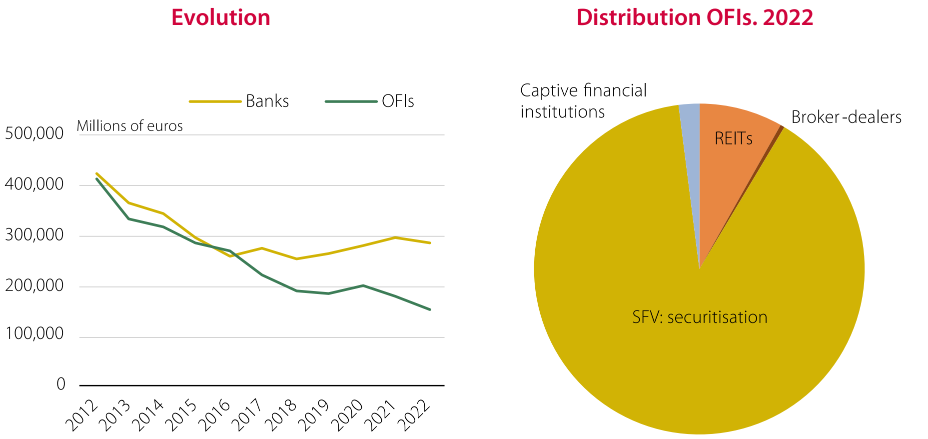


Source: CNMV and Bank of Spain.

In relation to the financing received by entities in the financial system, the figures are significantly lower than those of financing granted. Thus, total indebtedness[12] amounted to nearly €450 billion at 2022 year-end, corresponding practically to banks and OFIs. Bank indebtedness was slightly below €284 billion, whereas OFI indebtedness was higher than €163 billion (see left-hand panel of Figure 5). In both cases, this variable has been declining significantly over the last 10 or 12 years, although it exceeded €500 billion in the case of banks and €600 billion in the case of OFIs. In the case of the latter, as can be observed in the right-hand panel of Figure 4, securitisation funds are responsible for most OFI obligations, accounting for nearly 90% of the total, due to the nature of their activity.[13]

Bank and OFI liabilities

FIGURE 5



Source: CNMV and Bank of Spain.

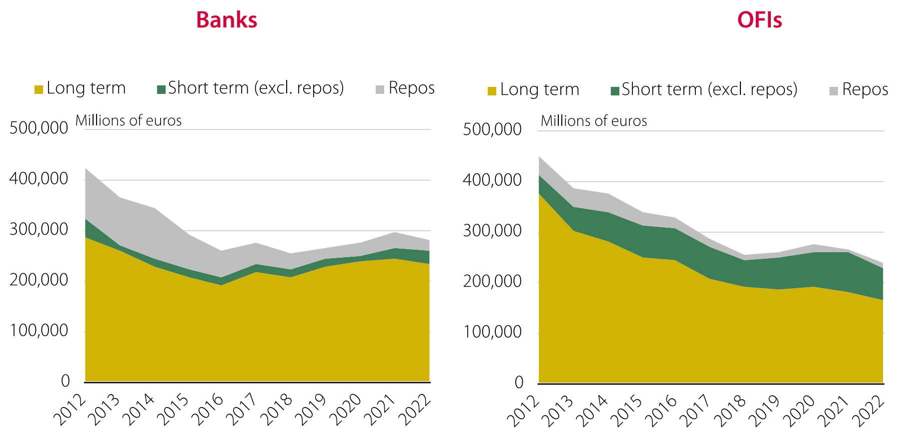
12 Indebtedness is composed of fixed-income assets, loans and repos included on the liabilities side of the balance sheet.

13 Liability consists almost entirely of securitisation bonds or promissory notes issued by the vehicle itself.

On the liabilities side, wholesale financing is one of the main sources of funds. These instruments, which are necessary for good price formation and liquidity in secondary markets, may also give rise to short-term obligations and, consequently, risks associated with the transformation of maturities and liquidity outside the banking system. Wholesale financing could also increase the interconnection between different financial institutions, thereby contributing to the procyclicality of the system.

As can be observed in the right-hand panel of Figure 6, Spanish OFIs have been decreasing their dependence on wholesale financing in recent years (with a slight upturn in 2019 and 2020), reaching just over €237 billion at the end of 2022, 26.6% of the total financial assets of these entities (28.7% in 2021), a percentage which, as might be expected, is higher than that of banks, which was just over 10%. Of the total of these obligations, long-term financing is the predominant source for OFIs, with accounting for 68.5% of total wholesale financing in 2022, a very similar percentage to that of 2021. In the case of banks, this percentage stood at 82.2% at 2022 year-end (see left-hand panel of Figure 6).

Trends in wholesale financing FIGURE 6



Source: CNMV and Bank of Spain.

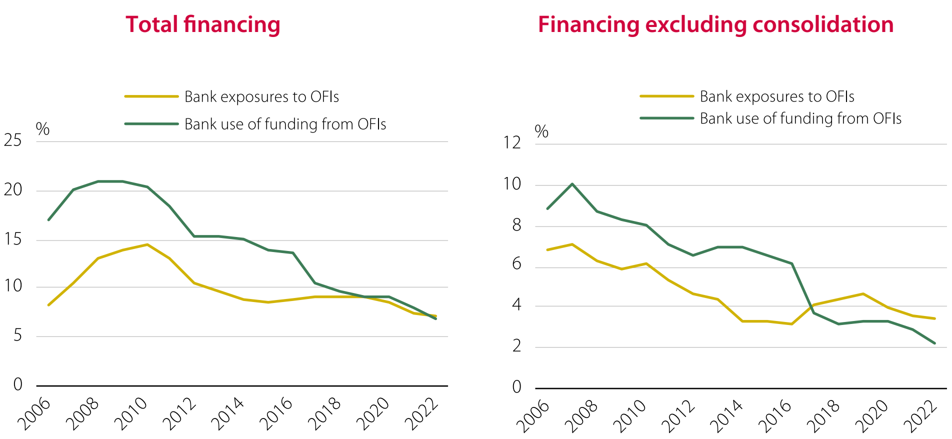
Repos deserve a separate analysis in the area of wholesale financing, as they are instruments with shorter repayment terms and, therefore, their potential risk is higher in terms of financial stability. In the case of OFIs, financing through repos has been limited and has also decreased in recent years. Thus, in 2022, repo financing was below €7 billion, just 2.9% of wholesale financing. In the case of banks, this type of repo financing accounted for 8.7% in 2022, with approximately €24.5 billion after having decreased by nearly €9 billion in one year.

2.2 Interconnectedness between banks and OFIs

In order to determine the risks posed by the different financial sectors to financial stability, in addition to their size, it is important to know the interrelationships between them, especially in periods of stress, since these are channels that favour risk contagion. This report analyses the direct interconnection between the financial sectors relevant to the study carried out on the basis of the bilateral positions existing between them, i.e. the interconnection between banks and OFIs has been calculated based on banks' claims on and obligations towards OFIs, all in relation to banks' total assets (see Figure 7).[14]

At the end of 2022, as can be observed in the left-hand panel of Figure 7, banks' rights in relation to OFIs ("Bank exposure to OFIs") accounted for 7.0% of bank assets,[15] which stood below €200 billion, down 8.5% on 2021, and nearly 60% since the maximums reached in 2010. On the opposite side, the figures corresponding to bank obligations to OFIs ("Bank use of funding from OFIs") also decreased, in this case by 15.0%, compared to those of 2021, standing at €192.5 billion at 2022 year-end. If we exclude the rights or obligations of OFIs that are consolidated within the banking groups[16] themselves, the aforementioned percentages decrease: in the case of bank rights, to 3,5% of bank assets, a figure similar to that of 2021, and to 2.2% in the case of bank obligations to OFIs (2.9% in 2021).

Interconnection between banks and OFIs
(% of bank assets) FIGURE 7



Source: CNMV and Bank of Spain.

The interconnection between OFIs and the other sub-sectors of the financial system is much lower than with banks, being the relationship with other entities belonging to the same group the most significant. Also, this figure increased

14 There are also indirect connections between financial sectors, which occur when two entities own assets of the same entity or the price of their shares or debt securities, for whatever reason, a very similar behaviour.

15 This same figure accounted for 22.1% of OFI assets.

16 In Spain, interconnection data between banks and OFIs that consolidate in banking groups are only available for the SFV subsector.

significantly in 2022 to more than €41 billion, representing an increase of €6 billion in one year. Obligations to insurance companies, the second most significant, were slightly below €20 billion at the end of 2022, whereas rights with these stood at €13 billion.

From the standpoint of financial stability, it is also important to analyse the interconnection that exists between the financial subsectors and non-financial sectors in order to understand the effects that a period of financial difficulties could have on the real economy. In this connection, banks show the greatest interconnection with non-financial agents in the Spanish economy,[17] with total obligations of more than €1.5 trillion (€1 trillion just with households) and rights amounting to a similar figure. For OFIs, the most significant interconnection is in the case of the obligations of these entities to households, totalling €272 billion at 2022 year-end, more than 95% of which corresponding to investment funds.

17 Non-financial agents consist of households, the public administration and non-financial companies.

3 Non-bank financial intermediation

As explained in the previous section, NBFI entities in Spain are delimited using the criterion developed by the FSB in 2013, whereby five economic functions were defined.[18] Those entities whose activity falls under one of these five functions would form part of the NBFI measure.[19] Table 3 briefly defines these functions and the entities which, in the case of Spain, belong to each and quantifies the assets of said entities. At present, the most relevant entities in quantitative terms are those belonging to economic function 1 (management of collective investment schemes whose characteristics make them susceptible to runs), which account for 57.2% of the assets of the total of the five functions, and those belonging to economic function 5 (securitisation-based credit intermediation to fund financial institutions), which account for 30.6% of the total. Of the other economic functions, only the entities of economic function 2 stand out (granting of loans dependent on short-term financing), whose assets account for 11% of the total.

It should be noted that the composition of NBFI in Spain in accordance with these functions has changed substantially in recent years: the weight of the entities belonging to economic function 1, which are basically investment funds, increased from 22.3% of this aggregate in 2010 to 57.2% in 2022, whereas the weight of the entities of economic function 5, securitisations, fell from 69% to 30.6% in the same period. The weight of the entities of economic function 2 also increased, although with a certain irregularity over time, from 7.4% to 11%.

18 "Policy Framework for Strengthening Oversight and Regulation of Shadow Banking Entities".

19 For further detail, see Article 1 of this series: Ispierto, A. (2019). "Non-bank financial intermediation in Spain". *CNMV Bulletin*. Quarter I, pp. 77-118. Available at: https://www.cnmv.es/DocPortal/Publicaciones/Boletin/Boletin_I_2019_WEBen.PDF

Classification of NBFI by economic function TABLE 3

Economic functions	Definition	Member entities	Size in millions of euros (% of total NBFI), % change 2021
EF1	Management of collective investment schemes whose characteristics make them susceptible to runs	Money market funds, fixed-income funds, mixed funds[1], hedge funds and SICAVs	279,150 (57.2%) -6.3%
EF2	Loan provision dependent on short-term funding	Finance companies	53,756 (11.0%) 5.8%
EF3	Intermediation of market activities that is dependent on short-term funding or secured funding	Broker-dealers	4,339 (0.9%) -0.8%
EF4	Entities that facilitate credit creation	Mutual guarantee companies	1,473 (0.3%) 5.3%
EF5	Securitisation-based credit intermediation to finance financial entities	Structured finance vehicles (SFVs) whose object is the securitisation of assets	149,543 (30.6%) -9.2%

Source: CNMV and Bank of Spain.

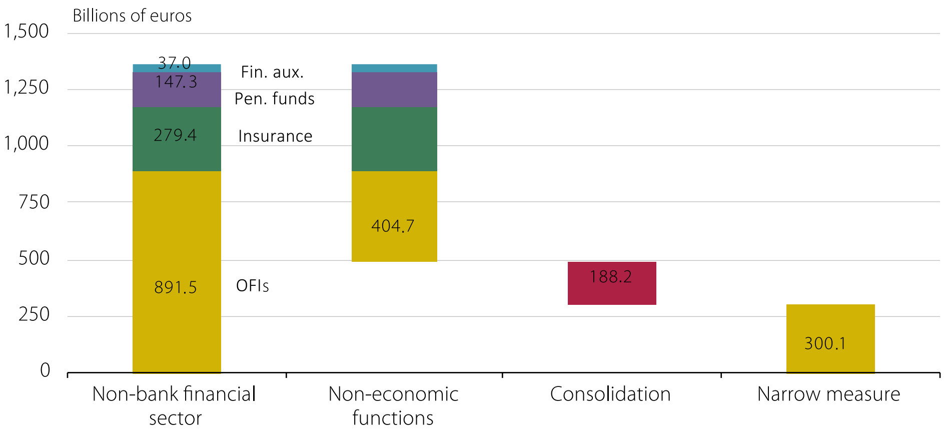
1 According to the criterion established by the FSB, only mixed funds with less than 80% equities in the total portfolio are included in EF1. In Spain, pursuant to current legislation, the exposure of mixed funds to equities cannot exceed 75% of the portfolio, due to which they are all considered as NBFI.

The amount of the narrow measure of NBFI in Spain would amount to €300 billion in 2022, below the €328 billion of 2021 (-8.6%). Figure 8 shows how the narrow measure of NBFI is obtained from the non-bank aggregate. In the process, insurance companies, pension funds and financial auxiliaries are excluded, as are OFI entities that do not perform any economic function.[20] We also add certain entities that are not OFIs but fall within the scope of NBFI (in the case of Spain they are mutual guarantee companies, whose assets have very little relevance). Lastly, entities which, despite belonging to one of the economic functions described, are consolidated in banking groups[21] are also excluded.

20 As explained in the previous section, OFIs that are not part of NBFI are captive financial institutions and money lenders, equity investment funds, REITs, CCPs and venture capital firms

21 Bank consolidation occurs basically for one of two reasons: i) the entity in question is controlled by a bank or ii) the assets belonging to the entity are also on the bank's balance sheet (and therefore subject to banking regulations). The latter case would relate to securitisation vehicles, whose assets must remain on the bank's balance sheet if the associated risks and returns have not been substantially transferred to third parties.

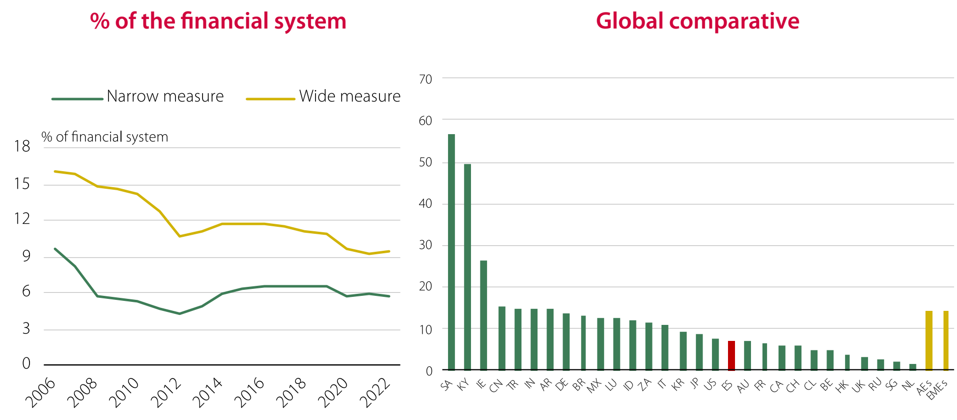
From the non-bank financial sector to the narrow measure of NBFI. 2022 FIGURE 8



Source: CNMV and Bank of Spain.

NBFI assets have shown great stability in recent years both in absolute and relative terms. In absolute terms, the narrow measure of NBFI is around €300 billion since 2016 and, in relative terms, this measure accounts for approximately 6% of the total financial system since 2014 (see left-hand panel of Figure 9). Therefore, the relevance of NBFI from a quantitative standpoint is reduced in relation to the Spanish financial system and also if compared to other benchmark countries. According to the latest report published by the FSB, the narrow measure of NBFI of the analysed countries accounts, in aggregate terms, for approximately 14% of the total financial system (see right-hand panel of Figure 9).

Relative weight of NBFI FIGURE 9



Source: CNMV and Bank of Spain.

The total assets of the five economic functions amounted to €488 billion in 2022, down 6% on 2021. As can be observed in Table 4, the entities of economic functions 1 and 5 (EF1 and EF5) concentrated 88% of the total assets of the five functions, a preponderant percentage but slightly lower than that of 2021 due to the larger-than-average decline in the size of the assets: EF1 assets (investment funds) fell by 6.3% and EF5 assets (securitisations) fell by 9.2%. In contrast, EF2 assets (finance companies) and EF4 assets (mutual agreement companies) grew by 5.8% and 5.3%, respectively, accounting for 11% and 0.4% of the total of these functions. Lastly, the change in EF3 assets (broker-dealers) was negligible (-0.8% in 2022), accounting for barely 1% of this aggregate.[22]

Structure of non-bank financial intermediation TABLE 4

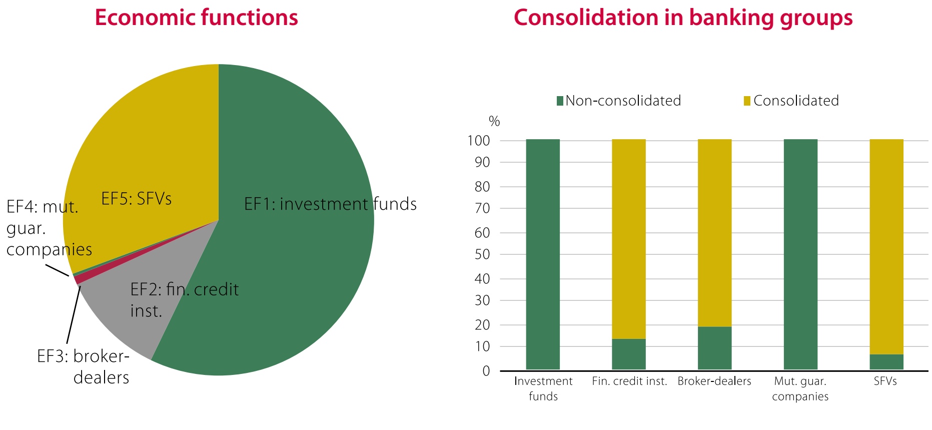
Millions of euros

	EF1	EF2	EF3	EF4	EF5	Aggregate of the five functions	NBFI (narrow)
Size in 2022 (millions)	279,150	53,756	4,339	1,473	149,543	488,261	300,060
Size in 2021 (millions)	298,074	50,795	4,372	1,399	164,723	519,363	328,184
% of total (2022)	57.2	11.0	0.9	0.3	30.6	-	-
Growth 2022 (%)	-6.3	5.8	-0.8	5.3	-9.2	-6.0	-8.6

Source: CNMV and Bank of Spain.

The phenomenon of consolidation in banking groups affects three of the five economic functions, being especially relevant in the case of securitisations. Consolidation percentages range between 80% in the case of broker-dealers and 92% in the case of securitisations (see right-hand panel of Figure 10). EF1 entities, which have the greatest weight, are not affected by this consolidation. Therefore, after discounting the assets that consolidate in banking groups, which total €188 billion, the weight of EF1 assets increases further, up to 93% of the narrow measure of NBFI. The other functions would be distributed between securitisations (EF5) with 3.8%, finance companies (EF2) with 2.4%, mutual guarantee entities (EF4) with 0.5% and broker-dealers (EF3) with 0.3%.

Distribution of non-bank financial intermediation. 2022 FIGURE 10



Source: CNMV and Bank of Spain.

22 It must be recalled that in 2021 this function fell sharply as a result of the cessation of activity of a large-sized entity.

3.1 Risk assessment of non-bank financial intermediation

This section provides an overview of credit risk, maturity transformation, liquidity risk and leverage of the most relevant entities of each NBFI economic function in quantitative terms. Therefore, the analysis is offered on several categories of investment funds, finance companies, broker-dealers and SFVs.[23]

The intensity of the risks analysed for each type of entity[24] listed in Table 5 shows little change over time, since it is partly determined by the nature of the entities themselves. However, mention must be made of those risks where a higher degree of involvement is observed, which are, mainly, credit and liquidity risks, and study not only their evolution over time but also that of other indicators that enhance the analysis and its distribution by entity. It can be observed, for example, that credit risk is usually rated as high or very high, since most NBFI entities invest a considerable portion of their assets in debt assets or loans. However, in this case it is important to consider the type of assets invested in and, in the case of fixed-income assets, analyse both the evolution of their credit rating and their sensitivity to fluctuations in interest rates, a circumstance which is especially significant since 2022.

Significant vulnerabilities in investment funds were not observed in any of the financial risks considered in this analysis. As explained below, many of the risk indicators calculated improved compared to the previous year, due mainly to the increased exposure of the funds to sovereign debt assets. The context of rising interest rates gave rise to a change in the average fund portfolio, with more public debt assets that, in general, improve the liquidity conditions of the portfolios, in addition to their credit quality. Also, a decrease of modified duration[25] of the portfolios is observed, which lowers their sensitivity to scenarios of rising interest rates and, lastly, the net leverage ratio continued at very low average values, far from the limit established by legislation (100%). An alarming use of the leverage is not considered to exist from the standpoint of systemic risk.

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23 Mutual guarantee entities are not included in the analysis, since they account for less than 0.5% of the sector.

24 For further details on the thresholds defined for each risk and type of entity, see the article by Ispierto, A. (2019). "Non-bank financial intermediation in Spain". *CNMV Bulletin*. Quarter I, pp. 77-118.

25 As opposed to duration, which is measured in years and corresponds to the effective period to maturity of an asset, the modified duration measures the percentage variation in the price of said asset in the event of an increase in interest rates of 100 bp.

Degree of NBFI involvement in financial risks. 2022

TABLE 5

	Investment funds					
	Money market	Fixed income	Mixed	Financial credit	Broker-dealers	SFV securitisation
Credit risk	●	●	●	●	●	●
Maturity transformation	○	●	○	○	○	●
Asset liquidity[1]	●	●	●	●	●	●
Leverage[2]	○	○	○	●	●	●
Interconnectedness with the banking system	○	○	○	○	○	●
IRelative importance[3, 4] (%)	1.1	20.2	31.7	11.0	0.9	30.6

Source: CNMV. For greater detail of the thresholds for each risk and type of entity, see the article by Ispierto, A. (2019). "Non-bank financial intermediation in Spain". *CNMV Bulletin*. Quarter I, pp. 77-118.

1 In the case of investment funds, the colours assigned to this risk are defined on the liquidity measure based on HQLA methodology, which takes into account the type of portfolio asset and its rating. In the NBFI monitor published in 2022 this assessment includes the portfolio assets relating to CIS investments in other CISs.

2 In the case of investment funds, the assessment of the leverage risk is made on the indirect leverage measurement, based on the position in derivatives.

3 The weights of each of the entities listed in this table do not add up to 100%, since mutual guarantee entities and some types of NBFI funds are not represented.

4 These percentages are calculated according to the total size of the sector, without deducting the entities that are consolidated in banking groups.

3.1.1 Economic function 1

CISs belonging to EF1 accounted for 93% of the total of the narrow measure of NBFI in Spain at the end of 2022, continuing the upward trend observed since 2010 despite the slight reduction in equity. Taking into account the definition of economic function 1 (EF1) provided in preceding sections,[26] in Spain, money market funds, fixed-income funds, mixed funds,[27] hedge funds[28] and open-ended collective investment companies (SICAVs) would form part of these money market funds. As can be observed in the right-hand panel of Figure 11, NBFI fund assets declined by 6.3% in 2022 due to the contraction in value of the portfolio of these vehicles, since net subscriptions were positive throughout the year, following the trend of 2021.

The relative importance of the different vehicles included in EF1 shows little change compared to previous years: although mixed funds continued to account for more than half of the assets of this function (55.4%),[29] this percentage fell by

26 Management of collective investment vehicles whose characteristics make them susceptible to runs.

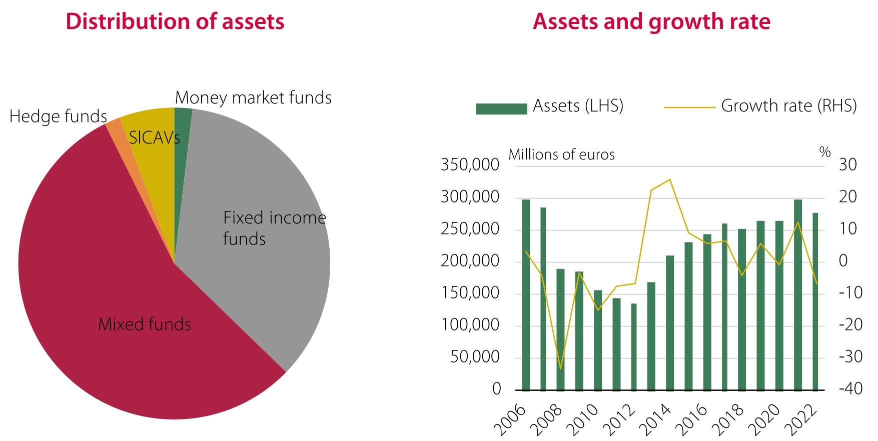
27 See footnote 1 to Table 3.

28 These institutions may be subject to runs in their liquidity windows, if any. This denomination includes the four types of hedge funds that exist in Spain: hedge funds (funds and companies) and funds of hedge funds (funds and companies).

29 Mixed funds encompass different fund categories including, namely, global funds (41.2%) and mixed fixed-income funds (24.5%), after the growth of the former by more than 2 p.p. and the contraction of

more than 3 percentage points (pp) in relation to 2021, while the weight of fixed-income funds increased from 29.0% to 35.4% (see left-hand panel of Figure 11). These changes occurred as a consequence of the high net subscriptions throughout 2022 in fixed-income funds[30] (greater than €18billion), which amply offset the loss of value of the investment portfolio. In the case of SICAVs, the relative weight was reduced to nearly half, from 9.6% to 5.7%, due to the significant contraction of this subsector, after the entry into force of Law 11/2021, of 9 July, on measures to prevent and combat tax fraud.[31] The weight of money market funds and hedge funds was very low, just over 1.5% in both cases.

Distribution of investment funds belonging to NBFI FIGURE 11



Source: CNMV.

In Spain, at the end of 2022 there were a total of 2,314 active investment vehicles belonging to EF1 (1,363 fewer than in 2021). The cause of this significant decline lies in the subsegment of SICAVs in which, in 2022, as mentioned earlier, the entry into force of Law 11/2021 gave rise to the cessation of activity of more than 1,300 vehicles. Thus, at 2022 year-end, 1,259 corresponded to investment funds, 950 to SICAVs and 105 to hedge funds. In 2022 the essential characteristics of the institutions belonging to this economic function remained similar to those described in previous editions of this report, with some slight differences. On the one hand, the biggest investment vehicles are investment funds: 62 investment funds that managed assets totalling more than €1 billion at the end of 2022 (64 in 2021), a figure that was not exceeded by any SICAV or hedge fund. And on the other, the degree of concentration of these institutions remained very high, although it decreased slightly in 2022 as a result of the decline in assets of the three largest vehicles. Thus, as can be observed in the left-hand panel of Figure 12, these three funds – the same

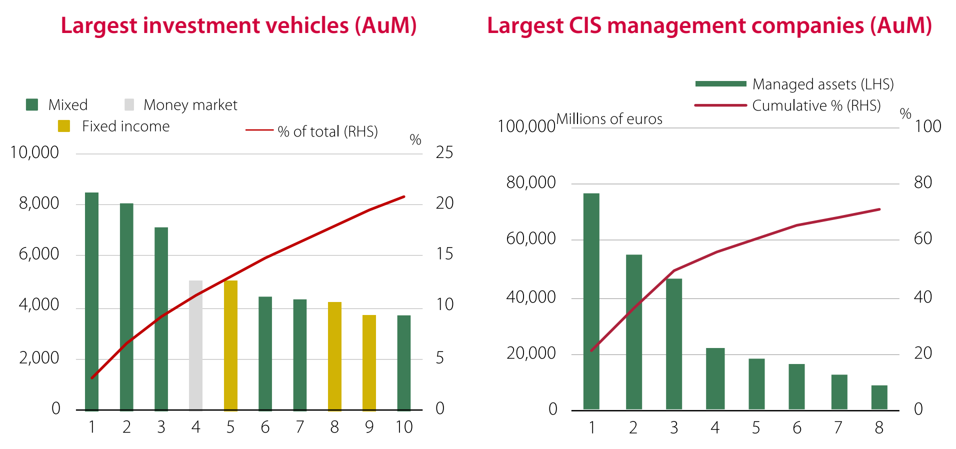
the latter by nearly 5 p.p.

30 This trend continued in 2023 and is due to the greater attraction of the fixed-income assets after the increase in accumulated interest rates in the last two years.

31 Law 11/2021 amended the Spanish Corporation Tax Law (LIS) in order to impose more stringent requirements for SICAVs to qualify for the tax benefit of 1% tax on profits by requiring that only those shareholders with a minimum holding of €2,500 (or €12,500 in the case of SICAVs with a multi-compartment structure) be considered when determining the minimum number of 100 shareholders.

as in previous years – accounted for 9.1% of total assets (10.7% one year earlier) and the ten largest funds accounted for 20.9% of assets (22.5% in 2021). The degree of concentration in the field of CIS management companies also remained very high, similar to that of the previous year: the three largest entities managed 49.8% of total assets (1 pp more than in 2021) and the seven largest practically 70%, all belonging to banking groups (see right-hand panel of Figure 12).

Concentration in the collective investment sector FIGURE 12



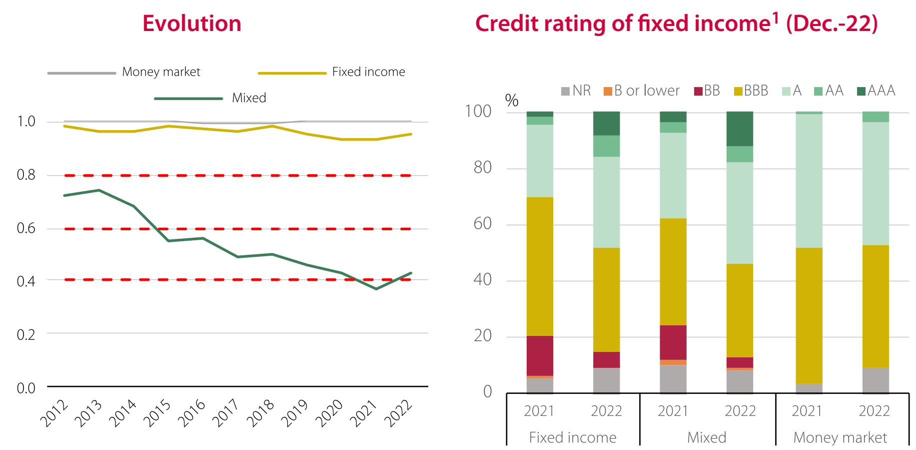
Source: CNMV. AuM: Assets under Management.

The analysis of the financial risks associated with NBFI investment funds does not indicate the existence of material vulnerabilities from the standpoint of financial stability. As mentioned earlier, although in the context of systemic risk the analyses usually focus on the liquidity risk of the funds and their leverage, this report also includes information on the credit risk of these institutions, in addition to maturity transformation risk. In the case of the liquidity gap analysis, a measure of liquidity of the funds' portfolio is known as HQLA (High Quality Liquid Assets), which takes the type of asset and its credit rating into consideration when assigning a certain degree of liquidity to an asset. In the last two reports, an effort has been made to improve the calculation of this measurement by including the liquidity assessment of each asset of the portfolio of investments in other CISs (which accounts for approximately 32% of the total assets of these institutions). Furthermore, and given the significant increase in interest rates and the slowdown in the economy, the analysis of credit ratings of all the fixed-income assets in the funds' portfolio and their duration.

The assessment of credit risk, measured as the proportion of credit assets in the funds' portfolio, reveals similar patterns to the reports of previous years. Thus, this proportion is practically 100% in money market funds and very high, specifically 95.4%, in fixed-income funds due to the very nature of these institutions (see left-hand panel of Figure 13). In the case of mixed funds, which can invest in both fixed-income and equities, this percentage increased in the first years from 37.2% to 43.4%, after several periods with a clear downward trend. This change, which slightly increases the credit risk of this fund category, is due to the increased weight of investments in fixed-income, especially in public debt, accounting for 22.3% in the latter at 2022 year-end, up 6 pp on 2021.

The analysis of the credit ratings of the funds' fixed-income portfolio reveals that most investment in debt belongs to the group considered "high quality" (or investment grade) and that the quality of the assets in this group has increased. Thus, it is estimated that the proportion of high-quality debt assets was 85.0% in fixed-income funds and 86.5% in mixed funds, slightly lower than the proportion of 2021 (1.4 pp less). The improvement in the quality of the assets of this group is observed in the reduction in relevance of those with BBB rating (the worst within investment grade, prior to high yield): in fixed-income funds, BBB debt accounted for 36.8% of the fixed-income portfolio (48.6% in 2021) and 32.9% in mixed funds (34.4% in 2021). However, the relative weight of non-investment-grade debt (or high yield) was 15.0% in fixed-income funds and 13.5% in mixed funds[32] (see right-hand panel of Figure 13).[33]

Credit risk in the different types of investment funds FIGURE 13



Source: CNMV.

1 Distribution of the fixed-income portfolio of the three NBFI fund categories (fixed income, mixed income and money market) based on the credit ratings of their portfolio assets. NR: no rating.

The analysis of maturity transformation risk of the investment funds, which is calculated by the ratio of non-current assets to assets managed by the fund,[34] points to a slight increase in 2022. As can be observed in the left-hand panel of Figure 14, the ratio of non-current assets to equity only shows a high value in fixed-income funds, recording just over 56% in 2022 and continuing the upward trend initiated in 2016. In the remaining fund types, the value of the indicator is low, especially in money market funds, in which this indicator is practically

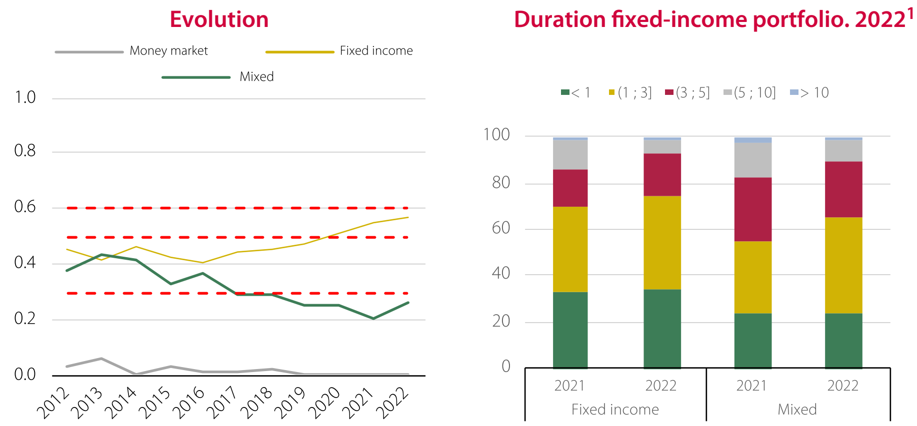
32 These percentages include both debt with BB rating or lower and debt for which there is no rating.

33 In the case of EU fixed-income funds, the analysis published by the ESRB reveals that there were few changes in the credit rating of the debt in the portfolio of these funds in 2022, observing a worse average level than in that of the Spanish funds, since the proportion of investment-grade debt is less than 60% (compared to 85% or more in the Spanish funds).

34 In the case of investment funds, instead of calculating the ratio of short-term liabilities to assets, as in the other entities, the proportion of long-term assets over total assets is calculated. As mentioned earlier in previous reports, this difference in the calculation of the ratio lies in the fact that, in investment funds, Unit Holders can redeem their units with a high frequency – in most cases, on a daily basis –, due to which short-term liability is not representative of all the possible obligations of the fund.

non-existent due to the strong restrictions for investing in long-term assets.[35] In the case of mixed funds, although they remained at a low level, the ratio increased to 26.6% in 2022 (20.5% in 2021).

Maturity transformation in the different types of investment funds FIGURE 14



Source: CNMV.

1 Money market funds are not included, since the total of their fixed-income portfolio has a duration of less than one year.

The analysis of the duration[36] of the assets of the fixed-income portfolio of these vehicles through the calculation of the modified duration[37] shows, for 2022, an average value of 2.1 in fixed-income funds and 2.6 in mixed funds. In the case of money market funds, the figure was obviously much lower, standing at 0.25. These values are, in all cases, substantially lower than those of 2021,[38] since the management companies of these vehicles reduced the average maturity of the portfolios during the year to mitigate the losses arising from the rise in interest rates.[39] As can also be observed on the right-hand panel of Figure 14, the total fixed-income portfolio of the mixed funds, just over 24%, had a modified duration of less than 1, whereas it was greater than 10 years in just 1.1%. In the case of fixed-income funds, these percentages were 34.0% and 0.7%, respectively.

The individual analysis of duration reflects that most of the funds have an average modified duration of less than 5, specifically 93.3% of fixed-income funds

35 In money market funds, the average duration of the portfolio must be less than or equal to 60 days, and average maturity cannot exceed 120 days.

36 Duration is a measurement of effective period to maturity of an asset, taking all the cash flows throughout the life of the asset into account.

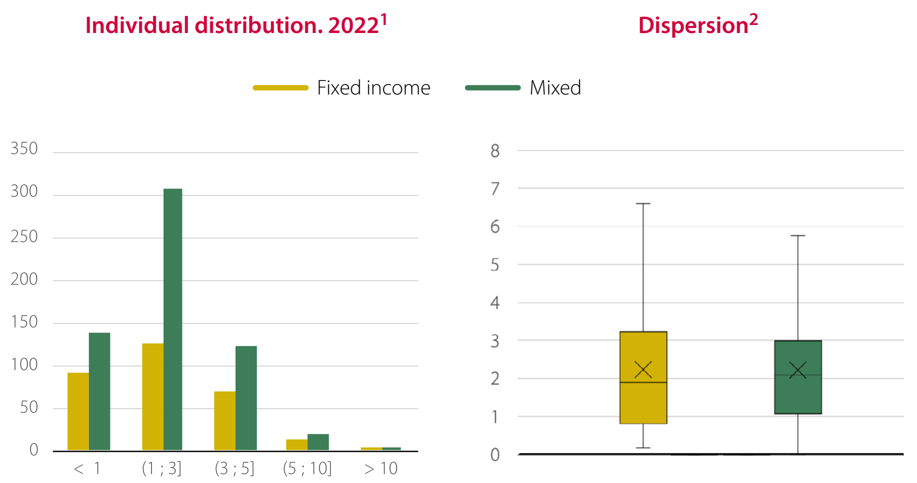
37 Modified duration measures the percentage variation that occurs in the price of a financial asset in the event of an increase of 100 bp in interest rates.

38 In 2021 the average duration of the three types of funds was 2.5, 3.1 and 0.29, respectively.

39 There are no data on duration for EU funds, but there are data on the average maturity of the fixed-income funds portfolio, whose average grew from 9.5 years to 8.3 years. Despite the decrease, the NBFI monitor published by the ESRB indicates that this variable remains at historically high levels, due to which the funds would continue being highly sensitive to rises in interest rates.

and 89.2% of mixed funds.[40] It can also be observed that the dispersal of the values of the modified duration of the funds' portfolio is not very high, although it is slightly higher in fixed-income funds compared to mixed funds (see panels of Figure 15). Thus, for more than half of the funds the modified duration was significantly less than in 2021, year in which the interquartile was close to 3.

Average modified duration of the fixed-income portfolio of the different types of investment funds FIGURE 15



Source: CNMV.

1 Distribution of the number of funds according to their modified duration.

2 The figure represents, for each type of fund, the minimum, maximum, mean (x), median and percentiles 0.25 and 0.75 of the duration of the funds. In the case of the minimum and maximum, outliers have been excluded (values that fall below [above] the first [third] quartile whose distance therefrom is greater than 1.5 times the interquartile range [P75-P25]).

In order to analyse the liquidity conditions of the funds' portfolio, the ratio known as HQLA is used in this report, which includes information on both the type of asset and its credit ratings. Additionally, it should be noted that, in order to obtain a metric as accurate as possible, the level of liquidity of the CISs in which Spanish funds invest was also quantified. In previous editions, it was considered that 100% of the investment of the funds in other CISs had low liquidity or its level of liquidity had been calculated taking into account only the type of asset in which they invested.[41] This edition includes, as mentioned earlier, the credit rating of the assets of the portfolios of that investment in other CISs. The results of the calculation of this metric is shown in Figure 16.

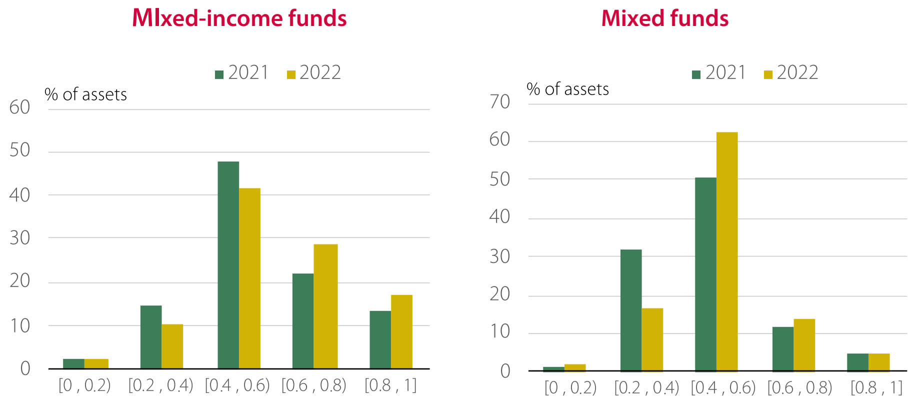
The HQLA ratio improved in 2022 for both fixed-income funds and mixed funds, growing from 55.6% to 60.2% in the former and from 47.5% to 49.8% in the latter. As can be observed in the left-hand panel of Figure 16, in the case of fixed-income funds, those with liquid assets greater than 60% of equity grew from 35.3%

40 Also, only four funds have been identified (one less than in 2021) which, at 2022 year-end, had a fixed-income portfolio with a modified duration of more than 10. Of these, three were mixed funds and one was a fixed-income fund.

41 Cash, deposits and public debt were considered completely liquid, whereas private debt was not liquid. In the case of equities, 50% of the value of their portfolio was considered liquid.

of the total (in equity terms) to 45.8%. This increase originated, mainly, in the recomposition of the investment portfolio since, in aggregate terms, there was a substantial increase in investment in public debt (in the first year it increased from 30.0% to 43.4%) to the detriment, in part, of private debt. In the case of mixed funds, a significant improvement was observed in the liquidity conditions of their portfolio in 2022, which is explained by the significant decrease in the percentage of funds with liquidity levels of less than 40%: falling from 33.0% in 2021 to 18.6% one year later. In this case, the change was due to the increase in direct investment in fixed-income assets, both public and private,[42] and to the decrease in investment in other CISs, since the weighting received by the latter in terms of liquidity is, on average, less than that of fixed-income assets.[43]

Liquidity risk of investment funds: distribution of HQLA assets.[1] 2022 FIGURE 16



Source: CNMV.

1 High-quality liquid assets (HQLA) are considered to be all cash and deposits, 50% of the value of the equity portfolio and variable percentages of public debt, private fixed income and securitisations depending on their credit rating. Therefore, the percentage of public debt that would be considered liquid ranges between 0% and 100%, while that of private fixed income is between 0% and 85% and that of securitisation is between 0% and 65%.

Lastly, in relation to the level of leverage of CISs, reference can be made to both direct leverage (indebtedness) and indirect leverage (use of derivatives). In the case of the former, Spanish legislation establishes that non-real-estate CISs (with the exception of hedge funds) can only be temporarily indebted and for a specific reason,[44] and said debt can never exceed 10% of their assets.[45] However, these

42 In the case of private debt, it grew by 3 pp, to 13.5%, whereas investment in public debt grew by more than 5 pp, to 20.6%.

43 Investment in other CISs, whose weighting is given by the HQLA of these institutions, have an average value of approximately 35% (it should be noted that the portfolio could not be obtained for 14% of these vehicles, due to which they are considered CISs, following a conservative criterion, with a HQLA equal to zero). However, in public fixed-income assets nearly all of them have a credit rating of BBB or higher, due to which their weighting ranges between 50% and 100%. In the case of private fixed income, although there are more assets with ratings lower than BBB (approximately 28%), assets with a rating of BBB or higher, whose weighting ranges between 50% and 85%, continue to predominate.

44 Royal Decree 1082/2012, of 13 July, approving the implementing regulation of Law 35/2003, of 4 November, on Collective Investment Schemes.

45 In Spain, no category exceeded 1% in 2022.

institutions can be leveraged through the use of derivatives, a practice that may significantly increase other existing risks in these vehicles. Therefore, it is important to monitor them on regular basis, using in this case the methodology proposed by IOSCO.[46]

The information available to the CNMV on the use of derivatives by Spanish CISs still does not indicate the existence of significant vulnerabilities in any of the potential risks to which the use of derivatives may give rise (counterparty, market and contagion). The analyses performed show that, at the end of 2021, exposure to market risk, assessed for the CISs belonging to NBFI which are subject to UCITS regulations in relation to leverage limits[47] and which perform their calculations using commitment methodology[48] (91.5% of the total in terms of assets),[49] accounted for 23.4% of their assets.[50] This percentage, which was still well below the maximum allowed by current legislation (100% of assets), was significantly lower than in 2021, when it stood at 35%.[51] An individual analysis of mixed and fixed-income investment funds[52] shows that exposure to market risk was less than 40% in more than 90% of fixed-income funds and nearly 50% (in terms of assets), whereas only 0.4% and 5.8%, respectively, of assets corresponded to funds with relatively high levels of exposure to this risk, between 80% and 100% of assets.

46 IOSCO (2019). *Final Report on Recommendations for a Framework Assessing Leverage in Investment Funds*. December.

47 Includes both CISs that comply with UCITS regulations in their entirety and those that are not fully compliant (CISs availing themselves of any of the exceptions established in Article 72 of Royal Decree 1082/2012), although they do comply in relation to transactions with derivatives.

48 The European commitment method, whose technical specifications are set out in the *ESMA Guidelines on Risk Measurement and the Calculation of Global Exposure and Counterparty Risk for UCITS* [CESR/10-788])- enables the calculation of exposure based on the conversion of all derivatives contracts to the equivalent investment in their underlying assets. the methodology is based on considering the market value of the underlying asset (or its notional value if more conservative) and adjusting it for the delta in the case of options and incorporating rules to offset long positions with short positions of the same underlying asset (netting) as well as between different underlying assets (hedging).

49 Hedge funds, which are analysed below, are not included in this case.

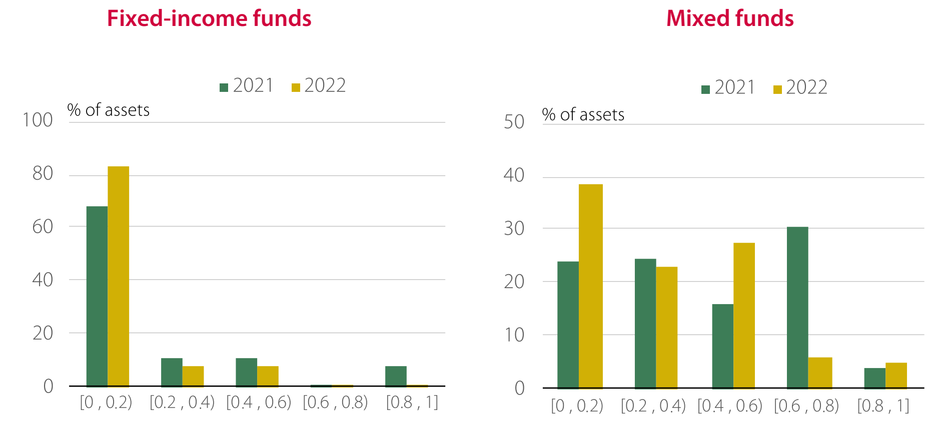
50 This percentage includes indirect exposure through investment in other CISs, estimated at 13% of assets (many CISs establish this exposure, for calculation simplification purposes, as 100% of their investment in other CISs).

51 A significant part of this decline was due to the reduction in the percentage of the portfolio invested in other CISs.

52 In aggregate terms, in fixed-income funds that use commitment methodology, the level of leverage was 8.6%, whereas in mixed funds this figure was 33.6%.

Indirect leverage in the different types of investment funds[1]

FIGURE 17



Source: CNMV.

1 Investment funds, both UCITS and quasi-UCITS, that use the commitment method and that belong to NBFI (with the exception of money market funds).

Of the other CISs included in NBFI (8.5% of total assets), approximately 2% of assets correspond to CISs that do not use derivative instruments, 4.5% to CISs also subject to UCITS regulations whose exposure to market risk is calculated using VaR methodology[53] and, lastly, a further 2% are structured funds that do not use derivatives to achieve a specific return target on maturity.[54] In the case of the last two categories, the gross level of exposure stood at 141.1% and 114.2%, respectively,[55] which are in any case low levels.

Leverage of NBFI funds through the use of derivatives

TABLE 6

Type of CIS	% Assets[1]	Gross leverage (%)
CISs subject to UCITS regulations (commitment method)	91.5	39.5
CISs subject to UCITS regulations (VaR method)	4.5	141.1
Structured CISs that use derivatives to achieve a specific return target	2.0	114.2
CISs that claim not to use derivatives	2.0	-
Hedge funds		29.0

Source: CNMV.

1 Percentages calculated without taking hedge funds into account.

Lastly, in the case of hedge funds (included in the category of AIFs and, therefore, having more flexible regulations), empirical evidence also shows a generally moderate level of leverage (29.0% at gross and aggregate level), since only a few isolated funds make more intensive use thereof. In the case of pure hedge funds, four institutions exceeded 100% of gross leverage at the end of 2022 (six in 2021).

53 This methodology establishes the maximum leverage limits based on the calculation of an expected maximum loss.

54 The latter are exempt from reporting their exposure, calculated using the commitment method.

55 Of all the CISs that can exceed leverage limits, only six of them (10.2% in terms of assets) exceeded the threshold of 200%.

With regard to funds of hedge funds,[56] it should be noted that leverage is mainly assumed indirectly through investment in hedge funds, observing very low gross direct leverage, with only two institutions reporting direct leverage and in no case greater than 50% of assets.

Counterparty risk (risk that the financial difficulties experienced by an entity may be transmitted to its counterparties or lenders), which is amplified by a high use of leverage, is very low in Spanish investment funds. Exposure to this risk[57] stands at very low levels, far from the amounts that could be considered potentially systemic. Thus, at the end of 2022 the combined debit balance of investment funds (IF) and SICAVs included in NBFI for transactions with OTC derivatives accounted for 0.39% of total assets (0.27% in 2021). From this value we must deduct the value of the assets that CISs receive as collateral to cover potential risk of non-payment of counterparties, which accounted for 0.17% of their assets. Therefore, the counterparty risk borne by CISs (net of collateral and at the aggregate level) barely reached 0.22%. in the case of hedge funds (including CISs that invest in hedge funds), this percentage was greater than that corresponding to IFs and SICAVs, but did not exceed 1% at 2022 year-end.

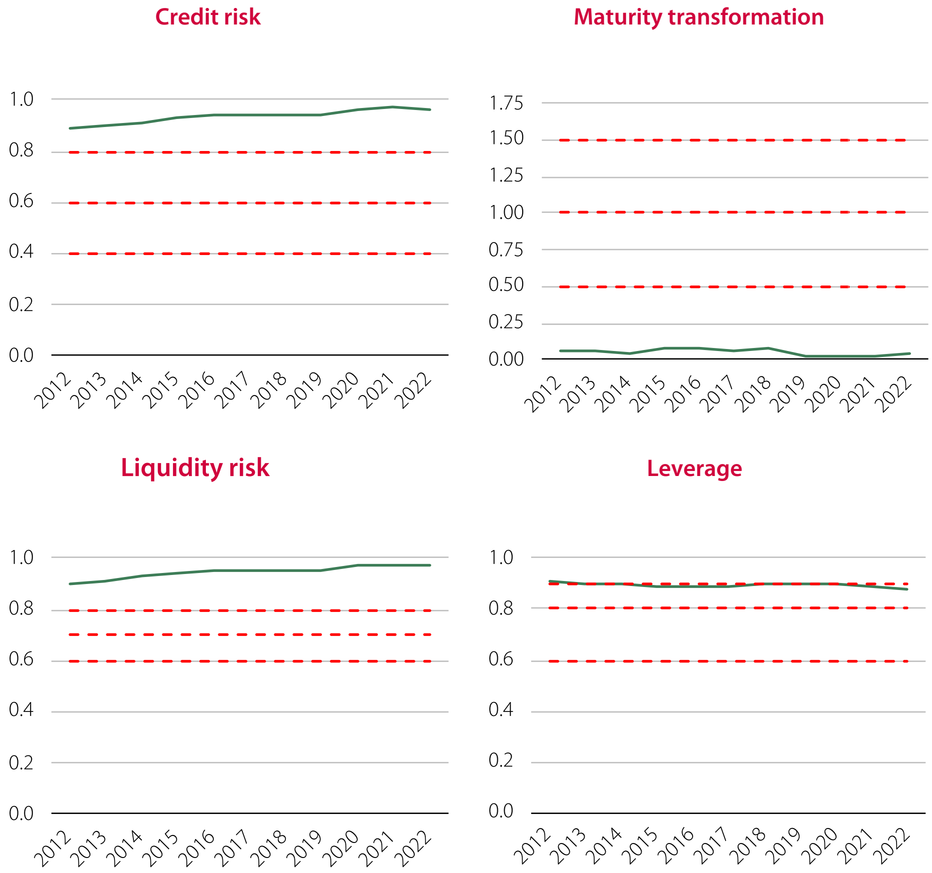
3.1.2 Economic function 2

EF2, defined as a loan provision dependent on short-term funding, can comprise a wide variety of entities and, depending on the jurisdiction, may be subject to very different legal frameworks. In Spain, it consists of finance companies whose financial assets account, as mentioned earlier, for 11.0% of the total of the economic functions, with nearly €54 billion at the end of 2022, after increasing by 5.8% relative to 2021. If the amount consolidated in banking groups is subtracted, the financial assets of these entities fall to €7.2 billion, accounting for 2.4% of the narrow measure of NBFI, two tenths more than 2021. Figure 18 shows the different risk indicators calculated for these entities. Although some of them are high, in terms of financial stability they would be of special relevance due to the small weight of these entities within NBFI.

56 Funds and companies that invest in other hedge funds.

57 In the case of CISs, counterparty risk arose in transactions with derivatives performed in unorganised markets (OTC) through unsettled transactions.

Risk trends for finance companies FIGURE 18



Source: CNMV.

As can be observed in the upper left-hand panel of the graph, the credit risk value is high for these entities due to the nature of the activity in which they engage, since more than 90% of the financial assets corresponds to loans granted. The values associated with the level of leverage and liquidity risk are also high (89.6% and 97.4%, respectively) as a result of the low level of own funds and liquid assets held by these entities. However, in relation to maturity transformation risk, the indicator shows very low levels, below 10%, despite having increased by more than 2 pp in 2022, to 4.8% (see upper right-hand panel of Figure 18).[58]

3.1.3 Economic function 3

EF3 is defined as the intermediation in market activities dependent on short-term funding or secured funding. In Spain, broker-dealers fall under this category.

At the end of December 2022 there were a total of 34 broker-dealers registered in the CNMV (one more than in 2021), which had total financial assets of €4.34 billion, after a slight drop of 0.8% in relation to 2021 (see Figure 19). Therefore, the size of this sector is still relatively small compared to that of other jurisdictions,

58 This upturn was due to the increase in short-term obligations of finance companies, which at 2022 year-end exceeded €1.1 billion as a whole.

since in Spain credit institutions provide most investment services. Thus, in 2022, 87% of the fees received for these services corresponded to the latter, whereas broker-dealers received around 3.7%[59] (the remainder corresponded to securities brokers, branches of foreign investment services firms and financial advisory firms), a percentage significantly smaller than in 2021 (6.3%). This drop was due to the decrease in fees for handling and execution of securities purchase/sale orders (-35.6%), due mainly to the cessation of activity in August 2021 of a foreign capital firm that became a credit institution.

Assets of broker-dealers and number of entities FIGURE 19

Source: CNMV.

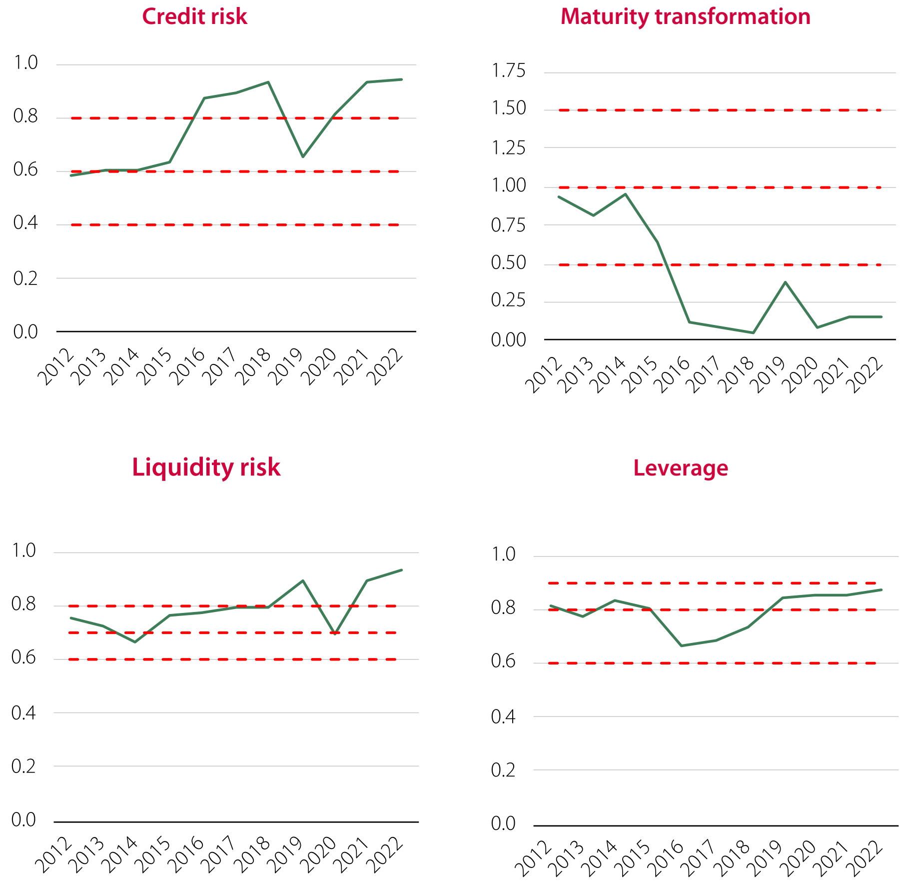
Broker-dealers have a very low weight in the five economic functions (barely 0.9% in 2022), meaning that the risk of contagion to the rest of the financial system is practically non-existent. Even so, analysing the risks associated with these companies, it can be observed that the risk indicators calculated for the sector throughout 2022 did not undergo major changes in relation to 2021 (see Figure 20), due to which credit and liquidity risk continued at high levels, specifically 94.2% and 93.3%, respectively. Therefore, as regards the level of liquidity of these entities, it should be noted that the entry into force of Regulation (EU) No. 2033/2019[60] gave rise to the establishment of liquidity requirements for broker-dealers and unified the definition of liquid assets at the European level. According to the information

59 These figures correspond to a classification of entities made from a legal standpoint, taking into account the legal form of each. However, there are some entities which have the legal form of a bank, but whose business model is based on the provision of investment services. Thus, from a broader perspective, it is estimated that 63% of the business related to the provision of investment services in Spain (including the management of CISs and assessed through fee and commission income), corresponds to commercial banks or entities belonging to their groups, whereas the rest would correspond to financial entities specialising in the provision of investment services and without corporate ties to commercial banks.

60 Regulation (EU) No. 2033/2019 of the European Parliament and of the Council, of 27 November 2019, on the prudential requirements of investment firms and amending Regulation (EU) No. 1093/2010, Regulation (EU) No. 575/2013, Regulation (EU) No. 600/2014 and Regulation (EU) No. 806/2014.

sent by Spanish entities to the CNMV, they all amply met the minimum requirements established by the regulation.[61]

Risk trends for broker-dealers FIGURE 20



Source: CNMV.

61 The minimum liquidity requirement is at least 1/3 of the requirement based on overheads which, in turn, is established as 25% of the previous year's overheads.

Private capital markets (private finance)

EXHIBIT 1

The CNMV has prepared a forthcoming document on private capital markets that describes the main factors which have contributed to the significant growth recorded by private markets since the great financial crisis, the different types of private capital and debt, their main vehicles and their interconnection with public markets. It also includes a specific section that details the most important aspects to be considered by supervisory bodies in view of the growth of private capital markets.

Furthermore, the CNMV used to be a member of the IOSCO work group, which prepared the document *Thematic Analysis: Emerging Risks in Private Finance*,[1] published in September 2023 and which analyses the development of private finance markets and the matters of greatest interest to supervisors in accordance with the main potential risks detected.

Although there is no general, agreed-upon definition of private markets, said document refers to them as markets in which alternative investment management companies channel investor funds – mainly institutional – to the different capital seekers through debt or capital instruments not traded on regulated markets or alternative trading systems.

A differential circumstance of traditional investment funds is the predominantly closed nature of investment vehicles, which allows management companies to align the time horizon of portfolio investments with the time horizon of investors' committed capital. This limits maturity transformation and also reduces the possibilities of massive sales of holdings and assets in stressed market situations.

According to data by Prequin, assets under management in private capital markets exceeded US$13 trillion in March 2023. In general, the following segments can be distinguished within private markets in accordance with the type of assets managed: private capital or private equity (PE) and venture capital (VC) with managed assets amounting to U$8.4 trillion; private credit or private debt (PD) with US$1.6 trillion; and real estate (RE) with US$1.6 trillion. Many classifications also include infrastructure (US$1.2 trillion) and others, including natural resources (US$0.2 trillion) as categories differentiated by their specificities.

Until 2022, retail investors were on the sidelines of investment in private capital and debt markets both due to regulatory restrictions and to the distribution model of the industry, which focused on institutional investors. Regulatory changes and the opening of the sector to retail investors, in a complex context of attraction of new funds, requires appropriate marketing adapted to the peculiarities of lack of liquidity and transparency in private markets.

The main supervisory aspects and risks in relation to the private financing activity is detailed below, differentiating between macroprudential supervision and investor protection and market integrity objectives.

Macroprudential supervision

According to the Bank for International Settlements (BIS),[2] there are three sources of **leverage** in private capital transactions: i) the initial debt that the investee company has prior to the transaction; ii) that added by private capital (PC) management companies by financing the acquisition of the target company with loans or with the issue of bonds; and iii) by means of subscription credit lines (SCL). SCLs are credit lines taken out by a private capital or debt fund that are usually more quickly available than a conventional credit line and which are guaranteed by the monetary commitments acquired by the fund investors, without drawing on the investments made.

A new source of leverage are loans guaranteed by the net value of their assets (NAV loans) to address the debts of the companies in their portfolio.

Leveraged buyouts (within the PE segment), with managed assets in excess of US$3.2 trillion, deserve special attention by supervisors, particularly due to the following aspects: i) the increase in indebtedness they can represent for the target companies and which could compromise their viability; ii) the role of banks in the financing of transactions; and iii) the use of tax engineering in the payment of dividends to management companies through the indebtedness of the acquired company (leveraged recapitalisation dividends).

Authors such as Bernstein, Lerner and Mezzanotti (2019),[3] and Aramonte and Avalos (2021),[4] inter alia, indicate that the activity of private capital is procyclical and is also positively correlated to stock market performance.

Although the dependence and interrelationship between interest rate levels and private capital markets is very high, there are various factors that would buffer the procyclical nature, such as the high level of dry-powder (amount of money committed by investors which has not yet been used but is available), which exceeded US$3.7 trillion in 2023; the absence of marked-to-market valuations, which would reduce the impact of volatility and which, together with the closed nature of the funds, prevents stress-driven sales of the assets in the portfolio, and the extensive information that managers have on the companies in which they invest and in whose management they participate. In private debt markets there are also bilateral relationships with debtors, which improves credit information and loan renegotiation capacity.

The activity of private capital is highly concentrated in certain segments such as technology and health, whereas in medium-sized and small enterprises, private credit is the main source of financing. A slowdown in the activity of these markets can affect the possibilities of financing in the growth and maturity phases of a large number of innovative companies.

There are a plurality of investors in the vehicles used by private capital and debt, as opposed to what happens in markets such as derivatives markets, where there are usually single counterparties. This circumstance, while expanding potential problems on the one hand, limits exposure and possible individual losses on the other.

Protection of investors and market integrity

One of the entry risks of retail investors lies in the valuations, owing to their higher complexity due mainly to: i) the illiquidity and uniqueness of the different investment portfolios of private capital management companies; ii) the lack of transparency; and iii) the high valuation reached in the last stages of the company's growth before flotation or sale to another company.

Each portfolio of each private capital fund has a non-replicable uniqueness, since the target investee companies/projects are usually owned by a single fund and are also not listed on secondary markets, which makes valuation extraordinarily complex for retail investors due to the lack of information and to the difficulty of company valuation models, whose reference price includes future business expectations in a very decisive way. Many of these companies are also disruptive in their segment, such that their valuation is even more complicated, since they also act in sectors with significant network economies in which the winner takes it all.

Market integrity: contagion between private and public markets

Due to the closed nature of holdings in private capital and debt vehicles, the absence of daily valuations and their investment in unlisted assets, private markets are unlikely to generate tensions in public markets. Conversely, significant corrections in public markets could lead to a slower pace of fundraising in private markets and hamper outflow of investments through IPOs.

With regard to institutional investors, losses in private markets may affect global returns and the value of their portfolios, which could compromise their obligations or capacity to invest in other segments, or force asset liquidations in organised markets. For this reason, supervisors must monitor the exposures to private markets of institutional investors.

1 OICV-IOSCO (2023). *Thematic Analysis: Emerging Risks in Private Finance*. Final Report. Available at: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD745.pdf

2 Aramonte, S. and Avalos, F. (2021). "The rise of private markets". *BIS Quarterly Review*, December, pp. 69-82. Available at https://www.bis.org/publ/qtrpdf/r_qt2112e.pdf

3 Bernstein, S., Lerner, J. and Mezzanotti, F. (2019). "Private equity and financial fragility during the crisis". *Review of Financial Studies,* vol. 32, No. 4, pp. 1,309-1,373.

4 Aramonte and Avalos (2021), op. cit.

3.1.4 Economic function 4

This category comprises entities that facilitate credit creation. In Spain, this group consists solely of mutual guarantee companies. These companies are defined as financial entities whose main purpose is to facilitate access to credit for SMEs and to improve their financing conditions in general through the provision of guarantees to banks, public administrations, customers and suppliers. Additionally, and although not included as NBFI for now, crowdfunding platforms are being monitored internationally, since they could potentially be classified as such and included in EF4, as they are vehicles that facilitate contact between investors and entities that need financing. In Spain, the CNMV is the institution in charge of collecting information about them.[62]

62 The most recent estimated information for these platforms reveals, for now, insignificant but growing amounts in relation to the attraction of funds (€308 million in 2022, more than double that of 2021). It should also be noted that less than 20% of the total was financed through debt or loans.

In Spain, mutual guarantee companies account for a very small fraction of the narrow measure of NBFI, with financial assets that barely represent 0.3% of the total. Given that the size of this sector is below the 0.5% threshold, it is not considered to pose any risk to financial stability and therefore no measurement analysis of potential risks has been carried out.

3.1.5 Economic function 5

EF5 is defined as securitisation-based credit intermediation for the funding of financial entities, due to which this category includes structured finance vehicles (SFVs), whose purpose is the securitisation of assets. These entities provide resources to banks or other financial entities, regardless of whether there is a real transfer of assets or risks, due to which they may be an integral part of credit intermediation chains. For this reason, the risks associated with NBFI must be borne in mind, especially regarding maturity transformation. However, as already mentioned in previous reports, securitisation issuances in Spain are structured, generally speaking, such that payments are made with the pools of assets that are redeemed, due to which this problem is, in principle, of little relevance.[63]

In Spain, securitisation is the second most important sector within NBFI. As mentioned earlier, the financial assets of SFVs amounted to nearly €150 billion at the end of 2022, accounting for 30.6% of the aggregate assets of the five economic functions, compared to 31.7% in 2021. As reflected in the right-hand panel of Figure 21, the assets of these vehicles have progressively declined since the impact of the financial crisis, although some stabilisation has been observed since 2019. As in the case of finance companies, a very high percentage of securitisation vehicles are consolidated in banking groups,[64] as a result of which, although their size is significant compared to that of other entities belonging to NBFI, once the assets included in the balance sheet of a bank are deducted, their relative weight falls to 3.8% (6.2% in 2021). Moreover, this figure has been decreasing significantly in recent years and had already exceeded 30% in the period 2010-2012.

63 Furthermore, generally speaking, in Spain securitisation has been more a financing tool than a risk transfer tool, unlike in other economies, where it posed one of the most significant problems of the 2008 financial crisis. For further information, see Martín, M.R. (2014). *Análisis de los fondos de titulización españoles: características en el momento de su constitución y comportamiento durante los años de la crisis.* CNMV, Working Document No. 57 [only in Spanish]. Available at: https:// www.cnmv.es/DocPortal/Publicaciones/MONOGRAFIAS/DT_57.pdf; and Redondo, J. (2021). "How securitisation has evolved since the financial crisis". *CNMV Bulletin*, Quarter IV, pp. 73-107. Available at: https://www.cnmv.es/DocPortal/Publicaciones/Boletin/Boletin_IV_2021_EN.pdf.

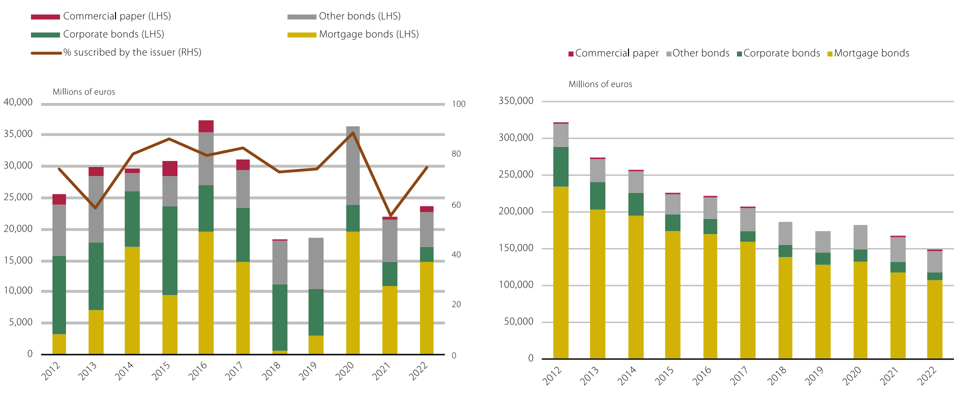
64 The reason why this happens in Spain is that in most situations the transferor retains control, pursuant to Bank of Spain Circular 4/2017 and IFRS 10: Consolidated Financial Statements, among other reasons because it continues to be exposed to the variable returns of the securitised funds and assets, either through credit enhancements or through swaps in which they collect the returns of the securitised portfolio and pay the bond coupons. In these cases, according to the existing accounting standards, the vehicle must remain on the balance sheet of the issuing banks and therefore falls within the scope of traditional banking regulations.

Evolution of securitisation bonds and commercial paper by asset type

FIGURE 21

Issues

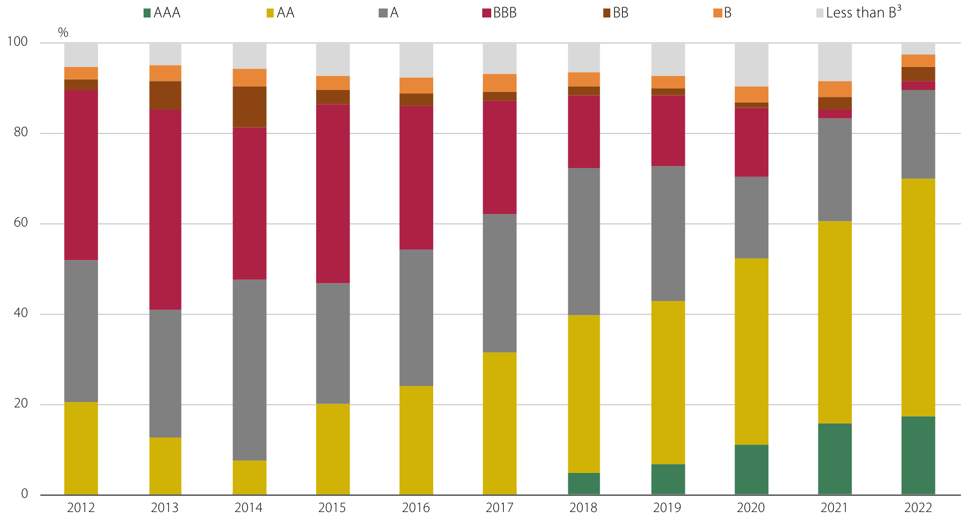
Outstanding balance



Source: CNMV.

Securitisation bond issues stood at €22.7 billion in 2022, slightly above 2021 (see left-hand panel of Figure 21). The percentage of issues subscribed by the issuer or transferor was 74.6%, a percentage similar to that of the last 10 years with the exception of 2021, when it fell sharply. By type of asset, it can be observed that the issue of mortgage bonds predominated, accounting for 63.0% of total issues, whereas consumer loan-backed mortgage bond issues (included under "Other bonds") were the second most important, accounting for 18.8% of the total. Furthermore, the credit rating of securitisation vehicles continued to show clear and progressive improvement, prolonging a trend that began in 2014 (see Figure 22). Thus, at 2022 year-end, of the total outstanding balance of securitisation bonds and commercial paper, 17.4% corresponding to assets with AAA rating (15.6% in 2021 and practically zero until 2017), whereas only 10.4% were assets with BBB or lower rating (16.8% the previous year).

Outstanding balance of securitisation bonds and commercial paper by credit rating[1, 2] FIGURE 22



Source: CNMV.

1 Does not include the Alternative Fixed Income Market (MARF).

2 Ratings grouped according to their Standard & Poor's equivalent.

3 Includes unrated issues.

The issuance of simple, transparent and standardised securitisation bonds (STS) amounted to nearly €6.15 billion in 2022. These assets are regulated by Regulation (EU) 2017/2402,[65] which establishes a general framework for securitisation and creates another specific framework for STS.[66] The amount of these standardised assets issued in 2022 accounted for 26.1% of total securitisation bonds and commercial paper issued, a very similar percentage to that of 2021. The outstanding balance of these instruments accounted for 19.7% of the total.

In relation to the risk assessment of these entities, maturity transformation risk is, without a doubt, the most significant, with liquidity risk also being of some importance. In contrast, the calculation of credit and leverage risks is, by definition, of little relevance for SFVs, at least in Spain.[67] Liquidity risk stood at 92.9% in 2022, a figure which has remained virtually unchanged in recent years: almost all the assets are made up of transferred loans and, therefore, there are very few liquid assets. Individual analysis of the funds shows that, in terms of assets, around 85% of them had liquid assets below 10%, while fewer than 1% had liquid assets above 40%.

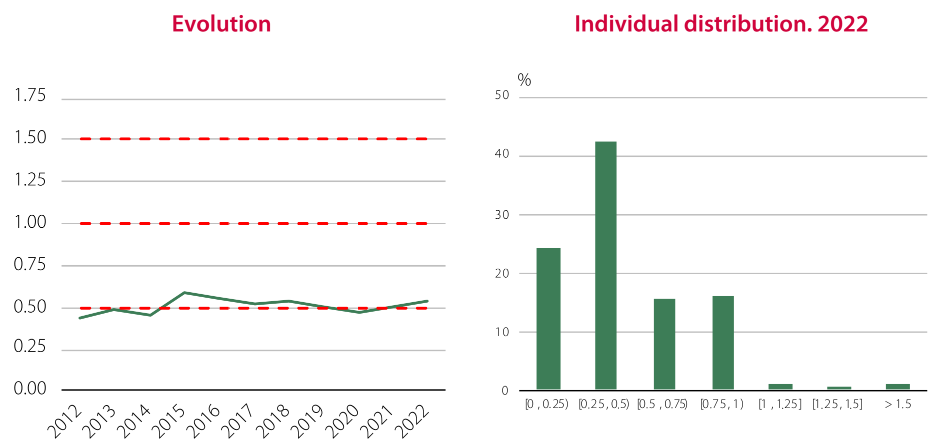
65 Amended by Regulation (EU) 2021/557 (SECR).

66 For a securitisation to be considered an STS, it must meet certain requirements of simplicity (the ownership of the credit exposures must be transferred by means of a real sale to the vehicle that securitises them), transparency (potential investors must have information on the historical behaviour of defaults and losses) and standardisation (compliance with risk retention requirements and prohibition on contracting derivatives except for hedging purposes). The objective of creating this term is to facilitate marketing between investors vis-à-vis other more complex securitisations, in addition to a more favourable treatment regarding capital requirements and retention requirement for the originator.

67 While credit risk is practically 100% by definition – all SFV assets consist of credits transferred by the originating entity or transferor –, something similar happens with the level of leverage, since securitisation funds do not have own funds and, therefore, the ratio, as constructed, is always equal to one.

The risk indicator associated with maturity transformation reached 54.3% in 2022, up 4 pp on 2021 (see left-hand panel of Figure 23), and is therefore in the moderate risk region, although very close to the threshold that separates it from low risk. However, there are substantial differences between the different vehicles and, despite the increase in the combined ratio of liabilities to assets, the number of vehicles with values greater than 100% (medium or high risk) decreased significantly. Thus, as can be observed in the right-hand panel of Figure 23, these funds also accounted for 1.9% of assets, compared to 2.3% in 2021. It should also be noted that, in Spain, most securitised assets come from long-term loans or credits, mainly mortgages, with the same applying to the securities issued (liabilities). Thus, at the end of 2022, current assets and liabilities of Spanish securitisation funds only accounted for 29% and 14% of the balance sheet, respectively, although these percentages, especially in relation to assets, have grown in recent years due to the increase in securitization, whose underlying assets are consumer or car loans.

Maturity transformation risk in securitisation funds FIGURE 23



Source: CNMV.

3.2 Use of macroprudential tools

This section is dedicated exclusively to the tools that are available and used in the field of collective investment and, in particular, to liquidity management tools. It also includes the results of the stress tests that are periodically conducted on investment funds, as they are considered a tool that contributes to identify those institutions that are most vulnerable to unexpected and significant redemption shocks in advance. All of this is part of the monitoring and supervision carried out by the CNMV of the risk assumed by CISs, particularly liquidity risk, based on the data received monthly from these institutions.

As explained in previous editions of this publication, liquidity management tools[68] (LMT) aim to mitigate the risk derived from liquidity mismatches,

68 The most important tools available for UCITS are: the suspension of redemptions, side pockets, partial redemptions, redemption notice periods, redemptions in kind, redemption fees, swing pricing and

understood as a timing mismatch between the time period in which investors can redeem their holdings and the time period required for the orderly sale of the fund's underlying assets. These tools have a high degree of heterogeneity both due to their nature (antidilutive tools,[69] tools that provide flexibility in the settlement of redemptions and tools that impose restrictions or limits to redemptions) and to their activation possibilities[70] (management company or supervisor). Also, their availability is disparate between European jurisdictions, highlighting Spain due to its high degree of availability of tools in comparative terms.[71] In this regard, the future reform of the UCITS and AIFMD Directives may contribute to harmonise the available tools and promote their use within the European Union.

In 2023, two documents with recommendations and guidelines, promoted by the FSB and IOSCO, respectively, aimed at promoting the international use of LMTs by open-ended investment funds were submitted for consultation. The recommendations of the FSB[72] place particular emphasis on the use of antidilutive tools, to which end the IOSCO's guidelines[73] provide a guide for applying this type of tools effectively and uniformly. Antidilutive tools are aimed at aligning fairly the price received by investors redeeming holdings in an investment fund with the price that said fund will obtain from the sale of the underlying assets required to meet the redemption. This value will depend on the market price of the assets in which the fund invests and the cost of the transaction derived from their liquidation.

The most recent available data reveal that the availability of liquidity management tools to Spanish fund management companies is high. It is estimated that, at 2022 year-end, the prospectus of 84% of investment funds (in terms of assets) envisaged the possibility of requiring notice periods of up to 10 business days for redemptions in excess of €300,000. Furthermore, 41% of funds (in terms of assets), either through their prospectus or by significant event communication, establish the possibility of using a swing pricing mechanism or other tools with antidilutive effects. As can be observed in Figure 24, it is the money market and fixed-income fund categories that

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minimum liquidity coefficients. In the case of hedge funds, to the aforementioned tools we must add those known as "gates".

69 The objective of these tools is to charge the transaction cost that will be borne by the fund in the sale of assets to the redeeming investors (to subscribers, the acquisition cost).

70 The activation of these tools is generally made by the management companies, but the CNMV can activate some of them under certain circumstances (for example, the suspension of the redemptions or the reinforcement of the liquid assets). The most recent tool was approved, in the context of the COVID-19 crisis (Royal Decree-Law 11/2020, of 31 March, adopting complementary urgent social and economic measures to address COVID-19), in March 2020 and consists of the possibility of establishing advance notice periods for redemptions without being subject to requirements such as deadlines, minimum amount and previous existence in the management regulation, applicable on an ordinary basis. These periods can be established by the management company or by the CNMV itself.

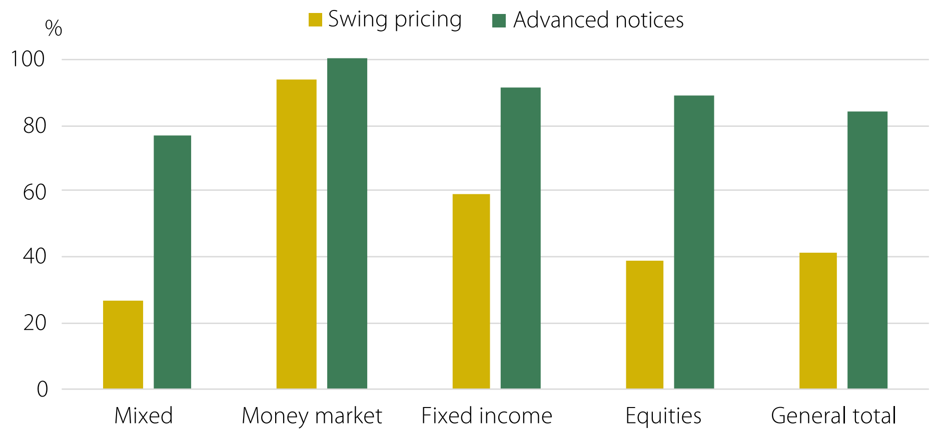
71 For further details, see Exhibit 2 of the NBFI Monitor corresponding to 2020, available at: https://www.cnmv.es/DocPortal/Publicaciones/Informes/IFNB_2021_ENen.pdf

72 FSB (2023). *Addressing structural vulnerabilities from liquidity mismatch in Open-Ended Investment Funds-Revisions to the FSB´s 2017 Policy Recommendations.* Consultation Report, 5 July. Available at: https://www.fsb. org/wp-content/uploads/P050723.pdf

73 OICV-IOSCO (2023). *Anti-dilution Liquidity Management Tools – Guidance for Effective Implementation of the Recommendations for Liquidity Risk Management for Collective Investment Schemes.* Consultation Report, July. Available at: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD739.pdf

most often use this mechanism: 94% of money market funds and 59% of fixed-income funds would be in a position to use if.

Availability of liquidity management tools in IFs FIGURE 24



Source: CNMV.

In 2022, in the context of the war in Ukraine, the CNMV intensified its supervision of liquidity management procedures of the management companies most potentially affected by this conflict. In the first quarter of the year, coinciding with the outbreak of the war and the consequent suspension of trading of assets linked to both countries, five institutions activated the partial redemption mechanism. The exposure of these institutions to suspended securities ranged from a minimum of 4.2% to a maximum of 16.3%. The redemptions remained unsettled in the amount of these percentages, while for the part not affected by suspensions, these institutions continued to process redemptions normally.

3.2.1 Stress tests

Stress tests form part of supervisors' tools to compare the degree of resistance of their supervised entities to a very adverse theoretical scenario. In the case of investment funds, stress tests are conducted to assess the capacity of these institutions to meet an extraordinary increase in redemptions. This capacity depends on the magnitude of the estimated redemption shock and the liquidity conditions of the assets in the fund portfolio. It therefore involves assessing the risk known as liquidity mismatch of investment funds, the most important from the standpoint of financial stability for these institutions, where there is a possibility that the redemption profile is not sufficiently aligned with the liquidity of the portfolio of these funds. This section summarises the most significant results of an exercise of this type on Spanish funds carried out every six months applying a methodology initiated by the European Securities and Markets Authority (ESMA) (STRESI framework [ESMA, 2019])[74] and later expanded by the CNMV (see paper by Ojea, 2020).[75]

Specifically, the CNMV designed a stress test for the money market investment fund sector, UCITS and quasi -UCITS.[76] The database used to conduct the test was extracted from the confidential financial statements submitted by Spanish investment fund management companies to the CNMV in its supervisory role. The granularity of the information contained in this database with respect to the type of unitholder, the composition of the fund portfolio, its category and volume of assets enables funds to be classified into detailed and representative categories. In this case, the categories into which the investment funds have been classified are: i) wholesale public debt funds; ii) retail public debt funds; iii) investment grade corporate fixed-income funds; iv) high-yield corporate fixed-income funds; v) mixed fixed-income funds; vi) wholesale equity funds, vii) retail equity funds; and viii) other investment funds (global and absolute return). The funds are then filtered, as detailed in Ojea (2020), so that those which, due to their characteristics, could distort the simulation of the scenarios are eliminated from the sample.[77]

Using the methodology developed by the CNMV, the stress test was conducted on investment funds with data from December 2008 to June 2023. This exercise provides several results, of which two are particularly relevant: i) the quantification of the proportion of liquid assets in the portfolio of investment funds and ii) the identification of funds that could experience difficulties in meeting redemptions in various adverse scenarios.

The first result of the exercise indicates that, in June 2023, the weighted average of liquid assets accounted between 33% and 70% of the fund assets according to their category, in accordance with the HQLA approach.[78] Under this approach,

74 ESMA (2019). *Stress simulation for investment funds.* ESMA Economic Report.

75 Ojea J. (2020). "Quantifying uncertainty in adverse liquidity scenarios for investment funds". *CNMV Bulletin*, Quarter II, pp. 23-44. Available at: https://www.cnmv.es/DocPortal/Publicaciones/Boletin/Boletin_II_2020_ENen.PDF

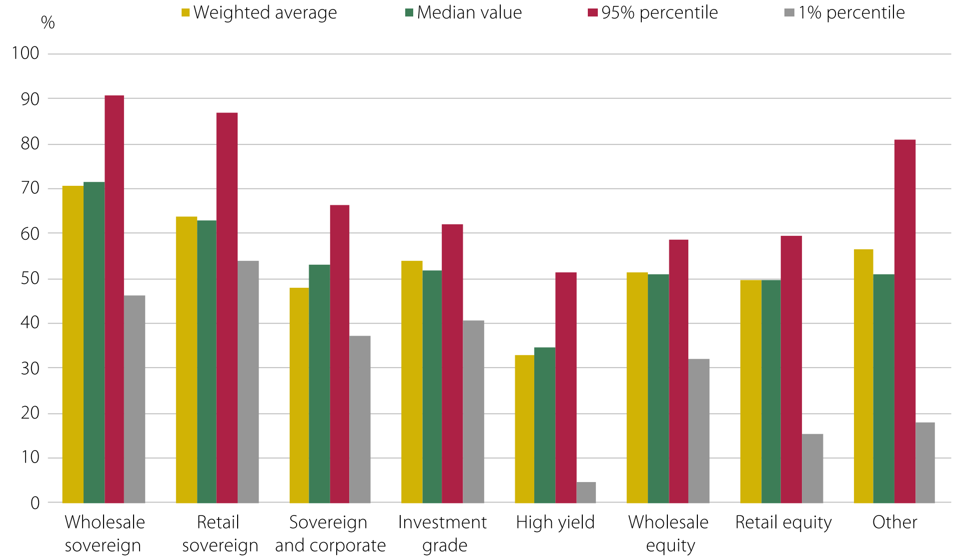
76 Money market funds are those regulated by Regulation (EU) 2017/1131 of the European Parliament and of the Council of 14 June 2017 on money market funds. UCITS are funds regulated by Directive 2009/65/EC of the European Parliament and of the Council, of 13 July 2009, on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities. In Spain, UCITS and quasi-UCITS are regulated by Law 35/2003, of 4 November, on Collective Investment Schemes and its implementing regulations, transposing Directive 2009/65/EC into Spanish law. It is important to note that according to European regulations, most of the quasi-UCITS funds are considered to be alternative investment funds (AIFs), which ESMA includes in the "Other" category. These alternative funds are regulated at European level by Directive 2011/61/EU of the European Parliament and of the Council, of 8 June 2011, on alternative investment fund managers and amending Directives 2003/41/EC and 2009/65/EC and Regulations (EC) No. 1060/2009 and (EU) No. 1095/2010.

77 Among others, funds whose portfolios contain unidentifiable assets which account for more than 40% of their total assets are eliminated (for example, funds that mainly invest in other funds). Guaranteed funds are also eliminated from the sample because they penalise redemptions outside the pre-established liquidity windows.

78 The HQLA approach measures the liquidity of the fund's portfolio using an index that attributes to each asset class a degree of liquidity (a weight that can take values from 0 to 100) depending on its characteristics: $HQLAi = \Sigma_{nk}=1\ (w_{i,k} * S_{i,k})*100$. Where $w_{i,k}$ is the weight (degree of liquidity) of asset *k* of fund *i* and $S_{i,k}$ represents the proportion of that asset in the fund's portfolio. In other words, the HQLA index is a

the assets available to the funds are delimited to address a negative shock that could occur in the next six months. Figure 25 shows the average data by category, in addition to other percentiles of interest. It can be observed that the high-yield corporate bond and sovereign and corporate bond categories have the lowest liquidity ratios, whereas the sovereign bond, investment grade corporate bond and "Other" categories have higher liquid asset ratios. It should also be noted that, in the high-yield corporate bond category, there is a certain percentage of funds which have available liquidity that is well below the average.

Proportion of HQLA of investment funds by category FIGURE 25



Source: CNMV.

The second of the results requires the simulation of different redemption shock scenarios and their effects on the fund categories and the identification of those funds that, with the estimated liquid assets, would not be able to meet the volume of redemptions in these theoretical scenarios. Table 7 shows the results of this analysis, which considers five theoretical scenarios of varying severity. One of them is the scenario proposed by ESMA in its 2019 exercise and the rest are scenarios proposed by the CNMV. As a reference, the most severe[79] ($CoES(\alpha=\beta=\sqrt{0{,}4\ \%})$) is up to 19 times more severe than in the worst week of COVID-19.

The update of this exercise using June 2023 data reveals that the Spanish fund sector continues to be significantly resistant to the scenarios considered. This

weighted average of the liquidity of the assets making up the fund portfolio. The weights attributed, $w_{i,k}$, correspond to those applied under Basel III.

79 *CoES* is formally defined as: where and is the inverse distribution function of variable *i*. In this context, *CoVaR* takes a value that fulfils the expression: $Pr(Net\ flow\ \%_i < CoVaR_{i|j}(\alpha,\beta) \mid Net\ flow\ \%_j < VaRj(\alpha)) = \beta$, where $VaR_j(\alpha)$ is the percentile α of net flows *j* that determines the severity of the conditional redemptions, while β is the percentile that determines the severity of redemptions conditional on the previous scenario. For example, for $CoES(\alpha=\beta=\sqrt{5\ \%})$, to calculate the redemption shock applied to the funds in each of the categories, the largest 22.36% ($\sqrt{5\ \%}$) of redemptions in each category have been taken into account, selected at times when the largest 22.36% of redemptions occurred in the whole fund sector.

can be deduced from the results shown in Table 7, which represents the percentage of funds (and assets) within each category that could experience difficulties meeting redemptions in said scenarios. Based on the analysis, there are only two categories in which funds could experience problems in one of the scenarios considered: high-yield corporate fixed income and Other. The number of funds that could experience problems ranges between two in the second most severe scenario and eight in the most severe scenario. In the most severe scenario, the assets of the eight funds that could experience problems account for 0.24% of the total assets of the fund sample analysed. Within the high-yield fixed income category, two funds could experience difficulties in the second most severe scenario and four in the worst-case scenario. These funds account for 4.3% and 8.5% of the funds of this category in both scenarios and account for 0.6% and 2.2% of their assets. In the "Other funds" category, the redemption coverage ratio is insufficient for one fund in the most severe scenario (2.7% of the assets of this category). The rest of the categories do not include funds with difficulties.

Results of the stress tests (aggregate flows) TABLE 7

%

Number of funds with RCR[1] < 1 in each style / Total funds in each style (in %)								
Scenarios	Wholesale sovereign	Retail sovereign	Sovereign and corporate	Investment grade corporate	High yield corporate	Wholesale equity	Retail equity	Other
ES (a = 3%)[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CoES ($a = \beta = \sqrt{5}$%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CoES ($a = \beta = \sqrt{3}$%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CoES ($a = \beta = \sqrt{2}$%)	0.0	0.0	0.0	0.0	4.3	0.0	0.0	0.0
CoES ($a = \beta = \sqrt{0{,}4}$%)	0.0	0.0	0.0	0.0	8.5	0.0	0.0	4.3

Assets of funds with RCR[1] < 1 in each style / Total funds in each style (in %)								
Scenarios	Wholesale sovereign	Retail sovereign	Sovereign and corporate	Investment grade corporate	High yield corporate	Wholesale equity	Retail equity	Other
ES (a = 3%)[2]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CoES ($a = \beta = \sqrt{5}$%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CoES ($a = \beta = \sqrt{3}$%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CoES ($a = \beta = \sqrt{2}$%)	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0
CoES ($a = \beta = \sqrt{0{,}4}$%)	0.0	0.0	0.0	0.0	2.2	0.0	0.0	2.7

Source: CNMV.

1 RCR: Redemption Coverage Ratio, defined as the ratio between the volume of liquid assets of each fund and the size of the redemption. Therefore, funds with a RCR < 1 are identified as those that could directly experience liquidity problems.

2 This is the baseline scenario used in the stress test conducted by ESMA (2019). ES is the acronym for Expected Shortfall, which is a risk measure that assesses, in this case, the expected redemptions when only the largest redemptions that may arise are considered. In this case, the largest 3% of redemptions are considered.