Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem

Market Based Finance
Monitor 2023

Contents

Back to “Contents”

Executive Summary

The *MBF Monitor* reviews trends and the evolution of vulnerabilities in the internationally focused Irish Market Based Finance (MBF) sector. MBF refers to the raising of debt or equity through financial markets, rather than through the banking system. The Irish domiciled MBF sector is large, outward-facing, and diverse, providing many benefits to the real economy, widening and diversifying financial channels. But with benefits come potential risks. In the event of an adverse shock, vulnerabilities in the MBF sector may lead to the amplification of systemic risk (see Central Bank of Ireland Discussion Paper for more details). The *Monitor* focuses initially on the sector as a whole and then on the specific sub-cohorts of MBF in Ireland, focusing on trends and evolving vulnerabilities in outward facing investment funds and Money Market Funds (MMFs) and presenting the main characteristics of Special Purpose Entities (SPEs).

The Irish domiciled MBF sector is large, outward-facing, and diverse, providing many benefits to the real economy.

A number of changes have been introduced in this edition of the *Monitor*. The primary methodological change in this edition is the introduction of new financial stability cohorts within the investment fund sector. The second change is the introduction of new monitoring tools for the investment funds sector. These include the *Risk Heatmaps* (Box A) to measure evolving and relative vulnerabilities and the network analysis tool (Box B) to assess interconnectedness by measuring common asset holdings between fund cohorts. The final change is the introduction of more informative risk metrics (e.g. using regulatory limits to assess liquidity in MMFs).

Vulnerabilities in the MBF sector may lead to the amplification of systemic risk.

MBF has increased in importance over the past decade for the real economy and for financial stability. The MBF sector is an important source of finance for both the financial system and the real economy. Ireland hosts a large portion of the European MBF sector and is an international financial *hub* intermediating capital flows. While Equity Funds are the largest and fastest growing cohort, funds investing in bonds may be more important from a financial stability perspective (as they support credit intermediation).[1]

[1] Credit markets are typically more important for financial stability than equity markets due to stronger financial accelerator effects. See Buch (2017), ESRB NBFI Monitor and FSB Global Monitoring Report on NBFI for more details.

Back to “Contents”

The size of the Irish investment fund sector decreased in 2022 mainly due to falling valuations. As macro-financial risks elevated in 2022, valuations of assets under management (AuM) fell, particularly for Equity Funds, Bond Funds, and GBP LDI Funds. The changing risk environment in 2022 led to net outflows from most cohorts of investment funds but downward revaluations explain the majority of the reduction in AuM in recent quarters. The decline in the sector did not continue into 2023 as AuM increased in the first six months of the year. The value of total MBF assets fell 4 per cent from 2021 Q4, reaching €5.4tn in 2023 Q2.

As macro-financial risks elevated in 2022, valuations of assets under management (AuM) fell, particularly for Equity Funds, Bond Funds, and GBP LDI Funds.

Leverage, a key source of financial vulnerability, is highest in GBP LDI Funds and Irish Property Funds but has declined from recent highs. Disruption in the gilt market in September 2022 highlighted the risks associated with high leverage for GBP LDI Funds.[2] In November 2022, the Central Bank of Ireland (along with other supervisory authorities) set out policy measures to increase GBP LDI Fund resilience. Since 2022, leverage has fallen significantly from its highs.[3] The Central Bank has also introduced policy measures to increase the resilience of Irish Property Funds.[4] On-balance sheet leverage in Hedge Funds trended upwards from 2018 to 2021, but reduced slightly in 2022.

Liquidity mismatch and interconnectedness are relatively high in Bond Funds. Liquidity mismatch is relatively high for Bond Funds, as they predominantly offer daily redemptions to investors and have lower levels of liquid assets compared to other fund cohorts. Bond Funds support credit intermediation and are highly interconnected with NFCs, banks and governments through their holdings (see Box A). While the value of bond portfolios held by the investment funds sector has fallen significantly due to rising interest rates, the overall sensitivity of the sector to interest rate shocks has reduced as the weighted average maturity of bonds held by Irish investment funds

---

[2] Dunne et al (2023) for more details.

[3] The increases in resilience are in line with the supervisory expectations for GBP LDI Funds to maintain an improved level of resilience, as outlined by the Central Bank via an industry letter in November 2022. For more details see - CP157: *Macroprudential measures for GBP liability driven investment funds*.

[4] The *MBF Monitor* focuses on outward facing MBF entities rather than domestically focused entities. Irish Property Funds are included in the charts for completeness but for more details on Irish Property Funds' resilience and the relevant policy measures that have been introduced, please see the *FSR*.

Back to "Contents"

has fallen steadily, from approximately 11 years in 2020 Q1 to 8 years in 2023 Q2.[5]

MMFs have grown recently, benefitting from rising interest rates and inflows. As they are cash-like market instruments, rising short-term interest rates increase the attractiveness of MMFs. AuM in Irish MMFs increased by 4 per cent from 2021 Q4 to 2023 Q1, with net inflows to the sector over the same period. Low Volatility Net Asset Value (LVNAV) MMFs in particular experienced strong growth in AuM since 2021. This cohort offers comparative valuation stability and competitive returns. Irish MMFs are denominated in three currencies with over 80 per cent invested in non-euro assets (GBP and USD). During the second half of 2022, GBP denominated MMFs experienced large net inflows that were (at least partially) linked to the aforementioned gilt market disruption. MMF managers have recently reduced the maturity profile of their assets and increased somewhat the liquidity, in particular for Public Debt Constant Net Asset Value (CNAV) MMFs (see glossary for definitions).

Money Market Funds have grown recently, benefitting from rising interest rates and inflows.

Special Purpose Entities include a wide range of activities and are mainly sponsored by UK and US entities. SPEs are companies created to fulfil a narrow, specific purpose. In Ireland, there are two cohorts: financial vehicle corporations (FVCs), which are securitisation vehicles, and Other SPEs, which are non-securitisation vehicles. Collateralised Loan Obligations (CLOs) remain the dominant type of FVC, with Investment Fund Linked strategies accounting for the largest Other SPE category. The majority of assets continue to be held by SPEs sponsored by UK and US entities.

[5] See Gianstefani, Metadjer and Moloney (2023).

Back to “Contents”

1. Introduction

The Irish domiciled Market Based Finance sector is large, outward-facing, and diverse. The sector supports credit and wider financial intermediation in the global economy for borrowers and savers, which include governments, banks, and insurers as well as non-financial companies and households. This growing form of financial intermediation provides a valuable alternative to bank finance, supporting economic activity. The Irish-domiciled MBF sector is internationally focused, with limited links to the domestic Irish economy (although there are some exceptions).[6]

The *Monitor* focuses on recent trends and the evolution of cohort vulnerabilities to financial stability risks. Like all forms of financial intermediation, MBF can also contribute to a build-up of financial vulnerabilities. Vulnerabilities in the MBF sector (e.g. liquidity mismatch and leverage) have the potential to be key factors for the materialisation of systemic risk. Furthermore, strong interconnectedness makes it more likely that sections of the MBF sector may amplify or transmit shocks to the rest of the financial system or the real economy.[7] Thus, the transmission of shocks by the sector could have an impact on financial stability and affect the real economy through changes in investment, employment, wealth, etc. The Central Bank actively monitors the MBF sector as part of our mission to protect financial stability. The *Monitor* complements existing Central Bank publications, such as FS Notes or Research Technical Papers, which give more detailed analyses of specific issues related to the sector, or to particular sub-sectors. In addition, the *Monitor* looks at the entire MBF sector domiciled in Ireland, with a particular focus on outward facing investment funds and MMFs (as these are priority areas for the Central Bank) and also surveying special purpose vehicles. This complements the existing *Financial Stability Review (FSR)*, which looks specifically at the segments of the MBF sector that are linked to the domestic economy.

The Central Bank actively monitors the Market Based Finance sector as part of our mission to protect financial stability.

[6] These exceptions include property funds which invest in commercial real estate in Ireland and some non-bank lenders which provide credit to SMEs in Ireland, see the Central Bank's Financial Stability Review 2023:II for further details.
[7] See Central Bank of Ireland Discussion Paper 11: An approach to macroprudential policy for investment funds.

Back to "Contents"

The primary methodological change in this edition of the *Monitor* is in how funds are categorised. This edition of the *Monitor* has seen a number of methodological changes to better reflect the risk monitoring approach of the Central Bank for this sector. Previously, funds were categorised based on their statistical reporting cohorts.[8] This approach has been tweaked to focus on cohorts that are particularly large or that are of interest from a financial stability perspective. Bond, Equity and Hedge Fund cohorts are retained. A new cohort has been introduced, pound sterling denominated Liability-Driven-Investment (GBP LDI) Funds, as a separate category due to the events of September 2022.[9] Additionally, Irish Property Funds are now defined as funds investing more than 50 per cent of their assets under management in Irish property assets. Thus, the new list of investment fund cohorts are: Bond, Equity, Hedge, Irish Property, GBP LDI, Other and Money Market Funds.[10]

This edition of the *Monitor* has seen a number of methodological changes to better reflect the risk monitoring approach of the Central Bank for this sector.

The second change is the introduction of a number of new monitoring tools *for* the investment fund and MMF sectors. In Box A, a new tool, the *risk heatmap*, is introduced. These heatmaps have been developed by the Central Bank to allow regular *Risk Assessments* and the monitoring of the vulnerability of fund cohorts to external risks. The *risk heatmaps* will form part of future editions of the *Monitor* and, when combined with the existing time series charts, give a more complete view of the relative cross-cohort vulnerabilities and the evolution of vulnerabilities over time. Box B presents a network analysis of common asset holdings of investment funds and MMFs. Finally, a number of updates to the risk metrics applied in the *Monitor* were also implemented to better capture the evolving vulnerabilities of different cohorts, e.g., the introduction of different measures of liquid assets in investment funds and MMFs.

The remainder of this publication is structured as follows: Section 2 provides a short overview of the MBF sector in Ireland. Section 3 focuses on the investment fund sector and in particular on trends in leverage, liquidity mismatch and asset holdings of debt instruments (by maturity and ratings) by fund sector cohort. Section 4 looks at

[8] Bond, Equity, Mixed, Hedge, Real Estate, Other, and Money Market Funds.
[9] See Dunne et al (2023) for more details.
[10] The remaining Other Funds (excluding GBP LDI funds), Mixed Funds, and Real Estate Funds (excluding Irish Property Funds) are grouped into a single Other Fund category.

Back to “Contents”

recent trends and evolving vulnerabilities in MMFs while Section 5 highlights some of the characteristics of the SPE sector. As mentioned above, the *Monitor* also includes boxes that explore specific areas in more depth. Box A looks at the *risk heatmaps* developed by the Central Bank to monitor the vulnerability of different fund cohorts. Box B focuses on indirect interconnectedness between fund cohorts by examining overlapping bond holdings.

Back to “Contents”

2. Overview of the MBF sector in Ireland

In Ireland, the number of market based finance entities in June 2023 was 10,021 while asset values stood at €5.4 trillion.

The MBF sector grew from 2016 to 2021, and contracted somewhat in 2022. The MBF sector increased in size relative to the size of the domestic economy from 18.6 times GNI* at the end of 2016 to a peak of 23.9 times GNI* at the end of 2021 (Chart 1). However, the size of the sector fell in 2022, primarily due to a retrenchment of asset valuations coupled with investor outflows from investment funds. This reduction in assets under management (AuM) occurred in the context of tightening financing conditions, leading to a fall in a range of asset valuations in global markets over the course of 2022. Thus, continued growth of the domestic economy, coupled with a reduction in AuM for the sector, saw the sector fall to 18.8 times GNI* in 2022. However, the decline in the sector did not continue into 2023, AuM increased in the first six months of the year, albeit not returning to 2021 levels.

Ireland hosts the largest Money Market Fund sector in the EU and the largest exchange-traded funds (ETF) sector.

Ireland hosts a large portion of the European MBF sector. Measuring by total asset value, Ireland has the second biggest investment funds sector in Europe (following Luxembourg) and the 4th biggest sector in the world.[11] Ireland also hosts the largest MMF sector in the EU and the largest exchange-traded funds (ETF) sector.[12] It is also the domicile of more than 90 per cent of CLOs in Europe, a particular type of SPE used to raise funding for (and in) credit markets.[13]

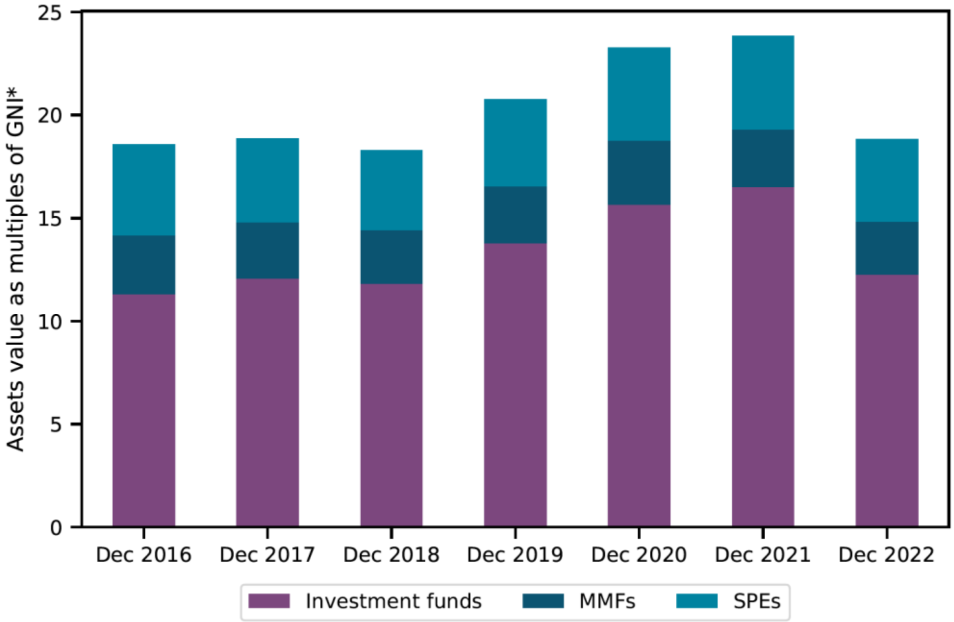
While Equity Funds are the largest and fastest growing cohort, funds investing in bonds may be more important from a financial stability perspective. Equity Funds are the largest cohort in the MBF sector with €1.5tn AuM, followed by SPEs (€1.1tn) and then Bond Funds (€1.0tn) (Chart 2). Within the investment funds sector, growth in the last 5 years has been strongest in Equity, Bond and Other Funds (Table 1). MMF assets have grown steadily over the same period to €0.7tn. Due to their role in credit intermediation, MBF cohorts with larger holdings of bonds – particularly Bond Funds, MMFs and GBP LDI

[11] See Central Bank of Ireland Discussion Paper 11: An approach to macroprudential policy for investment funds.
[12] Assets in Irish-domiciled ETFs increased from €535m to over €1tn over the past 4 years. Ireland is now the largest domicile for ETFs in Europe and is home to more than two thirds of the total European ETF market.
[13] See Box A, *MBF Monitor 2021.*

Back to "Contents"

Funds – may be more important than Equity Funds from a financial stability perspective.

Chart 1: The size of MBF sector has fallen in 2022 relative to the size of the economy (GNI*)
Total MBF entities' assets as a multiple of GNI* by type of entity



Source: Central Bank of Ireland, Central Statistics Office.

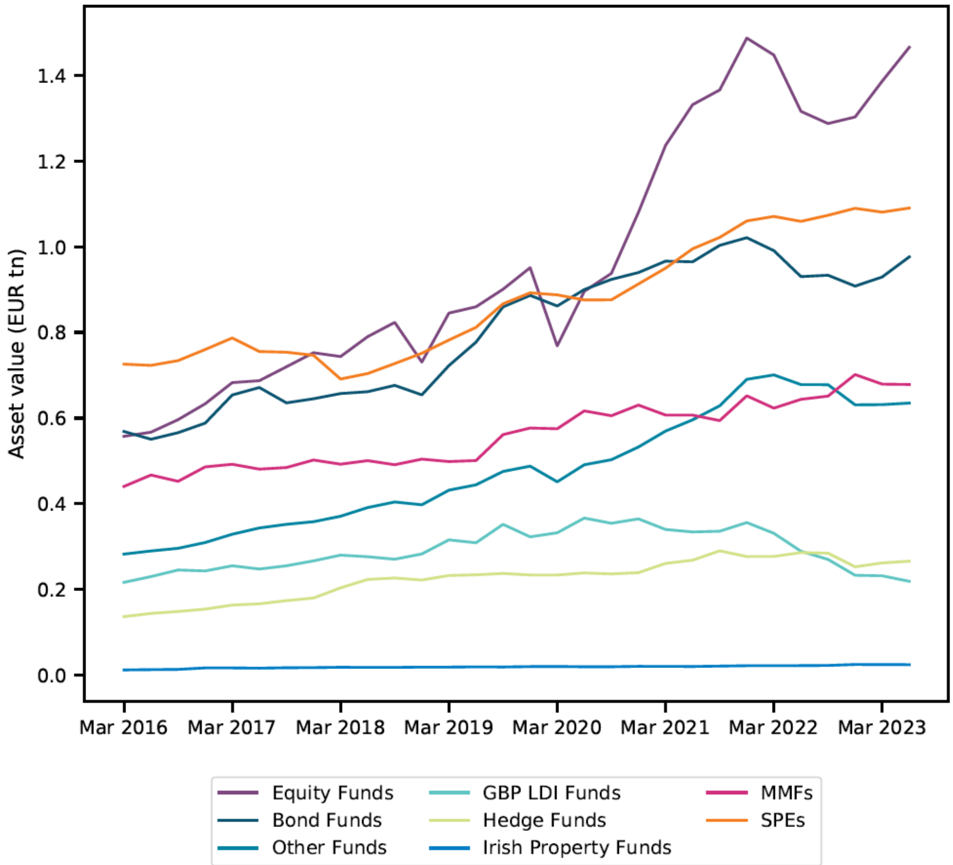
Table 1: Overview of the MBF
Number of entities and AuM for each fund category as of 2023 Q2

	Number of Entities	AuM (€bn)	2022 % AuM growth	2023 YTD % AuM growth	5-year % AuM growth
Equity Funds	2,466	1,465	-12	12	85
Bond Funds	1,231	976	-11	8	48
Other Funds	1,945	635	-9	1	62
Hedge Funds	444	266	-9	5	19
GBP LDI Funds	322	219	-35	-6	-21
Irish Property Funds	163	24	13	-2	36
MMFs	86	678	8	-3	36
SPEs	3,364	1,090	3	0	55
Total	10,021	5,354	-8	4	50

Source: Central Bank of Ireland.
Notes: Irish Property Funds are categorised based on direct holdings of Irish property. Some funds in Ireland may also have indirect exposures to Irish property and such funds may be included in other cohorts. Data as of 2023 Q2.

Back to "Contents"

Chart 2: Since the onset of COVID-19 Equity Funds have become the largest and fastest growing cohorts
Total MBF entities' assets by type of entity – Quarterly series from 2016 Q1 to 2023 Q2



Source: Central Bank of Ireland.

Ireland is an international financial *hub* intermediating capital flows. Ireland is an international financial *hub* that is it is a domicile from which financial entities receive finance from (mainly) international investors and invest in global markets.[14] Chart 3 illustrates the geographical sources of funding (liabilities) and the geographical domicile of investments (assets) for the MBF sector. On a first counterparty basis, the two largest sources of funding for the Irish MBF sector are from the UK and Other EU whereas the largest domicile for investment is the US.

The MBF sector is an important source of finance for both the financial system and the real economy.

The MBF sector is an important source of finance for both the financial system and the real economy. As of 2023 Q2, approximately €2.9tn of assets held by MBF entities have been issued by the (mainly international) real economy, i.e., NFCs (non-financial corporations), governments, property and land (Chart 4). The MBF sector is also an important source of financing for the banking sector. For example, MMFs hold approximately €83bn of Euro Area short term debt

[14] See Central Bank of Ireland Discussion Paper 11: An approach to macroprudential policy for investment funds.

Back to "Contents"

instruments, or 15 per cent of these institutions' outstanding money market instruments. The links to the Irish real economy remain relatively limited.[15]

MBF entities have increased their exposure to US NFC assets in recent years. Digging deeper into the connectedness of the MBF sector to different sectors and regions in terms of portfolio holdings, US NFC exposures have increased significantly in recent years, and make up almost 16 per cent of all asset exposures (Chart 5). 81 per cent of US NFC holdings are equity based and 14 per cent are debt securities. The increase is driven by a combination of positive revaluations and net purchases, with the increase due to revaluations being more significant. Exposure to US Banks has also increased from approximately 3 per cent of total assets in 2016 to 4 per cent in 2023. Exposure to UK Government assets has reduced significantly over recent quarters, at least partially due a reduction in exposures in the GBP LDI Fund sector following last year's gilt market disruption. While US and UK government debt exposures make up a significant portion of assets, exposure to euro area government debt is much more limited with a combined €97bn exposure with the largest exposure being to France at €29bn.

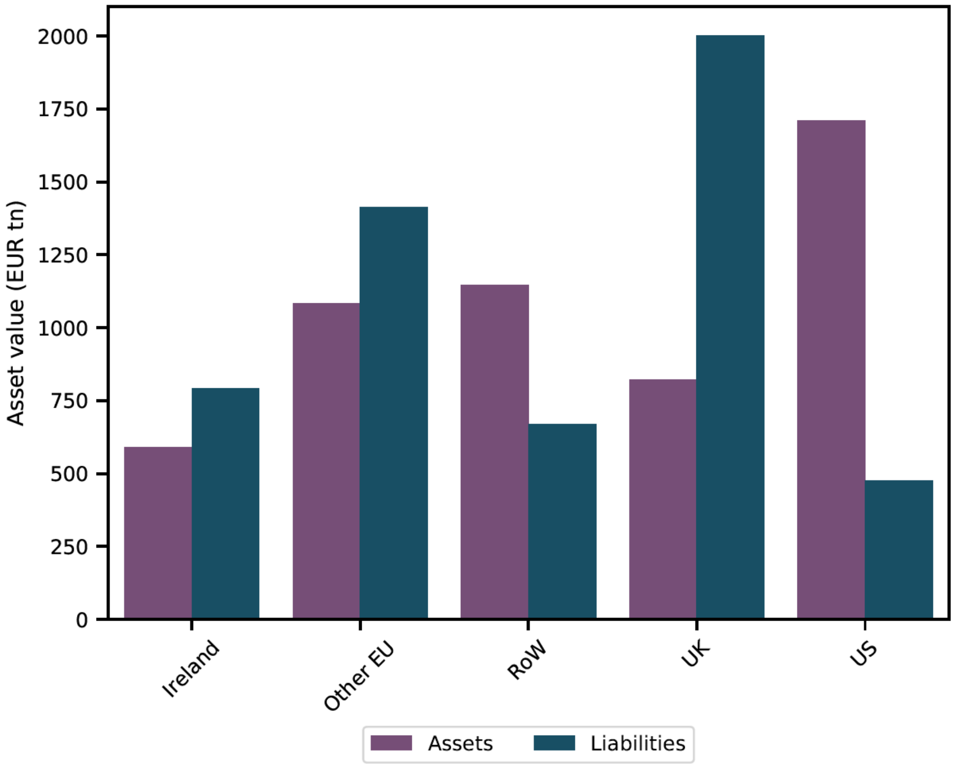
US NFC exposures have increased significantly in recent years, and make up almost 16 per cent of all asset exposures.

[15] The MBF sector also holds approximately €31bn of debt and equity issued by Irish NFCs and has exposure to Irish households of €32mn via securitisation of activities of FVCs.

Back to "Contents"

Chart 3: The Irish MBF sector intermediates global capital flows, particularly from the UK to the US

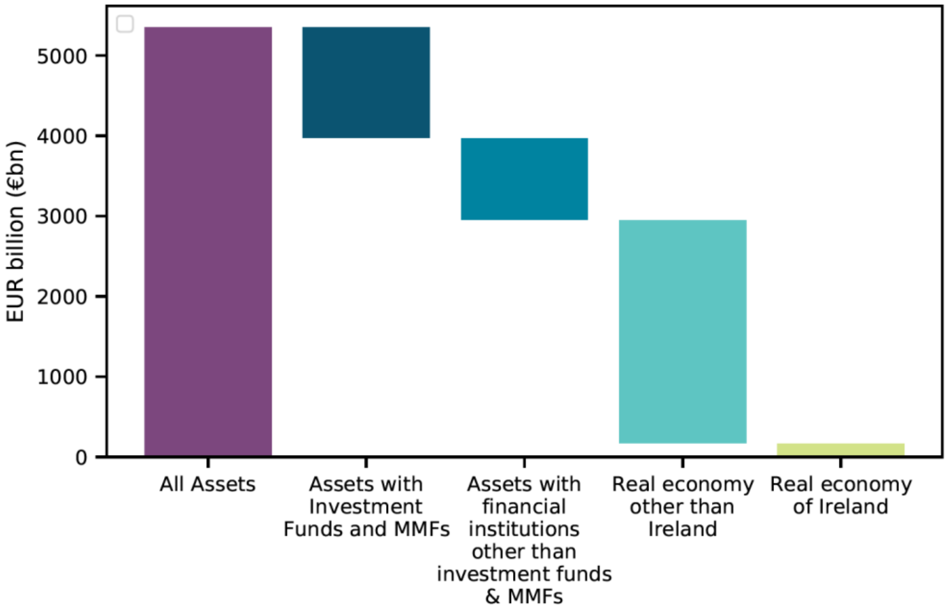
Total assets and liabilities of MBF entities by region of exposure.



Source: Central Bank of Ireland.

Chart 4: MBF entities are an important source of financing for the international real economy

Exposure of the Irish MBF sector to the real and financial economies

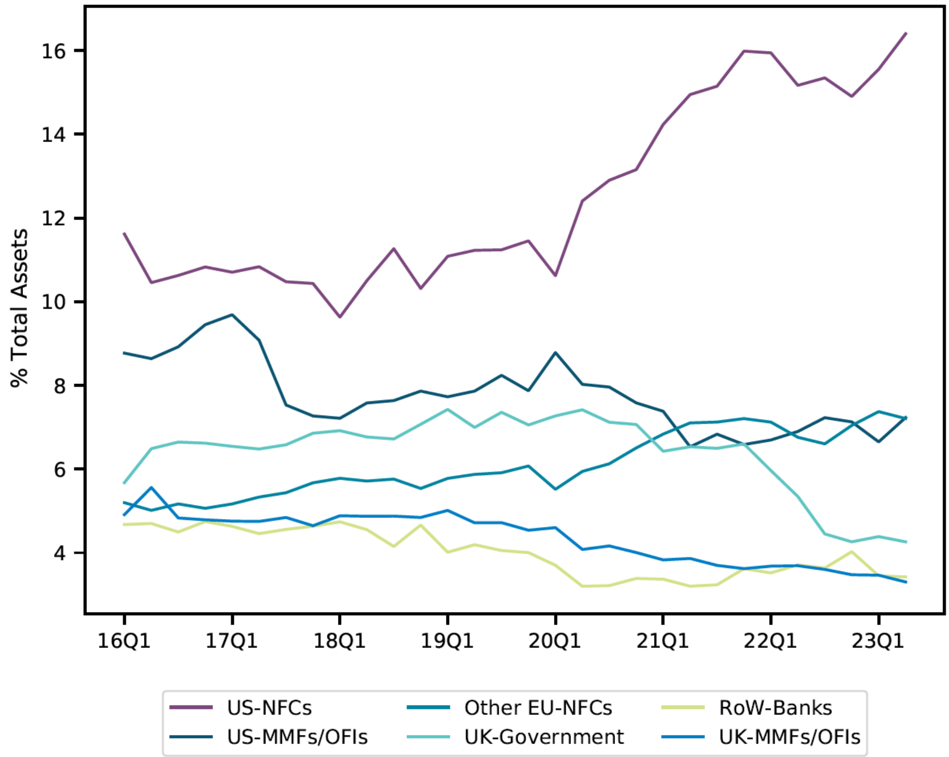


Source: Central Bank of Ireland.

Notes: Financing for the real economy includes assets issued by NFCs (non-financial corporations) or governments and property and land assets.

Back to "Contents"

Chart 5: US NFC exposure has increased significantly since the onset of COVID-19
Selected Country and Sector exposures as a % of total MBF assets.



Source: Central Bank of Ireland.

3. Recent trends and vulnerabilities in investment funds (excluding MMFs)

3.1 Recent Trends

The period from 2020 Q2 to 2021 Q4 saw strong growth across the Irish domiciled investment fund sector. The funds sector is the largest and fastest growing sub-sector within the MBF sector in Ireland. It exhibited strong growth across all cohorts in AuM between 2020 Q2 and 2021 Q4, driven by both investor inflows and increasing asset values. COVID-19 related outflows in 2020 Q1 for Bond Funds (and Equity Funds) were followed by a sustained period of inflows across the entire sector, with notably large subscriptions for Bond, Equity and Other Funds (Chart 6). The macro-financial risk environment changed in 2022 Q1, brought about by geopolitical tensions, post COVID-19 supply chain constraints, high inflation, and tightening financing conditions.

The macro-financial risk environment changed in 2022 Q1, brought about by geopolitical tensions, post COVID-19 supply chain constraints, high inflation, and tightening financing conditions.

As macro-financial risks elevated in 2022, valuations fell, particularly for Equity Funds, Bond Funds, and GBP LDI Funds. Equity Funds experienced the largest drop in AuM in monetary terms, falling by €184bn or 12 per cent in 2022. This primarily reflects poor stock market performance, with the S&P500 also dropping by about a fifth over the same period. On the back of the sharp adjustment in interest rates globally, Bond Funds and GBP LDI Funds also experienced negative growth in AuM, with approximately minus 11 per cent and minus 34 per cent change respectively over 2022. The decrease in the AuM of GBP LDI Funds was also partially attributable to asset sales of gilts following the UK *mini-budget* announcement in September 2022.[16]

Bond Funds and GBP LDI Funds also experienced negative growth in AuM, with approximately minus 11 per cent and minus 34 per cent change respectively over 2022.

The changing risk environment in 2022 also led to net outflows from most cohorts of investment funds. The outbreak of war in Ukraine and the supply chain and energy price concerns weighed heavily on European corporates.[17] Reflecting this, net flows turned negative for Bond Funds (Chart 6). European corporate bond funds in particular

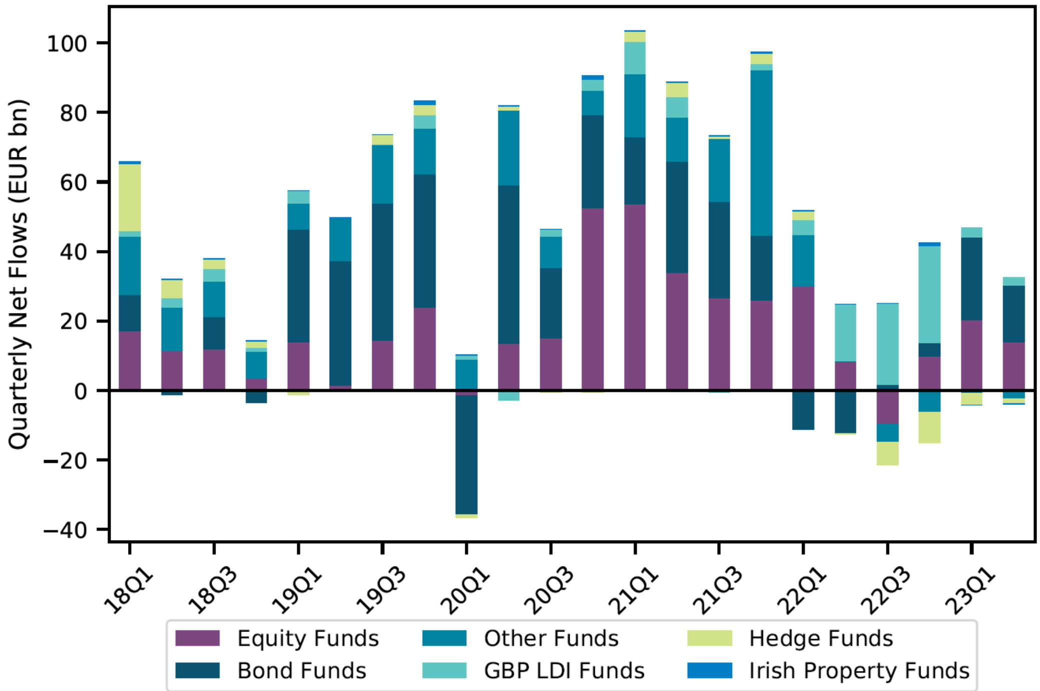
[16] See FSR 2022-II: Box C - UK developments and the investment fund sector.
[17] See FSR 2022-I: Box A - Risks to Irish financial stability emanating from the war in Ukraine

Back to "Contents"

experienced significant outflows. Outflows were recorded for Equity Funds in 2022 Q3, with Hedge Funds and Other Funds recording outflows in each quarter from 2022 Q3 to 2023 Q2. In contrast, significant inflows into GBP LDI Funds were seen at this time, as LDI fund managers requested subscriptions from pension fund investors to recapitalise the funds.[18]

Chart 6: Bond Funds in particular saw large net outflows at the onset of COVID-19 and to a lesser degree at the start of 2022

Total investment fund flows by cohort



Source: Central Bank of Ireland.

Downward revaluations explain more of the reduction in AuM in recent quarters than portfolio asset sales. The change in the total amount of debt and equity securities held by investment funds can be decomposed into net revaluations and net transactions. The growth in the holdings of equity securities between 2020 Q2 and 2021 Q4 was driven by increasing asset values in particular, with growth in debt securities dominated by net purchases over the same period. The impact of the changing risk environment was compounded by the global economy entering a monetary policy tightening cycle beginning the first half of 2022, leading to price drops across asset classes. Changes in asset valuations across both debt and equity securities were much more impactful on the level of holdings than net sales in 2022 (Chart 7). This may be reflective of higher correlation across

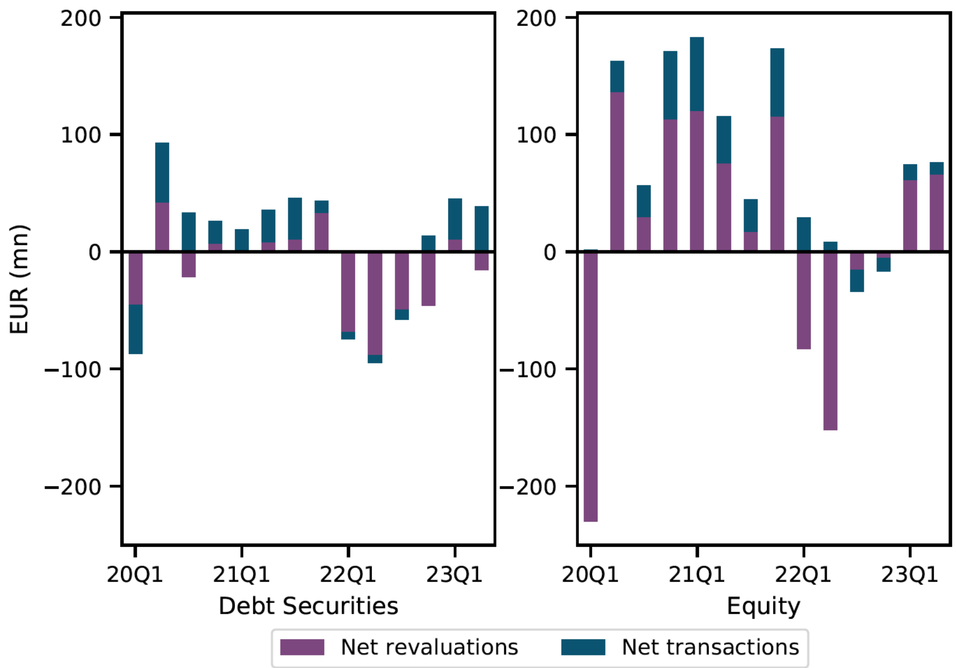
Changes in asset valuations across both debt and equity securities were much more impactful on the level of holdings than net sales in 2022.

[18] See Dunne et al (2023) for more details.

Back to “Contents”

different asset classes over the period reducing opportunities for investors to switch to better performing strategies and thus reducing the incentive to sell.[19]

Chart 7: Falling valuations – particularly at the onset of COVID-19 and from the end of 2021 to early 2022 – drove fund values more than asset sales
Change in Holdings of Debt and Equity Securities by investment funds



Source: Central Bank of Ireland.

3.2 Vulnerabilities

Leverage, liquidity mismatch and interconnectedness in funds are key metrics for monitoring evolving financial vulnerabilities. Typically, it is the collective actions of investment funds that have the potential to generate systemic risk. The materialisation of systemic risk arises from an adverse shock to the financial system and the collective interplay between investment funds' vulnerabilities, in particular leverage, liquidity mismatch, and the interconnectedness of the fund cohorts.[20]

The materialisation of systemic risk arises from an adverse shock to the financial system and the collective interplay between investment funds' vulnerabilities.

3.2.1 Leverage in investment funds

Leverage, a key source of financial vulnerability, is highest in GBP LDI Funds, Irish Property Funds and Hedge Funds. Excessive leverage can make cohorts of funds more fragile in the face of adverse

Leverage in Irish domiciled funds is highest in GBP LDI Funds, Irish Property Funds and Hedge Funds.

[19] See FSR 2023-I: Global Risk Assessment.
[20] See Central Bank of Ireland Discussion Paper 11: An approach to macroprudential policy for investment funds.

Back to "Contents"

shocks. They may be *forced to sell* assets to deleverage due to liquidity and/or solvency concerns. These *forced sales* of assets – known as *fire sales* – can impair the functioning of key markets, and also spill over to impact other systemically important parts of the financial system (e.g., banks). These effects can have implications for the real economy via wealth and investment effects or through the cost and availability of financing. Monitoring leverage is a key part of the Central Bank's financial stability risk assessments. Chart 8 shows that leverage in Irish domiciled funds is highest in GBP LDI Funds, Irish Property Funds and Hedge Funds.[21]

High leverage in GBP LDI Funds led to forced selling of gilts in September 2022.

High leverage in GBP LDI Funds led to forced selling of gilts in September 2022. Leverage is a key component of liability driven investment strategies. Leverage in GBP LDI Funds increased significantly over the period 2022 Q1 to 2022 Q3 (Chart 8). This made the funds less resilient to the sharp increase in gilt yields in late-September 2022. GBP LDI Funds experienced significant margin calls at this time and this put additional liquidity strain on these funds.[22] Also, high leverage meant that some funds had solvency concerns. As a result, there was significant selling of gilts amongst highly leveraged LDI funds. The Bank of England intervened in the gilt market to provide support as the market became dysfunctional. Since the events of late 2022, GBP LDI funds have maintained an increased resilience to changes in gilt yields and reduced their leverage. These changes are in line with the supervisory expectations set out by the Central Bank of Ireland in an industry letter in November 2022, in coordination with international authorities.[23] These events are an example of how high leverage increases funds' vulnerability to adverse shocks, which can lead to collective *forced sales*, causing market dysfunction and spillovers to other sectors.

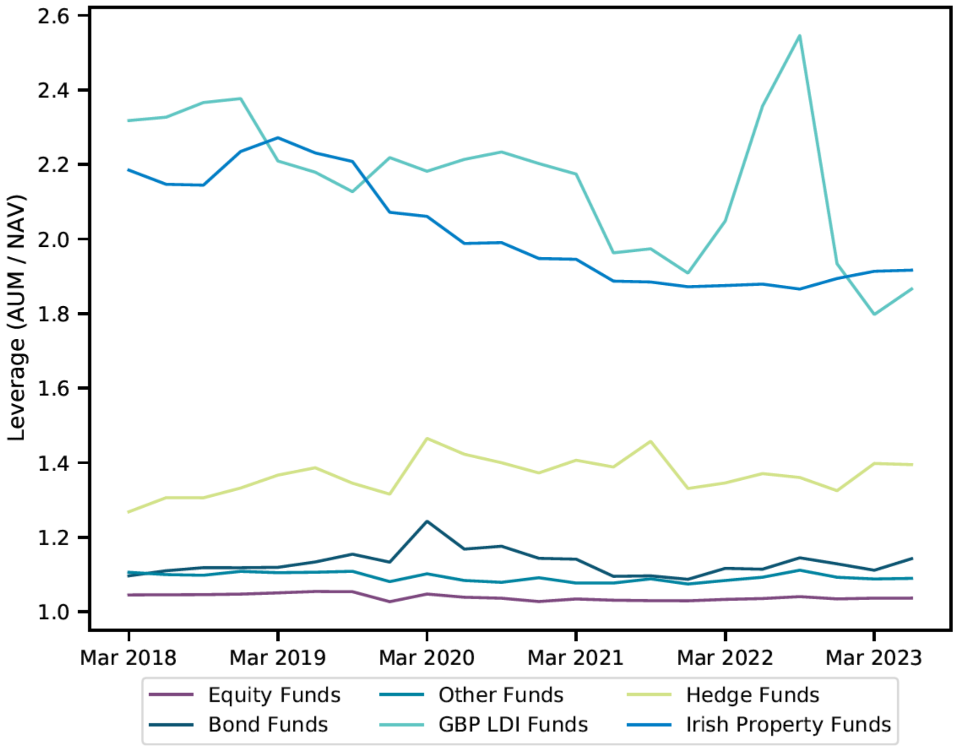
Since the events of late 2022, GBP LDI funds have maintained an increased resilience to changes in gilt yields and reduced their leverage.

[21] Macroprudential measures for property funds were introduced by the Central Bank in November 2022 in the form of leverage limits and liquidity requirements. See the Central Bank of Ireland website for further details.
[22] These margin calls were linked to repurchase agreements and derivatives contracts, see Dunne et al (2023) for more details.
[23] The letter outlined that GBP LDI funds were expected generally to maintain resilience to a 300-400 basis point increase in yields. The Central Bank is currently working to codify these measures to enhance the steady state resilience of GBP LDI Funds. For more details see CP157: *Macroprudential measures for GBP liability driven investment funds*.

Back to "Contents"

Chart 8: Leverage in Irish domiciled funds is highest in GBP LDI Funds and Irish Property Funds but for both cohorts it has fallen from highs

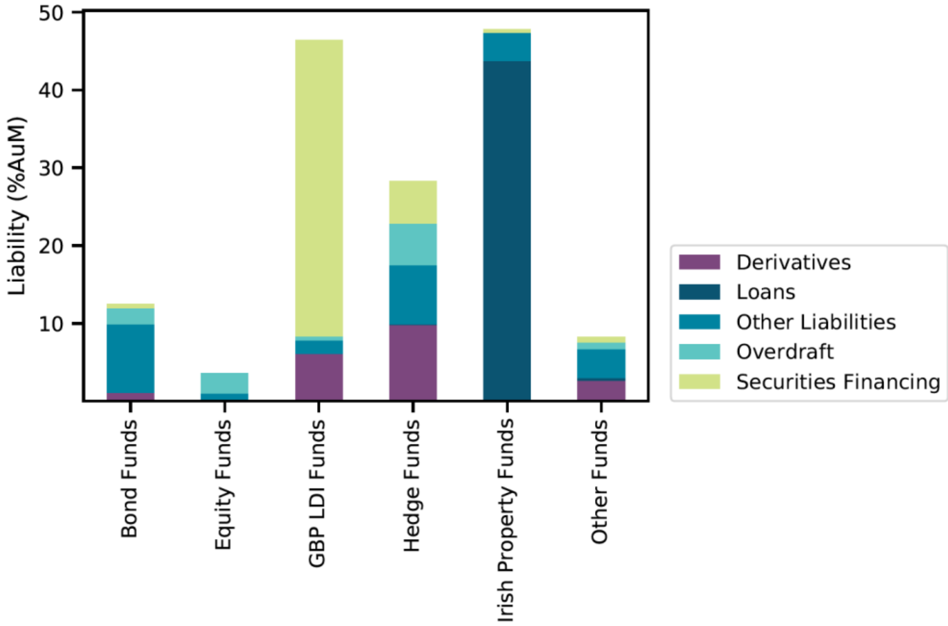
Weighted average leverage of Irish domiciled funds



Source: Central Bank of Ireland.

Chart 9: Leverage in GBP LDI Funds was primarily obtained via repurchase agreements

The percentage of liabilities (as a fraction of AuM) in 2023 Q2



Source: Central Bank of Ireland.

Notes: Securities financing contains positions in repurchase agreements and securities lending. Repurchase agreements (repos) allow the borrowing counterparty to a repo transaction to borrow cash using an asset as collateral (reverse repos allow the collateralised lending of cash). The repo involves the borrower of the cash selling the asset to the cash lender with an agreement to repurchase the asset at an agreed price and repay the loan at an agreed future date. The chart reflects the on-balance sheet value of liabilities as at 2023 Q2. As it only reflects the market value of derivatives positions, it does not reflect the additional off-balance sheet claims that may arise due to changes in the future value of an underlying asset.

Back to "Contents"

On-balance sheet leverage in Hedge Funds trended upwards from 2018 to 2021, but reduced slightly in 2022. Hedge Fund leverage increased from 1.33 times NAV in 2018 Q4 to 1.47 times NAV in 2020 Q1 and remained at a higher level until late 2021 (Chart 8). Leverage in Hedge Funds is slightly lower at 1.39 times NAV in 2023 Q2. However, the leverage metric employed in this section focuses on conventional or on-balance sheet leverage (Chart 9). In practice, investment funds, and Hedge Funds in particular, also take on leveraged positions through the use of derivatives, i.e. synthetic leverage. Therefore, simple metrics of leverage may not always provide the full picture of trends in this sector.

3.2.2 Liquidity mismatch in investment funds

Liquid assets have been relatively flat over the period, with some small increases in liquidity in some cohorts. The share of liquid assets has remained relatively constant across most fund types since 2020 (Chart 10).[24] This is unsurprising as many funds have well defined investment mandates set out in their prospectus. Large moves in liquidity would not be expected over a short period. That said, marginal improvements in liquidity are observed over a number of fund types. For example, the level of liquid assets has risen from approximately 28 per cent to 33 per cent over the last 3 years for Bond Funds. For Equity Funds, the level of liquid assets has risen from approximately 81 per cent to 88 per cent in the same period. These increases in liquid assets as a share of AuM could relate to more cautious positioning by some fund managers, or larger falls in the value of less liquid assets compared to liquid assets.

The share of liquid assets has remained relatively constant across most fund types since 2020.

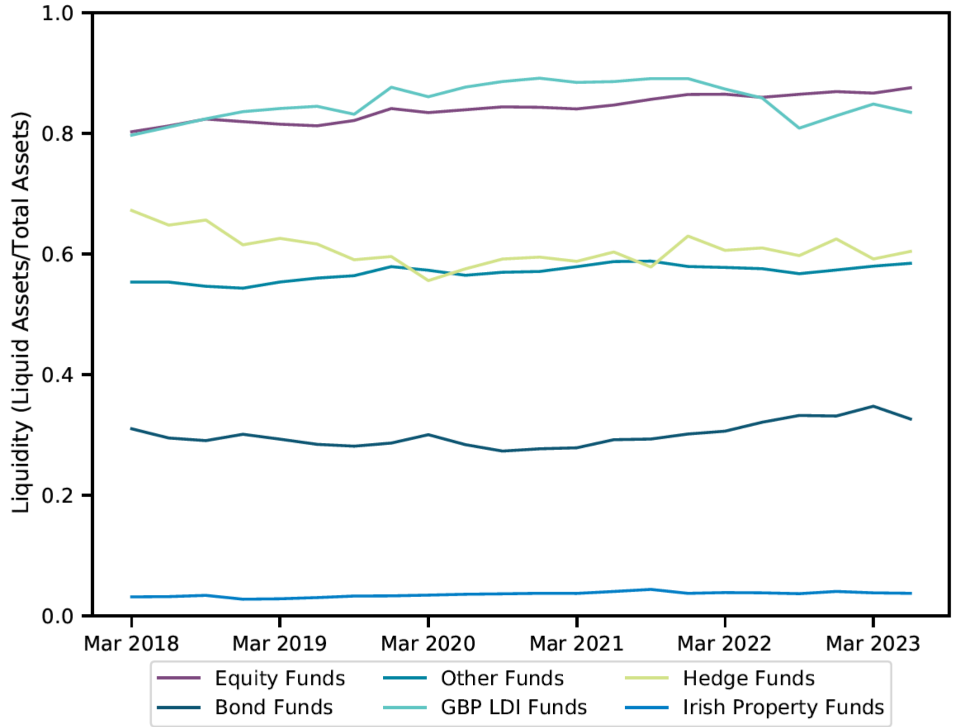
Frequent dealing coupled with low levels of liquid assets leads to elevated liquidity mismatch for Bond Funds. The vast majority of Bond Funds and Equity Funds offer daily dealing (Chart 11). However, Equity Funds have much higher levels of liquid assets and thus liquidity mismatch is less of a concern. Bond Funds have frequent dealing combined with a low share of liquid assets (Chart 12). This leads to elevated liquidity mismatch in Bond Funds, i.e., a situation where liquid claims are backed by less liquid assets.

Bond Funds have frequent dealing combined with a low share of liquid assets.

[24] Liquid Assets includes cash, advanced economies' government debt, debt or securities maturing in 7 days, and advanced economies' equities.

Back to “Contents”

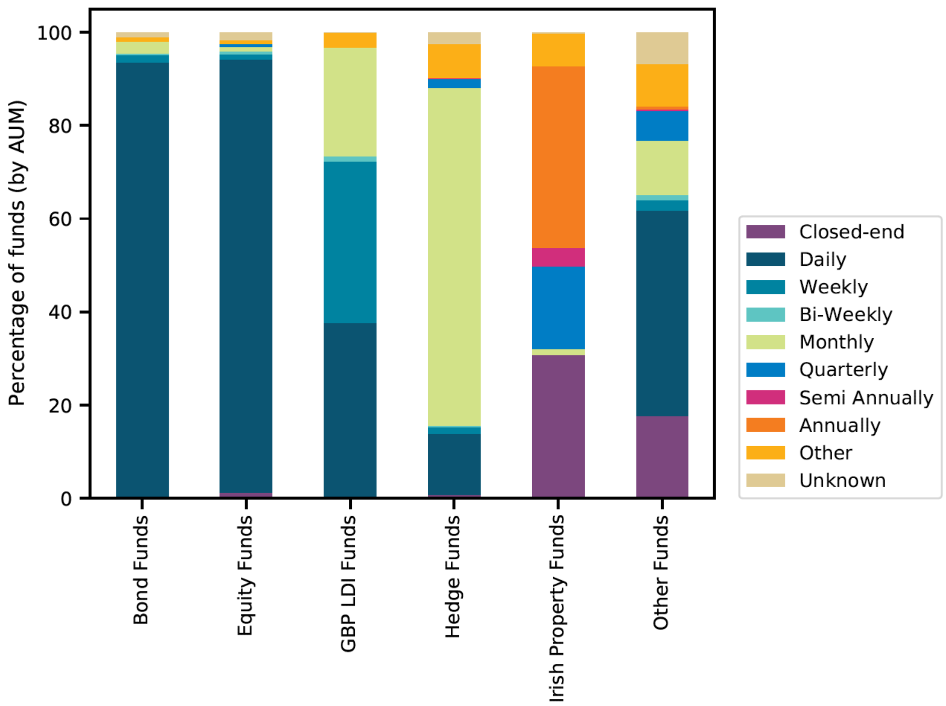
Chart 10: Liquid assets as a percentage of total assets have been relatively flat
Weighted average liquidity of Irish domiciled funds



Source: Central Bank of Ireland.

Notes: Liquid Assets includes cash, advanced economies' government debt, debt or securities maturing in 7 days, and advanced economies' equities.

Chart 11: Bond and Equity Funds have the highest portion of daily dealing funds.
Asset-weighted percentage of funds by dealing frequency



Source: Central Bank of Ireland.

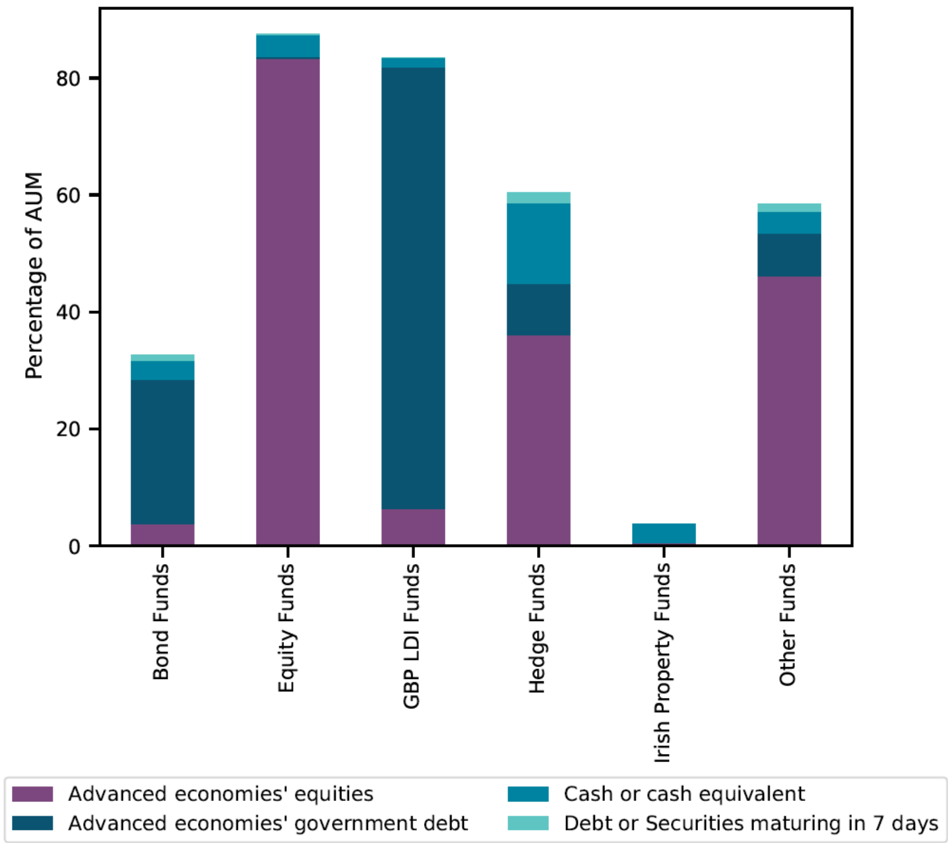
Notes: The Central Bank introduced guidance to reduce liquidity transformation in a significant subset of for Irish Property Funds. This guidance comes into immediate effect from Dec 2022, for new funds and has an 18 month phase-in period for existing funds. For more information see here.

Back to “Contents”

Bond Funds are highly interconnected through their debt holdings to governments, financial institutions and NFCs. Bond Funds hold 25 per cent of their AuM in advanced economies' government debt (Chart 12). Much of these debt securities are held in Government Bond Funds and Mixed Bond Funds, which are the most liquid of the bond fund categories.[25] However, as observed in September 2022 in the UK gilts markets, advanced economies' government debt markets can experience dysfunction under certain circumstances.[26] Corporate Bond Funds, which make up the majority of the Bond Fund sector by AuM, hold smaller reserves of liquid assets and are typically exposed to long-dated corporate bonds. These bonds are issued by NFCs, banks, and other financial institutions, representing a channel for potential spillover into the real economy in periods of market distress.

Corporate bond funds, which make up the majority of the Bond fund sector by AuM, hold smaller reserves of liquid assets and are typically exposed to long-dated corporate bonds.

Chart 12: Irish Property Funds and Bond Funds are the least liquid cohorts
Liquid assets as a per cent of AuM



Source: Central Bank of Ireland.
Notes: Liquid Assets includes cash, advanced economies' government debt, debt or securities maturing in 7 days, and advanced economies' equities.

[25] See Gianstefani, Metadjer and Moloney (2023).
[26] These type of events highlight the importance of ongoing international work coordinated by the FSB to address structural vulnerabilities related to liquidity transformation mismatch in open ended funds, which include considerations on the composition of liquidity buffers.

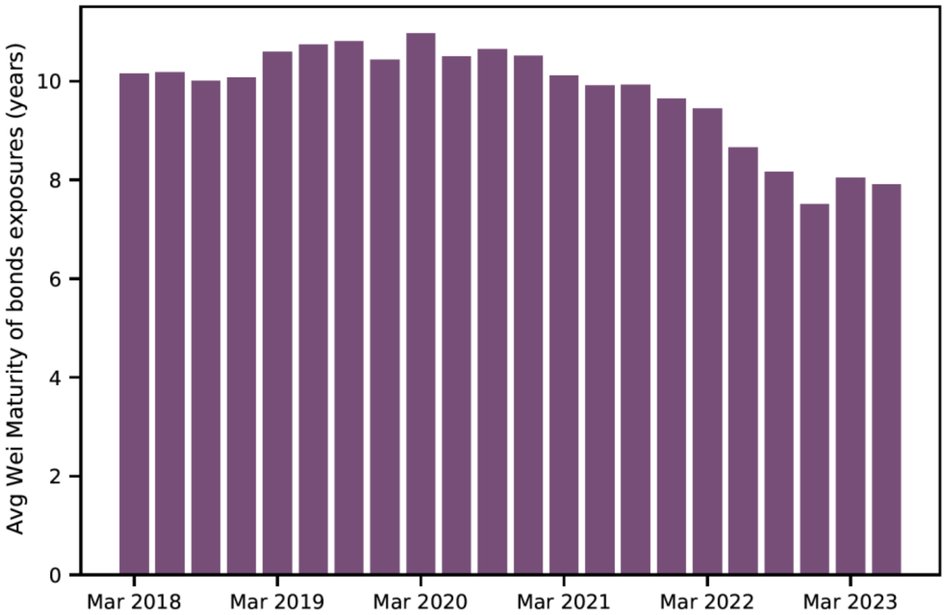
Back to "Contents"

3.2.3 Other vulnerabilities

While the value of bond portfolios has fallen significantly due to rising interest rates, the weighted average maturity of debt securities held by Irish investment funds has fallen in recent quarters (Chart 13). Rising interest rates and increased uncertainty have led to falling values in bond markets in recent times. Fund managers seem to be responding to this by reducing the maturity of their bond holdings. Between 2020 Q1 and 2023 Q2, the weighted average maturity of debt securities held by Irish investment funds fell from approximately 11.0 years to 7.9 years. A lower weighted average maturity can reduce sensitivity to interest rates.[27] Thus, the reduction in the weighted average maturity makes the value of funds' debt securities less sensitive to rising interest rates and the current cycle of monetary policy tightening.

Between 2020 Q1 and 2023 Q2, the weighted average maturity of debt securities held by Irish investment funds fell from approximately 11.0 years to 7.9 year.

Chart 13: The weighted average maturity of debt securities held by Irish investment funds has reduced significantly in recent years.
Weighted Average Maturity of Debt Securities.



Source: Central Bank of Ireland.

Bond Funds have the largest exposure to speculative assets, but also hold a high proportion of investment grade securities. Bond Funds and GBP LDI Funds hold the greatest proportion of debt securities. Both cohorts continue to hold a high proportion of investment grade securities, with Bond Funds being more exposed to speculative grade securities (Chart 14). The share of speculative grade securities held by

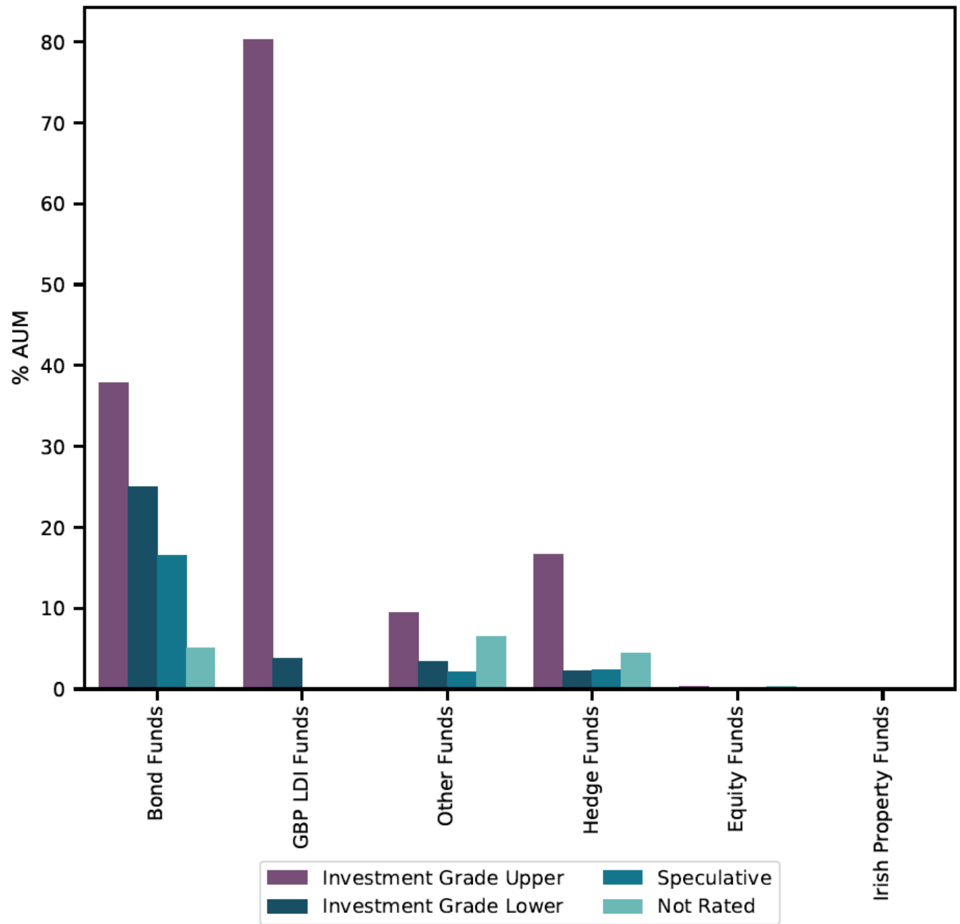
[27] See Gianstefani, Metadjer and Moloney (2023).

Back to "Contents"

Irish funds has not changed significantly since early 2020. The lack of any significant reduction in the portfolio share of speculative grade securities may be indicative of the fact that investment grade securities did not outperform speculative grade over the course of 2022. This is partly because the impact of interest rate changes on bonds is not dependent on credit rating. In fact, funds with a higher share of speculative grade bonds may be less impacted by interest rate changes due to a higher share of floating rate notes. However, funds with a large share of speculative grade securities are more exposed to credit risk particularly in the current risk environment with rising corporate insolvencies.[28]

Funds with a large share of speculative grade securities are more exposed to credit risk particularly in the current risk environment with rising corporate insolvencies.

Chart 14: Bond Funds hold the largest proportion of assets in speculative debt
Bond portfolio by fund category



Source: Central Bank of Ireland.

[28] See FSR 2023-I.

Box A: Investment Fund Risk Heatmaps

By Ilaria Gianstefani & Paraic O'Gorman (International Finance Division)

Cohorts of funds in the MBF sector have characteristics that make them more likely to amplify market shocks and transmit financial market volatility to other sectors in the economy (for example banks, businesses and government). This is especially true for groups of systemically important funds that have a combination of high leverage, liquidity mismatch, and close interconnectedness with other parts of the financial system or the real economy. As part of our regular monitoring of the Irish funds sector, we developed metrics to identify portions of the sector that may be vulnerable to a shock (such as a sharp deterioration in market conditions) and that are more likely to amplify stress due to these characteristics.

We consider a combination of metrics to identify leverage, liquidity mismatch, sensitivity to short-term market shifts and interconnectedness with key markets. For leverage and liquidity, we use the measure of AuM/NAV and liquid assets as defined in this *Monitor* (see Section 3.2.2). We also use a liquidity mismatch indicator adapted from a standard method used by the Financial Stability Board in the Global Non-Bank Financial Intermediation Monitoring Exercise where values less than 1 indicate that liquid assets exceed current liabilities, with higher values representing riskier liquidity mismatch. To measure interconnectedness (see Box B also), we measure the holdings of key assets classes as a percentage of total assets (corporate bonds, bank debt and long-dated government bonds). We also estimate the sensitivity of funds' valuations to interest rate changes using the method described in Gianstefani, Metadjer and Moloney (2023). We estimate the losses from a 100bps interest rate increase as a percentage of NAV.

	Total Assets EURbn	Number of funds	Leverage (AUM/NAV) perc	Liquidity (Liquid Assets /Total Assets) perc	Liquidity transformation indicator	CorpBonds perc total assets	BankDebt perc total assets	Long-dated Govt Bonds perc total assets	Securities Loss given 100bps rates increase perc NAV
Bond Funds	976.3	1231	114.3	32.7	1.5	51.9	10.0	8.3	4.7
Equity Funds	1465.4	2466	103.7	87.6	1.1	0.4	0.0	0.0	0.0
GBP LDI Funds	218.9	322	186.6	83.5	0.7	5.7	0.4	61.3	22.1
Hedge Funds	265.8	444	139.5	60.5	1.1	9.0	4.0	-0.0	0.3
Irish Property Funds	24.3	163	191.5	3.8	1.0	0.0	0.0	0.0	0.0
Other Funds	634.7	1945	109.0	58.5	1.0	13.1	1.9	2.2	0.9
(colour scale)	500 1000	1000 2000	125 150 175	25 50 75	1.0 1.5	25 50	2.5 5.0 7.5	0 50	10 20

Figure 1: Heatmap with metrics measuring leverage, liquidity, sensitivity to interest rates, and interconnectedness. Each column is coloured so the darker the colour the greater the potential vulnerability. Data as of 2023 Q2.

The heatmaps can be used to identify cohorts of funds with compounding vulnerabilities. For example, Figure 1 highlights the potential for damaging spillovers from illiquid Bond Funds into the real economy. Reading from left to right, we note that Bond Funds represent the second

Back to "Contents"

largest cohort of funds with total assets of €976bn. While leverage in the cohort is relatively low, Bond Funds have the highest liquidity mismatch among the cohorts analysed. Furthermore, we see Bond Funds are relatively exposed to corporate bonds and bank debt. Taken together, we note that Bond Funds may be vulnerable to redemption runs and may amplify shocks in these systematically important sectors in the real economy. The risk heatmap enables quick identification of interacting vulnerabilities in fund cohorts for further, more granular examination.

Regular monitoring of vulnerable groups of funds can also help with tracking of vulnerabilities over time, including in periods of distress. These heatmaps were developed after the gilt market disruption of 2022 but we use the example of GBP LDI funds to highlight their usefulness in this regard. Figure 2, a heatmap of GBP LDI Funds over time from 2022 Q2 to 2023 Q2, demonstrates, how, (prior to the *mini-budget* announcement in September 2022), GBP LDI Funds had growing leverage and were becoming increasingly sensitive to increases in interest rates, (due to holding of long-dated gilts). These vulnerabilities meant GBP LDI Funds were exposed to rapid falls in valuations in the UK gilt market. In the months following the crisis, we can see that these vulnerabilities have somewhat lessened. GBP LDI Funds have significantly deleveraged, falling from 2.5 times AuM/NAV in 2022 Q3 to 1.9 times AuM/NAV in 2023 Q2. Sensitivity to interest rates has also lessened from a loss of 30 percent of NAV in 2022 Q2 to 22 percent of NAV in 2023 Q2 and liquid assets have increased since 2022 Q3. Resilience to market shocks among this cohort of funds has improved since the period of stress, though close monitoring is still warranted.

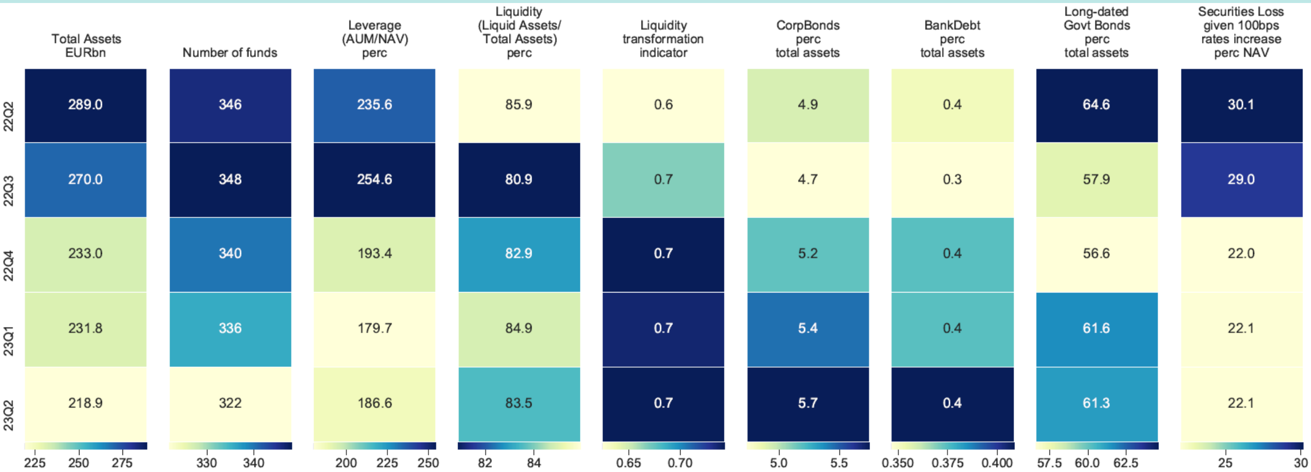


Figure 2: Heatmap showing GBP LDI Funds over time. Each column is coloured so the darker the colour the greater the potential vulnerability. Last observation at quarter end 2023 Q2.

Back to "Contents"

4. Recent trends and vulnerabilities in Money Market Funds

4.1 Recent Trends

MMF AuM increased by 4 per cent since 2021 Q4, benefitting from rising interest rates and net inflows over the period. MMFs are typically used by investors for cash management purposes and thus they are active players in short-term funding markets. Due to their low duration, rising policy rates pass through quickly to money markets, increasing the attractiveness of MMFs relative to other investments in the short term. Overall, MMF AuM at 2023 Q2 was €677bn, 4 per cent above the figure of €652bn observed in 2021 Q4 (Chart 15), with net inflows to MMFs over the same period.

MMF AuM at end 2023 Q2 was €677bn, 4 per cent above the figure of €652bn observed in 2021 Q4.

LVNAV MMFs in particular experienced growth since the last *MBF Monitor*. MMFs in Ireland are classified under three headings: LVNAV MMFs; Public Debt CNAV MMFs; or Variable NAV MMFs.[29] Each category of MMF must comply with various regulations, which affect the stability of asset valuations and limit the maturity of assets holdings. Some key differences include a requirement for Public Debt CNAV MMFs to invest primarily in government debt assets, while some Variable NAV MMFs may invest in assets with longer maturities. LVNAV MMFs invest in short-term assets and account for about 77 per cent of assets held by Irish MMFs in 2023 Q2 (Chart 15).

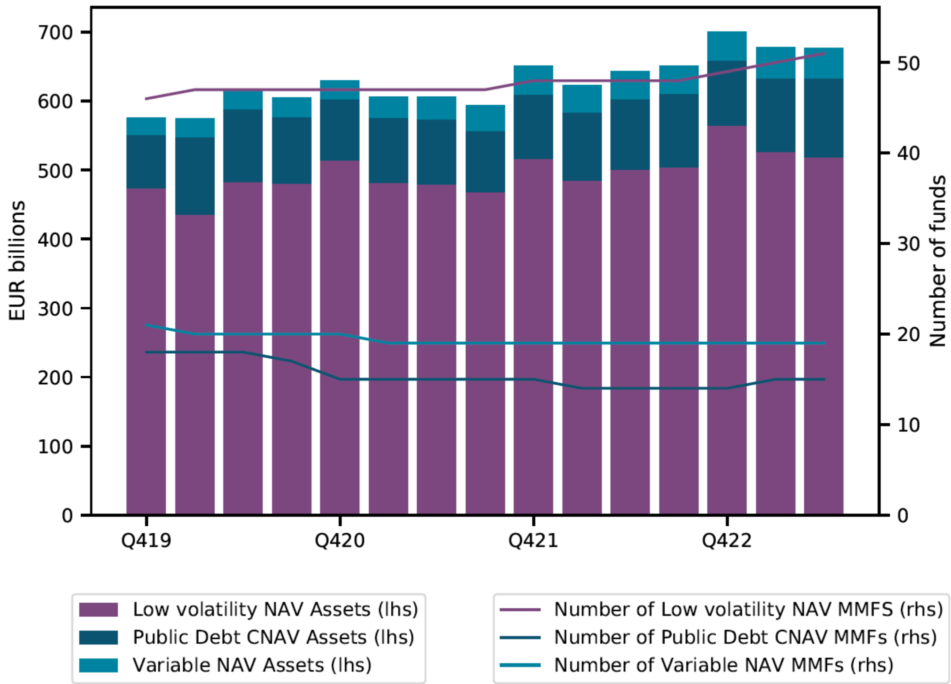
LVNAV MMFs invest in short-term assets and account for about 77 per cent of assets held by Irish MMFs in 2023 Q2.

Over 80 per cent of Irish MMFs are invested in non-euro assets. In 2023 Q2, US dollar assets accounted for 46 per cent of total MMF assets while GBP denominated assets accounted for 35 per cent (Chart 16). Euro denominated assets accounted for 19 per cent of the total. There were significant movements in the shares accounted for by each currency in 2022. For example, the share of GBP denominated assets decreased to 32 per cent in 2022 Q3, which was linked to the actions of GBP LDI funds during this period.[30]

[29] See REGULATION (EU) 2017/1131 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 June 2017 on money market funds.
[30] See Dunne, et al (2023).

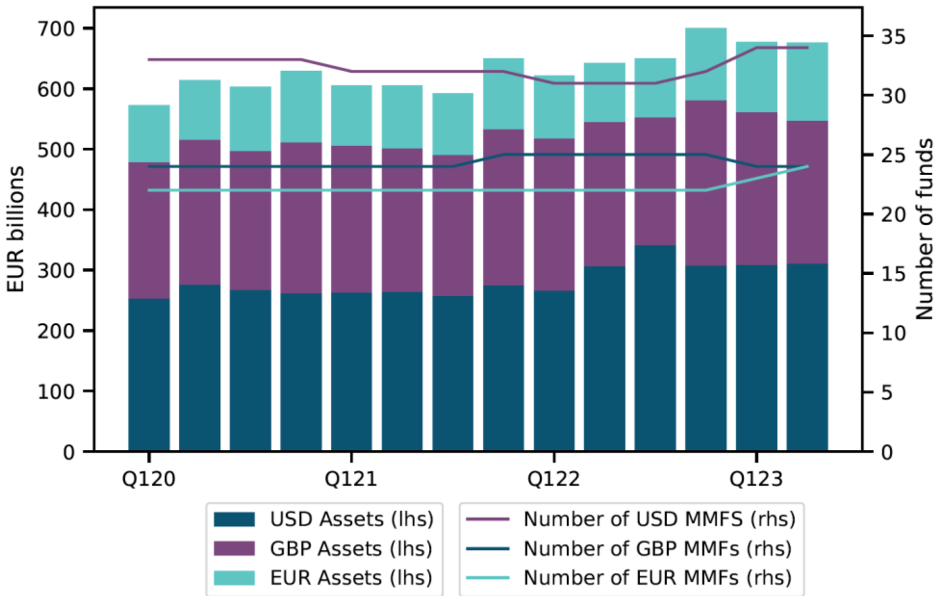
Back to "Contents"

Chart 15: Asset values for MMFs increased through 2022, particularly for LVNAV MMFs
MMF asset holdings by MMF type



Source: Central Bank of Ireland.

Chart 16: MMF continue to hold mainly USD and GBP denominated assets
MMF asset holdings by currency



Source: Central Bank of Ireland.

Over 80 per cent of Irish MMFs are invested in non-euro assets.

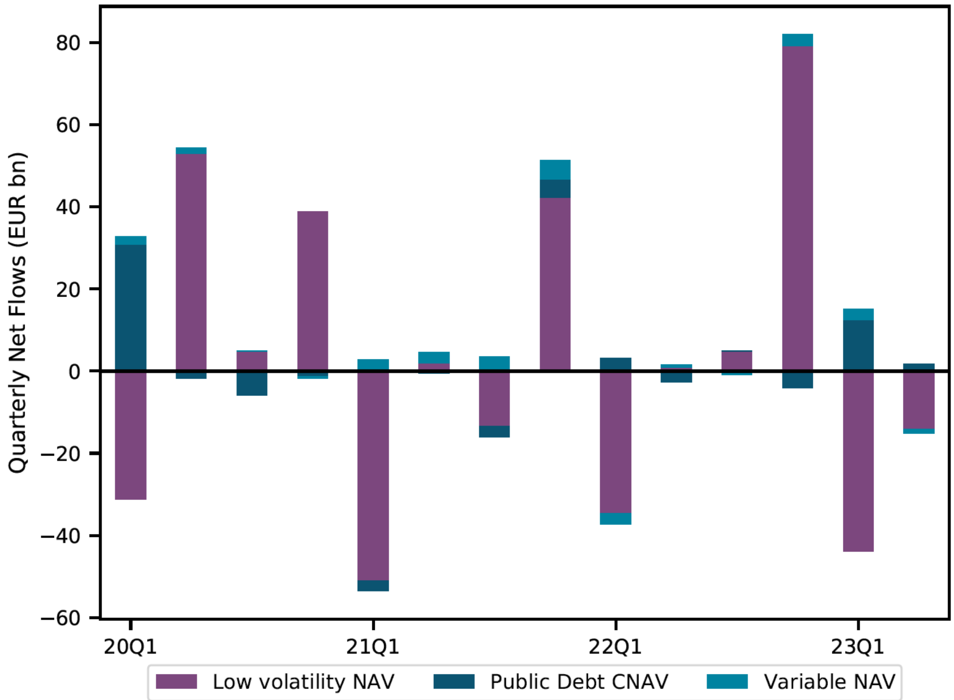
Irish MMF experienced large net inflows in the latter half of 2022. Net flows showed above average movements on a quarterly basis, particularly in the second half of 2022 (Chart 17). The magnitude of the increase in net inflows in 2022 Q4 can, at least partly, be linked to

Net flows showed above average movements on a quarterly basis, particularly in the second half of 2022.

Back to “Contents”

the actions of GBP LDI Funds during the disruption to the UK gilts market. During 2022 Q3, GBP LDI Funds redeemed shares in MMFs to meet liquidity needs, while this process reversed strongly in the last quarter of the year.[31] In the first half of 2023, net flows returned to negative territory, likely linked to a partial reversal of the large inflows in the previous quarter.

Chart 17: MMF flows have been large and volatile in recent quarters.
MMF net flows by MMF type



Source: Central Bank of Ireland.

4.2 Vulnerabilities

MMFs have reduced the maturity of their assets in recent quarters. The share of MMFs' bond exposures with a maturity of less than one week increased from 12 per cent in 2021 Q1 to 23 per cent by 2023 Q1, although this decreased somewhat to 16 per cent in 2023 Q2 (Chart 18). Internal analysis also suggests MMFs were more conservative with respect to the asset composition of their portfolios in 2022.

MMFs were more conservative with respect to the asset composition of their portfolios in 2022.

MMFs hold a large share of highly liquid assets, although differences exist across the cohorts. For the purposes of this *Monitor*, the liquidity of MMFs are defined as the percentage of AuM held in cash, securities (including reverse repurchase agreements) that will mature within

[31] See Dunne et al (2023) for more details.

Back to "Contents"

seven days, selected money market instruments (for Variable NAVs)[32], and highly liquid government securities (for LVNAVs and Public Debt CNAVs).[33] LVNAVs and Variable NAVs depend more on a mix of cash or cash equivalents and short-term securities as a source of liquidity. Public Debt CNAVs hold a large number of liquid government securities, but have limited cash reserves (Chart 19).

MMFs hold a large share of highly liquid assets.

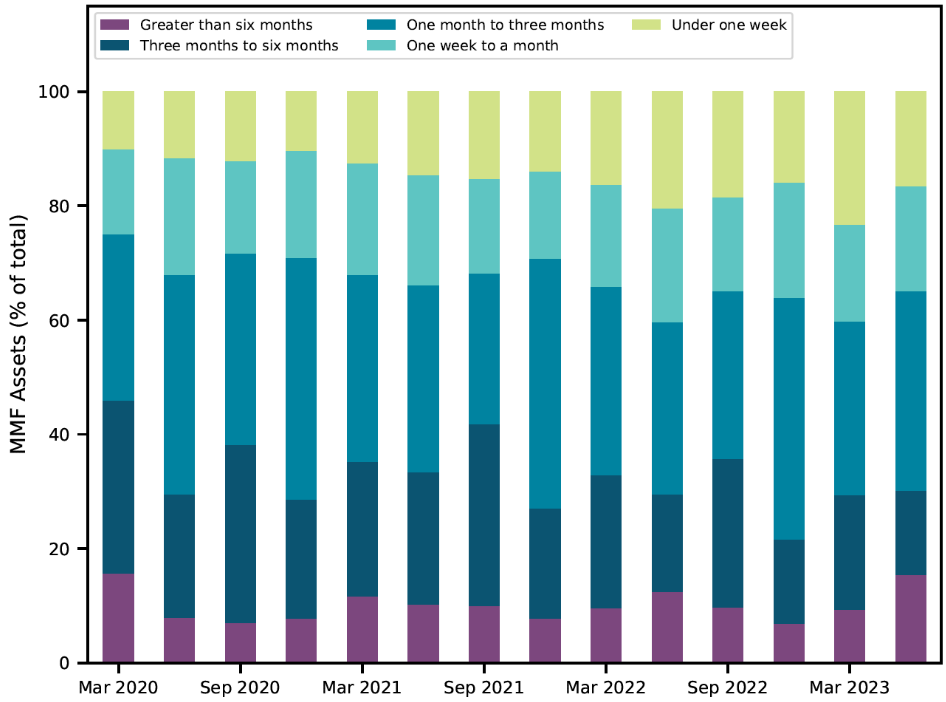
Liquidity in MMFs has improved since the onset of the COVID-19 pandemic, particularly for Public Debt CNAV MMFs. Public Debt CNAVs hold the highest proportion of liquid assets, though their average liquidity is most volatile, falling to a low of 36 per cent in 2020 Q2 before reaching a high of 93 per cent in 2023 Q1. Over the course of 2022, Public Debt CNAVs reduced the maturity of their holdings, with securities maturing within 7 days making up 85 per cent of AuM in 2023 Q1. This is reflected in the sharp increase in weekly liquid assets over 2022 and is primarily driven by increased investment by repurchase agreements maturing within 7 days. Irish MMFs, particularly Public Debt CNAV MMFs, have on average significantly larger liquid buffers than required under MMFR regulation since the COVID-19 shock (Chart 20).[34]

Over the course of 2022, Public Debt CNAVs reduced the maturity of their holdings, with securities maturing within 7 days making up 85 per cent of AuM in 2023 Q1.

[32] Includes highly liquid government securities that can be redeemed and settled within one working day and have a residual maturity of up to 190 days, subject to a limit of 17.5% AuM.
[33] Includes money market instruments or units or shares in other money market funds, subject to a limit of 7.5% AuM and provided they are able to be redeemed and settled with five working days.
[34] MMFR Paragraphs 1(a) and 1(b) of Article 34 of the regulation outline the conditions that trigger consideration of redemption controls such as fees, gating and suspension. See here.

Chart 18: MMFs have reduced the average maturity of their portfolios

MMFs' average maturity of bond exposures

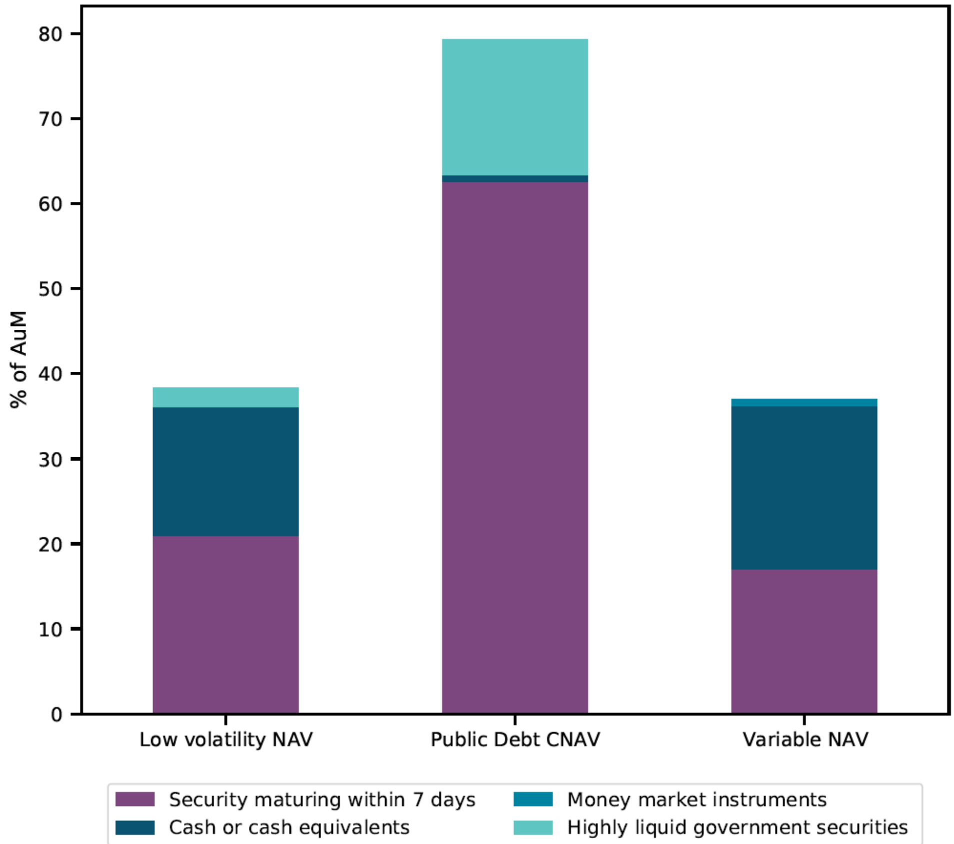


Source: Central Bank of Ireland.

Notes: This chart does not include investments by MMFs via repurchase agreements.

Chart 19: MMF holdings of liquid assets differ by NAV type

Assets redeemable within 7 days as a percentage of AuM by MMF type as of 2023 Q2

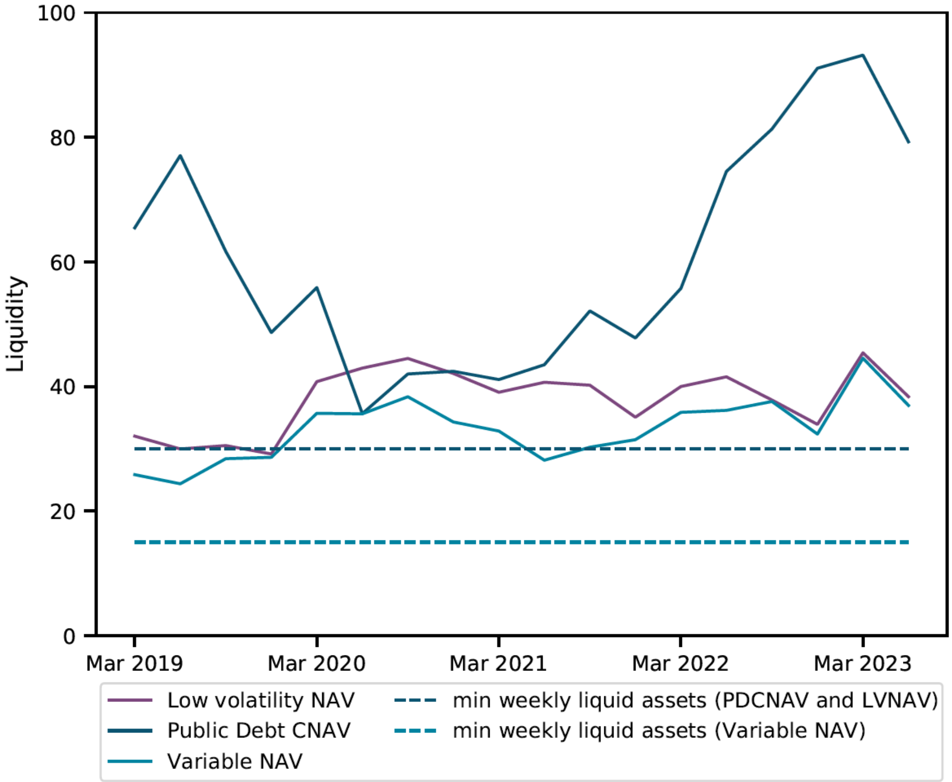


Source: Central Bank of Ireland.

Back to "Contents"

Chart 20: Weighted average liquidity of Public Debt CNAV funds increased significantly over 2022

Weekly liquid assets as a percentage of AuM by MMF type



Source: Central Bank of Ireland.

Notes: *Min weekly liquid assets* refers to the minimum required holdings of assets maturing within one week or other highly liquid assets for MMFs. For Public Debt CNAVs and Low Volatility NAVs, this requirement is 30% of total assets, while for Variable NAVs, this requirement is 15% of total assets. Reporting of MMFR regulatory limits began in 2020, weekly liquid assets are based on Central Bank calculations. Last observation 2023 Q2.

Back to “Contents”

Box B: Interconnectedness – Bond portfolio overlap for Irish resident funds

By Ilaria Gianstefani (International Finance Division)

In this Box we focus on *indirect* interconnectedness – a source of financial vulnerability due to linkages between financial sectors – that arises when two entities hold common assets (portfolio overlap). We focus on common bond asset holdings between the investment fund categories outlined in this edition of the *MBF Monitor*.[35]

Using securities data, we proxy the level of interconnectedness by calculating the degree to which fund cohorts hold the same debt securities in their respective portfolios.[36] We measure the level of similarity for each pair of fund cohorts with a measure of total portfolio overlap percentage (Wang, van Lelyveld, & Schaumburg, 2019). The portfolio overlap between two fund cohorts *X* and *Y* measures the extent to which cohort *X* invest in the same securities as sector *Y*:

$$ovlp(X,Y) = \sum_{i=1}^{N} min\left(\frac{X_i}{Y_i}, 1\right) \cdot \frac{Y_i}{AUM_y}$$

Where X_i and Y_i represent the investments (in euro) of each respective fund cohort in security $ISIN_i$ and AUM_y are the assets under management of cohort Y. The measure is asymmetric, i.e., ($ovlp(X,Y) \neq ovlp(Y,X)$), and is bounded by 100% ($ovlp(X,Y) = 100\%$ means that cohort *X* invest in the same securities of *Y* in a greater amount).

Table 2 presents the degree of portfolio overlap between each pair of fund cohorts. Each entry indicates the degree to which holdings of one cohort are also held in the portfolio of the other cohort. Not surprisingly, the largest overlaps are with the residual category. The Other Funds' portfolios have, by construction, very heterogeneous (debt) assets, determining a higher overlap with other cohorts. In a distressed period, the high overlap might be a channel for indirect contagion through the fire sales. Table 2 also shows overlap between Bond Funds and Hedge Funds. Namely, 15% of the Hedge Funds portfolio is also held by Bond Funds and 4% of Bond Funds portfolio overlaps with Hedge Funds' one. This gives us a sense of potential spillover effects. Bond Funds are mostly characterised by daily dealing and flows are quite sensitive to performance. A market shock could lead to *fire sales* in Bond Funds impacting asset valuations with negative

[35] Direct interconnectedness may arise from counterparty relationships and exposures, whether on the asset or the liability side. Indirect interconnectedness may arise when entities have common exposures, so that if one is forced into fire sales, the fall in asset prices affects the balance sheets of others (see Portes, R. 2018 here)

[36] Note that we limit our analysis to debt securities, but this framework might be extended to all portfolio holdings.

Back to "Contents"

implications for Hedge and Other funds in particular. Deeper investigation would be beneficial to uncover what type of securities (also in term of asset quality) are involved in the overlap.[37]

Figure 3 summarises the information on interconnectedness for Irish resident funds.

		Y						
		Bond Funds	Equity Funds	Hedge Funds	GBP LDI Funds	MMFs	Other Funds	Irish Property Funds
X	Bond Funds		1.41	15.38	9.55	1.60	21.02	0.43
	Equity Funds	0.56		2.14	0.03	0.19	1.07	0.00
	Hedge Funds	4.06	0.81		0.64	0.92	5.66	0.43
	GBP LDI Funds	2.92	0.03	0.72		0.11	4.33	0.00
	MMFs	1.26	0.39	4.88	-0.29		2.40	0.00
	Other Funds	7.31	0.93	11.02	5.09	1.05		0.43
	Irish Property Funds	0.00	0.00	0.00	0.00	0.00	0.00	

Table 2: Portfolio overlap in the Irish resident fund sector in 2022 Q4. The Table reports the portfolio overlap of each cohort with the portfolio of another cohort. Given the asymmetry of the measure, $\mathrm{ovlp}(X,Y)$ – in yellow, indicates the degree (in percentage) to which holdings of cohort X are also held in the portfolio of cohort Y; conversely, $\mathrm{ovlp}(Y,X)$ – in pink, represents the degree to which holdings of cohort Y are also held in the portfolio of cohort X.

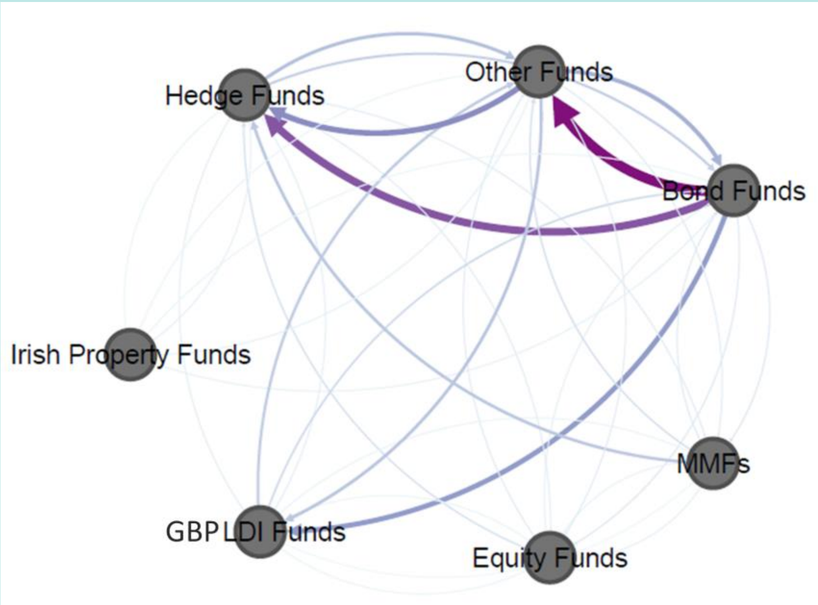


Figure 3: Interconnectedness in Irish resident fund sector in 2022 Q4. The Figure reports the indirect interconnectedness (proxied by the degree of common holdings two cohorts share) of Irish domiciled funds. Arrow thickness indicates the extent to which a portfolio overlaps with the portfolio of another cohort. A thicker arrow from X to Y means that more of Y's portfolio is also held in the portfolio of cohort X.

References

Financial Stability Board. (2019). *Global Monitoring Report on Non-Bank Financial Intermediation.*

Gianstefani, I., Moloney, K., & Metadjer, N. (2023). *Interest Rate Sensitivity of Irish Bond Funds.* Financial Stability Note, Central Bank of Ireland.

[37] A similar analysis was conducted in (Financial Stability Board, 2019).

Back to "Contents"

Wang, D., van Lelyveld, I., & Schaumburg, J. (2019). Do Information Contagion and Business Model Similarities Explain Bank Credit Risk Commonalities? *ESRB Working Paper Series*.

Back to "Contents"

5. Special Purpose Entities

SPEs are companies created to fulfil a narrow, specific purpose.[38] These purposes can include holding a pool of assets to act as collateral for loans, passing financial risks to other entities/investors, or availing of favourable tax circumstances. Unlike the funds sector and MMFs, SPEs are not authorised by the Central Bank. However, the SPE may be subject to certain regulation depending on their activities (for example, if they trade in derivatives they would be subject to EMIR). SPEs can broadly be defined under two headings: FVCs, which engage in securitisation activities or other SPEs, which engage in a variety of activities such as intra-group financing or loan origination.[39]

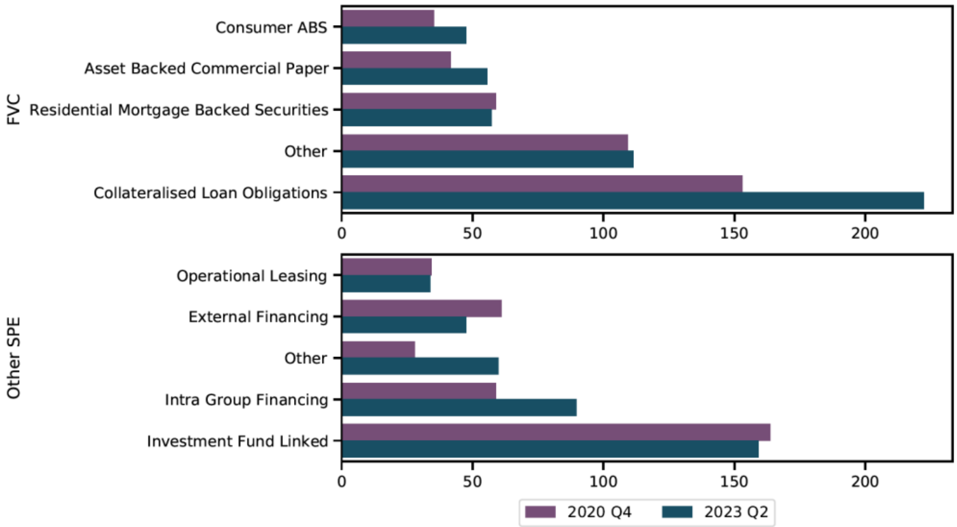
CLOs remain the dominant type of FVC, with Investment Fund Linked strategies accounting for the largest Other SPE category. CLOs are marketable securities backed by a pool of syndicated loans to sub-investment grade borrowers. As outlined previously, the European CLO industry plays a role in providing financing for European NFCs and is mainly based in Ireland.[40] Growth in Irish CLOs has been substantial in recent years, with assets increasing by 45 per cent to €222bn from 2020 Q4 to 2023 Q2 (Chart 21). However, links to the domestic economy remain limited. Investment Fund Linked SPEs are employed by investment funds to undertake all or part of their portfolio investment. Recent Central Bank research has outlined that links between Irish-resident funds and SPEs does not imply substantial indirect links between investment funds and the domestic Irish economy.[41] The key motivation for employing this type of SPE appears to be tax efficiency.

CLOs remain the dominant type of FVC, with Investment Fund Linked strategies accounting for the largest Other SPE category.

[38] See here for greater detail on SPEs.
[39] See Golden and Hughes, 2018.
[40] See Market-Based Finance Monitor, 2021, Box A: Irish-resident Collateralised Loan Obligations' (CLOs) trends in 2020.
[41] See Behind the Data: Do Special Purpose Entities hide domestic exposures from Investment Funds?

Back to "Contents"

Chart 21: CLOs remain the largest and fastest growing SPE activity
SPE primary activity for 2020 Q4 vs 2023 Q2



Source: Central Bank of Ireland.

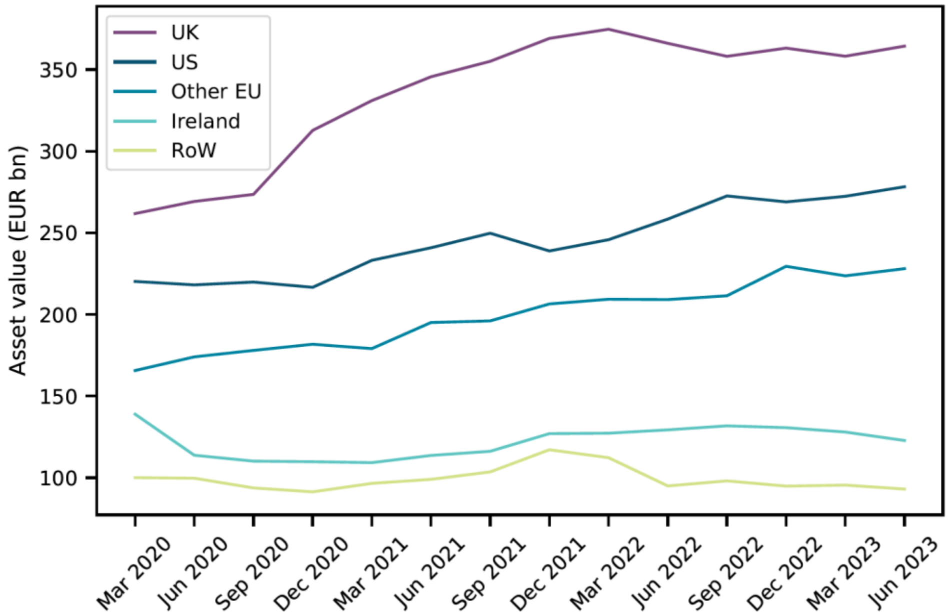
The majority of assets continue to be held by SPEs sponsored by UK and US entities. In 2023 Q2, UK-sponsored SPEs accounted for 34 per cent of the total assets of Irish SPEs and US-sponsored SPEs accounted for 26 per cent (Chart 22). While sponsors from the rest of the world make up a relatively limited share of Irish SPEs, there was a noticeable fall in assets held by these entities in mid-2022. Financial auxiliaries continue to be the most active sponsor of SPEs from a sectoral perspective (Chart 23). Examples of financial auxiliaries include loan brokers or investment advisors.[42]

UK-sponsored SPEs accounted for 34 per cent of the total assets of Irish SPEs and US-sponsored SPEs accounted for 26 per cent.

[42] See CSO - Other Financial Corporations S125, S126 and S127.

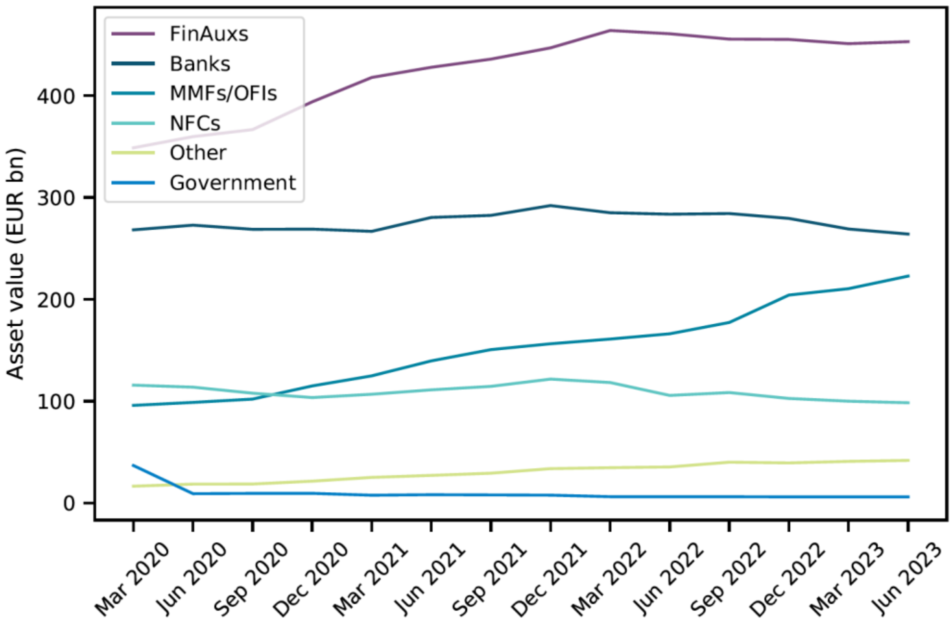
Back to “Contents”

Chart 22: The UK remains the largest sponsor of Irish SPEs
Total Irish SPEs' assets by geography of sponsor



Source: Central Bank of Ireland.
Notes: Assets of SPEs with multiple sponsors from multiple geographies/sectors have been evenly distributed among each sponsors.

Chart 23: Financial auxiliaries stand out as the largest sponsoring entities for Irish SPEs
Total SPEs' assets by sector of sponsor



Source: Central Bank of Ireland.
Notes: Assets of SPEs with multiple sponsors from multiple geographies/sectors have been evenly distributed among each sponsors. FinAuxs means financial auxiliaries, which facilitate financial transactions between third parties without becoming the legal counterparty (for example, stock exchanges, managers of pension funds and mutual funds, or insurance brokers). MMFs/OFIs denotes Money Market Funds and other financial intermediaries.

Back to "Contents"

Glossary

AIMFD Alternative Investment Fund Managers Directive. Directive 2011/61/EU is a legal act of the European Union on the financial regulation of hedge funds, private equity, real estate funds, and other "Alternative Investment Fund Managers" in the European Union.

EMIR The European Market Infrastructure Regulation (EMIR) regulates over-the-counter derivatives, central counterparties and trade repositories.

Financial Auxiliaries Companies which provide auxiliary financial services and other financial advisory and consultative services, such as loan brokers or investment advisors.

Investment Grade Securities Securities rated Aaa to Baa3 from Moody's, or AAA to BBB- from Standard & Poor's.

Leverage The use of debt to acquire additional assets, as captured by (AuM/NAV).

Liquidity The ease with which an asset can be converted into ready cash without affecting its market price. The definition of such assets as liquid is somewhat arbitrary, given the absence of a standard consensus on the precise divide between liquid and non-liquid assets.

LVNAV MMF The Low Volatility Net Asset Value MMF is categorised as a Short Term MMF. Units in the fund are purchased or redeemed at a constant price, as long as the value of the assets in the fund do not deviate by more than 0.2% from par.

MMFR EU Money Market Funds Regulation. Directive 2017/1131 is a legal act of the European Union on the financial regulation of money market funds in the European Union.

NAV Net asset value or the value of equity issued by the investment fund(s).

PD CNAV MMF The Public Debt Constant Net Asset Value MMF is categorised as a Short Term MMF. Units in the fund are purchased or redeemed at a constant price.

Speculative Grade Securities Securities rated Ba1 to C from Moody's, or BB+ to D from Standard & Poor's.

Back to "Contents"

Synthetic Leverage stems from derivative instruments or securities financing transactions that create exposures contingent on the future value of an underlying asset, which becomes evident, for instance, when a derivative position's value moves strongly, potentially creating a profit or loss.

UCITS Undertakings for the Collective Investment in Transferable Securities. This refers to a regulatory framework that allows for the sale of cross-Europe mutual funds.

VNAV Variable Net Asset Value (VNAV) funds are MMFs in which investors purchase or redeem units in the fund at a variable net asset value.

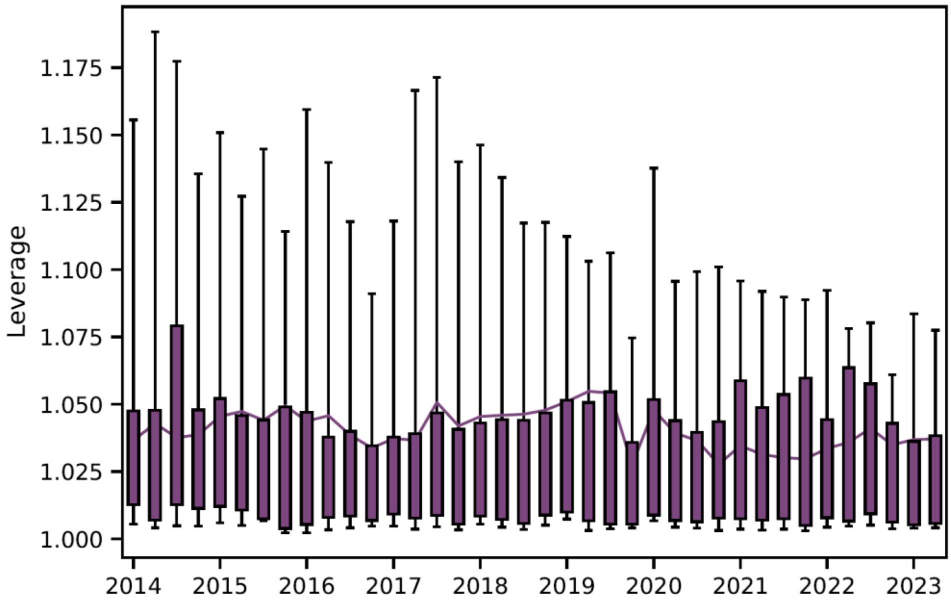
Back to "Contents"

Annex

In this annex, Irish domiciled funds' vulnerabilities are compared to investment funds in other EU countries using the common statistical cohorts.

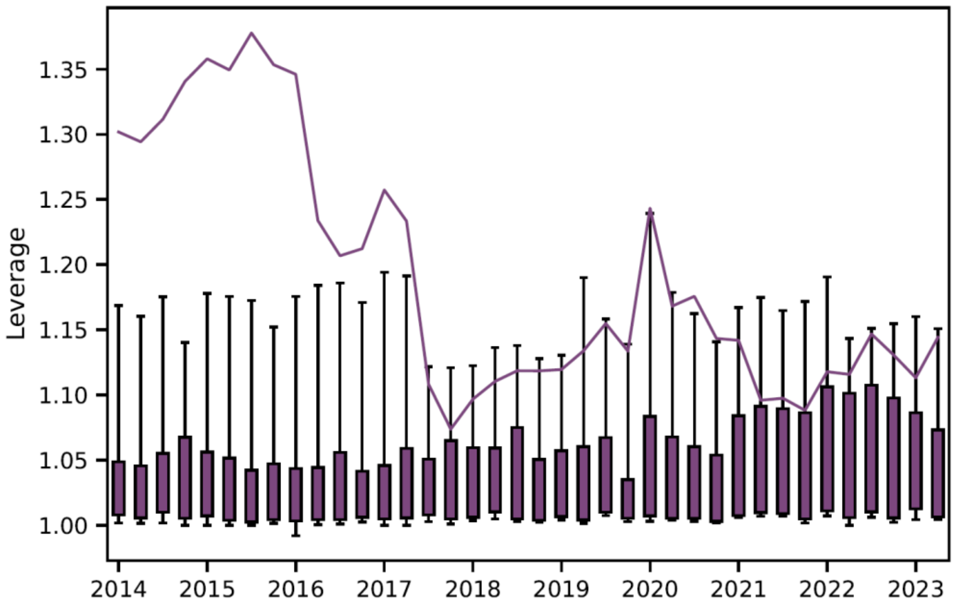
Figure 4 – Irish funds leverage with a distribution of leverage in funds across EU countries

Equity Funds' Aggregate Leverage in Ireland (line) vs distribution in the rest of EU



Source: Central Bank of Ireland and European Central Bank.
Notes: Financial leverage is calculated as assets under management divided by total net asset value (equity). The box plots show the 90th, 75th, 25th and 10th percentiles of leverage for equity funds across other European countries. The line indicates Irish equity funds' aggregated leverage.

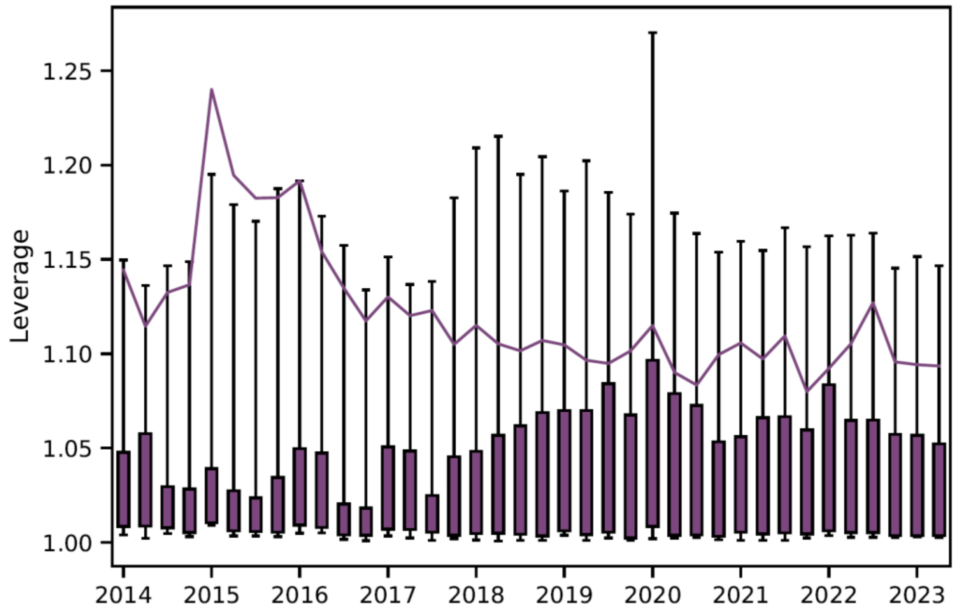
Bond Funds' Aggregate Leverage in Ireland (line) vs distribution in the rest of EU



Source: Central Bank of Ireland and European Central Bank.
Notes: Financial leverage is calculated as assets under management divided by total net asset value (equity). The box plots show the 90th, 75th, 25th and 10th percentiles of leverage for bond funds across other European countries. The line indicates Irish bond funds' aggregated leverage.

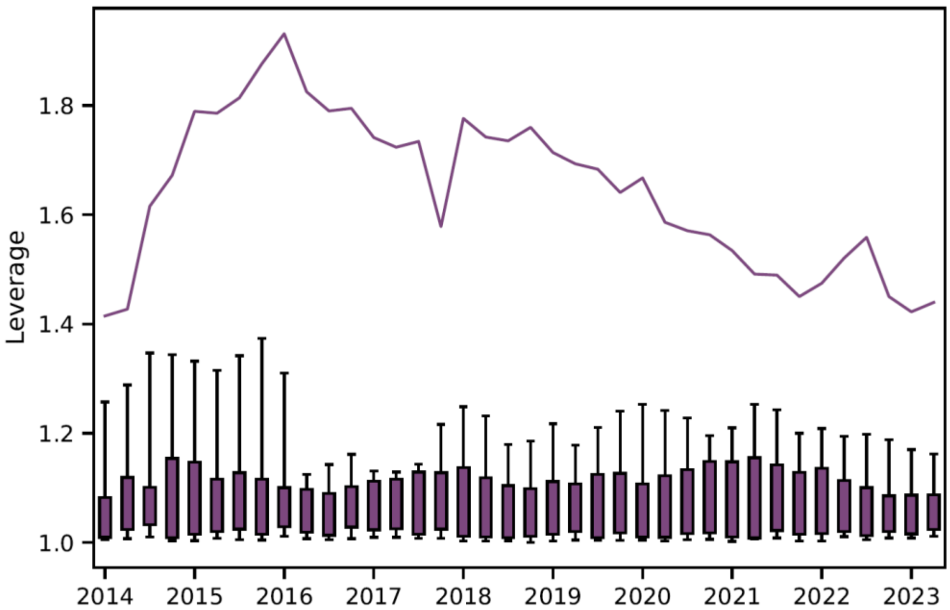
Back to "Contents"

Mixed Funds' Aggregate Leverage in Ireland (line) vs distribution in the rest of EU



Source: Central Bank of Ireland and European Central Bank.
Notes: Financial leverage is calculated as assets under management divided by total net asset value (equity). The box plots show the 90th, 75th, 25th and 10th percentiles of leverage for mixed funds across other European countries. The line indicates Irish mixed funds' aggregated leverage.

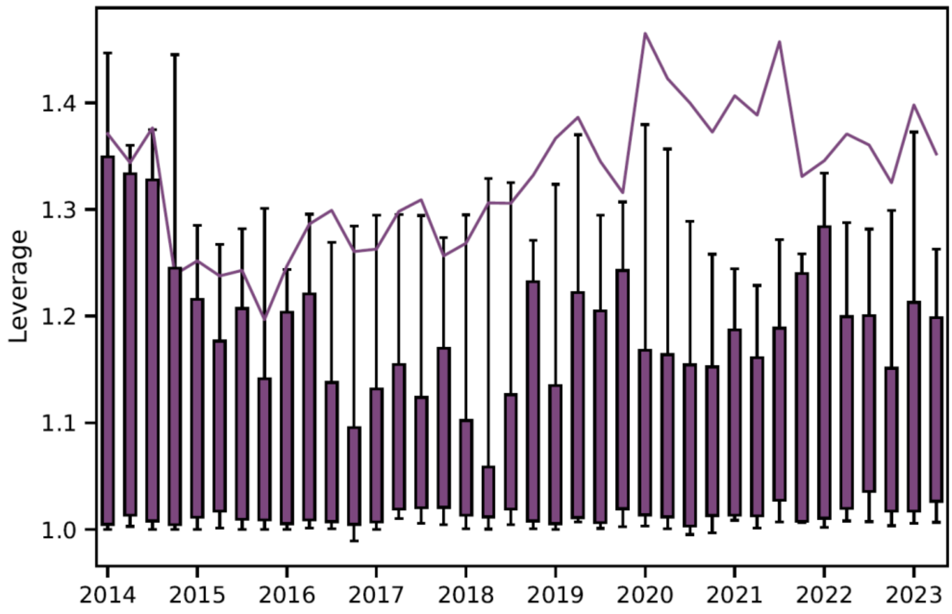
Other Funds' Aggregate Leverage in Ireland (line) vs distribution in the rest of EU



Source: Central Bank of Ireland and European Central Bank.
Notes: Financial leverage is calculated as assets under management divided by total net asset value (equity). The box plots show the 90th, 75th, 25th and 10th percentiles of leverage for other funds across other European countries. The line indicates Irish other funds' aggregated leverage.

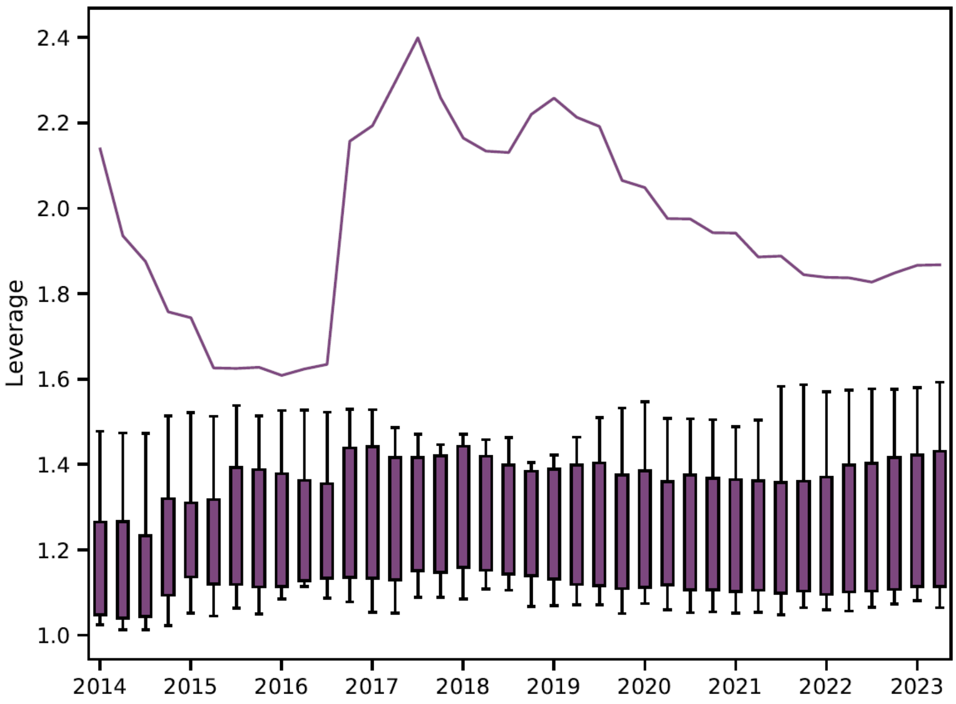
Back to "Contents"

Hedge Funds' Aggregate Leverage in Ireland (line) vs distribution in the rest of EU



Source: Central Bank of Ireland and European Central Bank.
Notes: Financial leverage is calculated as assets under management divided by total net asset value (equity). The box plots show the 90th, 75th, 25th and 10th percentiles of leverage for hedge funds across other European countries. The line indicates Irish hedge funds' aggregated leverage.

Real Estate Funds' Aggregate Leverage in Ireland (line) vs distribution in the rest of EU

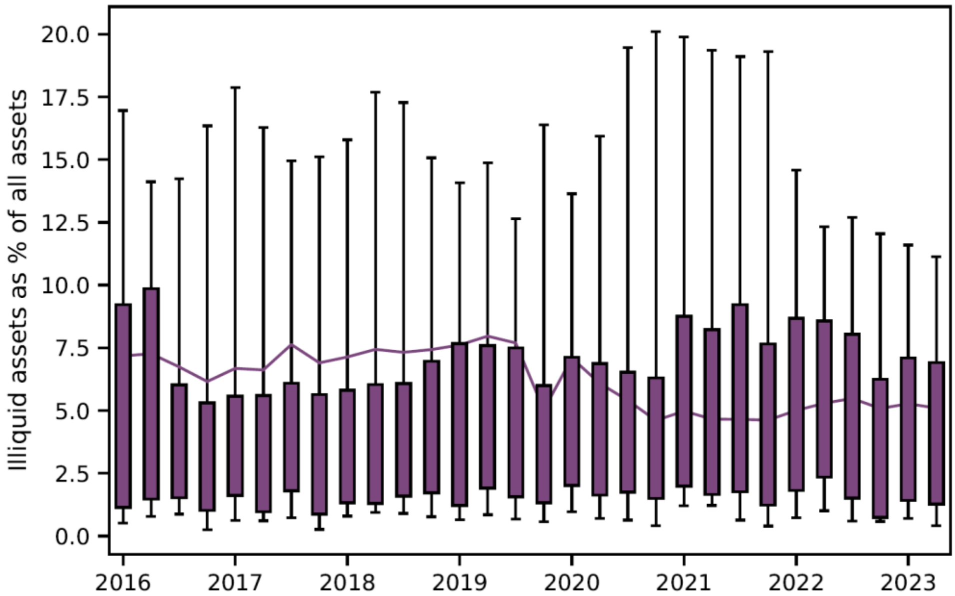


Source: Central Bank of Ireland and European Central Bank.
Notes: Financial leverage is calculated as assets under management divided by total net asset value (equity). The box plots show the 90th, 75th, 25th and 10th percentiles of leverage for real estate funds across other European countries. The line indicates Irish real estate funds' aggregated leverage.

Back to "Contents"

Figure 5 - Share of less liquid assets among Irish fund categories and the distribution of such across EU countries

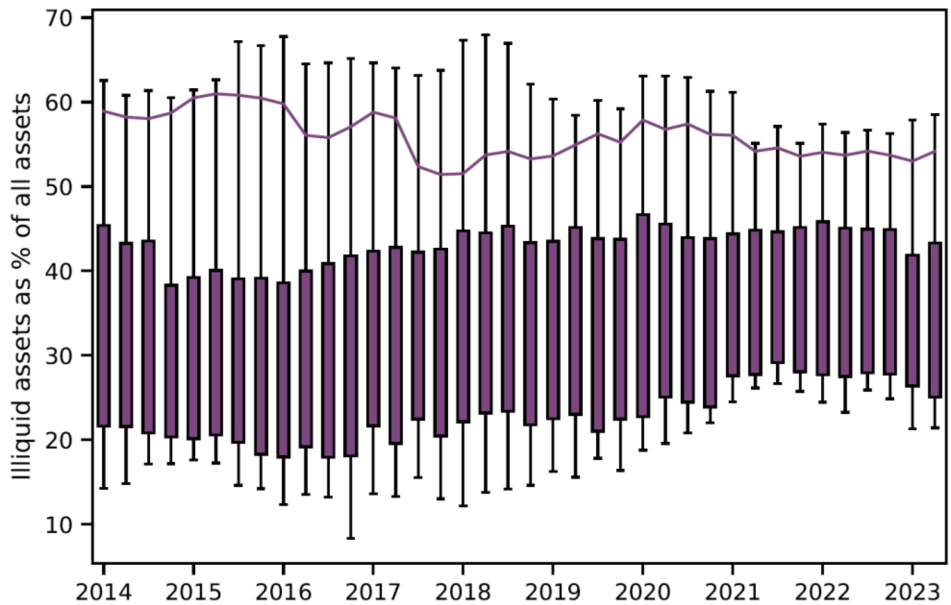
Illiquidity of Irish equity funds (line) compared to equity funds in the rest of the EU (distributions)



Source: Central Bank of Ireland.

Notes: Illiquidity is calculated as [(Total Assets – Liquid Assets) /Total Assets]. Liquid assets are defined as Cash, advanced economies' government debt, euro-zone short-term bank debt, and advanced economies' equities. Box plots show the 10th, 25th, 75th and 90th percentiles of illiquidity of equity funds across other European countries. Equity funds are those investment funds that self-identify as equity funds.

Illiquidity of Irish bond funds (line) compared to bond funds in the rest of the EU (distributions)

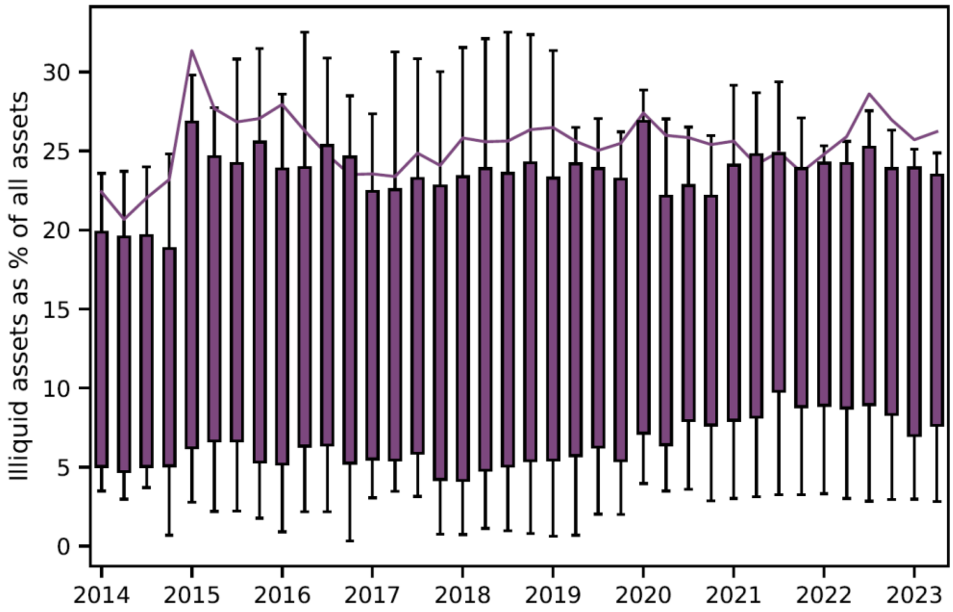


Source: Central Bank of Ireland.

Notes: Illiquidity is calculated as [(Total Assets – Liquid Assets) / Total Assets]. Liquid assets are defined as Cash, advanced economies' government debt, euro-zone short-term bank debt, and advanced economies' equities. Box plots show the 10th, 25th, 75th and 90th percentiles of illiquidity of bond funds across other European countries. Bond funds are those investment funds that self-identify as bond funds.

Back to “Contents”

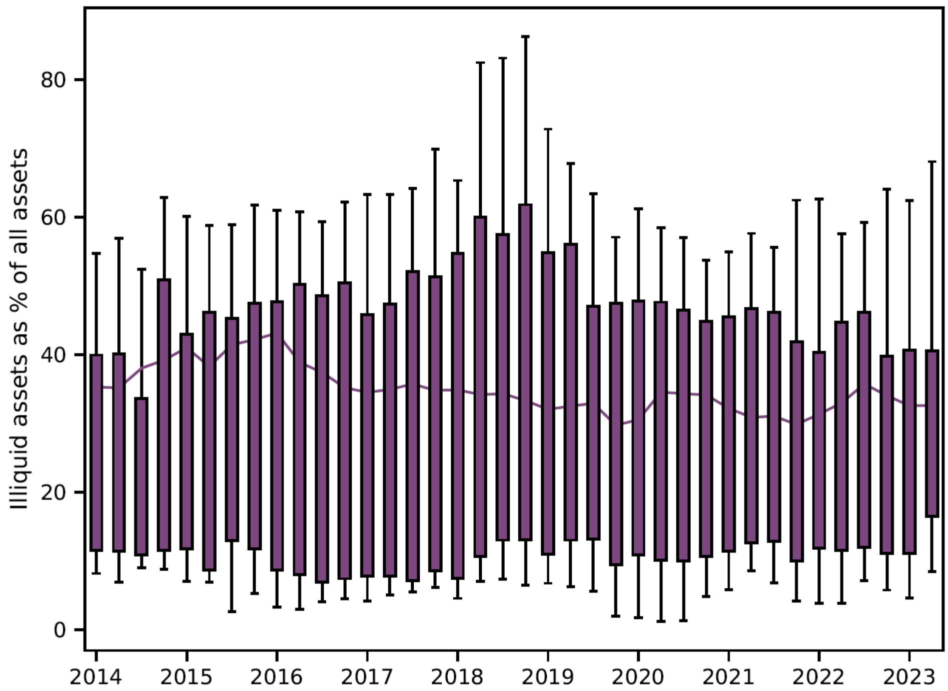
Illiquidity of Irish mixed funds (line) compared to mixed funds in the rest of the EU (distributions)



Source: Central Bank of Ireland.

Notes: Illiquidity is calculated as [(Total Assets – Liquid Assets) /Total Assets]. Liquid assets are defined as Cash, advanced economies' government debt, euro-zone short-term bank debt, and advanced economies' equities. Box plots show the 10th, 25th, 75th and 90th percentiles of illiquidity of mixed funds across other European countries. Mixed funds are those investment funds that self-identify as mixed funds.

Illiquidity of Irish other funds (line) compared to other funds in the rest of the EU (distributions)

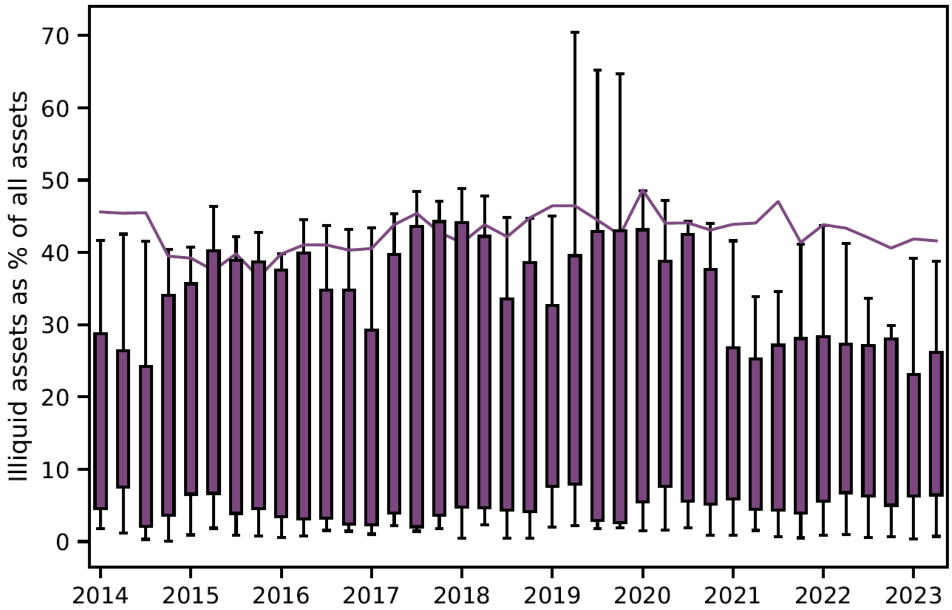


Source: Central Bank of Ireland.

Notes: Illiquidity is calculated as [(Total Assets – Liquid Assets) /Total Assets]. Liquid assets are defined as Cash, advanced economies' government debt, euro-zone short-term bank debt, and advanced economies' equities. Box plots show the 10th, 25th, 75th and 90th percentiles of illiquidity of other funds across other European countries. Other funds are those investment funds that self-identify as other funds.

Back to "Contents"

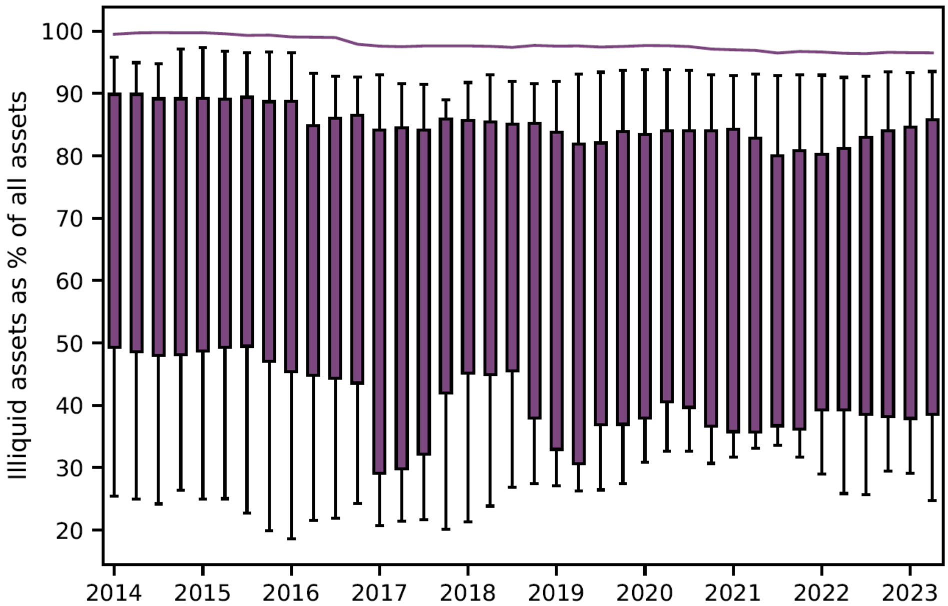
Illiquidity of Irish hedge funds (line) compared to hedge funds in the rest of the EU (distributions)



Source: Central Bank of Ireland.

Notes: Illiquidity is calculated as [(Total Assets – Liquid Assets) /Total Assets]. Liquid assets are defined as Cash, advanced economies' government debt, euro-zone short-term bank debt, and advanced economies' equities. Box plots show the 10th, 25th, 75th and 90th percentiles of illiquidity of hedge funds across other European countries. Hedge funds are those investment funds that self-identify as hedge funds.

Illiquidity of Irish real estate funds (line) compared to real estate funds in the rest of the EU (distributions)



Source: Central Bank of Ireland.

Notes: Illiquidity is calculated as [(Total Assets – Liquid Assets) /Total Assets]. Liquid assets are defined as Cash, advanced economies' government debt, euro-zone short-term bank debt, and advanced economies' equities. Box plots show the 10th, 25th, 75th and 90th percentiles of illiquidity of real estate funds across other European countries. Real estate funds are those investment funds that self-identify as real estate funds.

Back to "Contents"

T: +353 (0)1 2245800
E: publications@centralbank.ie
www.centralbank.ie

Banc Ceannais na hÉireann
Central Bank of Ireland
Eurosystem