



Banc Ceannais na hÉireann  
Central Bank of Ireland  
Eurosystem

# Signed Article

Vol. 2026 No. 3



# Contents

<b>Abstract</b>	<b>3</b>
<b>1. Introduction</b>	<b>4</b>
<b>2. Classification Methodology</b>	<b>5</b>
<b>3. Financial stability risk assessment</b>	<b>8</b>
Overview .....	8
Leverage .....	9
<b>Box A: Assessment of leverage measures</b>	<b>11</b>
Liquidity and liquidity shocks.....	14
Interconnectedness.....	17
Crowdedness and concentration .....	20
<b>4. Euro area government bond and other sovereign bond exposures</b>	<b>22</b>
<b>5. UCITS hedge funds</b>	<b>24</b>
<b>6. Policy implications and next steps</b>	<b>26</b>
<b>7. Conclusion</b>	<b>28</b>
<b>References</b>	<b>30</b>
<b>Appendix</b>	<b>34</b>
Appendix 1: Vulnerability Indicators.....	34
Appendix 2: Data sources.....	35

# Financial Stability Risk Assessment of Irish Hedge Funds

Stamatoula Fragkou, Jeremy Kostons, Darragh McLaughlin, Naoise Metadjer, Kitty Moloney, Brídín O’Leary, Arya Pillai.<sup>1</sup>

## Abstract

This Signed Article presents a financial stability assessment of the Irish hedge fund sector using diverse data sources including a detailed fund strategy taxonomy. The analysis points to substantial diversity in the strategies employed by the hedge fund sector in Ireland. It suggests that – given the relatively limited market footprint of the sector in core global markets – the Irish hedge fund sector, on its own, is unlikely to pose systemic risks. Nevertheless, the analysis reveals vulnerabilities in leverage, liquidity, and interconnectedness that could generate financial stability risks if correlated with hedge funds that follow similar strategies in other jurisdictions. Relative Value and Credit funds warrant particular attention - exhibiting high leverage and/or low liquidity, vulnerabilities which can lead to amplification of a market shock. They are also operating in core markets where shocks could transmit directly and indirectly to the real economy and the wider financial system, including the banking sector. The findings emphasise the need for enhanced financial stability monitoring of these vulnerable cohorts, supported by supervisory engagement as well as cross-border cooperation. Data limitations remain; the article outlines steps to refine future assessments, improve data quality, and support the macroprudential policy surveillance framework for non-bank financial intermediation.

---

<sup>1</sup>With thanks to Mark Cassidy, Stephen Doyle, Peter Dunne, Zhannur Issayev, Frederik Ledoux, Vasileios Madouros, Fergal McCann, Barra McCarthy, Cian Murphy and Paul Reddan. We also thank all the teams working on statistical and supervisory data collection of investment funds within the Central Bank of Ireland for their support. The views expressed in this Article are those of the authors and do not necessarily reflect those of the Central Bank of Ireland.

## 1. Introduction

**Ireland is amongst the largest hedge fund domiciles globally.** The global hedge fund sector continues to grow and has reached approximately US\$11tr in size in 2024 (Financial Stability Board, 2024). The US and Cayman Islands are domicile to the majority of hedge funds (International Organization of Securities Commissions, 2020). However, Ireland and Luxembourg are the largest domiciles in the euro area, with Ireland representing approximately 4 per cent of the global sector and circa 60 per cent of euro area sector assets (European Central Bank, 2025).

**Hedge funds play an important role in the financial system, but their use of leverage could impact financial stability.** Hedge funds play an important role in the provision of liquidity and price discovery in financial markets, as well as influencing capital allocation more widely. However, their investment strategies often involve high leverage and/or concentrated exposures which – in a shock – can force them to unwind positions at distressed prices (Board of Governors of the Federal Reserve System, 2024). Some hedge fund strategies, such as Relative Value and Credit, also have exposures to markets that are important for financial stability (for example sovereign bond markets or corporate bond markets).

**Financial stability risks in the hedge fund sector can materialise through fire sales and/or counterparty losses for creditors, with potentially adverse consequences for the real economy.** Financial stability risk arises when collective behaviour within the fund sector affects the broader financial system and real economy (Central Bank of Ireland, 2023). Hedge funds exhibiting high leverage, liquidity mismatches and significant interconnectedness are particularly vulnerable to shocks. When stressed, such funds may be forced to sell assets, depressing prices below economic value and disrupting market functioning. Fire sales of credit assets in particular may trigger a cascade of effects by reducing credit availability and having adverse macroeconomic effects.

**Recent financial stability research has identified emerging risks from hedge funds across several key areas.** Ferrara et al. (2024) find that hedge funds are playing an expanding role in sovereign bond markets, absorbing net supply but raising concerns over the potential impact of a sudden withdrawal from the market. De Araujo et al. (2024) focus on strong interconnectedness between hedge funds and the banking sector via prime broker relationships, noting that wrong-way risk, procyclical leverage, the opaqueness of funds' positions and poor risk management can create vulnerabilities for prime brokers. A key focus of recent literature is on how to capture leverage risks in investment funds and non-bank financial intermediaries and their potential impacts for financial stability. Bouveret et al. (2025) and the Financial Stability Board (2025) outline various

approaches and methodologies that use both entity level and transaction level reporting. Finally, there has been an increasing focus on vulnerabilities in Undertakings for Collective Investment in Transferable Securities (UCITS) funds that report to authorities as hedge funds (Baudino et al., 2025).<sup>2</sup>

**This Signed Article investigates these issues within the Irish hedge fund sector as part of a comprehensive financial stability assessment.** In the assessments we bring together many data sources collected by the Central Bank of Ireland, including an ad-hoc hedge fund survey (HFS) completed in 2025 to fill gaps in our regular reporting. The results of the analysis will be used to enhance monitoring of financial stability risks and to support supervisory engagement with the sector.

**The Signed Article is divided into seven sections.** Section 2 describes the classification methodology. Section 3 presents the hedge fund taxonomy and outlines the vulnerabilities of each cohort. Sections 4 and 5 focus on key themes of concern – euro area government bonds (EGBs) and UCITS hedge funds. Section 6 discusses the policy implications, limitations and next steps and section 7 concludes.

## 2. Classification Methodology

**The assessment categorises the hedge fund sector into eight distinct strategies to evaluate their vulnerabilities and interconnectedness.** As a starting point, we use the European Central Bank (2024) definition of hedge funds to define our population:

*“Hedge funds are any collective investment undertakings regardless of their legal structure under national legislation, which apply relatively unconstrained investment strategies to achieve positive absolute returns, and whose managers, in addition to management fees, are remunerated in relation to the fund’s performance. For that purpose, hedge funds have few restrictions on the type of financial instruments in which they may invest and may therefore flexibly employ a wide variety of financial techniques, involving leverage, short-selling or any other techniques.”*

This classification included UCITS and Alternative Investment Funds (AIFs) self-reporting as hedge funds, along with “Other” funds following hedge

---

<sup>2</sup> For more details on the European Communities (Undertakings for Collective Investment in Transferable Securities) Regulations 2022 (“the UCITS Regulations”) refer [Central Bank of Ireland guidance](#) on the topic. UCITS are open-ended investment funds and are marketed as retail investment products.

fund strategies.<sup>3</sup> Funds of hedge funds and feeder funds were excluded as they do not control the underlying portfolios.

We then assign our population of hedge funds to eight distinct hedge fund strategies and assess vulnerabilities and interconnectedness for each strategy. The strategy classifications, based on the literature (Lhabitant, 2011; Cumming et al., 2021; Fabozzi, 2008; Kodres, 1998; Garbaravicius and Dierick, 2005), are as follows:

1. **Credit:** Credit strategies generate returns by investing in debt securities and structured credit products (i.e., CDOs, CLOs). By taking both long and short positions in debt securities, credit derivatives and other financial products (e.g. SPV loans), hedge funds following this strategy capitalise on opportunities in credit markets.
2. **Equity Hedge:** Equity strategies involve taking long, short and market neutral positions in equity securities. This will allow the manager to separate individual stock risk from market risk and capitalise on it. For long and short strategies, hedge funds invest in equity securities (i.e., common stocks, ETFs, equity derivatives), to capitalise on both rising and falling equity prices. The aim of a market neutral strategy is to eliminate market exposures or to constrain them to restrict exposure to systematic risk. Hedge funds can take a beta neutral position (both long and short positions) in equities, index futures and ETFs to secure a hedge and offset losses connected to market risk.
3. **Event Driven:** Event Driven strategies involve profiting from price changes triggered by corporate actions (such as bankruptcies, mergers etc). Hedge funds implementing this strategy capitalise on opportunities by investing in securities issued by financially distressed entities and derive profits from accompanying price changes due to corporate actions. The sub-strategies within this category include distressed restructuring, merger arbitrage and special situations.
4. **Macro:** Macro strategies seek to capitalise on price discrepancies in financial markets by monitoring trends, market biases, macroeconomic cycles and imbalances in the global economy. Macro strategies are directional and managers take positions based on forecasts of major macroeconomic events. Macro strategy hedge funds use derivative contracts (such as currency forwards, interest rate swaps) and trade liquid assets (such as futures, options, government bonds, foreign exchange and forward contracts).
5. **Managed Futures/Commodity Trading Advisors (CTA)** Managed Futures/CTA strategies involve investing in listed financial and commodity futures markets and currency markets around the world.

---

<sup>3</sup> For more details on AIFs refer Central Bank of Ireland guidance on [AIFs](#). AIFs are subject to AIFM regulations, the AIFMD level 2 regulation and Central Bank's AIF rulebook.

These funds mainly invest in highly liquid assets such as futures and forwards with a range of underlying assets. Strategies can be directional, taking positions based on the perceived state of economic inputs (discretionary), but also quantitative, relying on algorithmic rules-based trading (systematic).

6. **Multi-Strategy:** Multi-Strategy funds allocate capital dynamically to different strategies within a single fund to capitalise on market opportunities. Multi-Strategy hedge funds take long/short Credit or Equity, global Macro, Event Driven, Relative Value, and arbitrage positions that are managed in-house by different portfolio managers. They adapt to market conditions and shifts capital across equities, bonds, derivatives, commodities, and currencies.
7. **Relative Value:** Hedge funds with a Relative Value strategy aim to profit from price discrepancies in various (and often related) securities by taking long and short positions. This strategy relies on profit opportunities arising from the long-run tendency of the market prices to revert to equilibrium relationships, while deviating in the short run. The Relative Value fixed income arbitrage (FIA) strategy focuses on price discrepancies between fixed income securities, credit, or interest rate derivatives by taking long and short positions across different securities (for example, spreads between government bonds and interest rate swaps). These strategies are more common where instruments are difficult to value accurately (for example, convertible bonds). Relative Value volatility arbitrage benefits from the differences between forecasted future price volatility and implied volatility. Different sub-strategies within this cohort include convertible arbitrage, corporate arbitrage, sovereign arbitrage and asset-backed arbitrage etc. Basis trading is a Relative Value strategy.
8. **Other Hedge:** “Other” hedge funds do not follow a particular strategy that falls under one of the other unique strategies nor do they follow a Multi-Strategy. Other hedge fund strategies commonly include Alternative Risk Premia and Volatility funds.

The identification and classification strategy was applied to funds reporting a non-zero NAV at any point between Q1 2022 and Q2 2025, using data sources outlined in Appendix A2. Further, any additional funds identified as following a hedge fund like strategy by the HFS were included in the analysis.<sup>4</sup>

---

<sup>4</sup> The survey - which requested information on leverage, liquidity, market share, risk management, and investor composition - targeted managers of hedge funds with total gross assets exceeding €100m, receiving submissions from 402 hedge funds.

### 3. Financial stability risk assessment

#### Overview

**Table 1: Vulnerability heatmap: a summary of key risk indicators by hedge fund cohort**

	Credit	Equity Hedge	Event Driven	Macro	Managed Futures	Multi-strategy	Relative Value	Other Hedge	All
<b>Size</b>									
AUM (Eur Bns)	38	218	16	12	7	15	40	47	393
AUM share (% of total AUM)	10	56	4	3	2	4	10	12	100
HHI concentration of AUM (0-10,000)	497	2306	438	3817	890	1010	6613	1439	810
Fund count	64	141	96	13	28	43	15	78	478
<b>Leverage</b>									
Total leverage (% NAV)	277	1187	167	1870	745	515	4538	598	941
Initial Margin ratio (% NAV)	1	20	2	11	6	8	2	3	12
Commitment leverage (% NAV)*	209	450	173	1375	954	381	3212	356	759
<b>Liquidity</b>									
Unencumbered HQLA (% AUM)	15	32	13	21	61	27	7	27	26
Share exchange traded (mean % AUM)*	40	94	23	54	195	62	97	50	65
> 5 days to liquidate (mean % AUM)*	33	7	87	0	4	36	1	26	32
Liquidity shortfall: redemption shock(% NAV)	6	0	0	2	1	0	2	0	0
Liquidity shortfall: margin shock(% NAV)	0	0	0	0	1	0	5	0	0
Daily dealing funds (% NAV)	49	24	18	90	92	35	18	48	34
<b>Interconnectedness</b>									
Sovereign debt securities (% AUM)	7	12	3	18	46	7	16	11	12
Bank debt securities (% AUM)	5	0	2	2	3	1	48	1	5
NFC debt securities (% AUM)	13	1	5	0	0	12	4	2	3
Top 3 prime brokers (% derivative notionals)	64	74	44	57	47	39	68	49	56
<b>Crowdedness</b>									
Crowdedness of returns (correlation)	0.35	0.34	0	0.28	0.53	0.32	0.08	0.14	0.19
Instrument concentration (median count)	12	20	3	21	11	11	29	8	12

Source: MMIF, NAV, Fund profile, AIFMD, EMIR, SFTR, HFS and Central Bank staff calculations. Details of definitions data sources are available in Appendix Table A2.

Notes: Definitions of risk indicators (first column) are in the Appendix Table A1 and cohorts (first row) are in section 2. Darker red indicates highest value (relative to other cohorts) in that risk indicator; it does not necessarily indicate where risks are elevated. Indicators marked with an asterisk (Commitment leverage, share exchange traded, >5 days to liquidate) are obtained from the HFS and are as of Q3 2024. The HFS was restricted to a smaller sample of 402 funds. All other indicators are as of Q2 2025.

**This Signed Article assesses vulnerabilities that are relevant for the materialisation of systemic risk on a cohort-by-cohort basis.** Table 1 presents an overview assessment of vulnerabilities of each strategic cohort within the hedge fund sector looking at various categories of indicators including size, leverage, liquidity, interconnectedness and crowdedness. Exposures and trading volumes in credit markets were also analysed to assess market footprint (see Figure 7).<sup>5</sup> In the following sections we explore the vulnerability results in more detail.

## Leverage

**Leverage in hedge funds can be an amplifier of stress to the financial system.** Leverage related risks can impact the broader economy via two channels: the position liquidation channel and the counterparty channel (Financial Stability Board, 2023; Central Bank of Ireland, 2023). Fire sales of hedge fund assets can occur when leveraged positions – through derivative or security finance transaction exposures – lead to new/large collateral or margin calls. Alternatively, hedge fund managers may decide to quickly deleverage in the face of a shock, also leading to fire sales. If the markets are already under stress, this can lead to adverse feedback loops as was seen with the LTCM crisis in 1998 (Slivinski, 2009). The default of a leveraged entity can lead to further propagation of losses to its lenders and investors.

**Relative Value funds employ very high levels of leverage in their investment strategies.** Several metrics highlight very high levels of leverage employed by Relative Value funds historically. Box A provides definitions and a detailed discussion of the various measures of leverage used in this Signed Article. Total leverage (see Figures 1 and 2) and commitment leverage (see Table 1), which accounts for netting and hedging, estimates show that the Relative Value cohort employs high levels of both financial and synthetic leverage. In line with this, higher levels of derivative use and borrowing are observed for the Relative Value cohort. Bouveret et al. (2025) also finds the use of high leverage by Relative Value funds. The exploitation of small price discrepancies (of a few basis points) by Relative Value funds incentivises the use of significant leverage to enhance returns (Bouveret et al., 2025). Macro and Equity Hedge cohorts show an increase in leverage employed in recent quarters.<sup>6</sup>

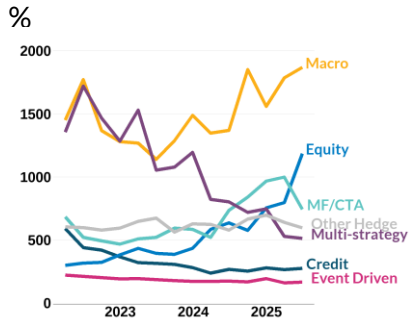
---

<sup>5</sup> Credit market exposures are prioritised in line with Financial Stability Board (2024) as these are more likely to have financial stability impacts.

<sup>6</sup> A recent increase in the leverage of Macro and Relative Value hedge funds was also noted by the Office of Financial Research (2025).

## Macro and Equity Hedge cohorts show a recent increase in total leverage

Figure 1: Total leverage of hedge fund cohorts across time, (per cent of NAV)

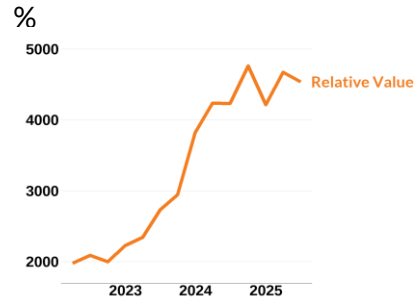


Source: MMIF, EMIR and Central Bank calculations.

Notes: Total Leverage is calculated as  $(AUM - \text{positive market values of derivatives} + \text{gross notional of derivatives})/NAV$ . The indicator is calculated quarterly using end of quarter values from the MMIF. The Gross notional is obtained from EMIR and reflects the median gross notional over the quarter. MF/CTA denotes Managed Futures/CTA cohort.

## Total leverage is highest for Relative Value strategy

Figure 2: Total leverage of Relative Value cohort, (per cent of NAV)



Source: MMIF, EMIR and Central Bank calculations.

Notes: Total Leverage is calculated as  $(AUM - \text{positive market values of derivatives} + \text{gross notional of derivatives})/NAV$ . The indicator is calculated quarterly using end of quarter values from the MMIF. The Gross notional is obtained from EMIR and reflects the median gross notional over the quarter. One fund was removed from the time series due to confidentiality requirements.

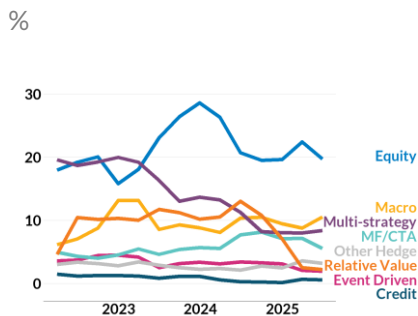
**The ratio of initial margins posted to NAV (IM ratio) confirms higher leverage in Equity and Macro funds.** The IM ratio is the ratio of initial margins posted for derivatives transactions as a share of NAV. Initial margin is calculated based on the potential future exposure of the derivatives portfolio and is less likely to overstate leverage related risks like gross notional exposures, which do not account for hedging and netting (Bouveret et al., 2025). Comparing the IM ratio to available liquid assets or NAV indicates the liquidity and solvency risk associated with a fund's derivative portfolio. The IM ratio (see Figure 3) is persistently higher for Equity Hedge funds across the sample period, with the IM ratio for Macro funds increasing in recent periods. Differences in IM ratios across cohorts relate to the composition of their derivatives portfolios and the volatility of the underlying securities. For example, the Basel Committee on Banking Supervision's (2019b) standardised initial margin schedule assigns initial margins of 1 to 4 per cent of notional exposure for interest rate derivatives, while equity derivatives require 15 per cent.

**Irish hedge funds borrow significant volumes via Securities Financing Transactions (SFTs).** Hedge funds concentrated in Relative Value and Equity strategies undertake significant volumes of borrowing as a share of

their total NAV via repos, buy-sell backs and margin lending<sup>7</sup> (Figure 4). The main leverage providers to hedge funds are located outside the EU, mainly in the US and UK, and are mainly banks and broker-dealers.

### Equity and Macro cohorts have higher margins, reflecting expectations of future market volatility

Figure 3: Initial Margin ratio of hedge funds across time, (per cent of NAV)

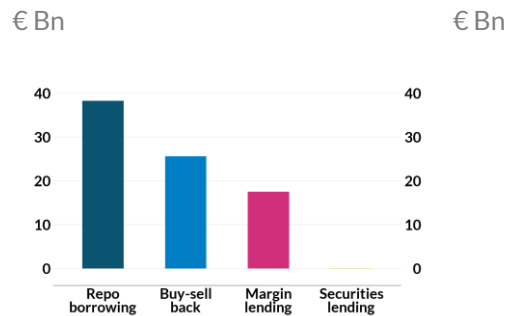


Source: MMIF, EMIR and Central Bank calculations.

Notes: IM ratio is calculated as initial margins posted divided by NAV. MF/CTA denotes Managed Futures/CTA cohort

### Hedge funds undertake significant borrowing as a share of their total NAV via securities financing transactions

Figure 4: Borrowing by hedge funds as of Q2 2025, (€ Bn)



Source: SFTR as of quarter end Q2 2025 and Central Bank calculations.

Notes: Where duplicates are found, the larger loan amount is considered.

## Box A: Assessment of leverage measures

An assessment of a range of leverage metrics found that no one indicator provides a complete picture.<sup>8</sup> As leverage is a key vulnerability potentially increasing financial stability risks,<sup>9</sup> this financial stability assessment aims to evaluate leverage metrics and identify an approach that is both meaningful and comprehensive. We align our metrics with the Financial Stability Board (2025) recommended metrics on NBF1 leverage. The main finding of this analysis is that no one indicator provides a complete picture of leverage related risks and it is important

<sup>7</sup> Refer to article 3 (paragraphs 7 to 10) of Regulation (EU) No 2365/2015 (The European Parliament and the Council of the European Union, 2015) for details on the type of SFTs as mandated for SFTR reporting. Securities lending, repo borrowing and buy-sell back arrangements involve transfer of securities or commodities, where there are key differences in the transfer of ownership or legal rights, restrictions applied to reuse of collateral and fee structures. Margin lending is when a counterparty extends credit specifically for purchasing, selling, carrying, or trading securities (and does not involve transfer of ownership), but excludes other loans merely secured by securities as collateral.

<sup>8</sup> See the Financial Stability Board (2025) for a detailed discussion of different leverage metrics that can be used to assess financial stability risks

<sup>9</sup> Central Bank of Ireland (2023) highlights the role played by leverage in the amplification of financial stability risks.

to monitor a suite of leverage metrics to understand the sources of risk (e.g. financial or synthetic) and riskiness of the leverage employed. The metrics assessed include financial leverage, total leverage, commitment leverage, initial margin ratio and prime broker leverage (see Box A: Table 1 Notes for definitions).<sup>10</sup>

**Total leverage gives a worst-case scenario of on and off-balance sheet leverage in a systemic crisis.** Total leverage measures both on and off-balance sheet exposures (ignoring hedging and netting) and represents a worst-case scenario of exposure in a market shock. In a systemic crisis, even typically safe asset classes can experience high volatility and increased co-movement. Normal trading and settlement activity may stall. In this scenario, typical netting and hedging arrangements may not hold and counterparty risk can increase dramatically. This can lead to an underestimation of risks if allowing for netting and hedging arrangements, so total leverage is useful in this case.

**The commitment leverage ratio allows for hedging and netting but further engagement with industry is required to improve this estimate across all funds.** The commitment leverage metric allows for hedging and netting and thus could be a more accurate measure of leverage in normal times than the total leverage metric. UCITS do not report the commitment leverage metric in their regular reporting, so to fill this gap fund managers were asked to report commitment leverage for each fund as part of the HFS. Comparing the reported data to our estimate of total leverage, we find a very similar ranking and, for some cohorts, a limited impact of netting and hedging arrangements. In some cases, reported commitment leverage is higher than the estimate of total leverage. This could be related to timing differences as the fund managers were asked to report the maximum commitment leverage ratio over the quarter whereas the total leverage is based on the median gross notional derivative exposure over the quarter.<sup>11</sup> Further engagement with fund managers – and possibly further guidance – would be required to better understand these self-reported results for commitment leverage.

**The initial margin (IM) ratio provides a measure of potential future liquidity requirements from derivatives positions.** Initial margins are the initial cash or collateral needed to gain exposure to a particular derivative contract. As such, increases in the IM ratio can act as a flag of

---

<sup>10</sup> To allow comparability of reported and estimated metrics the assessment was carried out for the reduced survey sample of 402 funds as of 2024 Q3.

<sup>11</sup> The median is used to reduce the impact of outliers in the EMIR dataset.

increased perceived risk from market participants.<sup>12</sup> This metric provides an alternate, more dynamic indicator and can be useful to assess exposure to derivatives. Bouveret et al (2025) suggest comparing it to available liquidity to assess the resilience of the cohort to shocks to margin calls and derivatives in general.<sup>13</sup> But there are also downsides to this metric. It is not a comprehensive measure, as it does not measure – for example – leverage through repos or margin lending. Further, where derivatives are not centrally cleared, there may be no IM posted. Using this metric, Equity Hedge funds have the highest leverage as equity derivatives tend to require higher initial margins due to typically higher volatility in equities than in interest rate, credit or currencies. Further work would include comparing the IM ratio to liquid assets.

**On-balance sheet leverage measures can highlight key counterparties and potential for contagion.** While financial leverage and prime-broker leverage are captured in the total leverage indicator, these metrics help us to carve out the specific risks arising from borrowing. Financial leverage provides a measure of funding received from various sources such as secured, unsecured and prime broker loans. Prime broker leverage isolates borrowing through margin lending agreements. This metric estimates the interconnectedness with systemically important financial institutions such as banks.

**Leverage vulnerabilities vary significantly across hedge fund strategies, reflecting different sources of risk exposure.** In Box A: Table 1, we note that Macro and Relative Value hedge funds stand out as having higher leverage than the other cohorts. The highest levels of IM ratio leverage are to be found in the Equity hedge fund cohort, with the Macro cohort having the second highest score. Whereas Equity and Multi-strategy cohorts have the highest levels of prime broker leverage, thus indicating these cohorts are most likely to transmit a shock to prime brokers.

---

<sup>12</sup> The Bank for International Settlements (BIS) recommends calibrating IM to an extreme but plausible scenario in relation to the change in the value of the derivative instrument, using a period that includes a period of financial stress (Basel Committee on Banking Supervision, 2019b).

<sup>13</sup> See Bouveret et al. (2025) for discussion of the Initial Margin ratio as a measure of leverage and its use in comparison to fund liquidity.

**Table 1: Leverage Heat map**

	Credit	Equity	Event Driven	Macro	Managed Futures	Multi-strategy	Relative Value	Other Hedge
Financial Leverage	115	153	135	300	119	141	362	152
Total Leverage	264	610	181	1881	862	799	2737	742
Commitment Leverage	209	450	173	1375	954	381	3212	356
IM Ratio	0	21	4	11	7	10	7	3
Prime Broker Leverage	0	15	1	0	0	5	0	0

Source: MMIF (2024 Q3), Fund profile, EMIR, HFS and Central Bank Calculations. This table shows the estimates based on a reduced sample of funds who reported in the HFS. Darker red indicates highest value (relative to other cohorts) in that risk indicator; it does not necessarily indicate where risks are elevated.

Notes: Each metric in the heatmap is estimated as follows,

- Total Leverage is Total Assets Under Management – Positive Market Value of Derivatives + Total Gross Notional of Derivatives)/Total Net Asset Value.
- Commitment Leverage is calculated using the commitment method which converts derivative positions to their equivalent underlying asset exposure and accounts for hedging and netting arrangements that reduce market risk. Commitment Leverage is self-reported in the HFS.
- Initial Margin (IM) ratio is the total initial margin posted by a fund across all derivatives transactions divided by its total Net Asset Value.
- Financial Leverage is Total Assets Under Management divided by Total Net Asset Value.
- Prime Broker Leverage is the total borrowing from prime brokers via margin lending agreements divided by Total Net Assets.

## Liquidity and liquidity shocks

**Margin call or redemption-driven asset fire sales by hedge funds may amplify market stress.** Liquidity mismatches in funds occur when funds' redemption frequencies are not aligned with the time required to liquidate holdings without disrupting market prices (Central Bank of Ireland, 2023). Liquidity illusion may also be a factor if investors mistakenly perceive that daily dealing frequencies imply that funds hold more liquid assets than they do (Financial Stability Board, 2017a). Therefore, mismatches and liquidity illusion may lead to challenges for hedge funds if there are increased redemption requests. This may force funds to fire sell less-liquid assets during market stress events. A significant minority of hedge funds are daily dealing and thus may be vulnerable to redemption driven fire sales (assuming liquidity management tools are not used to fully manage the liquidity shortfall). Insufficient liquidity in hedge funds to cover margin calls can also lead to funds unwinding their positions, exerting downward pressure on asset prices, and correlated collective action of funds could result in fire sales (Central Bank of Ireland, 2023).

**Irish hedge funds predominantly operate on a monthly or less regular dealing frequency.** Almost 70 per cent of assets under management (AUM) in Irish hedge funds are in funds that offer monthly, quarterly, or annual redemptions. However, daily dealing funds represent 26 per cent (€104 Bn) of AUM (see Figure 5). Dealing frequency varies considerably by strategy: Macro and Managed Futures funds exhibit the highest proportion of daily dealing funds by AUM, while Relative Value and Event Driven funds have the lowest (Figure 5). Daily dealing funds are typically UCITS, whereas AIFs tend to offer less frequent opportunities to redeem.

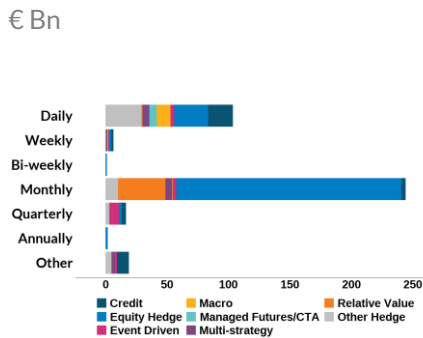
**Relative Value, Credit and Event Driven funds in particular exhibit materially lower levels of liquid assets relative to other cohorts.** Event Driven and Credit funds tend to have the lowest share of investments in exchange-traded assets relative to other cohorts. Furthermore, a high proportion of their assets would require longer than five days to liquidate (see Table 1). These cohorts would therefore require longer to unwind positions than other cohorts. Relative Value, Event Driven and Credit funds also hold a lower share of unencumbered High-Quality Liquid Assets (HQLA) in these cohorts (see Table 1).<sup>14</sup> Assets that can be easily and immediately converted into cash at little or no loss of value are classified as HQLA as per the Basel framework (Basel Committee on Banking Supervision, 2019a). HQLA are considered liquid in markets during stress events. Credit and Relative Value funds also exhibit materially higher liquidity shortfalls relative to other cohorts when a severe margin call or redemption shock scenario is applied, however the shortfalls are still relatively small as a percentage of NAV (see Table 1).

---

<sup>14</sup> Un-encumbrance is defined as the level of HQLA, as defined by the Basel Committee on Banking Supervision (2019a), adjusted for collateral usage. Specifically, individual ISINs pledged as collateral in Securities Financing Transactions are subtracted from the total HQLA pool. This represents an upper-bound estimate, reflecting data limitations discussed in Section 7.

## The majority of hedge funds are monthly dealing

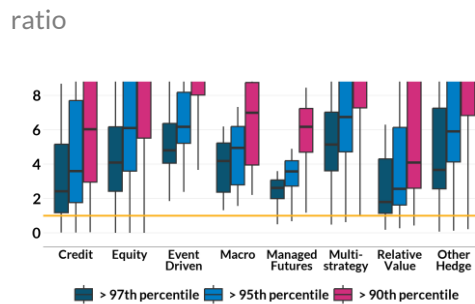
Figure 5: Total AUM of hedge funds by dealing frequency and cohort strategy, (€ Bn)



Source: Fund profile, MMIF & Central Bank of Ireland calculations.

## Most hedge funds have sufficient HQLA to meet a severe margin call

Figure 6: Margin Coverage Ratio boxplots Q2 2025, (ratio)



Source: EMIR, MMIF, SFTR & Central Bank of Ireland calculations.

Notes: We apply the Macchiati et al. (2024) method for calculating daily margin flows. The weekly aggregated margin flows are then used to calculate a margin shock based on the past distribution of margin flows over the sample period per strategy. Boxplots of Margin Coverage Ratio for all Irish hedge funds, based on a 97th, 95th and 90th percentile weekly net margin flow expected shortfall calculation. Box = middle 50 per cent of data (25th to 75th percentile). Line in box = median. Whiskers = typical range ( $1.5 \times$  Interquartile range, IQR). Funds with MCR below the yellow line are experiencing shortfalls.

**The Irish hedge fund sector appears resilient to one-off margin calls and redemption shocks, although pockets of vulnerability exist.** Testing for a severe weekly margin call shock (ranging from 11 to 33 per cent of NAV), most funds have sufficient liquid assets (see ' $>97^{\text{th}}$  percentile' shock scenario in Figure 6).<sup>15,16</sup> However, a small share of Relative Value, Credit and Other hedge funds would not be sufficiently resilient due to high leverage and/or insufficient HQLA. Due to lower dealing frequency, AIF hedge funds are less susceptible to redemption shocks. Section 5 details the results of redemption stress tests conducted on UCITS hedge funds, which are relatively more vulnerable to redemption shocks. The liquidity shortfalls indicated in these stress test results are relatively small as a per cent of NAV (see Table 1) making it less likely that funds would be forced to

<sup>15</sup> The historical distribution of weekly fund-level margin flows from 2022-Q1 to 2025-Q2 were obtained for each strategy. The median value of weekly margin flows above the 90<sup>th</sup>, 95<sup>th</sup> and 97<sup>th</sup> percentile was then used to calculate 3 shock scenarios of increasing severity for each strategy.

<sup>16</sup> Margin call shocks are calibrated to the strategy specific historical distribution.

sell significant volumes of illiquid assets to meet calls on their liquidity. However, should they be forced to liquidate significant volumes of unencumbered HQLA, this could contribute to pressure on core markets in a global stress event. Furthermore, if these shocks were persistent or recurred before liquidity could be replenished, the resilience of more vulnerable hedge fund cohorts could deteriorate further.

## Interconnectedness

**Hedge funds' actions during stress events can amplify and transmit market stress to key stakeholders and core markets.** Past events show that hedge funds can respond to market stress with deleveraging and disorderly fire sales, leading to amplified volatility, lower prices, lower liquidity and dysfunctional market trading. This can be transmitted to financial, non-financial and government sectors due to the strong interconnectedness of hedge funds with core debt markets. Hedge funds also have strong and complex links to prime brokers. These links may involve highly leveraged trades using derivatives positions and securities financing transactions. Prime brokers are often systemically important financial institutions, and they can face solvency risks due to the unwinding of highly leveraged positions, observed notably during the Archegos collapse (Karagiorgis et al., 2026).

**Irish hedge funds have significant investments in securities issued by banks, non-financial companies (NFCs) and governments.** Irish hedge funds' asset holdings are mainly with the US (45 per cent), EU (26 per cent) and UK (17 per cent) (see Table 2 and Figure 8). Large NFC exposures to the US and the EU (via equities and to a lesser extent debt securities) indicate strong links to the real economy. Sovereign exposures are predominantly to US Treasuries, with a much smaller exposure to the EU and UK government bonds. Significant banking sector exposures to the US, UK and EU primarily reflects cash, derivatives and other assets (unsettled trades). Investments via equity and debt in banks make up a smaller portion of Irish hedge funds' overall holdings but are significant for some cohorts i.e. Relative Value (see Table 1). Irish exposures are relatively small at 9 per cent of gross assets, and the majority are towards other non-bank financial intermediaries and banks (cash, overdrafts and other assets).<sup>17</sup>

---

<sup>17</sup> Irish NFC exposures are 96 per cent equities, diversified across 46 companies. Irish bank exposures are mainly overdrafts, other assets and cash with unidentified banks. Some derivative and SFT assets are linked to Irish banks as well.

**Table 2: Hedge fund gross asset exposures by country and sector**

Country	Sector (Amount - €m)								Total (€m)	% Total
	NFC	GOV	DTC	ICPF	IF/MMF	OFI	SPE	Other		
EU	34,696	9,785	37,674	920	12,267	11,083	16,504	9,351	132,277	26%
US	82,317	43,008	68,876	1,185	19,533	8,864	674	6,624	231,081	45%
UK	2,959	3,045	48,666	113	82	29,229	147	1,704	85,944	17%
RoW	27,361	9,165	16,374	1,133	2,186	3,891	116	4,219	64,446	13%
Total (€m)	147,332	65,004	171,590	3,350	34,068	53,067	17,440	21,898	513,748	-
% Total	29%	13%	33%	1%	7%	10%	3%	4%		100%

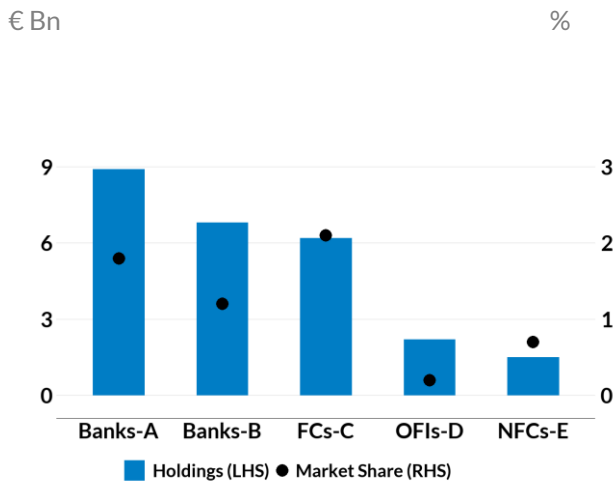
Source: 2025 Q2 MMIF and Central Bank calculations.

Notes: Amounts (in €m) represent the *gross* exposures (sum of long and short exposures) on the asset side of the hedge funds' balance sheet. This includes the following instruments: Equities, Debt Securities, Property and Land, Securities, Cash Deposits and Loans, Overdraft Accounts, Accrued Income, Reverse Repos, Derivatives and Other assets.

**Exposures to debt markets are relatively low compared to the underlying market size.** Irish hedge fund investments in core debt markets are typically a small share of overall market size, where the largest market footprints observed are less than 3 per cent (see Figure 7). The Managed Futures/CTA cohort has a high share of their own portfolio in sovereign debt assets (see Table 1). However, the market footprint of this Irish cohort is low. They also have a high share of unencumbered HQLA, which increases their resilience to liquidity shocks. In monetary value, Equity Hedge funds have the highest exposure to US Treasuries. This exposure is small relative to the size of this market. A high portfolio share of banking sector debt is observed in the Relative Value cohort (see Table 1), but again the market footprint is small.

## Irish hedge funds largest debt market footprint is to the banking sector

Figure 7: Top 5 market share of debt securities held by hedge funds by sector-country



Source: MMIF Q2 2025, BIS, and Central Bank calculations.  
 Notes: Amounts (in €bn) represent the gross exposures on the asset side of the hedge funds' balance sheet (LHS, bar chart). Market share (%) is calculated as gross balance sheet exposures as a share of the underlying debt market size obtained from BIS debt securities statistics (RHS, dots). Where detailed market size estimates were not available, a higher sectoral classification was used for estimation of market share. Only combinations of sector-country with top 5 market shares are shown. Country details are anonymised due to confidentiality requirements. Gross exposures above 1 Bn are considered for market share estimation. FC stands for "Financial Corporations", OFI stands for "Other Financial Intermediaries" and NFC stands for "Non-Financial Corporations".

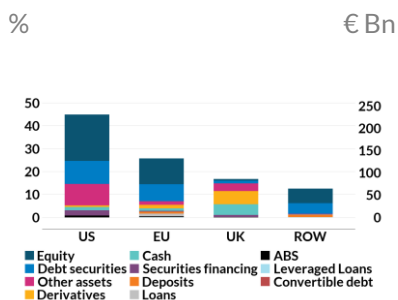
**There is significant counterparty concentration of derivative exposures with a small number of US, UK and European prime brokers.** Hedge funds are interlinked with a small number of international prime brokers (e.g. based in the US, UK and Switzerland) through borrowing, trading etc. Equity Hedge and Relative Value funds in particular hold a large proportion of derivative notionals with the top three prime brokers in the sample (see Table 1). This suggests substantial concentration of derivative trading amongst a small number of intermediaries and could lead to spillovers to/from hedge funds in a shock. Future work could examine this risk in greater depth (including understanding the risks from rehypothecation),

although this would be reliant on international cooperation given the domicile of the prime brokers.<sup>18</sup>

**Investors in Irish hedge funds are mainly non-banks (e.g. broker-dealers, investment funds, pension funds etc.) based across Europe, the UK, the US and other locations.** Investors in hedge funds are quite diversified, with non-EU investors holding the majority share in Irish hedge funds (mostly via non-bank entities, see Figure 9). Pension funds are also a major investor, increasing their exposure to higher risk investments.<sup>19</sup> However, significant data gaps remain in studying investor profile and concentration as most reporting refers to the first counterparty rather than the ultimate investor.

### The US represents the largest exposure of Irish hedge funds.

Figure 8: Hedge fund gross asset exposures to specific regions by instrument type, (per cent)

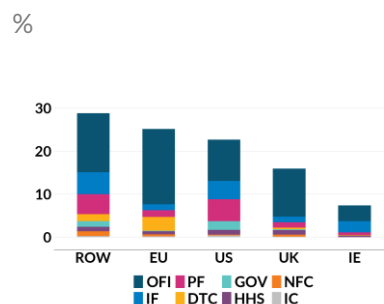


Source: MMIF Q2 2025 and Central Bank calculations.

Notes: Gross asset exposures of hedge funds (long + short) exposures are shown in the chart. ROW stands for rest of the world. ABS denotes Asset Backed Securities.

### Hedge fund investors are predominantly other financial institutions.

Figure 9: Sector-geographies of hedge fund investors as a share of NAV, (per cent)



Source: HFS and Central Bank calculations.

Notes: Top 5 investors and percentage of NAV invested as of Q3 2024. The investor sectors are Investment Funds (IF), Pension Funds (PF), banks (DTC), government and social security funds (GOV), households and non-profits (HHS), Non-Financial Corporations (NFC), insurance corporations (IC) and all other Financial Institutions (OFI) including SPEs

## Crowdedness and concentration

**Crowdedness within cohorts is quite low during normal market conditions but rises during periods of stress.** Crowdedness is when too many investors follow a similar strategy, leading to correlated shocks in which investors run simultaneously and funds are forced to liquidate their positions, leading to asset fire sales (Chincarini et al., 2026). Crowdedness of different funds within each cohort is quite low in normal times. When

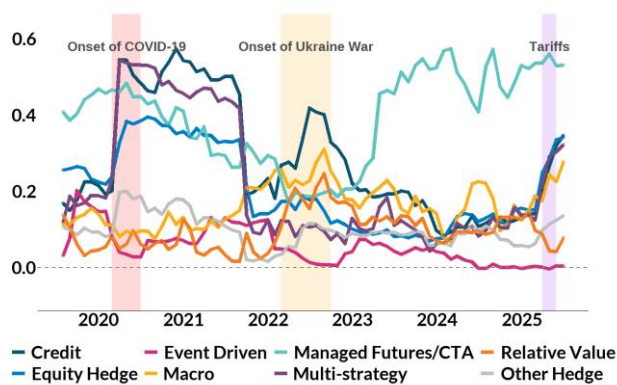
<sup>18</sup> Rehypothecation occurs when a lender uses an asset, supplied as collateral on a debt by a borrower, and applies its value to cover its own obligations (Financial Stability Board, 2017b).

<sup>19</sup> [Barbell effect](#) involves simultaneously investing in both high and low risk assets (Johnson, 2025).

examining rolling 18-month median pairwise correlations, most funds within strategies do not employ highly correlated approaches. The exception is the Managed Futures/CTA cohort where moderate levels of crowdedness are observed; however as noted above, its small size and high liquidity mitigates risks for this cohort.<sup>20</sup> The degree of crowdedness tends to increase in times of market stress (see Figure 10), potentially increasing the likelihood that cohorts may behave in a correlated way at these times, increasing the impact on markets and the underlying economy.

### Crowdedness in many hedge fund cohorts increases in times of stress.

Figure 10: Rolling 18-month median pairwise correlation by strategy (per cent)



Source: NAV and Central Bank calculations

Notes: Within cohort median pairwise correlation calculated in 18 month rolling window. Correlation is calculated between every pair of funds in a cohort for each 18-month overlapping window and the median of all the calculated correlation coefficients plotted for each window.

**Strategy concentration varies considerably across cohorts.** Analysis of the average number of instrument type-country-sector combinations reveals varying levels of concentration across cohorts. Relative Value funds employ the least concentrated (most diversified) strategies across all cohorts, whereas Event Driven funds pursue the most concentrated strategies (see Table 1). More concentrated strategies can increase the risks related to the inability to liquidate assets when required. This is particularly important where higher concentration and higher levels of investment in illiquid assets are observed. Across all strategies, Event Driven funds tend to employ particularly concentrated illiquid strategies,

<sup>20</sup> Correlation of 0.53 is observed. Managed Futures strategies generally employ quantitative systematic trading strategies. Previous research (Hurst et al., 2013) found that a high share of the returns of Managed Futures funds can be explained by time series momentum strategies. This may explain the higher correlation.

although this is partly mitigated by the fact that they generally do not offer redemptions more frequently than quarterly.

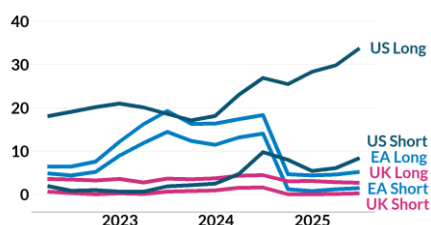
## 4. Euro area government bond and other sovereign bond exposures

**While hedge funds increasingly provide liquidity in sovereign bond markets, they can also amplify volatility.** Hedge funds play an important role in the absorption of sovereign bond issues (Sushko and Todorov, 2025) and specifically of EGBs (Ferrara et al., 2024). However, this means a sudden withdrawal by hedge funds can reduce liquidity, increase trading bottlenecks and increase pressure on intermediaries such as banks. The high leverage employed by hedge funds undertaking treasury basis trades means funding and liquidity risks related to margin calls can impact them during market stress (Bassi et al., 2024). Rapid unwinding of such trades could add to volatility and price dislocations in sovereign markets. This is demonstrated by past events such as the March 2020 instability in the US Treasury (UST) market (Schrimpf, Shin and Sushko, 2020).

### Hedge funds focus more on US Treasuries in recent years

Figure 11: Hedge fund holdings of sovereign bonds across quarters, (€ Bn)

€ Bn



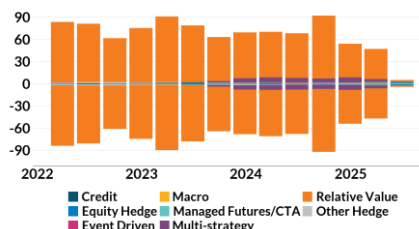
Source: MMIF and Central Bank calculations.

Notes: Quarter end values of exposures are shown in the chart.

### Relative Value funds conduct most of the trading in EGBs

Figure 12: Hedge fund trades of EGBs across quarters by strategy, (€ Bn)

€ Bn



Source: MMIF and Central Bank calculations.

Notes: The values shown are sum of long and short trades undertaken over the quarter. Transaction increases and decreases reported for EGBs are shown as two trades.

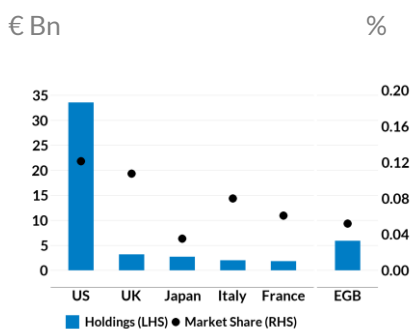
**Irish hedge funds have significant sovereign bond exposures relative to their NAV; however, the market footprint of these exposures is small.**

Gross holdings of sovereign bonds by hedge funds show some volatility over time, with a recent shift in exposures from EGB to UST holdings (see Figure 11). EGB holdings across time include significant volumes of short positions, potentially providing some evidence of Relative Value sovereign arbitrage trades being undertaken. However, the holdings of both EGBs

and USTs are a small proportion of their respective market sizes and hence do not imply significant risks to sovereign bond markets (see Figure 13). Bassi et al. (2024) note that the majority of hedge fund trading in EGBs is from hedge funds domiciled in the Cayman Islands.

### The market shares of sovereign debt holdings by Irish hedge funds are small

Figure 13: Hedge fund gross exposures of sovereign debt and market share estimates as of Q3 2024

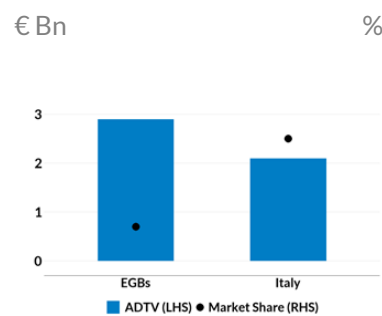


Source: MMIF Q3 2024, BIS debt securities statistics, ECB data portal and Central Bank calculations

Notes: Amounts (in €bn) represent the gross sovereign bond exposures (long and short) (LHS, bars). Values examine direct on-balance sheet exposures only. Market share estimates use closing position of the market value of General Government Debt from the BIS Debt securities statistics and ECB statistics (RHS, dots).

### Irish Hedge funds undertake a small share of trades in secondary markets

Figure 14: ADTV and market share of EGBs and Italian sovereign bonds Q3 2024



Source: MMIF and Central Bank calculations.

Source: MMIF, Markit, ECB data portal and Central Bank calculations.

Notes: Volumes of trades reported by Irish hedge funds in Bns (LHS, bars) and market share of ADTV (RHS, dots). ADTV estimation was based on estimates from online sources and internal calculations from Markit.

**Irish hedge funds trade euro area government bonds much more actively than other Irish fund types, but their trading still represents a small share of the total daily trading volume in these markets.** The volumes of sovereign bond trades reported by Irish hedge funds (see Figure 12) are very high relative to their assets under management.<sup>21</sup> These trades are mostly undertaken by a relatively small number of highly leveraged hedge funds.<sup>22</sup> However, estimates of Average Daily Trading Volume (ADTV) for Irish hedge funds indicate that the largest trading volumes reported by the sector are less than 3 per cent of trading volumes in the underlying markets. This reduces the likelihood of Irish hedge fund trading activity having a large market impact during a stress event (see Figure 14). These estimates are approximate due to the quarterly nature of reported trades

<sup>21</sup> For instance, in Q3 2024 the EGB trades undertaken by Relative Value funds was almost 385 per cent of their AUM.

<sup>22</sup> Over 90 per cent of the trades in each quarter are undertaken by less than 5 hedge funds.

and difficulties in estimating ADTV of the market correctly due to the fragmented nature of trading in EGBs across venues.

**While Irish hedge funds report undertaking basis trading activity, data gaps mean we cannot identify these trades in sovereign debt markets.** A typical basis trade is a sovereign arbitrage trade, employed via a cash leg (with long exposures to sovereign bonds) and a futures leg (with short exposures to sovereign bond futures).<sup>23</sup> While hedge funds report that they are involved in basis trades in the HFS, and some of these funds hold sovereign debt, data gaps in EMIR mean we cannot estimate the size of the short futures leg. In the absence of corresponding futures data, we are unable to estimate the proportion of the long (or overall) exposure of sovereign holdings that are employed in the basis trade. While we cannot quantify basis trades precisely, industry engagement suggests that Treasury basis trades are not a common strategy employed by Irish hedge funds.

## 5. UCITS hedge funds

**Significant financial stability risks from within Irish UCITS hedge funds have not been identified, but ongoing monitoring is required.** UCITS funds are subject to the UCITS Directive and operate under strict regulatory constraints, including on liquidity, leverage and concentration. They are typically considered to be suitable for retail investors due to strong investor protections. UCITS hedge funds represent approximately a quarter of the Irish hedge fund sector. Substantial financial stability risks from within Irish UCITS hedge funds have not been identified, primarily due to the relatively small market footprint of the different strategies, high resilience to margin calls and diversification of on-balance sheet holdings. However, risks to the financial resilience of individual funds could be higher for individual UCITS with elevated vulnerabilities, particularly in funds employing leveraged trading strategies or those with insufficient HQLA to meet redemption or margin call shocks.

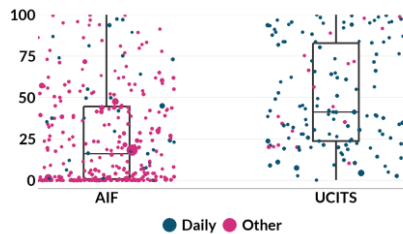
---

<sup>23</sup> Gilcoes, et. al. (2024) details a methodology used to quantify treasury basis trades.

## UCITS are more liquid than AIFs

Figure 15: Unencumbered HQLA as per cent of AUM by regulatory type as of Q2 2025, (per cent)

%

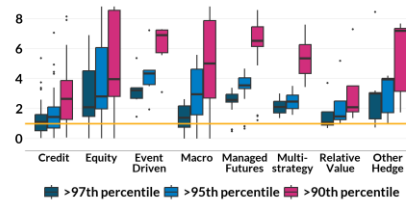


Source: MMIF (Q2 2025), SFTR, Fund profile and Central Bank calculations  
Notes: Box = middle 50 per cent of data (25th to 75th percentile). Line in box = median. Whiskers = typical range (1.5x IQR). The size of the dot indicates the scaled AUM of the hedge fund.

## Most UCITS have sufficient liquidity for a large redemption

Figure 16: Redemption Coverage Ratio boxplots as of end of quarter Q2 2025, (ratio)

ratio



Source: NAV, MMIF, SFTR and Central Bank calculations.  
Boxplots of UCITS redemption coverage (in line with Bouveret (2017)) ratio based on a greater than 97th, 95th and 90th percentile monthly net outflow expected shortfall calculation. Box = middle 50 per cent of data (25th to 75th percentile). Line in box = median. Whiskers = typical range (1.5x IQR). RCR below yellow line show funds experiencing shortfall.

**UCITS hedge funds tend to have more liquid assets than AIF counterparts but are more vulnerable to redemption shocks as they are typically daily dealing.** UCITS hedge funds are predominantly daily dealing (although some deal weekly). They also tend to have higher levels of HQLA than AIF counterparts (see Figure 15). Testing for a severe redemption shock for UCITS, ranging from 21 to 38 per cent of NAV, we find that most funds are resilient to the shock (see Figure 16). However, some UCITS Credit, Macro and Relative Value hedge funds would not have sufficient HQLA to meet the redemption shock and would be forced to sell less-liquid assets (see Figure 16, funds below the yellow line). High levels of liquid assets also mean they are resilient to large margin calls, with only one in six UCITS hedge funds not having enough HQLA in this scenario. Most of the less resilient funds are in the Credit hedge fund category. As noted in Section 3, these severe redemption shocks are unlikely to generate significant liquidity shortfalls in these cohorts as the total net asset values of those with insufficient liquid assets is small. While we have tested for univariate margin call and redemption shocks, Baudino et al. (2025) note that UCITS hedge funds could face a combination of margin call and redemption shocks. Thus, ongoing monitoring is warranted alongside the development of tests for multivariate shock scenarios.

## 6. Policy implications and next steps

**The objective of this financial stability assessment has been to enhance our understanding of the Irish hedge fund sector and its potential implications for financial stability.** From a policy perspective, the analysis has not identified substantial financial stability risks from within the Irish hedge fund sector, if acting alone, that would warrant domestic macroprudential action. Nonetheless, the sector displays vulnerabilities and exposures to core markets that could amplify wider shocks if hedge funds in other jurisdictions acted in a correlated fashion with the Irish sector. These include concentrated leverage in some strategies, reliance on a small set of international prime brokers, and exposures to core debt markets.

**Continued macroprudential surveillance and supervisory engagement will remain the primary oversight tools.** Given the sector's international footprint and the domicile of many counterparties and leverage providers, continued monitoring for financial stability risks is needed, including on a cross-border basis where possible. This will include enhancing the Central Bank of Ireland's ongoing structured risk assessments for higher-risk cohorts (for example Relative Value and Credit strategies) using methods developed as part of this assessment. The annual AIFMD Article 25 submission and the biennial Market-Based Finance Monitor will incorporate the outcomes from the assessment into routine surveillance. The findings of the financial stability assessment of hedge funds will be used to inform ongoing supervisory engagement with the sector on resilience to large margin calls and redemptions.

**This Signed Article and the analysis presented within contributes to the global efforts to enhance NBFi resilience.** This financial stability assessment of Irish domiciled hedge funds contributes to international efforts to monitor the NBFi sector and enhance its resilience. In particular, the work addresses some of the Financial Stability Board (2025) recommendations in relation to non-bank leverage, risk monitoring and data challenges. For example, our assessment aligns with the FSB's multi-metric approach to monitoring leverage related risks. The deep dive's findings support monitoring a suite of measures, in particular total leverage, commitment leverage, initial margin ratio, financial leverage and prime broker leverage, to capture different sources and manifestations of leverage, thereby highlighting emerging vulnerabilities.

**The assessment contributes to international efforts to improve data quality and data access by highlighting key constraints faced during the exercise.** Coverage and granularity vary across datasets (SFTR, EMIR,

AIFMD, UCITS).<sup>24</sup> Inconsistencies in reported fields limit precise measurement of exposures and market footprints. For example, ISINs<sup>25</sup> are not consistently reported and data quality is poor in the reporting of counterparty identifiers, maturity and market values. First-counterparty reporting obscures ultimate investor and leverage provider identities. Low-frequency quarterly statistical reporting makes it difficult to perform high-frequency event analysis around specific times of stress. These findings will be used to inform the Central Bank of Ireland's engagement with European and international counterparts to improve NBF data access and quality to support improved risk assessments going forward.

**The assessment has also highlighted gaps in the data.** Remaining gaps exist in measuring synthetic leverage, with poor quality vulnerability metrics in this area, particularly with respect to netting and hedging for UCITS. There is insufficient reporting on ultimate beneficiaries and borrowing sources, which are essential for understanding financial stability risks. Data gaps are particularly acute for offshore hedge fund activity in sovereign bond markets, where incomplete data limits risk assessment.

**Ongoing improvements to data reporting and validation should enhance surveillance capabilities.** The data quality limitations identified previously reduce certainty, for example around estimates of trading volumes, basis-trade positions and rehypothecation chains involving prime brokers. Where possible such constraints were mitigated through data triangulation and a bespoke survey, but residual uncertainty remains and should be considered when interpreting results. Harmonisation and enhanced validation of existing data can mitigate some of the data gaps noted in this study.<sup>26</sup> Engagement with market participants regarding their data submissions to the Central Bank of Ireland can improve results and reduce gaps. Further, the ECB's (2024) mandate for higher-frequency, more granular reporting will improve future analyses.

**Cross-border cooperation is essential.** National-level analysis of hedge fund financial stability risks is incomplete without access to cross-border activity data. Enhanced international data sharing would be beneficial. Systemic amplification risks are typically international rather than domestic: Irish hedge funds may be one part of a broader, internationally distributed network of funds with similar vulnerabilities and interconnectedness. Ongoing international engagement—encompassing global, regional and bilateral interactions—will be critical to building a more

---

<sup>24</sup> Refer appendix A2 for details on datasets used.

<sup>25</sup> International Securities Identification Numbers (ISINs) are 12-character alphanumeric codes used to uniquely identify a security.

<sup>26</sup> For instance, the European Commission (2021) strategy on supervisory data in EU financial services proposes detailed steps to improve quality and usability of data reported to supervisory authorities.

complete picture of correlated exposures and possible spillovers across the entire hedge fund sector and to ensure timely information sharing during stress episodes. This paper aims to facilitate such engagements with key counterparts in other jurisdictions.

## 7. Conclusion

**Given the relatively limited market footprint of the sector in core global markets – the Irish hedge fund sector, on its own, is unlikely to pose systemic risks.** Through this risk assessment, we have significantly improved our understanding of the Irish hedge fund sector by improving the data, developing stress tests and other analytical tools and creating a taxonomy of hedge funds for future monitoring. So far, we haven't seen substantial exposures that would suggest that a systemic event could come from within the Irish hedge fund sector. However, the sector displays vulnerabilities and interconnectedness that indicate potential financial stability risks if acting with other correlated investors from outside the jurisdiction. Looking at core credit markets, for example, there are exposures to euro area government bonds, US Treasury repos and European bank debt, which could impact financial stability if forced sales by Irish hedge funds - during a shock - coincide with similar actions by hedge fund cohorts elsewhere.

**The analysis will inform macroprudential surveillance and support ongoing supervisory engagement on the resilience of the sector.** The analysis outlined here is being used to inform enhanced monitoring of higher risk cohorts, including the incorporation of new methods and indicators outlined in this paper into ongoing structured risk assessments, and to support supervisory engagement. Relative Value and Credit funds in particular display vulnerabilities due to high leverage and/or low liquidity. These cohorts are also active in core credit markets where shocks could transmit directly to the functioning of the financial system and the real economy.

**Knowledge gaps remain, highlighting the importance of continued surveillance, supervision and engagement.** This risk assessment improves our understanding, but outstanding questions remain. For example, although severe shocks based on historical trends are applied in the stress tests within this paper, it remains unclear what shock level would trigger a systemic event. Also, although funds may have sufficient liquidity for a one-off large shock, should conditions continue to deteriorate further, funds may not be able to continue to meet liquidity calls. Additional analysis is needed to better understand prime-broker linkages. Data sharing with other authorities (for example through an international data hub) would facilitate an international assessment of hedge fund market impact during a

shock. Indeed, addressing some of the most important gaps will require cross-border coordination with international financial authorities, which this analysis can facilitate.

## References

Bassi, C., Hermes, F., Kördel, S., Lenoci, F., Pizzeghello, R. and Sowiński, A. (2024) “Financial stability risks from basis trades in the US Treasury and euro area government bond markets”, Financial Stability Review, May 2024. European Central Bank. Available

at: [https://www.ecb.europa.eu/press/financial-stability-publications/fsr/focus/2024/html/ecb.fsrbox202405\\_03~09cad3d18d.en.html](https://www.ecb.europa.eu/press/financial-stability-publications/fsr/focus/2024/html/ecb.fsrbox202405_03~09cad3d18d.en.html)

Basel Committee on Banking Supervision (2019a) “LCR-Liquidity Coverage Ratio”. Basel Framework, BCBS, Bank for International Settlement.

Available at:

[https://www.bis.org/basel\\_framework/chapter/LCR/30.htm?inforce=20191215&published=20200605&tldate=20201224](https://www.bis.org/basel_framework/chapter/LCR/30.htm?inforce=20191215&published=20200605&tldate=20201224)

Basel Committee on Banking Supervision (2019b) “Margin Requirements for Non-Centrally Cleared Derivatives”. Basel Framework, BCBS, Bank for International Settlement. Available at:

<https://www.bis.org/bcbs/publ/d475.pdf>

Baudino, P.A., Blicke, O.S. and Habib, M.M. (2025) “Procyclicality and leverage of euro area UCITS hedge funds: an unhealthy mix”, Financial Stability Review, November 2025. European Central Bank. Available

at: [https://www.ecb.europa.eu/press/financial-stability-publications/fsr/focus/2025/html/ecb.fsrbox202511\\_04~50cc2ae4e6.en.html](https://www.ecb.europa.eu/press/financial-stability-publications/fsr/focus/2025/html/ecb.fsrbox202511_04~50cc2ae4e6.en.html)

Board of Governors of the Federal Reserve System (2024) Financial Stability Report: November 2024. Available

at: <https://www.federalreserve.gov/publications/files/financial-stability-report-20241122.pdf>

Bouveret, A. (2017). Liquidity stress tests for investment funds: A practical guide. IMF Working Papers,

2017(226). <https://doi.org/10.5089/9781484324783.001>

Bouveret, A., Ferrari, M., Grill, M., Molestina Vivar, L., Schmidt, D.J., and Weistroffer, C. (2025) “Leveraged investment funds: A framework for assessing risks and designing policies.” Macprudential Bulletin, 26, January 2025, European Central Bank. Available at:

[https://www.ecb.europa.eu/press/financial-stability-publications/macprudential-bulletin/html/ecb.mpbu202501\\_02~1955080e3a.en.html](https://www.ecb.europa.eu/press/financial-stability-publications/macprudential-bulletin/html/ecb.mpbu202501_02~1955080e3a.en.html)

Central Bank of Ireland (2023) “Discussion Paper 11 - An approach to macroprudential policy for investment funds” Central Bank of Ireland Discussion papers. Available at:

<https://www.centralbank.ie/publication/discussion-papers/discussion-paper-detail/discussion-paper-11-an-approach-to-macroprudential-policy-for-investment-funds>

Chincarini, L., Lazo-Paz, R., and Moneta, F. (2026) "Crowded spaces and anomalies." *Journal of Banking & Finance*, 182, 107579. Available at:

<https://www.sciencedirect.com/science/article/pii/S0378426625001992>

Cumming, D., Johan, S., & Wood, G. (Eds.). (2021). *The Oxford handbook of hedge funds*. Oxford University Press.

De Araujo, D. K. G., Cohen, B. H. and Tracol, K. (2024) The prime broker-hedge fund nexus: recent evolution and implications for bank risks. *BIS Quarterly Review*. Bank for International Settlements. Available at:

[https://www.bis.org/publ/qtrpdf/r\\_qt2403y.htm](https://www.bis.org/publ/qtrpdf/r_qt2403y.htm)

European Central Bank (2024) REGULATION (EU) 2024/1988 OF THE EUROPEAN CENTRAL BANK of 27 June 2024 concerning statistics on investment funds and repealing Decision (EU) 2015/32. *Official Journal of the European Union*. Available at: [https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L\\_202401988](https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=OJ:L_202401988)

European Central Bank (2025) "Financial Stability Review November 2025". Available at: <https://www.ecb.europa.eu/press/financial-stability-publications/fsr/html/ecb.fsr202511~263b5810d4.en.html#toc25>

European Commission (2012) Commission delegated regulation (EU) No 231/2013 of December 2012 supplementing Directive 2011/61/EU of the European parliament and of the Council with regard to exemptions, general operating conditions, depositaries, leverage, transparency and supervision. *Official Journal of the European Union*. Available at: [https://eur-lex.europa.eu/eli/reg\\_del/2013/231/oj/eng](https://eur-lex.europa.eu/eli/reg_del/2013/231/oj/eng)

European Commission. (2021, December 15). *Strategy on supervisory data in EU financial services*. Directorate-General for Financial Stability, Financial Services and Capital Markets Union. Available at:

[https://finance.ec.europa.eu/publications/strategy-supervisory-data-eu-financial-services\\_en](https://finance.ec.europa.eu/publications/strategy-supervisory-data-eu-financial-services_en)

European Parliament and the Council of The European Union (2015) REGULATION (EU) 2015/2365 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 25 November 2015 on transparency of securities financing transactions and of reuse and amending regulation (EU) No 648/2012. *Official Journal of the European Union*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R2365>

Fabozzi, F. J. (Ed.). (2008). *Handbook of finance, financial markets and instruments* (Vol. 1). John Wiley & Sons.

Ferrara, F. M., Linzert, T., Nguyen, B., Rahmouni-Rousseau, I., Skrzypinska, M. and Cruz, L. V. (2024) "Hedge funds: good or bad for market functioning?" The ECB Blog. Available at: <https://www.ecb.europa.eu/press/blog/date/2024/html/ecb.blog20240923~d859db790b.en.html>

Financial Stability Board (2017a). Policy Recommendations to Address Structural Vulnerabilities from Asset Management Activities. Available at: <https://www.fsb.org/2017/01/policy-recommendations-to-address-structural-vulnerabilities-from-asset-management-activities/>

Financial Stability Board (2017b) Re-hypothecation and collateral re-use: Potential financial stability issues, market evolution and regulatory approaches. Available at: <https://www.fsb.org/2017/01/re-hypothecation-and-collateral-re-use-potential-financial-stability-issues-market-evolution-and-regulatory-approaches/>

Financial Stability Board (2023) The Financial Stability Implications of Leverage in Non-Bank Financial Intermediation. Available at: <https://www.fsb.org/uploads/P060923-2.pdf>

Financial Stability Board (2024) Global Monitoring Report on Non-Bank Financial Intermediation 2024. Available at: <https://www.fsb.org/2024/12/global-monitoring-report-on-non-bank-financial-intermediation-2024/>

Financial Stability Board (2025) "Leverage in Nonbank Financial Intermediation: Final Report." Financial Stability Board, 9 July 2025. Available at: <https://www.fsb.org/uploads/P090725-1.pdf>

Garbaravicius, T., & Dierick, F. (2005). Hedge funds and their implications for financial stability (No. 34). ECB Occasional Paper. Available at: <https://www.ecb.europa.eu/pub/pdf/other/ecbocp34en.pdf>

Glicoes, J., Iorio, B., Monin, P., and Petrasek, L. (2024) "Quantifying Treasury Cash-Futures Basis Trades." FEDS Notes, 8 March 2024, Board of Governors of the Federal Reserve System. Available at: <https://www.federalreserve.gov/econres/notes/feds-notes/quantifying-treasury-cash-futures-basis-trades-20240308.html>

Hurst, B., Ooi, Y.H., and Pedersen, L.H. (2013) "Demystifying Managed Futures." Journal of Investment Management, Third Quarter 2013. Available at: <https://joim.com/article/demystifying-managed-futures/>

International Organization of Securities Commissions (2020) "Report on the Fifth IOSCO Hedge Funds Survey: Final Report." IOSCO, FR05/2020. Available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD653.pdf>

Johnson, S. (2025, January 27). 'Barbell' effect helps fixed income newcomers usurp traditional bond funds. Financial Times. Available at: <https://www.ft.com/content/f8e94752-0a09-413c-ab4b-9f8be9e79894>

Karagiorgis, A., Anastasiou, D., Drakos, K. & Ongena, S. (2026). The leverage of hedge funds and the risk of their prime brokers, *Journal of Financial Stability*, Volume 82, 2026, 101498, ISSN 1572-3089. Available at: <https://www.sciencedirect.com/science/article/pii/S1572308925001275?via%3Dihub>

Kodres, L. E. (1998). IV Hedge Fund Investment Strategies. *Hedge funds and financial market dynamics*, (166), 42. Available at: <https://www.elibrary.imf.org/display/book/9781557757364/ch04.xml>

Lhabitant, F. S. (2011). *Handbook of hedge funds*. John Wiley & Sons.

Office of Financial Research (2025) "Hedge Fund Monitor; Leverage by strategy" Monitoring tools, Office of Financial Research. Available at: <https://www.financialresearch.gov/hedge-fund-monitor/categories/leverage/chart-28/>

Macchiati, V., Cappiello, L., Giuzio, M., Ianiro, A., & Lillo, F. (2024). When margins call: liquidity preparedness of non-bank financial institutions (ECB Working Paper Series No. 3074). European Central Bank. Available at: <https://www.ecb.europa.eu/pub/pdf/scpwps/ecb.wp3074~e9a4fbc8ca.en.pdf>

Schrimpf, A., Shin, H.S., & Sushko, V. (2020) Leverage and margin spirals in fixed income markets during the Covid-19 crisis. *BIS bulletin*. Bank for International Settlements. Available at <https://www.bis.org/publ/bisbull02.htmhttps://www.bis.org/publ/bisbull02.htm>

Slivinski, S. (2009). Economic history: Too interconnected to fail? The rescue of Long-Term Capital Management. *Econ Focus*, 13, 34–36. Available at: [https://www.richmondfed.org/-/media/richmondfedorg/publications/research/econ\\_focus/2009/summer/pdf/economic\\_history.pdf](https://www.richmondfed.org/-/media/richmondfedorg/publications/research/econ_focus/2009/summer/pdf/economic_history.pdf)

Sushko, V. & Todorov, K. (2025) Sizing up hedge funds' relative value trades in US Treasuries and interest rate swaps. *BIS quarterly review* 08 December 2025. Available at <https://www.bis.org/publ/qtrpdf/rqt2512y.htm>

## Appendix

### Appendix 1: Vulnerability Indicators

**Table A1: Definitions of vulnerability heatmap indicators**

Indicators 2025 Q2	Definitions
<b>Size of Strategy</b>	
AUM (€ Bn)	Total Gross Asset Value
AUM share (% of total AUM)	Share of cohort AUM out of total AUM
HHI Concentration of AUM (scaled 0-10,000)	Herfindahl-Hirschman Index (HHI) is a measure of strategy concentration calculated based on AUM of the funds in each strategy. It is scaled to be between 0 and 10,000 where the higher the value the more concentrated the strategy
Fund count	Number of funds in the cohort
<b>Leverage</b>	
Total Leverage (Financial+Synthetic as % NAV)	Total Leverage is calculated as (AUM - positive market values of derivatives + gross notional of derivatives)/NAV. The indicator is calculated quarterly using end of quarter values from the MMIF. The gross notional is obtained from EMIR and reflects the median gross notional over the quarter.
Commitment Leverage (% NAV)	Commitment leverage as a percentage of NAV. It is self-reported in the HFS as the maximum commitment leverage observed during the quarter of 2024 Q3.
IM Ratio (Initial Margin Posted as % NAV)	Initial Margins Posted divided by NAV
<b>Liquidity of Assets</b>	
Unencumbered HQLA (% AUM)	Unencumbered High Quality Liquid Assets (HQLA) is a measure of a fund's portfolio liquidity calculated by subtracting the value of liquid assets pledged as collateral in SFTR transactions from the value of their liquid assets as calculated using the BCBS HQLA methodology
Share exchange traded (average % AUM per cohort)	Share of exchange traded securities in a fund's portfolio expressed as a per cent of Total AUM. Self-reported in the HFS as of 2024 Q3.
> 5 days to liquidate (average % AUM per cohort)	Share of a fund's portfolio that would take longer than 5 days to liquidate expressed as a per cent of Total AUM. Self-reported in the HFS as of 2024 Q3.
Daily Dealing Funds (% NAV)	Share of daily dealing funds in a cohort expressed as a per cent of Total NAV
Liquidity shortfall: margin shock (% NAV)	The shortfall in liquid assets (% NAV) required to meet a hypothetical margin call shock for all hedge funds that fail a margin coverage test. The MCR test uses a weekly margin shock calibrated using a 97th percentile median shortfall method and is compared to a funds unencumbered HQLA. The same shock is applied to all funds within a strategy individually and the fund level shortfall is aggregated to cohort level.
Liquidity shortfall: redemption shock (% NAV)	The shortfall in liquid assets (% NAV) required to meet a hypothetical redemption shock for UCITS funds that fail a redemption coverage test. The RCR test uses a monthly redemption shock calibrated using a 97th percentile median shortfall method and is compared to a funds unencumbered HQLA. The same shock is applied to all funds within a strategy individually and the fund level shortfall is aggregated to cohort level.
<b>Interconnectedness</b>	

Sovereign Debt Securities (% AUM)	% of a fund's AUM (on-balance sheet) in debt securities issued by Governments
Bank Debt Securities (% AUM)	% of a fund's AUM (on-balance sheet) in debt securities issued by Banks
NFC Debt Securities (% AUM)	% of a fund's AUM (on-balance sheet) in debt securities issued by NFCs
% Derivatives Notional - Top 3 Prime Brokers (% Notionals)	Derivatives gross notional with the top 3 counterparties of hedge funds per strategy expressed as a per cent of total gross notional in the strategy.
<b>Crowdedness</b>	
Crowdedness-Pairwise Correlation of Fund Level Returns	The median of the Pearson pairwise correlation calculated between all funds in a strategy using a 24-month rolling window on monthly returns.
Average no. of Instrument-Country-Sector Combinations	The strategy average of the number of Instrument-Country-Sector combinations reported in the MMIF return calculated for each fund in a strategy.

## Appendix 2: Data sources

Table A2: Datasets used in analysis.

Datasets	Definition
MMIF	The quarterly Money Market and Investment Fund Return gives a comprehensive overview of all transactions and positions of a fund vis-à-vis residents and non-residents, as well as a providing detailed profit and loss and balance sheet information. More information is available at: <a href="https://www.centralbank.ie/statistics/statistical-reporting-requirements/fund-administrators/money-market-and-investment-funds-return-mmif">https://www.centralbank.ie/statistics/statistical-reporting-requirements/fund-administrators/money-market-and-investment-funds-return-mmif</a>
NAV	The monthly Net Asset Values return gives information such as total gross asset value, total net asset value, issue of shares, redemption of shares, as well information on management fees and expenses. More information is available at: <a href="https://www.centralbank.ie/statistics/statistical-reporting-requirements/fund-administrators/net-asset-values-return-nav">https://www.centralbank.ie/statistics/statistical-reporting-requirements/fund-administrators/net-asset-values-return-nav</a>
SFP (Fund Profile)	The annual Fund (Sub-Fund) Profile V3 return gives descriptive information on funds such as fund mandates, fund strategy, and dealing frequency etc. More information is available at: <a href="https://www.centralbank.ie/docs/default-source/regulation/industry-market-sectors/funds/industry-communications/guidance-for-fund-profile-return-vol-2.3-may-2025.pdf?Status=Master&amp;sfvrsn=eb306b1a_4">https://www.centralbank.ie/docs/default-source/regulation/industry-market-sectors/funds/industry-communications/guidance-for-fund-profile-return-vol-2.3-may-2025.pdf?Status=Master&amp;sfvrsn=eb306b1a_4</a>
AIFMD	The Alternative Investment Fund Manager Return is a dataset gathered as part of the EU's Alternative Investment Fund Manager Directive (AIFMD). The AIFMD governs Alternative Investment Fund Managers and their funds, requiring regulated AIFMs to report detailed information such as AIF investment portfolios, leverage and collateral.

	<p>Frequency of this reporting differs based on ESMA guidelines.</p> <p>More information is available at:  <a href="https://www.centralbank.ie/docs/default-source/regulation/industry-market-sectors/funds-service-providers/aifm/reporting-requirements/reporting-guidance-for-alternative-investment-fund-managers.pdf?sfvrsn=7feaa01d_10">https://www.centralbank.ie/docs/default-source/regulation/industry-market-sectors/funds-service-providers/aifm/reporting-requirements/reporting-guidance-for-alternative-investment-fund-managers.pdf?sfvrsn=7feaa01d_10</a></p>
EMIR	<p>The European Market Infrastructure Regulation imposes requirements for reporting of all derivative contracts (including exchange traded derivatives) to Trade Repositories (TRs), clearing those OTC derivatives subject to the mandatory clearing obligation, risk mitigation techniques for non-centrally cleared derivatives, and setting out further requirements for both Central Counterparties (CCPs) and TRs.</p> <p>More information is available at:  <a href="https://www.centralbank.ie/regulation/industry-market-sectors/securities-markets/emir-regulation">https://www.centralbank.ie/regulation/industry-market-sectors/securities-markets/emir-regulation</a></p>
SFTR	<p>The Securities Financing Transaction Regulation (SFTR) is a regulation which intends to enhance the transparency of securities financing markets and the financial system. SFTR covers any securities financing transaction which uses securities to borrow cash or vice versa, with the exception of derivative contracts (see EMIR) derivative contracts. Securities Financing Transactions included are Repurchase agreements (repos), securities/commodities lending activities, buy-sell (sell-buy) back transactions, and margin lending.</p> <p>More information is available at:  <a href="https://www.centralbank.ie/regulation/industry-market-sectors/securities-markets/securities-financing-transaction-regulation">https://www.centralbank.ie/regulation/industry-market-sectors/securities-markets/securities-financing-transaction-regulation</a></p>
SHSS	<p>The Securities Holdings Statistics by sector (SHSS) data is collected on holdings of securities across resident institutional sectors.</p> <p>More information is available at:  <a href="https://data.ecb.europa.eu/methodology/securities-holdings-statistics">https://data.ecb.europa.eu/methodology/securities-holdings-statistics</a></p>
CSDB	<p>The “Centralised Securities Database” (CSDB) is a security-by-security database that provides information on instruments, issuers and prices for debt securities, equity instruments and investment fund shares issued worldwide.</p> <p>More information is available at:  <a href="https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/securities/html/index.en.html">https://www.ecb.europa.eu/stats/financial_markets_and_interest_rates/securities/html/index.en.html</a></p>
HFS	<p>Hedge fund survey (ad-hoc): The hedge fund survey was a bespoke survey designed to address identified data gaps during the financial stability assessments of Irish hedge funds. See section 2 for more details.</p>

Markit	<p>IHS Markit (part of S&amp;P Global) is a third-party dataset which gives detailed security and issuer level information, particularly in the case of spreads and traded volumes of bonds.</p> <p>More information is available at: <a href="https://www.spglobal.com/en">https://www.spglobal.com/en</a></p>
ECB Data Portal	<p>ECB data portal provides aggregates for euro area debt and other sector aggregates for market share estimation. More information is available at: <a href="https://data.ecb.europa.eu/data/data-categories/prices-macroeconomic-and-sectoral-statistics/government-finance/government-debt/gross-government-debt-consolidated/total">https://data.ecb.europa.eu/data/data-categories/prices-macroeconomic-and-sectoral-statistics/government-finance/government-debt/gross-government-debt-consolidated/total</a></p>



Banc Ceannais na hÉireann  
Central Bank of Ireland

---

Eurosystem

T: +353 (0)1 224 5800  
E: [enquiries@centralbank.ie](mailto:enquiries@centralbank.ie)