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**JOURNAL**  
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INVESTMENTS

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The E.U. alternative investment fund industry: Insights from AIFMD reporting

ANTOINE BOUVERET | MASSIMO FERRARI  
STEFFEN KERN

WEALTH & ASSET  
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**DEAR READER,**

Welcome to edition 51 of the Capco Institute Journal of Financial Transformation.

The global wealth and asset management industry faces clear challenges, and a growing call for innovation and transformation. Increased competition, generational shifts in client demographics, and growing geopolitical uncertainty, mean that the sector needs to focus on the new technologies and practices that will position for success, at speed.

There is no doubt that technology will be at the forefront of a responsive and effective wealth and asset management sector in 2020 and beyond. The shift to digitization, in particular, will see the speeding up of regulatory protocols, customer knowledge building, and the onboarding process, all of which will vastly improve the client experience.

This edition of the Journal will focus closely on such digital disruption and evolving technological innovation. You will also find papers that examine human capital practices and new ways of working, regulatory trends, and what sustainability and responsible investment can look like via environmental, social and corporate governance.

As ever, I hope you find the latest edition of the Capco Journal to be engaging and informative. We have contributions from a range of world-class experts across industry and academia, including renowned Nobel Laureate, Robert C. Merton. We continue to strive to include the very best expertise, independent thinking and strategic insight for a future-focused financial services sector.

Thank you to all our contributors and thank you for reading.

A handwritten signature in black ink, appearing to read 'Lance Levy', with a stylized, flowing script.

Lance Levy, **Capco CEO**



# THE E.U. ALTERNATIVE INVESTMENT FUND INDUSTRY: INSIGHTS FROM AIFMD REPORTING

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## ABSTRACT

The asset management industry has grown significantly in recent years – in Europe alone assets under management have more than doubled in the last decade – and, as a result, is attracting heightened attention for its systemic implications. Alternative investments, including hedge funds and private equity, form a significant part of that industry. In the E.U., the Alternative Investment Fund Manager Directive (AIFMD) provides a dedicated regulatory framework for these alternative investment funds. This article presents a comprehensive mapping of the €6 trillion E.U. AIF market, and an overview of the indicators ESMA applies to assess industry-level risks.

## 1. INTRODUCTION

In the aftermath of the global financial crisis, the G20 stressed the need for consistent international regulation and oversight with respect to every financial market participant and financial products. In response to this, the Financial Stability Board (FSB) advanced a program of financial reforms to build a more resilient and less procyclical financial system. The work of the FSB emphasized the need for the creation of global monitoring capabilities to capture the scale and trends in non-bank financial intermediation [FSB (2011)]. In this context, the European Union (E.U.) adopted a Directive on Alternative Investment Fund Managers (AIFMD) in 2011, which for the first time comprehensively regulated the E.U. alternative fund industry.

The line between traditional and alternative asset management is difficult to draw, and the concept of alternative strategies tends to encompass all styles other than simple diversified long-term investments in plain vanilla stocks and bonds and without recourse to leverage.

In the markets, hedge funds and private equity funds are often referred to as “alternative” investments because they provide material alternatives to traditional funds by showing low correlation with traditional asset classes, dynamic trading strategies, and the use of a wide range of techniques and instruments. Alternative funds attempt to provide investors with returns by following so-called alpha-strategies aimed at generating excess returns on a portfolio managed actively and with wide discretion, as opposed to conventional investment funds where the portfolio is modeled around a reference market. The interest of institutional investors in alternative investments has resulted over time in a significant expansion of their allocation to these strategies, a trend that has been documented since before the financial crisis.

The E.U. regulatory framework AIFMD, in contrast, uses the term “alternative” in a more comprehensive way to include all investment funds not governed by the UCITS (Undertakings for the Collective Investment in Transferable Securities) Directive. In doing so, it covers all non-UCITS funds, regardless of their market classification, and prominently captures hedge funds, private equity, and real estate funds.

<sup>1</sup> Contents and views expressed in this paper are those of the authors, and do not necessarily represent those of the European Securities and Markets Authority.

Importantly, AIFMD requires extensive reporting on alternative investment fund activities, and it is on that basis that in 2019 ESMA (European Securities and Markets Authority) was able to present for the first time a comprehensive view of the European alternative fund industry. In this article, we provide an up-to-date mapping of this nearly €6 trillion market, and an overview of indicators which ESMA applies to assess industry-level risks.

## 2. AIFMD: A REGULATORY FRAMEWORK FOR E.U. ALTERNATIVE FUNDS

Adopted in 2011 and entering into force in the same year, the objective of AIFMD is to provide a harmonized regulatory and supervisory framework for the activities of all alternative investment fund managers in the E.U. In broad terms, AIFMD lays down the rules for authorization, ongoing operations, and transparency of alternative investment fund managers. This objective is not only consistent with the G20 appeal for appropriate regulatory and supervisory arrangements to apply to all relevant market actors but goes further than that by establishing the necessary legislative framework for a single market for alternative investment fund managers.

The Directive strengthens investor protection and financial market stability, notably through:

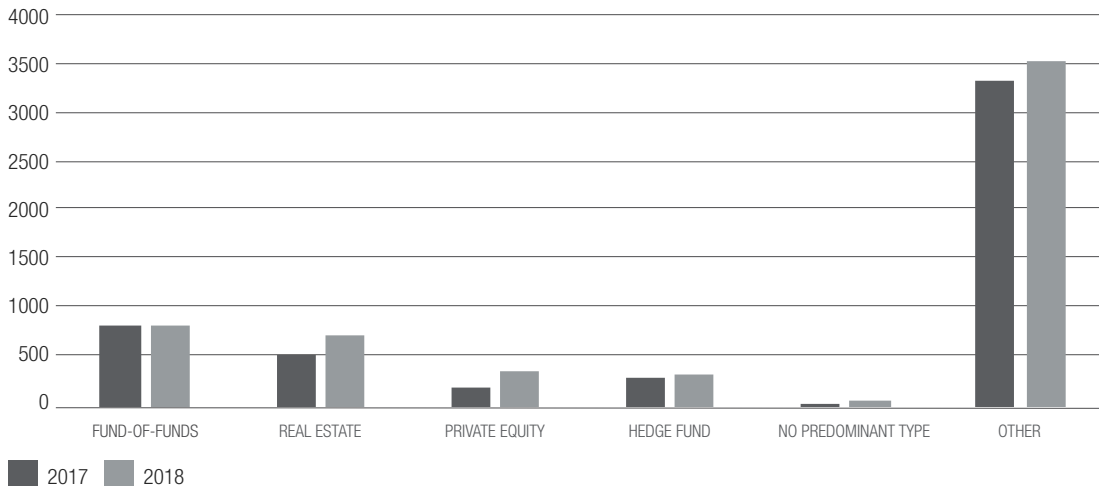
- The enhancement of the oversight of alternative investment fund managers, by requiring proper authorization in order for them to manage one or more alternative investment funds.

- An incentive structure aimed at avoiding excessive risk-taking by imposing cross-sector rules on the governance and the remuneration practices for relevant categories of staff, with the aim of safeguarding investors from potential conflict of interests.
- A focus on systemic risk and consistent requirements regarding risk management procedures and processes.
- Extensive reporting obligations, to allow supervisors to have a fuller picture of the market through data collection that is consistent across E.U. jurisdictions.
- Close cooperation between all national supervisors (National Competent Authorities, NCAs) and the E.U.-level regulatory and supervisory authority (ESMA).

These legislative provisions have subsequently been complemented by a series of regulatory Acts, so-called Level-II measures, which provide the necessary detail to operationalize the legal requirements.

Importantly, these implementing Acts also provide, among a wide range of conduct-of-business requirements, important rules on leverage as a key source of financial risk. These include disclosure requirements towards investors and national supervisors. For each alternative investment fund under management, an authorized alternative investment fund manager is required to set the maximum level of leverage that can be employed by the fund and comply with this limit at all times.

**Figure 1:** Size of the alternative investment funds industry by type



Note: Net asset value (NAV) by type of alternative investment funds managed and/or marketed by authorized alternative investment fund managers and sub-threshold managers registered only on national jurisdictions (in € billion).

Sources: AIFMD database, National Competent Authorities, ESMA



Regarding systemic risk, Article 25 of the AIFMD introduces the possibility for NCAs to set up leverage limits on alternative investment funds in order to reduce the build-up of imbalances in this sector. ESMA, in addition, can recommend to the NCAs the imposition of such leverage limits in case of a union-wide interest. ESRB (European Systemic Risk Board) Recommendation 2017/6/E stipulates that ESMA should give guidance on the framework to assess the extent to which the use of leverage within the alternative investment fund sector contributes to the build-up of systemic risk in the financial system. In that context, ESMA is designing indicators along with an assessment framework to be used by NCAs. The power of NCAs and ESMA to require managers to limit the leverage of funds they manage is of particular importance given the centrality of leverage as a source of risk in exposed funds.

### 3. AIFMD REPORTING OBLIGATIONS

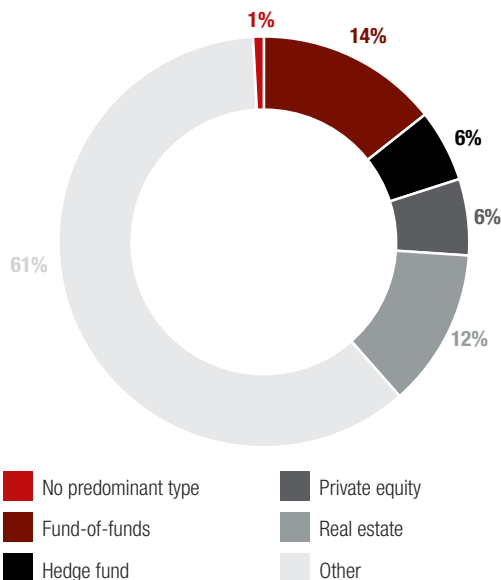
AIFMD sets out extensive reporting requirements for alternative investment fund managers, which vary according to the size and the complexity of the alternative investment funds. Prior to the 2007 financial crisis, alternative investment vehicles were not subject to public or supervisory disclosures and belonged to the opaquest players in the investment universe. Not surprisingly, uncertainty over risk exposures in alternative funds as well as counterparty risks in highly interconnected financial markets was a key concern for investors and policymakers alike at the time.

The confidential disclosure to supervisors of key fund, performance, and risk metrics, as required under AIFMD, provides NCAs with the necessary information to oversee whether alternative investment fund managers are properly addressing micro-prudential risks and to assess the potential systemic consequences of the individual or collective alternative investment fund manager activities. Disclosure requirements are, thus, also an important element of the macro-prudential oversight of the AIF industry.

Importantly, AIFMD standardizes the content of reporting, which in principle makes a uniform implementation of the reporting rules established by the Directive possible. In line with the principle of regulating the manager and not the product, an alternative investment fund manager must provide the requested information for the alternative investment funds it manages. The reporting requirements include data on the characteristics of the alternative investment fund (type, strategy, concentration of investors), along with detailed information on assets (principal exposures, exposures by asset type, and regional investment focus), as well as several risk features (market risk, liquidity profile, use of leverage, and stress test results).

Aggregated across the member states, these standardized statistics allow for a rich and exclusive view for ESMA of the E.U. alternative investment market. Based on this unique dataset, ESMA published its first Annual Statistical Report on E.U. alternative investment funds in 2019, shedding light for the first time on the Alternative Investment Fund industry using consistent detailed reporting information on funds. The report is part of a series of Statistical Reports published by

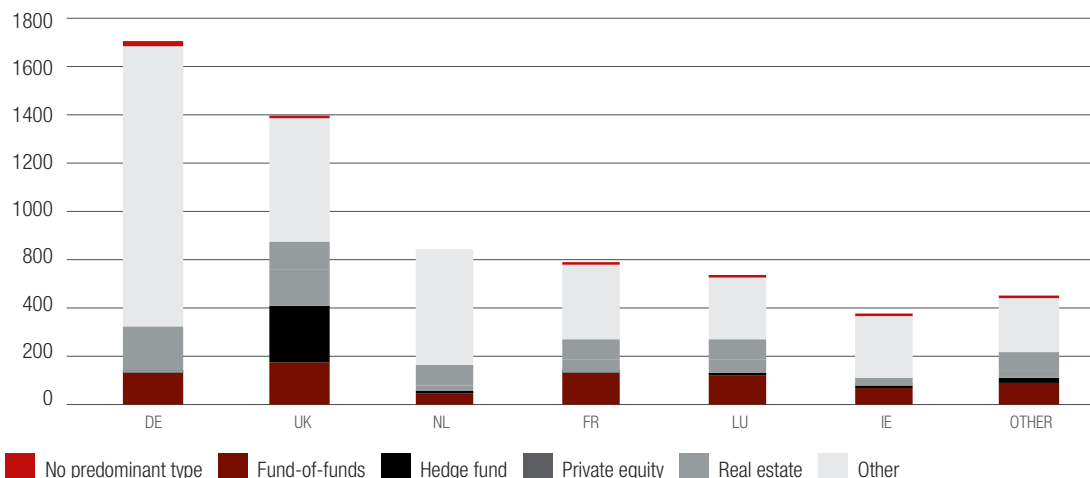
Figure 2: AIF industry by type



Note: NAV by type of alternative investment funds managed and/or marketed by authorized E.U. alternative investment fund managers and sub-threshold managers registered only in national jurisdictions, end of 2018, in percentage. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA

Figure 3: Size of AIF by type and country



Note: NAV by type of alternative investment funds managed and/or marketed by authorized alternative investment fund managers and sub-threshold managers registered only in national jurisdictions, in € billion.

Sources: AIFMD database, National Competent Authorities, ESMA

ESMA covering different markets and entities under its remit, such as derivatives markets [(ESMA (2018)]. The 2020 Annual Statistical Report uses 2018 end-of-year data from around 30,400 alternative investment funds.<sup>2</sup>

#### 4. THE E.U. ALTERNATIVE INVESTMENT FUNDS MARKET – LARGE AND DIVERSE

The alternative investment funds industry accounts for a significant share of the investment fund activity in the E.U.: the NAV of alternative investment funds in the E.U. amounted to around €5.8trillion at the end of 2018 (Figure 1).<sup>3</sup> By comparison, the NAV of UCITS amounted to €9.3 trillion.<sup>4</sup> Thus, alternative investment funds account for around 40 percent of the E.U. fund industry, and their assets have almost quadrupled in the last decade.

##### 4.1 Wide variety of fund types

While hedge funds were the focus of the response to the crisis, the E.U. alternative funds universe was subsequently designed by lawmakers to be broader. It includes private equity and real estate funds, funds of funds, but also a large residual of vehicles pursuing diverse strategies (mainly in

bonds and equities with insurance and pension funds as the main investors). In terms of assets, hedge funds, in fact, make up only 6 percent of the E.U. alternative fund market and 80 percent of E.U. hedge funds by assets are managed in the U.K. Private equity accounts for 6 percent, real estate for 12 percent, and funds-of-funds for 14 percent. “Other alternative investment funds” accounts for 61 percent of the NAV of the sector (Figure 2), including commodity and infrastructure funds together with conventional non-UCITS investment funds pursuing more traditional strategies and targeting primarily traditional asset classes such as equities and bonds. Within this category, 70 percent of funds are equity or fixed income funds, and around 27 percent of the NAV is attributed to a further residual category, which includes mostly mixed funds and amounts overall to 17 percent of the NAV of all alternative investment funds, pointing to potential classification issues for alternative investment funds managers.

##### 4.2 High degree of industry concentration

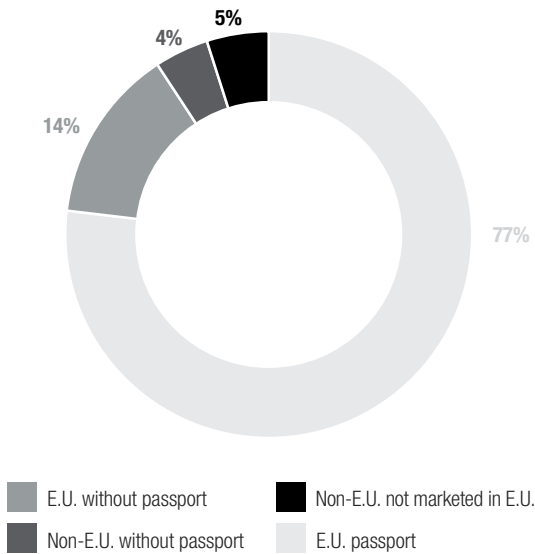
In terms of market concentration, the alternative investment fund industry is concentrated in a few countries, with the top-five accounting for more than 85 percent of the NAV (Figure 3). In countries with a large asset-management industry

<sup>2</sup> AIFMD reporting obligations cover a wide range of measures of market and operational risk with different degrees of complexity for their calculation. Some very important indicators, such as leverage reported by alternative investment funds, cannot be directly used at this stage due to severe data-quality issues. Some other information is not always mandatory and may not be requested at the national level (e.g., the redemption frequency for open-ended alternative investment funds), which makes the use of aggregate data more difficult, see ESMA (2020) for further details on the dataset.

<sup>3</sup> The NAV of alternative investment funds amount to €5,860 billion according to AIFMD data, compared to a NAV of €5,873 billion according to EFAMA data. Thus, coverage of AIFMD data currently stands at more than 99 percent in terms of NAV.

<sup>4</sup> EFAMA statistics (<https://bit.ly/32zke9W>).

**Figure 4: E.U. passport**



Note: NAV of alternative investment funds by manager's access to AIFMD passport, end of 2018, in percentage.

Authorized E.U. alternative investment fund managers with access to AIFMD passport or marketing non-E.U. alternative investment funds without passport, sub-threshold managers registered only in national jurisdictions without passporting rights. Data for 24 EEA countries.

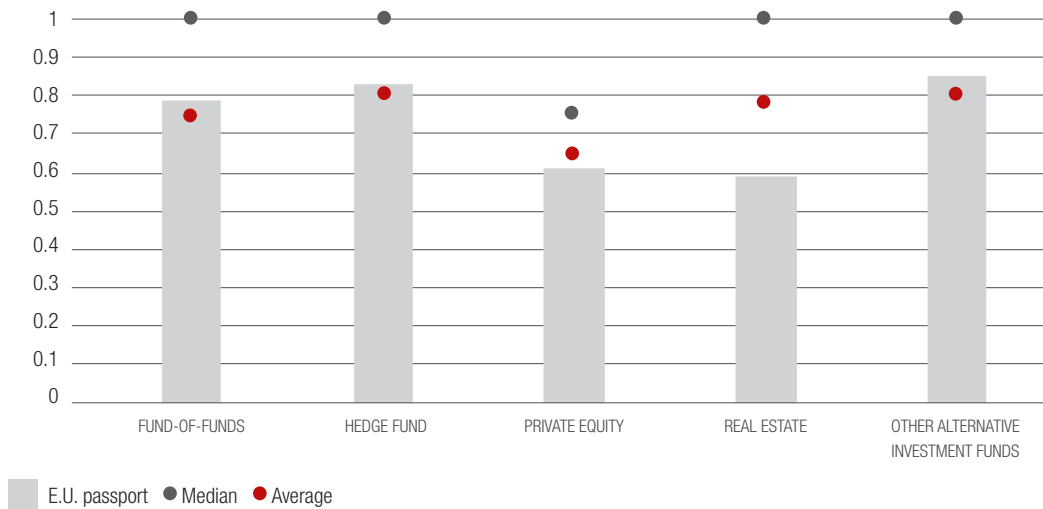
Sources: AIFMD database, National Competent Authorities, ESMA

(Luxembourg, Ireland, France), funds-of-funds also account for a significant share of the NAV. The hedge fund industry is heavily concentrated in the U.K., with more than 80 percent of the NAV managed by U.K. alternative investment funds managers. In most E.U. member states, "other alternative investment funds" account for most of the NAV. Most alternative investment funds have access to the E.U. passport (76 percent), allowing them to be sold throughout the E.U. (Figure 4).

### 4.3 Investor base dominated by institutionals

Alternative investment funds should principally target professional investors rather than retail investors. Professional investors account for around 85 percent of the NAV, while direct retail investors' participation is more limited, but quite significant at 15 percent of the NAV. Retail investors' participation might be underestimated since they could purchase banking or insurance products that are invested into alternative investment funds. In some E.U. countries, qualifying investor funds, referred to as "special funds", are created for investors with a special set of needs and not offered to the general public. qualifying investor funds for professional investors such as pension funds, insurance companies, or companies that seek an adequate investment for their excess cash are particularly important and tend to

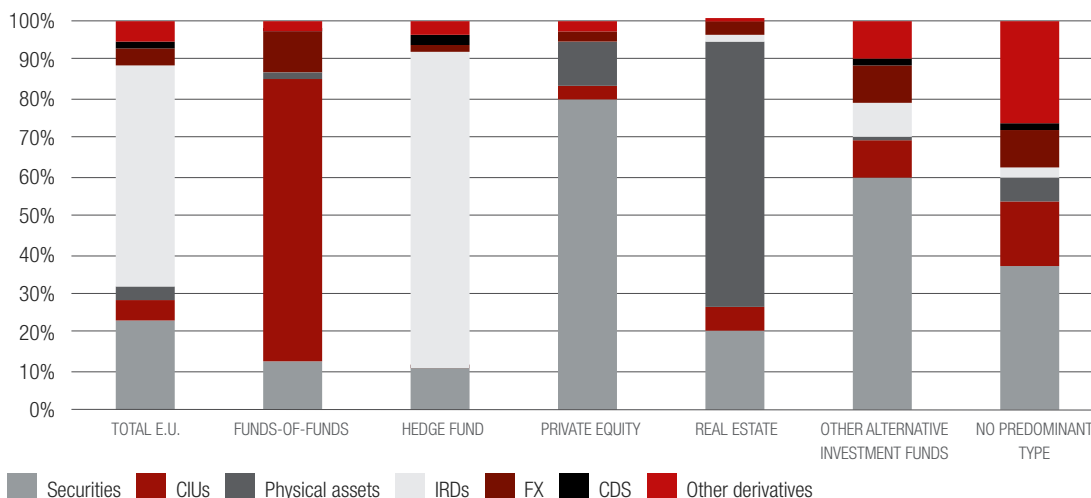
**Figure 5: Distribution of ownership**



Note: Investor concentration of E.U. passported alternative investment funds, end of 2018, in percentage of NAV. Investor concentration computed as share of alternative investment fund equity beneficially owned by the five largest investors. Data for 25 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA

**Figure 6:** Exposures by alternative investment funds and asset type



Note: Share of gross exposures by alternative investment fund type, end of 2018, in percentage of total alternative investment funds managed and/or marketed by authorized E.U. alternative investment fund managers. Data for 25 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA

be very big. These investors may typically consider the fund structure to adequately meet their needs and deal with the valuation of illiquid assets, benefiting from the standardized disclosures and the investor protection standards ensured by the AIFMD. Among professional investors, unitholders are diversified across alternative investment fund types. Pension funds and insurance companies account for 28 percent and 16 percent of the NAV, respectively. Banks and other funds account for 8 percent each, and other financial institutions for 7 percent. Remaining investor categories are small, except for “unknown” investors (15 percent of the NAV).

#### 4.4 Alternative investment fund shareholdings are concentrated in a few hands

The alternative investment fund industry is characterized by a very high concentration of investors. The top five holders account for around 75 percent of the NAV on aggregate (Figure 5). For at least 50 percent of alternative investment funds, the five main investors hold all the of the units of the fund. The high degree of concentration can be explained by two dominant factors. First, before the AIFMD, funds could be set up under national law for a single investor. When the AIFMD entered into force, those funds were converted into alternative investment funds, resulting in a highly concentrated participation, although under the Directive the funds must raise capital from a number of investors. Second, professional investors are

the main investors in alternative investment funds, and they typically hold a large share of the funds they invest in, which could also explain the concentration of ownership.

#### 4.5 Alternative investment fund exposures – variety of assets, limited geography

Alternative investment funds are exposed to a wide range of asset classes, with variation across fund types (Figure 6). Real estate funds, private equity funds, and funds-of-funds are by construction heavily exposed to the underlying assets (physical assets for real estate funds, (unlisted) securities for private equity funds, and collective investment units for funds-of-funds). Hedge fund exposures are overwhelmingly biased towards interest rate derivatives – partly due to the fact that these derivatives have been reported in gross notional terms. The exposures of “other alternative investment funds” are more diversified, reflecting the diversity of strategies used within this residual category.

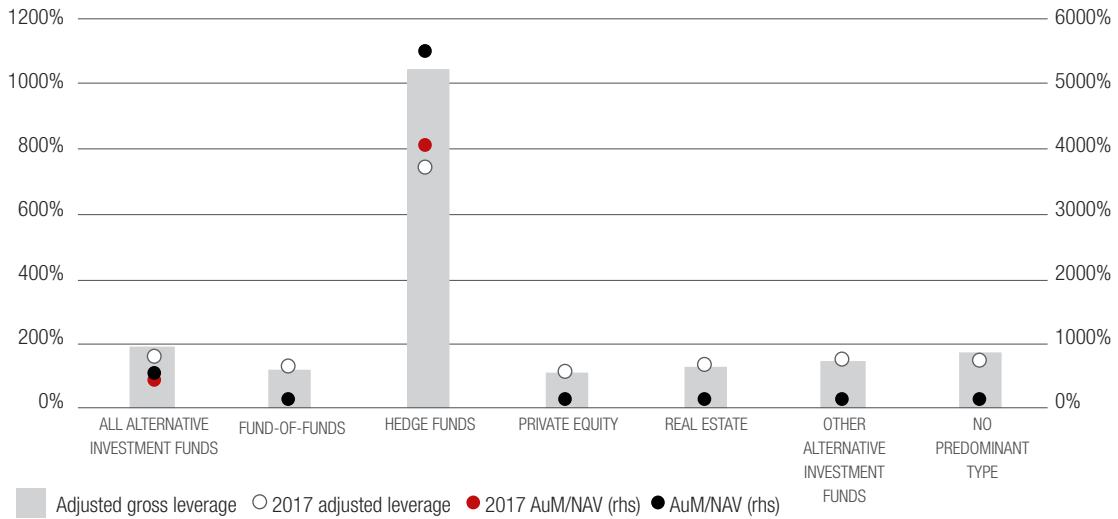
The geographical diversity of alternative investment fund investments, in contrast, is rather limited. Alternative investment funds invest mainly in the EEA (63 percent), followed by North America (16 percent), and supranational issuers (9 percent). Other regions account for less than 15 percent of the NAV. Hedge funds are the only alternative investment fund type that invest predominantly outside of the EEA, with their largest exposures to North America.

## 5. RISKS IN THE ALTERNATIVE INVESTMENT FUND INDUSTRY

Financial risks in alternative investment funds are a key concern of investors and supervisors alike. In particular, financial leverage from outright borrowing and synthetic

leverage from derivatives exposures can – in adverse market conditions – be a source of financial losses to a fund and may, in unfavorable situations, deteriorate the liquidity position of a fund. Leverage and liquidity are, as a result, the two most important risk indicators in entity-level supervision.

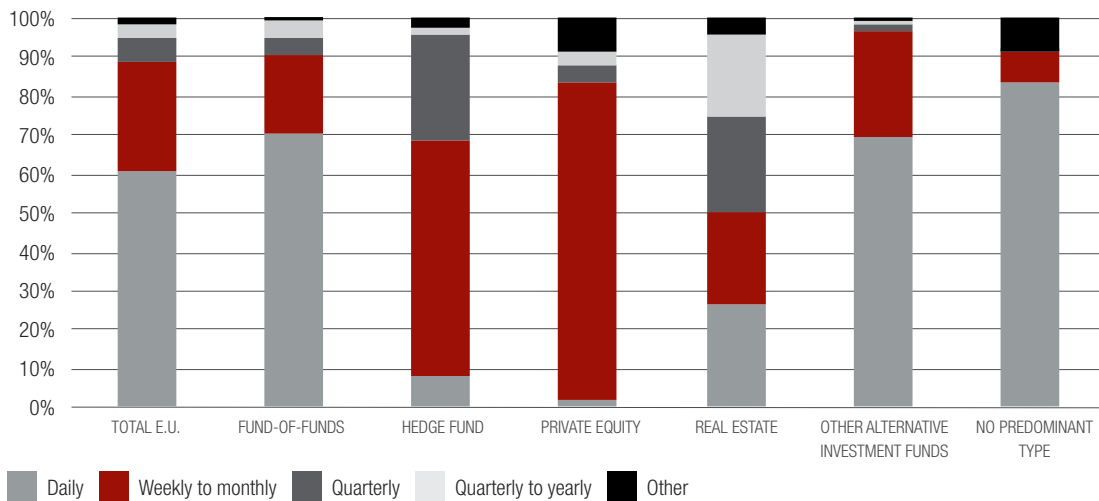
Figure 7: Leverage



Note: Adjusted gross leverage of alternative investment funds managed and/or marketed by authorized E.U. alternative investment fund managers, end of 2018, in percentage of NAV. Adjusted gross leverage does not include interest rate differentials. Data for 25 EEA countries.

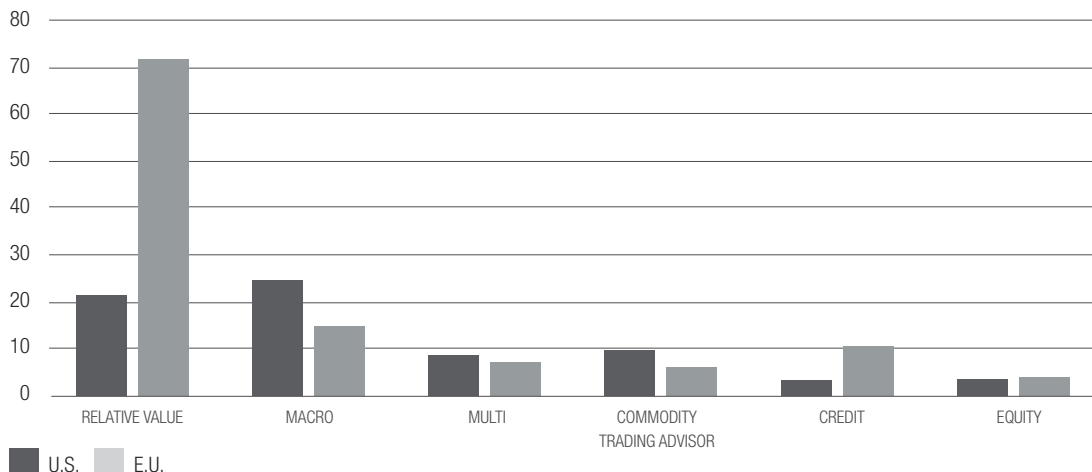
Sources: AIFMD database, National competent authorities, ESMA

Figure 8: Redemption frequency



Note: Investor redemption frequencies allowed by open-end alternative investment funds managed and/or marketed by authorized E.U. alternative investment fund managers, end of 2018, in percent of NAV. E.U. and non-E.U. alternative investment funds by authorized E.U. alternative investment fund managers marketed, respectively, with and without passport. Data for 25 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA

**Figure 9:** Hedge fund leverage by strategy

Note: Leverage defined as gross exposures/NAV, in percentage, end of 2018 U.S. data for qualifying hedge funds. For E.U., gross exposures excluding interest rate derivatives.

Sources: AIFMD database, National Competent Authorities, SEC, ESMA

### 5.1 Alternative investment funds' leverage and liquidity – limited, with pockets of risk

In the case of E.U. alternative investment funds, leverage is considered in terms of a fund overall exposure, and it includes any method by which its exposure is increased, whether through borrowing of cash and securities, gearing embedded in derivatives positions, foreign currency holdings, or by any other means.

At present, ESMA measures leverage<sup>5</sup> by the ratio of regulatory AuM (assets under management) to NAV, with regulatory AuM being relatively close to a measure of the gross exposure of a fund (see ESMA (2019) for a discussion of the two measures). Under the gross exposure and our present AuM-based approaches, derivatives are measured by notional amounts – rather than duration-adjusted as, for example, under the commitment approach. Using notional amounts tends to result in higher leverage figures, especially when a fund uses interest rate derivatives, for which the notional outstanding typically is significantly higher than the exposure after adjusting for the remaining duration of the derivatives portfolio. In order to arrive at a balanced view of the risks involved, we, therefore, complement the standard AuM measure of leverage with an adjusted leveraged indicator, for which interest rate derivatives are excluded from the computation of the leverage ratio.

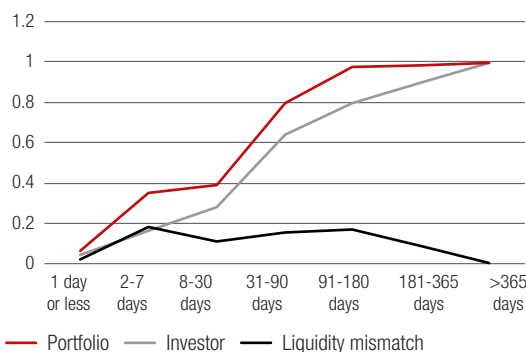
Across all alternatives, leverage remains reassuringly limited, with a multiple of below 4.4 times NAV on average, measured by the ratio of gross exposures to NAV (Figure 7). Hedge funds stand out, as would be expected, with an average multiple of 55, which, however, goes down to ten if adjusted for their use of interest-rate derivatives. The high leverage of hedge funds stems mainly from the use of derivatives (synthetic leverage) rather than outright borrowing (financial leverage).

Around 70 percent of alternatives in the E.U. are open-ended, so need to stand ready to redeem fund shares at short notice. That exposes them to liquidity risks, which is why cash cushions, fund liquidity (the ability of funds to liquidate assets in their portfolio), and investor liquidity (the ability of investors to ask for a redemption of fund share at short notice) have the full attention of supervisors. Open-ended alternative investment funds tend to offer daily liquidity to investors (Figure 8). However, alternative investment funds that are more likely to be exposed to illiquid assets, such as private equity funds, real estate funds, and hedge funds tend to have longer redemption frequencies (weekly to monthly).

In aggregate, the liquidity profile of alternative investment funds points to potential liquidity risk: within one day, investors can redeem up to 28 percent of the NAV, while only 26 percent

<sup>5</sup> Under AIFMD reporting requirements, alternative investment fund managers also report two additional, dedicated and more sophisticated measures of leverage. The first is gross leverage (in percentage of NAV), and the second is the leverage under the commitment approach, where netting and hedging arrangements are taken into account to reduce exposures. Both indicators are calculated by market participants on the basis of complex reporting requirements, and the quality of data submitted by alternative investment fund managers varies considerably for the time being. ESMA and the NCAs are in the process of making them usable and publishable in the future.

**Figure 10: Liquidity profile – hedge funds**



Note: Portfolio and investor liquidity profiles of hedge funds managed and/or marketed by authorized E.U. alternative investment fund managers, end of 2018. Portfolio profile determined by percentage of the funds' portfolios capable of being liquidated within each specified period, investor liquidity profiles depend on shortest period within which each fund could be withdrawn or investors could receive redemption payments. E.U. and non-E.U. alternative investment funds by authorized E.U. alternative investment fund managers marketed, respectively, with and without passport. Data for 25 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA

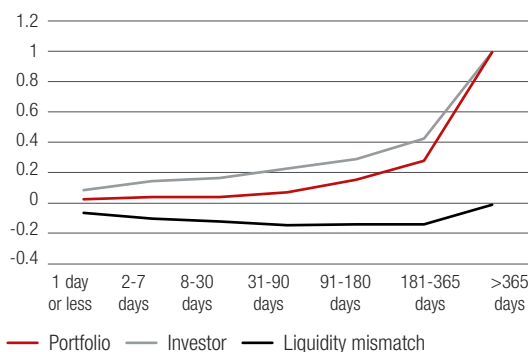
of the assets can be liquidated within this time frame. However, this liquidity risk is very different across alternative investment funds types, and subsequent sections show the differences across sub-segments. Additionally, relying on aggregate figures may hide individual risks, as funds with excess liquidity might compensate for funds with a liquidity mismatch.

All in all, most E.U. alternative investment funds take limited recourse to leverage, with the notable exception of hedge funds, and the liquidity mismatch for most fund types is modest, except for real estate funds (see ESMA (2020) for further details). It is, therefore, useful to take a more detailed look at leverage risk in hedge funds and liquidity risk for real estate funds.

### 5.2 Hedge funds: High leverage but limited liquidity mismatch

Hedge funds are in general strongly leveraged compared to other funds, with an adjusted gross leverage of around 10x NAV. Among hedge fund strategies, relative value and macro have the highest levels of leverage (at respectively 71x and 15x NAV), even when interest rate differential exposures are excluded. We compare the figures for end-2018 with U.S. hedge funds, as reported by the U.S. Securities and Exchange Commission [SEC (2019)]. Overall, the use of leverage by

**Figure 11: Liquidity profile – real estate funds**



Note: Portfolio and investor liquidity profiles of real estate funds managed and/or marketed by authorized E.U. alternative investment fund managers, end of 2018. Portfolio profile determined by percentage of the funds' portfolios capable of being liquidated within each specified period, investor liquidity profile depend on shortest period within which each fund could be withdrawn or investors could receive redemption payments. E.U. and non-E.U. alternative investment funds by authorized E.U. alternative investment fund managers marketed, respectively, with and without passport. Data for 25 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA

hedge fund strategies is qualitatively similar: relative value and macro are the most leveraged funds, followed by commodity trading advisor (CTA) and multi strategy. However, levels can be quite different, with E.U. relative value funds reporting very high levels of leverage compared to similar strategies in the U.S. (Figure 9).

Most of hedge fund leverage comes from derivatives, but financial leverage is also significant at around 80 percent of NAV. Most of the funding comes from the repo market, with E.U. hedge funds less reliant on prime brokers than their American counterparts. Regarding liquidity risks, most alternative investment funds are open-ended funds that offer weekly to monthly liquidity to investors. Hedge funds offering daily liquidity only account for 8 percent of the NAV. At the aggregate level, hedge funds' liquidity profiles point to very little liquidity mismatch: within a week, investors can only redeem up to 16 percent of the NAV, while 35 percent of the assets can be liquidated within this time frame (Figure 10). This pattern remains across all hedge fund strategies, despite different levels of portfolio and investor liquidity. For example, investors in commodity trading advisors can redeem up to 68 percent of the NAV within a week while portfolio liquidity is close to 100 percent at this horizon. For macro funds, investor redemptions within a week amount to 19 percent of the NAV against 80 percent for portfolio liquidity.



### 5.3 Real estate funds: Relatively high retail participation and sizeable liquidity mismatch

Real estate funds account for 12 percent of the NAV of alternative investment funds, at €730 billion, invested mainly in commercial real estate, and the industry is concentrated in a few countries. Real estate funds are sold mainly to professional investors (79 percent). Among alternative investment fund types, real estate funds have one of the largest shares (after fund-of-funds) of retail investors, especially for commercial real estate, with a share of 31 percent of the NAV. Among professional investors, pension funds and insurance companies are the main investors, accounting for 27 percent and 14 percent of the NAV respectively. Other funds also account for a sizeable share of real estate fund ownership, with 10 percent of the NAV. Banks have limited exposures to real estate funds, except for residential funds for which banks hold 15 percent of the NAV.

Real estate gross exposures are concentrated in physical assets (around 70 percent of exposures, across most real estate types), in line with the strategy used. Around 60 percent of real estate funds are open-ended funds, and there is considerable heterogeneity regarding redemption frequencies for open-ended funds. Real estate funds offering daily to monthly liquidity account for 47 percent of the NAV, ranging from 20 percent for industrial funds to 72 percent for residential funds. At the aggregate level, real estate funds' liquidity profile points to a potential liquidity mismatch: within a month, investors can redeem up to 16 percent of the NAV, while only 4 percent of the assets can be liquidated within this time frame (Figure 11). The liquidity mismatch relates mainly to commercial real estate funds, the largest real estate fund category: 22 percent of the NAV can be redeemed monthly whereas only 6 percent of assets can be liquidated within a month. The liquidity mismatch is more likely to occur than for other types of alternative investment funds, especially at the 1-month horizon, since in the past funds have experienced outflows of the order of 30 percent of the NAV, for example during the Brexit referendum [ESMA (2016)].

## 6. CONCLUSION AND WAY FORWARD

Collecting data on alternative investment funds and making operational use of them has been one of the most important policy initiatives in response to the global financial crisis. In the E.U., this commitment was translated into reporting requirements under AIFMD. This means that since July 2014 alternative investment fund managers have reported to national market regulators detailed information on the alternative investment funds they manage. Six years later, we are able to produce statistics from this highly sophisticated reporting system, and what emerges is a picture of a very diverse market, with limited leverage but pockets of vulnerabilities.

“  
*The rich alternative investment fund data set allows for a better understanding of the structures, performance, and risks of the E.U. alternative fund universe.*”

The statistical and analytical evidence that E.U. and national authorities will be able to generate on alternative fund activities and risk exposures on that basis is set to grow in the coming years. The rich alternative investment fund data set allows for a better understanding of the structures, performance, and risks of the E.U. alternative fund universe. In parallel, ESMA is addressing key weaknesses in terms of low data quality in cooperation with national authorities and market participants. In addition, alternative investment funds evolve quickly, as do statistical and analytical techniques. Given the wealth of information available through AIFMD, further work is required to explore other dimensions of the dataset, including fund flows as well as performance. Counterparty and concentration risks could also be further studied, as alternative investment funds have to report their principal counterparties. The first findings presented here mark an important starting point and promise even more granular insights for entity supervision and financial stability surveillance in the E.U.

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