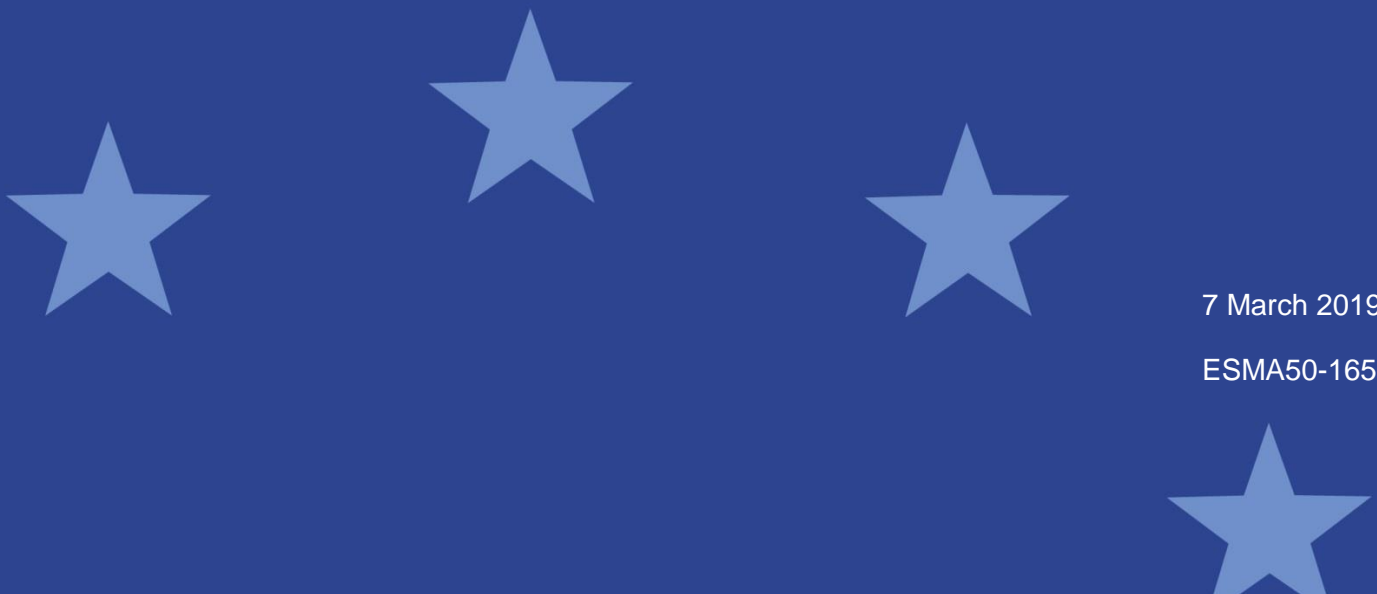




European Securities and
Markets Authority

ESMA Annual Statistical Report EU Alternative Investment Funds 2019



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ESMA Annual Statistical Report on EU Alternative Investment Funds 2019

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Editorial

Dear Reader –

With this edition, the European Securities and Markets Authority presents its first statistical report on EU Alternative Investment Funds, to be published in the future on an annual basis.

Collecting data on Alternative Funds and making operational use of them has been one of the most important policy initiatives in response to the global financial crisis. In 2009 G20 leaders agreed that Hedge Funds or their managers should be registered and should be required to disclose appropriate information on an ongoing basis to supervisors or regulators. In the EU this commitment was translated into reporting requirements under the Alternative Investment Fund Managers Directive (AIFMD), such that since July 2014 Alternative Investment Fund Managers have reported detailed information on the Alternative Investment Funds they manage to national competent authorities.¹

Most importantly, AIFMD data help authorities in their supervision of alternative investment funds. Supplementing this entity-level work, this report provides, for the first time, a comprehensive market-level view of EU Alternative Investment Funds, based on a set of AIFMD data as reported by managers to national competent authorities and to ESMA. Its primary objective is to contribute to our risk assessment work at ESMA, supplementing the ESMA report on Trends, Risks and Vulnerabilities and ESMA's Risk Dashboards, through which we will continue to monitor developments and risks on a quarterly basis, as well as other ESMA Annual Statistical Reports, such as the EU Derivatives Markets report. In doing so, this report also informs our regulatory assessment of Alternative Investment Funds. And — through the data standardisation and statistical methods developed for this analysis — we aim to facilitate the oversight of entities by national competent authorities and contribute to supervisory convergence.

The report contains three elements. First, in the chapter on market monitoring, we provide an analysis of structures and trends in the European Alternative Investment Funds Sector, building on the indicators developed for risk monitoring. Second, the chapter on statistical methods is dedicated to topical issues in developing and exploring AIFMD data. Third, the chapter on Alternative Investment Funds market statistics offers a full list of indicators and metrics monitored by ESMA.

With this first edition of the report, we are still at an early point in exploring, analysing and displaying statistics on EU Alternative Investment Funds. Statistics presented here should be read with the imitations in terms of data coverage and quality in mind, which we specify in this report in detail. AIFMD data offer unprecedented reach and detail, yet they need further improvement. In particular, we aim at enhancing data coverage, which currently stands at around 80%. Also, we work on further improving overall data quality, for example on fund leverage as a key risk measure. In addition, Alternative Investment Funds evolve quickly, as do statistical and analytical techniques. Thus, future editions of this report will include more extensive data coverage, more risk indicators and possibly also revisions of data and methods. To help us improve our reporting, we would be grateful if readers could send any feedback or suggestions on this report to risk.analysis@esma.europa.eu.

Operationalising the use of AIFMD data has been — and will continue to be — a challenging task for IT experts, data managers, statisticians and analysts across numerous institutions involved in Alternative Fund supervision in Europe and around the world. We thank all colleagues in our community, especially in national authorities, for their invaluable advice on our reporting so far, as well as ESMA staff for their dedicated work.

We at ESMA are pleased to share this part of our surveillance work with a wider audience, and we hope that our report will contribute to the understanding of the risks in EU Alternative Investment Funds.

¹ Directive 2011/61/EU of the European Parliament and of the Council of 8 June 2011 on Alternative Investment Fund Managers (AIFMD), Article 24.

Executive summary

Market structure and developments

The EU AIF market: The EU Alternative Investment Fund (AIF) universe is defined by the EU Alternative Investment Fund Managers Directive (AIFMD), and covers a range of different types of funds, investing in diverse asset classes. Based on AIFMD data, the AIF industry had a net asset value (NAV) of EUR 4.9 tn at the end of 2017.² Funds of Funds account for 16% of the NAV, followed by Real Estate Funds (11%), Hedge Funds (5%) and Private Equity Funds (4%). The residual category 'Other AIFs' accounts for 63% of the NAV. Professional investors own most of the shares of AIFs, although retail investors account for a significant share (19%). AIFs invest predominantly in the European Economic Area (EEA) and across several asset classes. Use of leverage by AIFs is limited, with the notable exception of Hedge Funds. There are signs of potential liquidity risks at short-term horizons as the liquidity offered to investors is greater than the liquidity of the assets.

Funds of Funds: Funds of Funds (FoFs) account for 16% of the NAV of EU AIFs, at around EUR 770bn. FoFs are mainly sold to professional investors, yet they have the largest share of retail investors among AIF types (31%). FoFs have significant exposures to funds from the same managers and make little use of leverage. Overall, FoFs faces limited mismatch, with investors able to redeem 83% of the NAV within one week, while 77% of assets could be liquidated within this time frame.

Real Estate Funds: Real Estate Funds (RE) account for 11% of the NAV of AIFs, at EUR 540bn, invested mainly in Commercial Real Estate (CRE), and the industry is concentrated in a few countries. Most RE funds are sold throughout the EU, mainly to professional investors, although RE funds have one of the highest shares of retail investors (26% of NAV), which, given potential liquidity risk, is a concern. Indeed, RE funds are mostly exposed to illiquid physical assets. RE funds make limited use of synthetic leverage but they do use financial leverage, with some RE types engaged in short-term borrowing. The financing liquidity risk is amplified by the largest liquidity mismatch among AIF types: within one week investors can redeem up to 20% of NAV while RE funds can only liquidate 8% of their assets.

Hedge Funds: The Hedge Funds (HF) sector amounted to EUR 264bn in NAV at the end of 2017, or 5% of all AIFs. However, when measured by gross exposures, HFs account for 64% of AIFs since they make substantial use of derivatives. HFs make limited use of the EU passport and their investor base is more diversified than other AIFs. Leverage is very high at 780% (7.8 times the NAV), particularly for some strategies highly reliant on derivatives. HFs are exposed to limited liquidity mismatch, as they typically invest in liquid instruments. HFs are exposed to financing risk, as one third of their financing is overnight, but they tend to maintain large cash buffers, which mitigate the risk.

Private Equity Funds: Private Equity Funds (PE) account for 4% of the NAV of all AIFs, or EUR 204bn. They follow a range of strategies and are almost exclusively sold to professional investors. PE funds make little use of synthetic and financial leverage and invest mainly in illiquid securities (unlisted securities). Overall, liquidity risk is limited, given that PE funds are overwhelmingly closed-ended.

Other AIFs: The regulatory category of 'Other AIFs' — a residual category — in practice accounts for 63% of the NAV of EU AIFs, at around EUR 3.1tn. This residual category covers a range of strategies, with fixed income and equity strategies accounting for 70% of the NAV and an additional residual category amounting to 27%. A more detailed analysis of underlying strategies and potential classification issues in the 'Other AIFs' category will be provided in future editions of this report. Other AIFs are mainly sold to professional investors, although there is a larger retail investors' presence in the residual category. They make little use of financial or synthetic leverage. While most types of other AIFs have very limited liquidity risk, the residual category faces some liquidity mismatch.

² AIFMD data as reported to ESMA remain subject to quality limitations. The statistics cover around 80% of the market in terms of the number of AIFMs and the NAV of AIFs.

Statistical methods

Handling AIFMD data — methods and challenges: Extensive reporting obligations introduced by the AIFMD for AIFs and their managers allow national competent authorities (NCAs) to oversee whether alternative investment fund managers (AIFMs) are properly addressing risks associated with their activities. AIFMD data currently cover around 80% of the EU AIF market, in terms of both the number of fund managers and the NAV of AIFs. We provide key features of AIFMD data and the specificities in their statistical evaluation. We will also describe the remaining data-quality issues, with a focus on reported leverage data. In addition, we provide a first overview of the AIFMD national private placement regime (NPPR) market.

The structure of the EU and US Hedge Fund industries: As in this edition, we take a first look at the EU AIF data sourced from AIFMD reporting systems, it makes sense in particular to compare the picture that emerges to other jurisdictions hosting substantial AIF industries. One noteworthy and relevant comparison — especially for the HF segment of the AIF universe — is the US market, where HFs emerged as early as the 1920s and today comprise a vital part of the local investment universe. Our analysis shows that risk indicators derived from EU and US sources provide a similar message. Leverage tends to be concentrated in specific HF strategies, such as relative value or macro. HFs relying on derivatives have a larger amount of unencumbered cash than other HFs to meet future margins call on derivatives exposures. At the aggregate level, EU HFs have lower funding leverage but their funding is more short term than US funds. EU and US HFs face limited liquidity mismatch overall, with higher levels of liquidity in US funds.

Essential statistics

	Funds of Funds	Real Estate	Hedge Funds	Private Equity	Other AIFs	All AIFs
Size						
Number of funds (Absolute number)	4,912	2,602	1,147	3,369	13,836	26,378
Net Asset Value (EUR bn)	776	524	264	204	3,103	4,909
Average fund size (EUR mn per fund)	160	200	230	60	220	190
Share of total market (NAV % of all AIFs)	16%	11%	5%	4%	63%	100%
Distribution						
EU passport (% of total)	76%	82%	29%	71%	77%	76%
Retail participation (% of total)	31%	27%	3%	8%	16%	19%
Exposures						
Main exposures (Asset type)	CIU	PA	IRD	S	S	IRD
Main exposures (% of exposures)	75%	67%	82%	84%	62%	53%
Leverage						
Gross leverage (% of NAV)	114%	134%	4,491%	112%	144%	357%
Adjusted leverage (% of NAV)	113%	131%	781%	112%	137%	163%
Borrowing (% of NAV)	<1%	7%	79%	4%	2%	7%
Liquidity						
Open ended (% of NAV)	71%	52%	78%	5%	69%	65%
Monthly portfolio liquidity (% of NAV)	77%	9%	83%	5%	89%	89%
Monthly investor liquidity (% of NAV)	81%	24%	43%	4%	86%	82%

Note: All values at end of 2017, AIFs reported to ESMA by NCAs. Statistics for All AIFs also include 512 funds with no predominant type. For details on leverage measures see "Fundamental issues in AIFMD data handling and statistics" on pages 33-47. CIU=collective investment units; PA=Physical assets; IRD=Interest rate derivatives; S=Securities.
Sources: AIFMD database, national competent authorities, ESMA.

Market monitoring

Market structure and developments

The EU Alternative Investment Funds (AIF) universe covers a range of different types of funds, investing in diverse asset classes. AIFMD data offer unprecedented reach and detail on AIFs, part of which is still to be improved further to ensure adequate quality of the data. In particular, data coverage, which currently stands at around 80% in terms of both the number of AIFMs and the NAV of AIFs, will improve over time. Based on AIFMD data, the AIF industry had a NAV of EUR 4.9trn at the end of 2017. Among AIF types, FoFs account for 16% of the NAV, followed by RE funds (11%), HFs (5%) and PE funds (4%). The last category of 'Other AIFs' accounts for 63% of the NAV, including a residual category accounting for 17% of the NAV of all AIFs, pointing to potential classification issues by AIFMs. Professional investors own most of the shares of AIFs, yet retail investors account for a significant share at 20% of the NAV. AIFs invest predominantly in the EEA and across several asset classes. The use of leverage by AIFs is limited, with the notable exception of HFs, which acquire leverage mainly through derivatives. At the aggregate level there are signs of potential liquidity risk at short horizons, as the liquidity offered to investors is greater than the liquidity of the assets.

Introduction

In the aftermath of the global financial crisis, the G20 stressed, at its 2008 summit in Washington, the need for consistent international regulation and oversight with respect to every financial market participant and financial product. In response to this, the Financial Stability Board (FSB) advanced a programme of financial reforms to build a more resilient and less procyclical financial system. The work of the FSB in this regard emphasised the need to create global monitoring capabilities to capture the scale and trends in non-bank financial intermediation (FSB, 2011).

In this context, in 2009 the European Commission issued a proposal for a directive on alternative investment fund managers (AIFMD),³ aimed at laying the regulatory foundations for a secure financial system to support and stimulate the real economy. With the AIFMD, the EU alternative fund industry would, for the first time, be comprehensively regulated at EU level and supervised. The European Parliament and the Council finally adopted the directive⁴ in June 2011.⁵

Main objectives of the AIFMD

The overarching objective of the AIFMD is to provide an internal market and a harmonised regulatory and supervisory framework for the activities within the EU of all AIFMs, regardless of whether they have their registered office in a Member State (EU AIFMs) or a third non-EU country (non-EU AIFMs).

As a post-crisis regulatory initiative, the AIFMD aimed at strengthening investor protection and financial market stability. The features of this initiative include:

- the enhancement of intermediary specific oversight and the integrity of the internal market to provide legal certainty for its participants, for example professional investors, competent authorities and other stakeholders;
- an incentive structure aiming to avoid excessive risk-taking by imposing cross-sector rules on remuneration schemes and governance;
- a focus on systemic risk and consistent requirements regarding risk-management procedures and processes;

³ The glossary provides an overview of the concepts and abbreviation used in this report.

⁴ Directive 2011/61/EU.

⁵ The AIFMD was published in the Official Journal of the European Union on 1 July 2011 and entered into force on 21 July 2011.

- extensive reporting obligations;
- close cooperation between all NCAs and ESMA.

In broad terms, the AIFMD lays down rules for the authorisation, ongoing operation and transparency of AIFMs.

The AIFMD extends appropriate regulation and oversight to all actors and activities that may entail significant risks by introducing a coherent European framework for regulating AIFMs and increasing their accountability, with the goal of protecting investors, depositors and financial markets while strengthening and deepening the European single market.

The directive does not address the funds themselves, but rather the fund managers and their current business activities, independent of the specific strategy or business model.

The AIF regulatory framework

In the EU, investment funds are regulated under two main regimes: the UCITS directive⁶ and the AIFMD. Funds authorised under the UCITS directive are typically targeted at retail investors. UCITS are subject to specific requirements, including diversification, limits on counterparty risk and restrictions on leverage (ASR-AIF.1). In contrast, AIFs are funds that typically target professional investors. They can invest in a wide range of assets (including asset classes not eligible for UCITS) and have no restrictions on leverage. AIFs include HF, some FoFs, PE funds and RE funds and other types of funds.

Even if the AIFMD only regulates the manager, the AIF product could be regulated at the national level. A number of Member States have defined rules about the investment policy of the AIFs (mainly as far as AIFs targeted at retail investors are concerned). Inter alia, depending on the adopted national approach, those rules can include: risk spreading's limits, the maximum level of the portfolio's exposure and constraint in terms of the form that the AIF can take (e.g. in some Member States the RE funds are open-ended funds, while in others they are closed-ended funds). Accordingly, the portfolio's risk

profile and the leverage's use could be affected by the national legal framework.

Under AIFMD, authorised EU AIFMs can market their EU-domiciled AIFs by using the EU marketing passport. The EU passport allows them to market their AIFs to professional investors in any Member States of the EU.

ASR-AIF.1

Regulatory framework overview

Comparison of UCITS and AIFs

	UCITS	AIF
	Fund set-up	
Targeted investors	Retail investors	Professional investors
Passport	Always	Not always
	Restrictions and requirements	
Redemption policy	Only open-ended	Open- or closed-ended
Restrictions on eligible assets	Yes (only liquid instruments)	No
Diversification requirements	Yes	Not always
Counterparty risk limits	Yes	No
Restrictions on leverage	Yes	No, but NCAs can set leverage limits
	Size	
Number of funds at the end of 2017	31,974	28,231
Total net assets (EUR bn)	9,714	5,909

Note: Main characteristics and size of UCITS funds and AIFs.
Sources: EFAMA, NCAs, ESMA.

AIFMD reporting obligations

The AIFMD sets out extensive reporting requirements to NCAs for AIFMs.⁷ The reporting requirements include data on the characteristics of the AIF (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). Reporting requirements vary depending on the characteristics of the AIFM and the complexity of the AIF, which are reflected in different reporting thresholds (ASR-AIF.2).

⁶ Directive 2009/65/EC of the European Parliament and of the Council of 13 July 2009 on the coordination of laws, regulations and administrative provisions relating to undertakings for collective investment in transferable securities.

⁷ NCAs transfer received AIF reports to the ESMA central database.

ASR-AIF.2

AIFM reporting thresholds

Higher reporting frequency for larger AIFMs

	Annually	Semi-annually	Quarterly
AIFM reporting	• ≤ EUR 100mn (leveraged AIF)	• ≥ EUR 100mn (leveraged AIF)	• > EUR 1bn
	• ≤ EUR 500mn (unleveraged AIF)	• ≥ EUR 500m (unleveraged AIF)	
	• All unleveraged AIFs (above the thresholds) investing in non-listed companies to acquire control	• ≤ EUR 1bn	

Note: Reporting frequencies indicated by level ii regulation for authorised AIFMs based on the managers' characteristics and AIFs managed. Thresholds based on regulatory asset under management (AuM), full diagrams on the reporting frequencies available in the ESMA guidelines on reporting obligations.

Source: ESMA.

Scope of the report

This report is based on data submitted by NCAs to ESMA, covering authorised EU and sub-threshold AIFMs on behalf of the AIFs they manage. The data do not cover products marketed by non-EU AIFMs under an NPPR.

The data refer to annual reports for 2017 and are based on reports transmitted to ESMA by 24 NCAs. The data cover 1,873 authorised full-scope EU AIFMs, amounting to 78% of EU AIFMs according to ESMA registers, and 2,389 sub-threshold managers. Around 30,000 AIF reports were transmitted to ESMA, with varying coverage across Member States. Among those reports, we excluded around 1,650 nil reports (empty reports sent by new AIFs) and reports that missed out critical information (such as fund identification or investment strategy). The final sample is comprised of around 26,400 AIFs.

The report provides data and risk indicators for AIFs at the EU level, rather than at the national level. The report relies on aggregate indicators by AIF types, but subsequent editions may look at the distribution of risk indicators within AIF types to identify pockets of vulnerabilities and inform NCAs' supervisory work.

The report relies on a set of risk indicators, a subset of the data provided under the AIFMD. The risk indicators were chosen based on their relevance for risk analysis and the quality of the data.⁸ Looking forward, ongoing cooperation with NCAs should allow ESMA to improve the set of

risk indicators, along with coverage, in future editions.

Data quality

AIFMD reporting obligations cover a wide range of indicators with different degrees of complexity for their calculation. Some very important indicators, such as leverage reported by AIFs, cannot be used at this stage due to data-quality issues. A variety of reporting errors (formatting, monetary values instead of percentages, etc.) prevent us from using the reported leverage indicators. Some other indicators are not always mandatory and may not be requested at national level (e.g. the redemption frequency for open-ended AIFs), which makes the use of aggregate data more difficult. In this report, when the data used for the analysis is based on a subset of our sample, this is specified.

The detailed inventory of analysed data and indicators is provided in the inventory section at the end of the report. A detailed discussion of data-related issues and coverage, including NPPR, is provided in the article "Fundamental issues in AIFMD data handling and statistics", pp.32-45.

Definition of terms

Under the AIFMD, some concepts might have a different meaning than commonly used by the industry. For clarification a glossary is provided at the end of the report. The main concepts used are the following:

- Regulatory assets under management (AuM): value of all assets in portfolio, including all assets acquired through use of leverage (borrowing of cash or securities and leverage embedded in derivative positions). This concept of AuM is different from the industry approach of AuM, which typically relates to the assets on the balance sheet of the AIF;
- NAV: the net value of the assets of the AIF (as opposed to the NAV per unit or share of the AIF). The NAV is equal to the unit shares of the AIF, i.e. the money placed in the AIF by investors, which correspond to the concept of total net assets sometimes used by the industry.

⁸ The data inventory on pages 86-87 summarises the coverage of each indicator used in this report.

Size of the EU AIF market: around EUR 5tn NAV

The AIF industry accounts for a significant share of the investment fund activity in the EU: the NAV of AIFs in the EU amounted to around EUR 4.9tn at the end of 2017 (ASR-AIF.8). This compares to a NAV of around EUR 5.9tn according to EFAMA data. Thus, coverage of AIFMD data currently stands at more than 80% in terms of NAV. By comparison, the NAV of UCITS amounted to EUR 9.7tn at the end of 2017 according to EFAMA. Therefore, AIFs account for one third of the EU fund industry.⁹

AIF types: One of the main features of the AIF market is the diversity in the types, strategies and risk profiles of AIFs. FoFs account for 16% of the NAV, followed by RE funds (11%), HFs (5%) and PE funds (4%). Within the last category of 'Other AIFs', which accounts for 63% of the NAV (ASR-AIF.9), around 27% of the NAV is attributed to a residual category (which amounts to 17% of the NAV of all AIFs), pointing to potential classification issues for AIFMs. Another explanation for the very large share of 'Other AIFs' could be that existing AIF types (FoFs, RE funds, HFs and PE funds) do not cover AIFs that might implement simple strategies also used by UCITS. For example, AIFMs might classify their AIF bond or equity funds under 'Other AIFs'. These issues will be explored further in future editions of this report.

AIF distribution: In terms of cross-country distribution, the AIF industry is concentrated in a few countries, with the top five accounting for more than 85% of the NAV (ASR-AIF.10). In countries with a large asset-management industry (Luxembourg, Ireland, France), FoFs also account for a significant share of the NAV. The HF industry is heavily concentrated in the United Kingdom, with more than 80% of the NAV managed by UK AIFMs. In most EU Member States, 'Other AIFs' account for most of the NAV. Most AIFs have access to the **EU passport** (76%), allowing AIFs to be sold throughout the EU (ASR-AIF.11).

A full cross-country analysis is beyond the scope of this report due to data-quality issues and the fact that some countries have not yet transmitted their AIFMD data to ESMA.

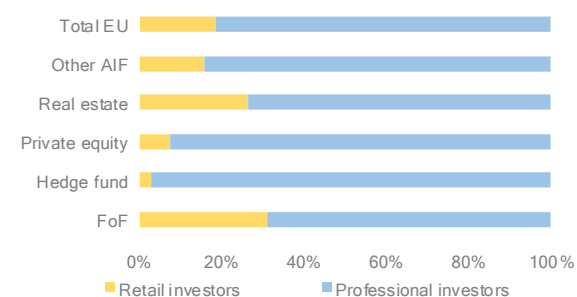
Moreover, an analysis of the countries where the AIFs are actually distributed, and on the differences between countries where the AIFs are managed and countries where the AIFs are marketed, cannot be carried out. Indeed, the AIFMD reporting does not include information such as the investors' domicile or the countries where the subscriptions are collected.

AIF investors: AIFs should principally target professional investors rather than retail investors. Professional investors account for around 80% of the NAV, while direct retail investors' participation is more limited, but quite significant at 20% of the NAV (ASR-AIF.3).¹⁰ Retail investors' participation might be underestimated since they could purchase banking or insurance products which are invested into AIFs.

ASR-AIF.3

AIF investors

Mainly professional investors



Note: Clients of AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. FoF=Fund of funds. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA.

Among professional investors, unitholders are diversified across AIF types (ASR-AIF.4). Professional investors, such as pension funds and insurance companies, are the main investors as they account for 26% and 17% of the NAV respectively.¹¹ Banks and other funds account for 8% each, and other financial institutions for 7%. Remaining investor categories are small, except for 'unknown' investors (17% of the NAV).

⁹ For an earlier overview of the EU AIF market and risks indicators monitored by ESMA, see Ferrari (2018).

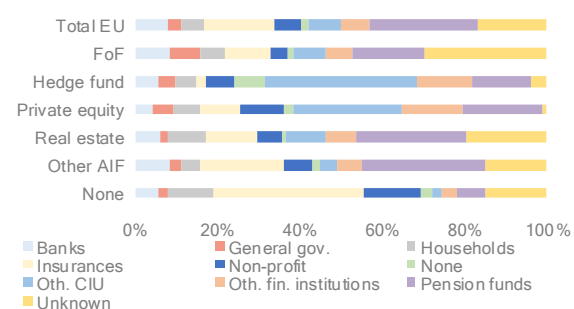
¹⁰ For an overview of retail AIFs, see ESMA (2018).

¹¹ Van der Veer et al. (2017) report similar results using data for Dutch AIFs.

ASR-AIF.4

AIF investors types

Diversified investor base



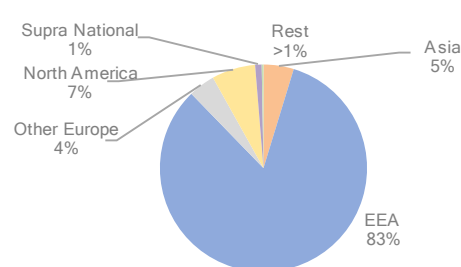
Note: Ownership of units in AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. FoF=Fund of funds; None=No predominant type. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.5

Regional investment focus

Most exposures towards the EEA



Note: Regional investment focus of real estate funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA.

AIF shares: The AIF industry is characterised by a very high concentration of investors: the top five holders account for around 80% of the NAV on aggregate (ASR-AIF.12). For at least 50% of AIFs, the five main investors hold all the units of the AIF. This pattern applies across AIF types, except for PE funds, which tend to have a less concentrated participation. 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 AIFs, resulting in a highly concentrated participation, although under the directive AIFs must raise capital from a number of investors. Second, professional investors are the main investors in AIFs, and they typically hold a large share of the funds they invest in, which could also explain the concentration of ownership.

AIF geographical investment focus: AIFs invest mainly in the EEA (60%), followed by North America (16%) and supranational issuers (9%). Other regions account for less than 15% of the NAV (ASR-AIF.5).

Leverage and liquidity risks

Gross exposures: AIFs are exposed to a wide range of asset classes, with variation across AIF types (ASR-AIF.13). RE funds, PE funds and FoFs are by construction heavily exposed to the underlying assets (physical assets for RE funds, (unlisted) securities for PE funds and collective investment units for FoFs). HF exposures are overwhelmingly biased towards interest rate derivatives (IRDs) — partly due to the way IRDs are reported.¹² The exposures of 'Other AIFs' are more diversified, reflecting the diversity of strategies used within this residual category.

Leverage: The AIF industry is characterised by significant differences in the use of leverage, measured by the ratio of gross exposures (excluding IRDs) to NAV (ASR-AIF.6). Most AIFs have limited use of leverage, with the notable exception of HFs (ASR-AIF.14). The high leverage of HFs stems mainly from the use of derivatives (synthetic leverage) rather than outright borrowing (financial leverage).

¹² Gross notional exposures use the gross notional value of the IRDs, with no adjustment for duration. However, under the commitment approach, IRDs are adjusted for duration. IOSCO has recently published a consultation paper aimed at harmonising the definition of leverage for

funds (IOSCO (2018)). The report includes a proposal for an adjustment of gross notional exposures for IRDs based either on duration or on the conversion of IRDs exposures into 10-year bond equivalents.

ASR-AIF.6

Measures of leverage

Different definitions of leverage

Leverage can be measured by different metrics.

Financial leverage (also called balance-sheet leverage) involves outright borrowing and is defined as the ratio of total assets to equity (or NAV for funds).

Synthetic leverage is defined as the ratio of exposures, acquired through the use of derivatives, to the NAV. Exposures can be gross (long and short exposures are added) or net.

Under the AIFMD, leverage is defined according to two measures:

- **Commitment leverage** is defined as the sum of the absolute value of all transactions, after netting and hedging, divided by the NAV;
- **Gross leverage** is the sum of the absolute values of all transactions ('gross exposures'), excluding cash in the currency of the AIF, divided by the NAV.

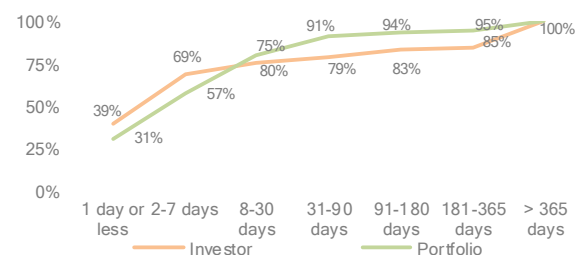
Two other measures of gross leverage can also be computed: (i) the ratio of regulatory AuM to NAV, where regulatory AuM includes the value of all assets in the portfolio, including through the use of leverage by outright borrowing of cash and securities and leverage embedded in derivatives; and (ii) the ratio of gross exposures excluding IRDs to NAV.

In this report we measure leverage by gross exposures excluding IRDs to NAV (adjusted gross leverage), unless otherwise specified.

Liquidity risk: Most AIFs are open-ended funds (65% of NAV), with variation across types. Open-ended AIFs tend to offer daily liquidity to investors (ASR-AIF.15). However, AIFs more likely to be exposed to illiquid assets such as PE funds, RE funds and HFs tend to have longer redemption frequencies (weekly to monthly). At the aggregate level, AIFs' **liquidity profile** points to potential liquidity risk: within a week, investors can redeem up to 69% of the NAV, while only 57% of the assets can be liquidated within this time frame (AIFR.S.7). However, this liquidity risk is very different across AIFs 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 liquidity mismatch. A final assessment of fund liquidity risks requires a supervisory analysis at entity level, along with a review of liquidity management tools (LMTs) available at the fund level.¹³

ASR-AIF.7

Liquidity profile

Potential liquidity risk at the short end

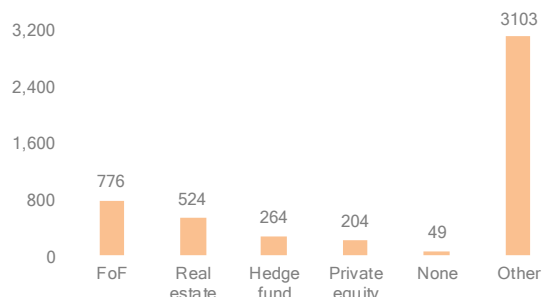
Note: Portfolio and investors liquidity profiles of AIFs managed and/or marketed by authorised EU AIFMs, end of 2017. Portfolio profile determined by percentage of the funds' portfolios capable of being liquidated within each specified period, investor liquidity profile depend on shortest period within each fund could be withdrawn or investors could receive redemption payments. d=Days. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA.

¹³ Under Article 24(2), AIFMs have to report, the measures adopted to ensure consistency between the redemption policies and the liquidity profiles of the managed AIFs. These LMTs include: the presence of a lock-up period or side pockets, the adoption of redemption gates or redemption notice periods that specify how many days in

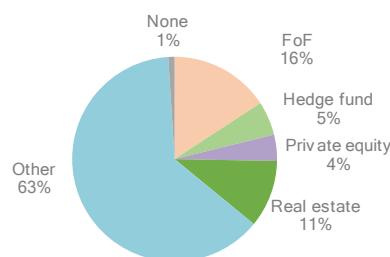
advance investors have to notify that they wish to redeem, the suspension of dealing arrangements as any other special arrangement arising from assets' illiquid nature. Liquidity management tools and procedures employed by AIFMs are beyond the scope of this report, as current data limitations may impair the accuracy of the analysis.

ASR-AIF.8
Size of the AIF industry
Large AIF market



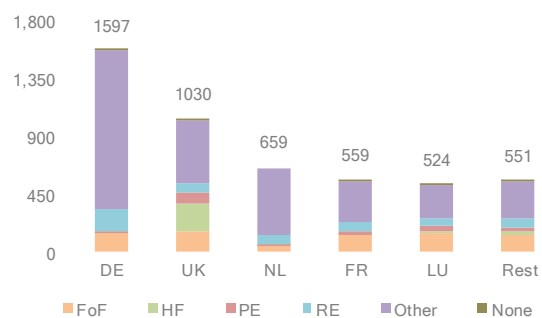
Note: Net Asset Value by AIF type, in EUR bn, end of 2017. FoF=Funds of funds, None=No predominant type. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.9
AIF industry by type
Other AIFs largest type



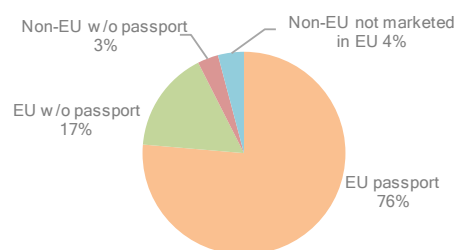
Note: NAV by type of AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in %. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.10
Size of AIF by type and country
Concentration in a few countries



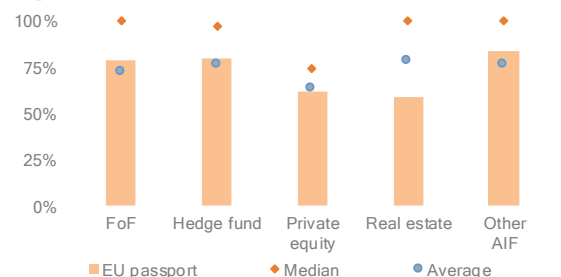
Note: Net Asset Value by AIFs type, in EUR bn, end-2017. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.11
EU passport
Most AIFs can be passported



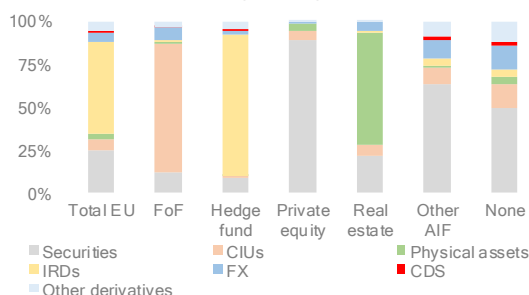
Note: NAV of AIFs by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.12
Distribution of ownership
High concentration of ownership



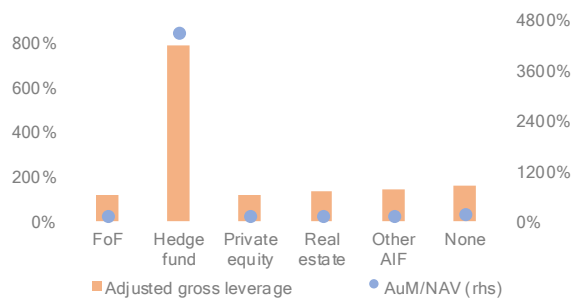
Note: Investor concentration of EU-passported AIFs, end of 2017, in % of NAV. Investor concentration computed as share of AIF equity beneficially owned by the 5 largest investors. FoF=Fund of funds. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.13
Gross exposures
Diverse exposures by AIF type



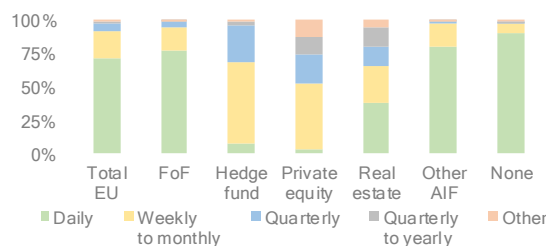
Note: Share of gross exposures by AIF type, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.14
Leverage
High leverage of HFs



Note: Adjusted gross leverage of AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Adjusted gross leverage does not include IRDs. FoF= Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

ASR-AIF.15
Redemption frequency
Daily frequency for most open-ended AIFs



Note: Investor redemption frequencies allowed by open-ended AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Fund of Funds, None=No Predominant Type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Funds of Funds

Funds of Funds (FoFs) account for 16% of the NAV of EU AIFs, at around EUR 770bn. FoFs are mainly sold to professional investors, yet among AIF types they have the largest share of retail investors (31%). FoFs have significant exposures to funds from the same managers. They make little use of financial or synthetic leverage. The largest type of FoFs faces limited mismatch, with investors able to redeem 83% of the NAV within a week, while 77% of asset could be liquidated within this time frame. However, for the mismatch to occur, investor redemptions would need to be several multiples higher than historical episodes.

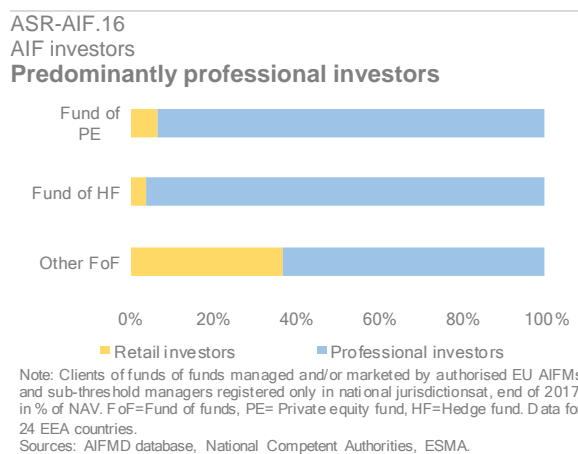
Funds of Funds: market size and structure

Size: The size of the FoFs sector amounts to EUR 776bn, or 16% of all AIFs. Unlike other AIFs, FoFs are spread across EU countries (ASR-AIF.20), with a larger presence in countries with a large asset-management industry (United Kingdom, Germany, Luxembourg and France).

Funds of funds types: Most FoFs pursue strategies beyond investing in PE funds or HFs. FoFs investing in HFs and PE funds only account for 9% and 8% of the NAV (ASR-AIF.21) respectively.

Distribution: Like most types of AIF, FoFs have access to the EU passport to a large extent, with 76% able to be sold throughout the EU (ASR-AIF.22).

Funds of Fund investors: FoFs are mainly sold to professional investors (69%), although among AIF types they have the largest share of retail investors (ASR-AIF.16). The share of retail investors varies significantly between FoF strategies — below 10% for funds of PE funds and funds of HFs at one end, and close to 40 % for ‘Other FoFs’. Among professional investors, pension funds and insurance companies are the main investors, accounting for 18% and 11% of the NAV (ASR-AIF.23) respectively, with an even larger share for FoFs investing in PE and HFs (36% for pension funds and 8% for insurance companies).

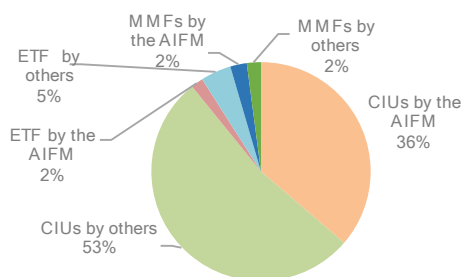


Geographical investment focus. FoFs invest primarily in the EEA (57%), followed by supranational issuers (27%) and North America (8%) (ASR-AIF.24). Since the supranational issuers category also covers ‘multiple regions’, FoFs may invest in geographically diversified funds, rather than in supranational issuers specifically.

Leverage and liquidity risks

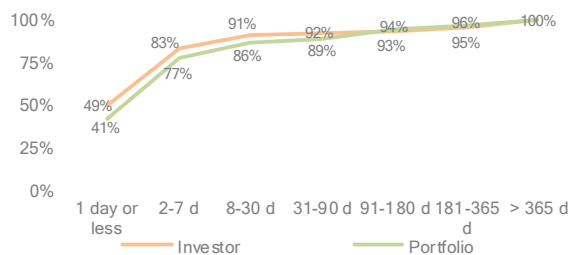
Gross exposures: FoFs are predominantly exposed to other funds (84% of exposures), in line with the strategy used (ASR-AIF.25). FoFs have a large share of their fund holdings (36%) invested in funds from the same manager (ASR-AIF.17).

ASR-AIF.17
Share of fund holdings for FoFs
Significant cross investment



Note: Share of collective investment undertakings held by funds of funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. CIUs=Collective Investment Undertakings. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA

ASR-AIF.18
Liquidity profile
Some liquidity mismatch



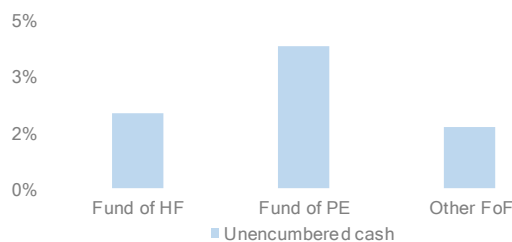
Note: Portfolio and investor liquidity profiles of funds of funds pursuing strategies classified as "other" managed and/or marketed by authorised EU AIFMs, end of 2017. Portfolio profile determined by percentage of the funds' portfolios capable of being liquidated within each specified period, investor liquidity profile depend on shortest period within each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

Leverage: FoFs have limited use of leverage: regulatory AuM to NAV is 115% on aggregate, with some variation by type (ASR-AIF.26). Relatively low leverage levels come from limited exposures to derivatives and little use of financial leverage (less than 1% of NAV).

Liquidity risk: Most FoFs are open-ended funds (71%), with the exception of funds of PE funds. Most open-ended FoFs offer daily liquidity to investors (ASR-AIF.27). At the aggregate level, FoFs' **liquidity profile** points to very limited liquidity mismatch: within a week investors can redeem up to 83% of the NAV, while 77% of the assets can be liquidated within this time frame. For the liquidity mismatch to crystallise at the aggregate level, investors would need to redeem more than 77% of the NAV, which is extreme. However, by construction the liquidity of the portfolio of FoFs depends on the liquidity of the underlying funds, which can be difficult to measure.

Unencumbered cash, i.e. a fund's position in cash or cash-like securities not subject to legal claims by another party (for example from collateral pledges or securities lending activities), is an important indicator for a fund's ability to mobilise funds fast to meet redemption claims.¹⁴ FoFs have relatively low levels of unencumbered cash, at around 2.5% of the NAV. (ASR-AIF.19).

ASR-AIF.19
Unencumbered cash
Cash buffers relatively low



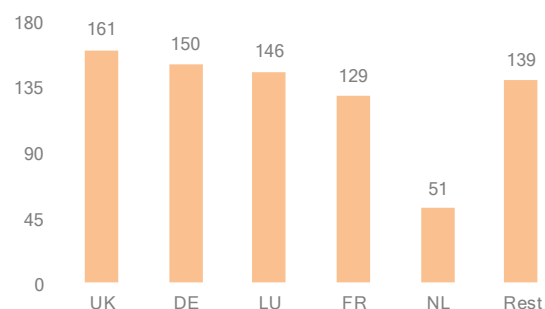
Note: Unencumbered cash held by funds of funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Funds of funds, HF=Hedge fund, PE=Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

¹⁴ The concept of unencumbered cash is not defined in the ESMA guidelines to the AIFMD reporting. See the section on 'Fundamental issues in AIFMD data handling and statistics', pp. 32-45, for further details.

ASR-AIF.20

Size of FoFs

Spread across countries

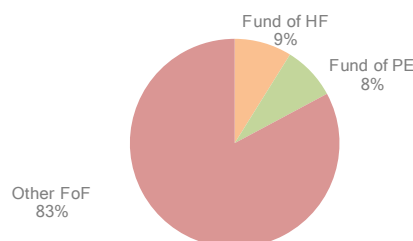


Note: Net Asset Value of Funds of Funds, in EUR bn, end of 2017. Sources: AIFMD database, National Competent Authorities, ESMA

ASR-AIF.21

FoF strategies

Mainly outside of PE funds and HFs

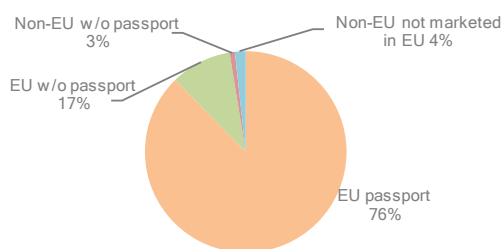


Note: Investment strategies of funds of funds, end of 2017, in % of NAV. Funds of funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions. FoF=Fund of funds, PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.22

EU passport

Most FoFs can be passported

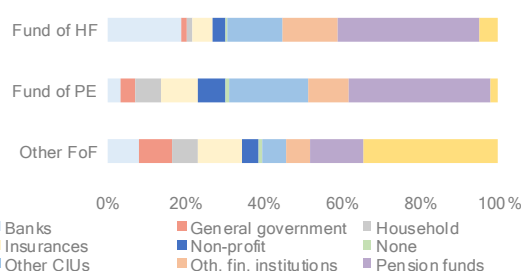


Note: NAV of funds of funds by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers are registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.23

FoFs investors

Mainly professional investors

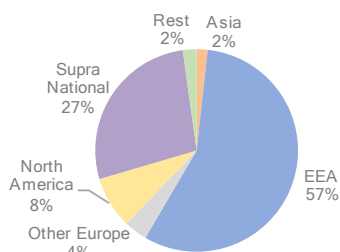


Note: Ownership of units in funds of funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. FoF=Fund of funds; PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.24

Regional investment focus

Mainly EEA

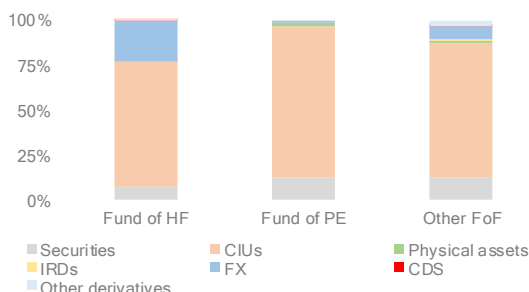


Note: Regional investment focus of funds of funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.25

Gross exposures

Mainly investment in funds

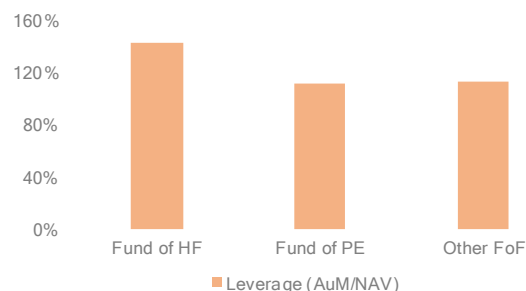


Note: Share of exposures by funds of funds' investment strategies, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. FoF=Fund of funds, PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.26

Leverage

Limited leverage

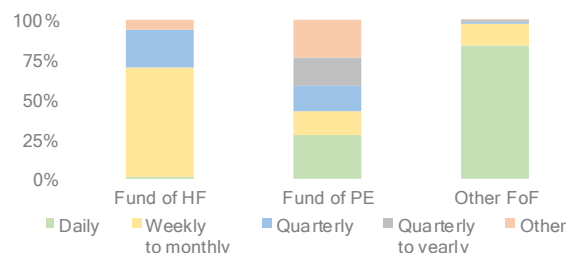


Note: Leverage of funds of funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Leverage computed as AuM/NAV ratio. FoF=Fund of funds, HF=Hedge fund, PE=Private equity fund. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

ASR-AIF.27

Redemption frequencies

Mostly daily and weekly



Note: Investor redemption frequencies allowed by open-end funds of funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Fund of funds, PE=Private equity fund, HF=Hedge Fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Real Estate Funds

Real Estate Funds (RE) account for 11% of the NAV of AIFs, at EUR 523bn, invested mainly in Commercial Real Estate (CRE), and the industry is concentrated in a few countries. Most RE funds are sold throughout the EU, mainly to professional investors, although RE funds have one of the highest shares of retail investors (26% of NAV), which given potential liquidity risk is a major concern. RE funds are mostly exposed to illiquid physical assets which take time to sell. RE funds make limited use of synthetic leverage, but they use financial leverage, with some RE types reliant on short-term borrowing. The financing liquidity risk is amplified by the potential liquidity mismatch among AIF types: within a week investors can redeem up to 20% of NAV while funds can only liquidate 8% of their assets.

Real Estate Funds: market size and structure

Size: RE funds are the third-largest AIF type by size, with a NAV of EUR 523bn, or 11% of all AIFs. The RE fund industry is concentrated in a few countries (ASR-AIF.33), with the top five accounting for 85% of the NAV.

Real Estate fund types: RE investment strategies focus mainly on CRE with 62% of the NAV; exposure to residential markets is limited, with 12% of the NAV (ASR-AIF.34).

Distribution: Among AIFs, RE funds have the largest access to the EU passport, with 82% able to be sold throughout the EU (ASR-AIF.35). This high share could be explained by investor demand to get exposures to specific housing markets in the EU (UK or French housing markets for example), assuming that RE funds invest mainly in the country where they are domiciled.

Real Estate fund investors: RE funds are sold mainly to professional investors (74%). Among AIF types, RE funds have one of the largest shares (after FoFs) of retail investors, especially for CRE, with a share of 35% of the NAV (ASR-AIF.28). Among professional investors, pension funds and insurance companies are the main investors, accounting for 27% and 13% of the NAV (ASR-AIF.36) respectively. Other funds also account for a sizeable share of RE fund ownership, with 10% of the NAV. Banks have limited exposures to RE funds, except for residential RE funds for which banks hold 23% of the NAV.



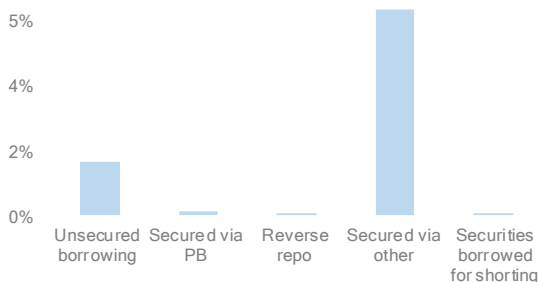
Geographical investment focus: RE funds invest overwhelmingly in the EEA (83%), with very limited exposures to other regions. The second largest exposure, North America, accounts for only 7% of the NAV (ASR-AIF.37).

Leverage and liquidity risks

Gross exposures: RE gross exposures are concentrated in physical assets (around 70% of exposures, across most RE types), in line with the strategy used (ASR-AIF.38).

Leverage: RE funds make limited use of leverage. Regulatory AuM to NAV is 136% on aggregate, as they have limited exposures to derivatives, with low dispersion across RE fund types (ASR-AIF.39). However, RE funds do use **financial leverage**, with outright borrowing amounting to 7% of the NAV, the second largest by AIF type (after HFs) (ASR-AIF.29).

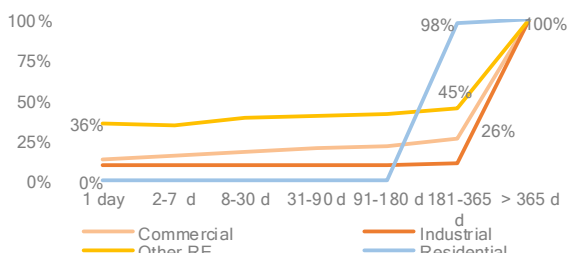
ASR-AIF.29
Financial leverage
Sizeable secured borrowing



Note: Cash and securities borrowed by real estate funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Most available borrowing is relatively long, implying limited financing liquidity risk for most RE funds. However, for ‘other’ RE funds, very short-term borrowing (overnight) amounts to 36% of financing liquidity (ASR-AIF.30).

ASR-AIF.30
Financing liquidity risk
Low short-term borrowings for most RE funds

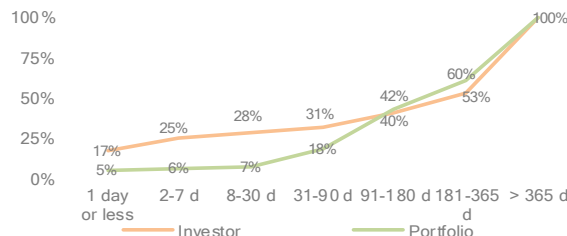


Note: Liquidity financing of real estate funds managed and/or marketed by EU authorised AIFMs, end of 2017. Aggregate amount of borrowing and cash financing divided depending on longest period for which creditors are contractually committed to provide such financing. Borrowing and cash financing include drawn and undrawn, committed and uncommitted lines of credit as well as any term financing. RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Liquidity risk: Around half of RE funds are open-ended funds (52% of the NAV), and there is considerable heterogeneity regarding redemption frequencies for open-ended RE funds (ASR-AIF.40). RE funds offering daily to monthly liquidity account for 63% of the NAV, ranging from 20% for industrial RE funds to 72% for residential RE funds. At the aggregate level, RE funds’ **liquidity profile** points to potential liquidity mismatch: within a week, investors can redeem up to 20% of the NAV, while only 8% of the assets can be liquidated within this time frame. The liquidity mismatch relates mainly to CRE funds, the largest RE fund category: 25% of the NAV can be redeemed weekly whereas only 6% of

assets can be liquidated within a week (ASR-AIF.31). The liquidity mismatch is more likely to occur than for other types of AIF, especially at the 1-month horizon, since in the past funds have experienced outflows of the order of 30% of the NAV, for example during the Brexit referendum (ESMA (2016)).

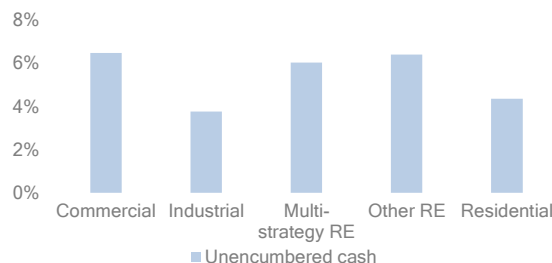
ASR-AIF.31
Liquidity profile
Potential liquidity mismatch



Note: Portfolio and investor liquidity profiles of funds of commercial real estate funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

The liquidity mismatch can be mitigated by cash to some extent: **unencumbered cash** for RE funds is higher compared to other AIF categories (respectively 6% and 4.5% of the NAV, ASR-AIF.32). However, within a 3-month horizon, cash buffers are significantly lower than the potential liquidity mismatch that could arise if investors were to redeem. In that context, funds may have to rely on LMTs, provided that they are available at the fund level. Based on partial data, around two thirds of open-ended CRE AIFs require a notice period. Among them, more than 50% foresee a minimum period of 5 months for notifying redemptions, while only 18% impose a lock-up period for investors.¹⁵

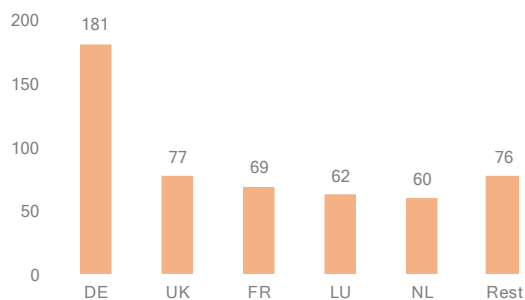
ASR-AIF.32
Unencumbered cash
Cash buffers may be too small



Note: Unencumbered cash held by real estate funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. RE=Real estate. Data for 24 EEA countries.

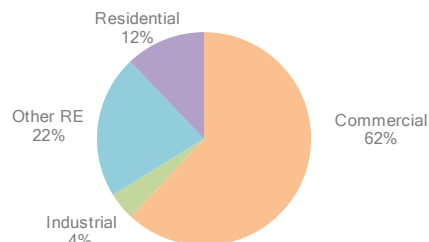
¹⁵ Data currently available to ESMA show that the adoption of redemption gates and other liquidity arrangements arising from the illiquid nature of the assets as measure to manage liquidity risk is limited.

ASR-AIF.33
Size of RE funds
Concentration in a few countries



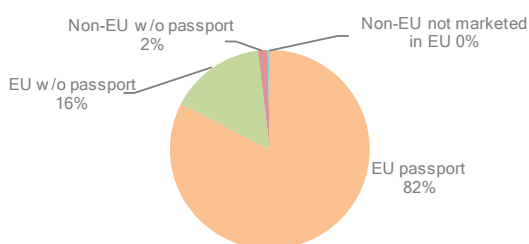
Note: Net Asset Value of real estate funds, in EUR bn, end of 2017.
Sources: AIFMD database, National Competent Authorities, ESMA

ASR-AIF.34
RE fund strategies
Mainly CRE



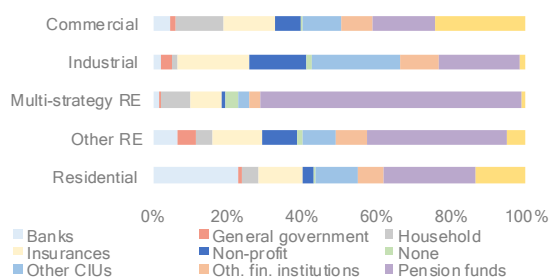
Note: Investment strategies of real estate funds, end of 2017, in % of NAV. Real estate funds managed and/or marketed by full-scope EU AIFMs and sub-threshold managers registered only in national jurisdictions. RE= Real estate. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.35
EU passport
High access to passport



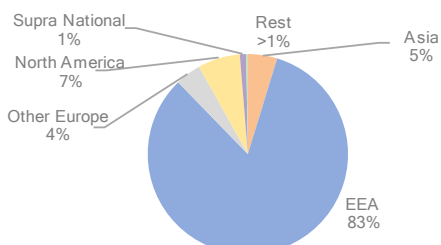
Note: NAV of real estate AIFs by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers are registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.36
RE funds investors
Pension funds' largest investors



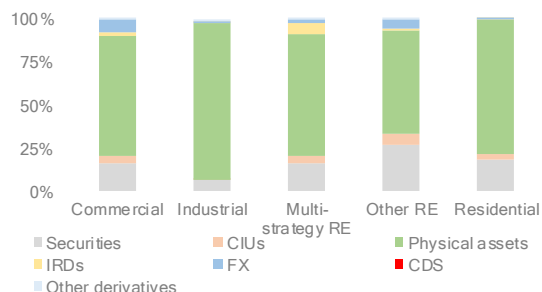
Note: Ownership of units in real estate funds AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. RE=Real estate. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.37
Regional investment focus
Investments mainly in EEA



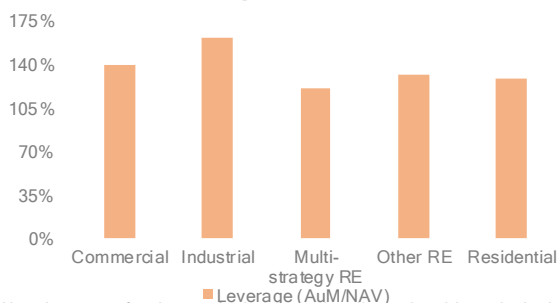
Note: Regional investment focus of real estate funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.38
Gross exposures
Mainly physical assets



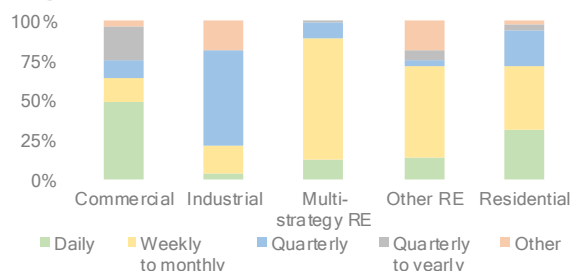
Note: Share of exposures by real estate funds' investment strategies, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. RE=Real estate. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.39
Leverage
Limited use of leverage



Note: Leverage of real estate funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Leverage computed as AuM/NAV ratio. RE=Real estate. Data for 24 EEA countries.
Sources: AIFMD database, National competent authorities, ESMA.

ASR-AIF.40
Redemption frequencies
Large dispersion



Note: Investor redemption frequencies allowed by open-end real estate funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. RE=Real estate. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

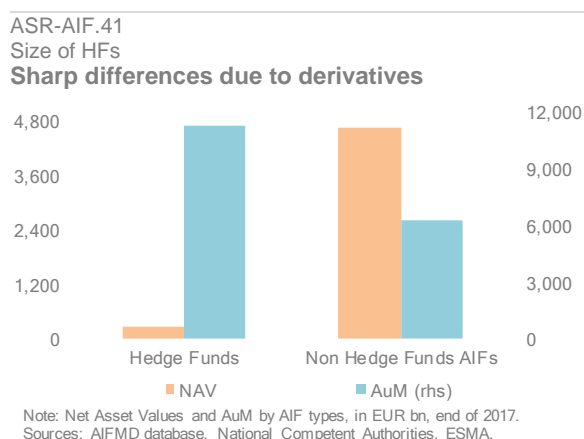
Hedge Funds

The EU Hedge Fund (HF) sector amounted to EUR 264bn at the end of 2017 in NAV, or 5% of all AIFs. However, when measured by gross exposures, HFs account for 64% of AIFs since they rely heavily on derivatives. HFs make limited use of the EU passport, and their investor base is more diversified than other AIFs. Leverage is very high, particularly for some strategies highly reliant on derivatives. HFs are exposed to little liquidity mismatch, as their assets can be liquidated quickly to meet investor redemptions. HFs are exposed to financing risk, as one third of their financing is overnight, but they tend to maintain large cash buffers, which are also used to meet future margin calls relating to derivatives positions.

Hedge Funds — market size and structure

HFs are funds that employ complex strategies, usually through the use of derivatives, and rely on leverage to generate returns.

Size: As of the end of 2017, the NAV of HFs sold in the EU by European AIFMs amounted to EUR 264bn (5% of all AIFs). The size of the EU HF sector in AIFMD data is higher than reported from other sources. However, HF AIFs domiciled in the euro area (EA) are far smaller than estimates based on ECB data (ASR-AIF.42). Despite their limited size compared to the rest of AIFs, as measured by their NAV (see also AIFR-S.42), HFs are very active users of derivatives, resulting in a very large amount of regulatory AuM (around EUR 11tn), accounting for 64% of all AIFs (ASR-AIF.41).



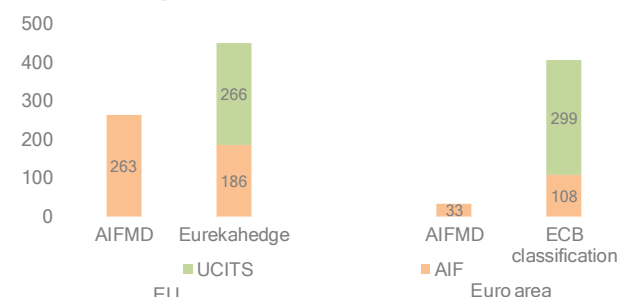
Most of the HF industry is concentrated in one country, with the UK AIFMs accounting for 82% of the NAV of HFs (ASR-AIF.50).

ASR-AIF.42
HFs in the EU
Size of the HF sector in the EU and the EA

AIFMD data can be used to compare the size of the HF sector to other sources. Based on the domicile of the manager, the NAV of AIF HFs amounted to EUR 264bn at the end of 2017 according to AIFMD data (ASR-AIF.43). This compares to a NAV of around EUR 190bn for HF AIFs according to Eurekahedge, a commercial provider. Eurekahedge data also show that AIFs account for only 40% of the size of the EU HF sector, with UCITS being the main type of HF in the EU ('alternative UCITS').

Looking at EA data, according to the ECB's (partially estimated) figures, HFs had a NAV of around EUR 407bn at the end of 2017, with EUR 108bn for AIFs and EUR 299bn for UCITS. In AIFMD data, HFs domiciled in EA countries have a NAV of around EUR 30bn, far below ECB data. The ECB data also show that UCITS account for the larger share of the HF sector in the EA (73% of NAV).

ASR-AIF.43
HF size by types
UCITS HF larger than AIFs HF



Note: Size of the European hedge fund sector in EUR bn. NAV for AIFMD and ECB, AuM for Eurekahedge.
Sources: AIFMD database, National Competent Authorities, ESMA, ECB, Eurekahedge.

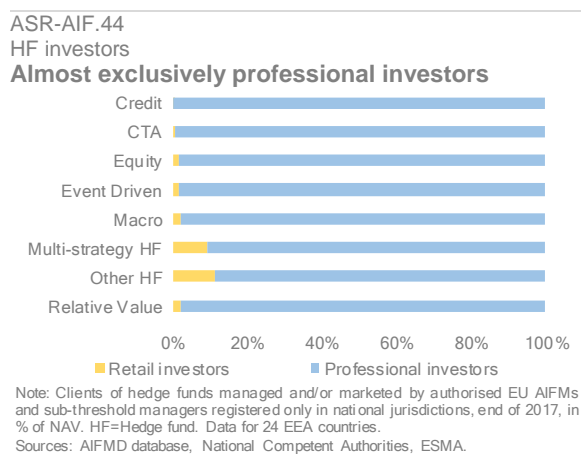
The striking differences between the sources can be explained by different classifications. The AIFMD does not define HFs but provides a list of HF strategies on the basis of which AIFMs self-classify their AIFs. The ECB, in contrast, defines HFs as funds 'which apply relatively unconstrained investment strategies to achieve positive absolute returns, and whose managers, in addition to management fees, are remunerated in relation to the fund's performance' (ECB (2017)), which may encompass funds which do not implement HF strategies (such as funds of HFs or AIFs classified under 'Other AIFs'), and which also capture UCITS-registered funds pursuing the strategies under the definition.

Hedge Fund types: HFs pursue a wide range of strategies (ASR-AIF.51). Strategies relating to equities (such as long/short) account for half of

the NAV of the sector, followed by macro (12%) and commodity trading advisors (CTA) (11%). However, in terms of gross exposures, HF strategies relying heavily on derivatives are predominant: macro account for 65%, followed by relative value (29%), with equity strategies amounting to less than 2%.

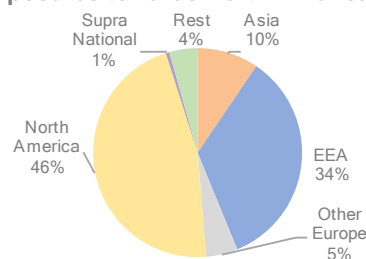
Distribution: Unlike other AIFs, most HFs do not have access to the EU passport, with only 29% able to be sold throughout the EU (ASR-AIF.52). This can be explained by the domicile of HF AIFs, since most of them are domiciled outside the EU, mainly in offshore centres such as the Cayman Islands.¹⁶ As a result, non-EU HF AIFs marketed by EU AIFMs without passporting rights account for most of the NAV (close to 70%).

Hedge Fund investors: HFs are almost exclusively owned by professional investors, with retail investors accounting for less than 5% (ASR-AIF.45). Among professional investors, ownership is split across investor types (ASR-AIF.54). ‘Other collective investment units’ are the main holders of HF shares at 37%, followed by pension funds (15%) and other financial institutions (13%). Similarly, with other AIFs, the ownership of HF shares is highly concentrated, with the top five holders accounting for around 75% of the NAV, across strategies.



Investment focus: HFs invest primarily in North America (46%), followed by the EEA (34%) and Asia (10%). (ASR-AIF.45).

ASR-AIF.45
Regional investment focus
Most exposures towards North America



Note: Regional investment focus of hedge funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments, and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

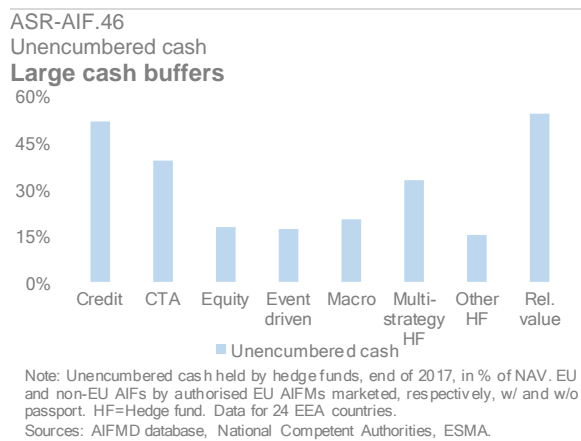
Leverage and liquidity risks

Gross exposures: Gross exposures of HFs are diverse and heterogeneous across strategies (ASR-AIF.54). Macro, CTA, relative value and credit HFs have high exposures relating to derivatives, especially interest-rate derivatives. Other strategies tend to have their main exposures towards securities. Securities account for more than 50% of gross exposures for event-driven and equity HFs (64% and 57% respectively).

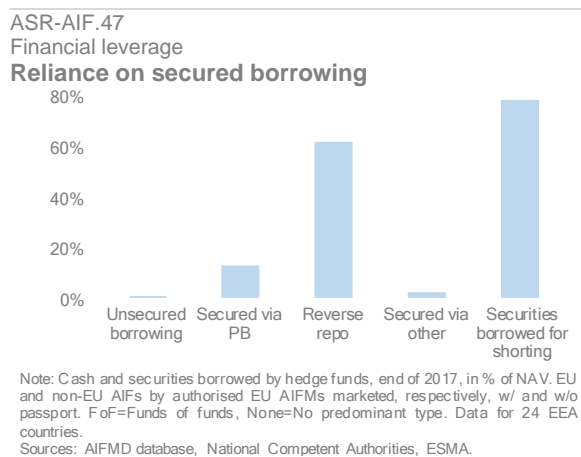
Regarding the **clearing of derivatives** by HFs, most derivatives are bilaterally cleared (ASR-AIF.55). Low levels of central clearing point to the use of bespoke derivatives rather than vanilla derivatives subject to the clearing obligation, which could be explained by the use of complex strategies by HFs. HFs are therefore mainly subject to bilateral risk-management procedures in order to mitigate their counterparty risk.

HFs have high levels of **unencumbered cash** compared to other AIFs (24% for HFs versus 5% for all AIFs). The highest levels of cash are for strategies that have the highest exposures to derivatives, such as relative value, macro, credit and CTA (ASR-AIF.46). This suggests that part of the cash buffers is used to cover future margin calls.

¹⁶ See the section “The structure of the EU and US Hedge Funds industry”, pp. 48-51.

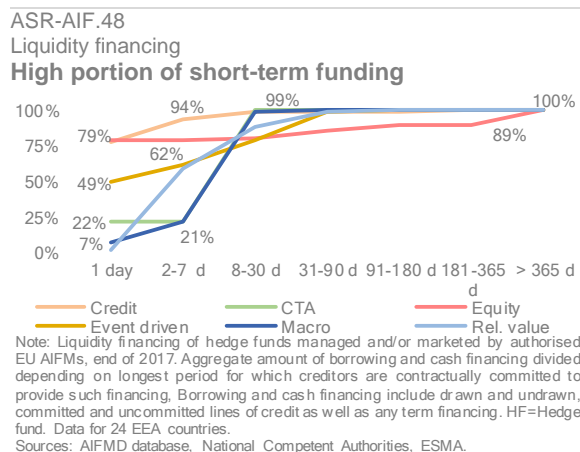


Leverage: HFs are in general strongly leveraged (ASR-AIF.56). Among HF strategies, relative value and macro have the highest levels of leverage (at respectively 4,440% and 1,350% of NAV), even when IRD exposures are excluded. To assess the plausibility of these figures, a comparison with US HFs, as reported by the US Securities and Exchange Commission (SEC), points to qualitatively similar results with highest leverage levels for relative and macro funds, although levels differ significantly (at respectively 2,190% and 1,840% of the NAV).¹⁷ While most of the leverage is due to synthetic leverage, i.e. the use of derivatives, **financial leverage** is also significant for HFs (ASR-AIF.47), amounting to around 160% of the NAV (against 6% for all AIFs). Secured borrowing through repo and reverse repo accounts for 60% of the NAV and funding from prime brokers for 12% of the NAV.

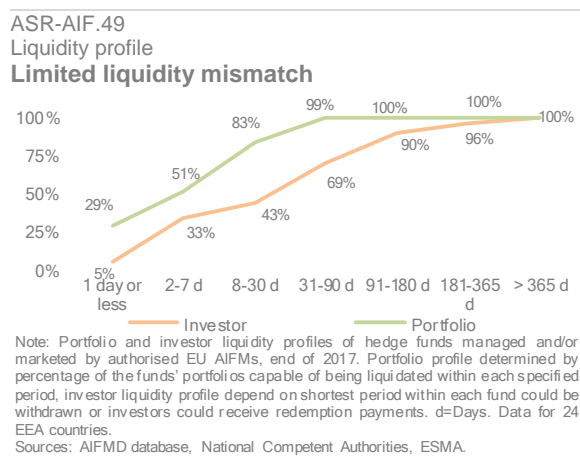


Liquidity risk: HFs reliant on short-term borrowings are exposed to **financing liquidity risk** (ASR-AIF.48). The risk would crystallise if HFs were to use most of their available financing, and then their counterparts were to cut or reduce their funding. Overall, 30% of the funding is overnight, with heterogeneity across strategies.

Some strategies such as credit and event driven have most of their available borrowing overnight (79% and 49% respectively), exposing them to potential rollover risk.

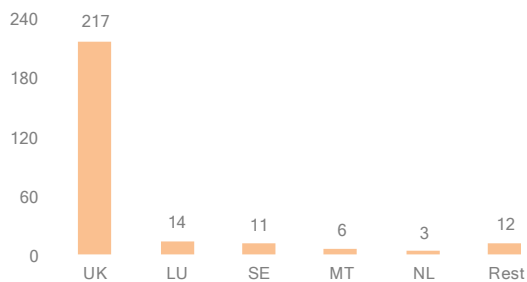


Regarding liquidity risks, most AIFs are open-ended funds which offer weekly to monthly liquidity to investors (ASR-AIF.57). HFs offering daily liquidity only account for 6% of the NAV. At the aggregate level, HFs **liquidity profiles** point to very little liquidity mismatch: Within a week, investors can only redeem up to 33% of the NAV, while 51% of the assets can be liquidated within this time frame (ASR-AIF.49). This pattern remains across all HF strategies, despite different levels of portfolio and investor liquidity. For example, investors in CTA can redeem up to 85% of the NAV within a week while portfolio liquidity is close to 100% at this horizon. For macro funds, investor redemptions within a week amount to 29% of the NAV against 46% for portfolio liquidity.



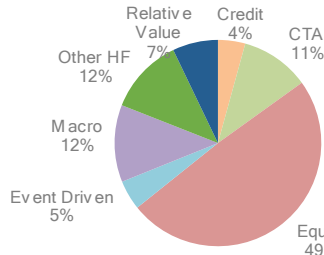
¹⁷ See the section 'The structure of the EU and US Hedge Fund industry', pp. 48-51.

ASR-AIF.50
Size of HFs by country
High concentration in the UK



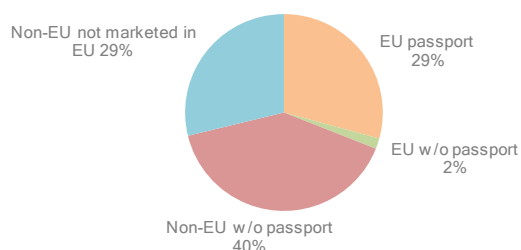
Note: Net Asset Value of Hedge Funds, in EUR bn, end of 2017.
Sources: AIFMD database, National Competent Authorities, ESMA

ASR-AIF.51
HF strategies
Mainly equity strategies



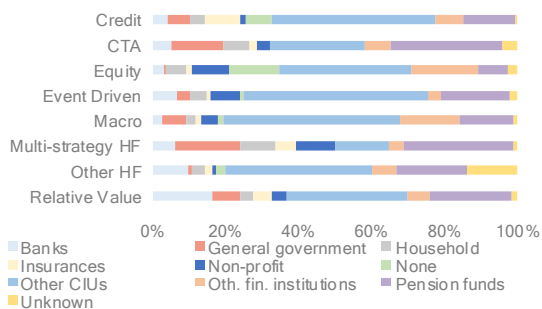
Note: Investment strategies of hedge funds, end of 2017, in % of NAV. Hedge funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.52
EU passport
Lower use of passport



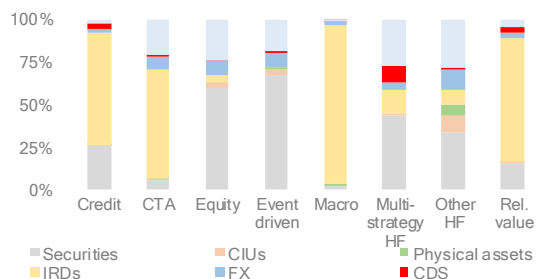
Note: NAV of hedge funds by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers are registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.53
Investor types
High ownership of FoFs



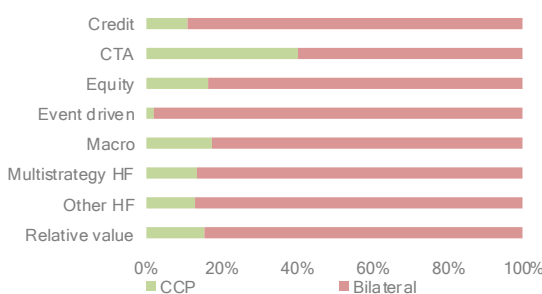
Note: Ownership of units in hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.54
Gross exposures
Heterogeneity across HF strategies



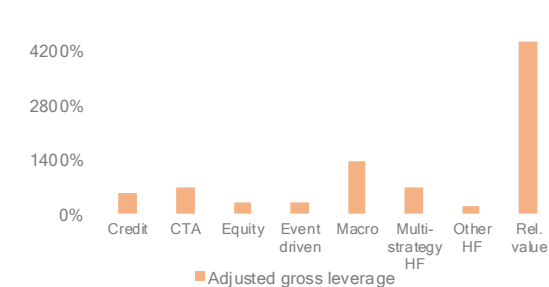
Note: Share of exposures by hedge funds' investment strategies, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.55
Derivatives clearing
Mostly bilateral clearing



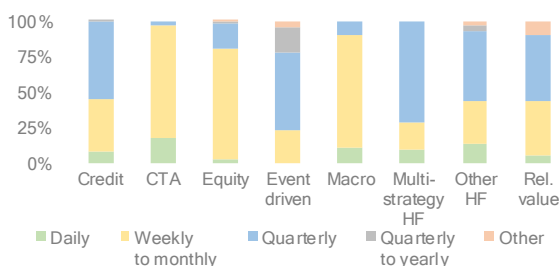
Note: Estimated volume of derivatives cleared bilaterally and via CCP by AIFs managed and/or marketed by authorised EU AIFMs, in %. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.56
Leverage
Very high leverage



Note: Adjusted gross leverage of hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Adjusted gross Leverage computed as total exposure less IRDs with respect to NAV. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National competent authorities, ESMA.

ASR-AIF.57
Redemption profile
Mostly weekly to monthly frequency



Note: Investor redemption frequencies allowed by open-end hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

Private Equity Funds

Private Equity Funds (PE) account for 4% of the NAV of all AIFs, or EUR 204bn. They follow a range of strategies and are almost exclusively sold to professional investors. PE funds make little use of synthetic and financial leverage, and invest mainly in illiquid securities (unlisted securities). Overall, liquidity risk is limited given that PE funds are overwhelmingly closed ended.

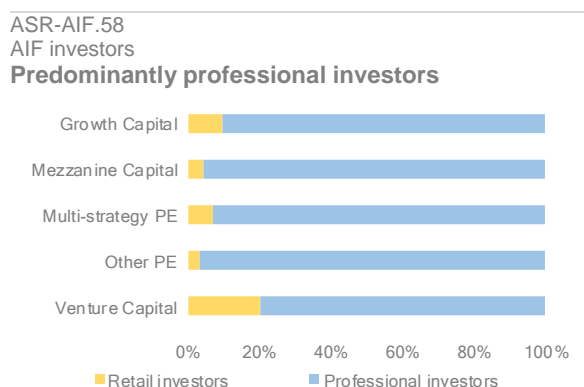
Private Equity Funds — market size and structure

Size: PE funds amounted to EUR 204 bn at the end of 2017, or 4% of all AIFs. The PE fund industry is concentrated in a few countries (ASR-AIF.62), with the top five accounting for 87% of the NAV.

Private Equity Fund types: PE investment strategies are diversified, with 30% of the NAV invested in growth capital, followed by venture capital (14%) and mezzanine capital (4%). Most of the NAV (52%) is related to other unspecified strategies (ASR-AIF.63).

Distribution: As for other types of AIFs, the majority of PE funds have access to the EU passport, with 71% able to be sold throughout the EU (ASR-AIF.64).

Private Equity Fund investors: PE funds are sold mainly to professional investors (92%). Among PE fund types, venture capital has a larger share of retail investors, at 20% of the NAV (ASR-AIF.58). Among professional investors, investment funds, pension funds and insurance companies are the main investors, accounting for 26%, 19% and 9% of the NAV (ASR-AIF.65) respectively.



Note: Clients of private equity funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. PE = Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

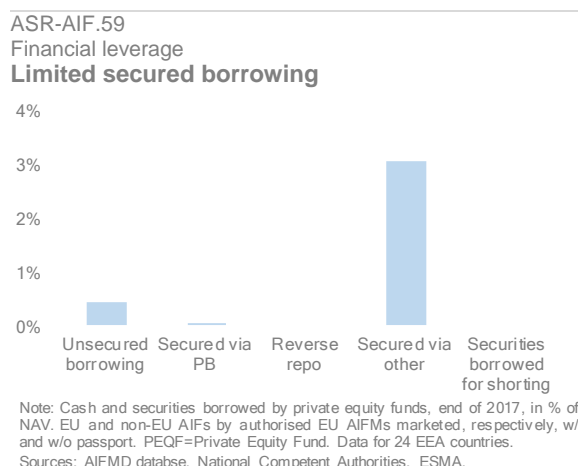
Geographical investment focus: PE funds invest overwhelmingly in the EEA (77%), with limited exposures to other regions. The second-

largest exposure, North America, accounts for only 9% of the NAV (ASR-AIF.67).

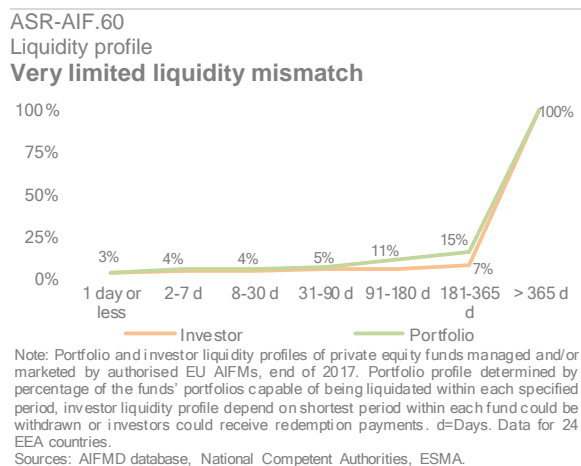
Leverage and liquidity risks

Gross exposures: PE gross exposures are concentrated in securities (around 83% of exposures, ranging from 64% for multi-strategy PE funds to 91% for growth capital), in line with the strategy used (ASR-AIF.67). Unlisted equities account for around 60% of PE exposures.

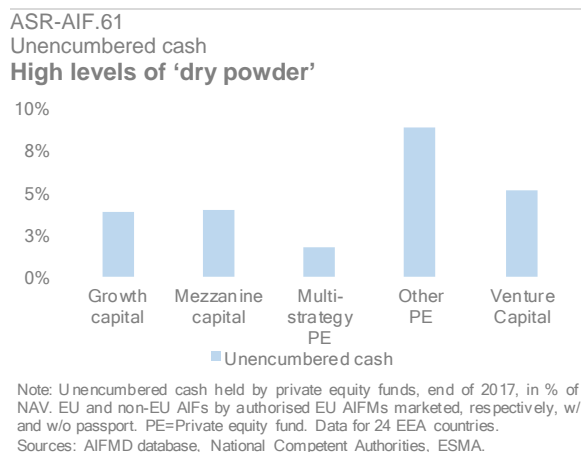
Leverage: PE funds make comparatively limited use of leverage. The AuM-to-NAV ratio is at 113% on aggregate, the lowest among AIF types, as PE funds have very limited exposures to derivatives, with low dispersion across PE fund types (ASR-AIF.68). PE funds make limited use of **financial leverage**, with outright borrowing amounting to 4% of the NAV (ASR-AIF.59). Most borrowing is around a month, implying limited **financing liquidity risk** for most PE funds.



Liquidity risk: Most PE funds are closed-ended funds (95% of the NAV) and the redemption frequency for open-ended PE funds is usually longer than for other types of AIF (ASR-AIF.69). At the aggregate level, open-ended PE funds' **liquidity profile** points to very limited liquidity mismatch: within 6 months, investors can only redeem up to 5% of the NAV, while 11% of the assets can be liquidated within this time frame (ASR-AIF.60). This pattern holds across all PE fund types.



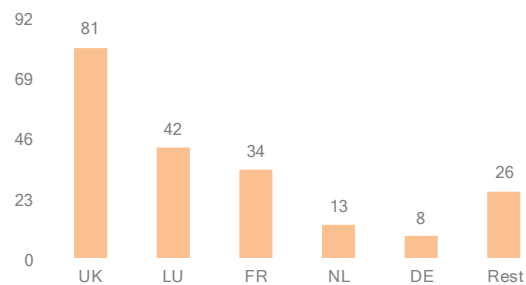
Given limited financing liquidity risk and very low liquidity mismatch, PE funds tend to have relatively high levels of **unencumbered cash** compared to other AIFs at 4.9% of the NAV, with some dispersion across PE fund types (ASR-AIF.61). These cash reserves amount to 'dry powder', money that has not yet been invested by PE fund managers.



ASR-AIF.62

Size of PE funds

Concentration in a few countries

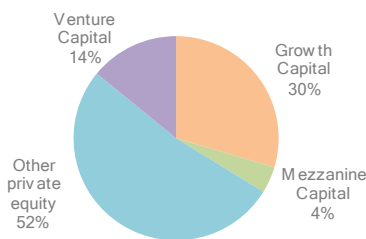


Note: Net Asset Value of private equity funds, in EUR bn, end of 2017. Sources: AIFMD database, National Competent Authorities, ESMA

ASR-AIF.63

PE fund strategies

Diversified strategies

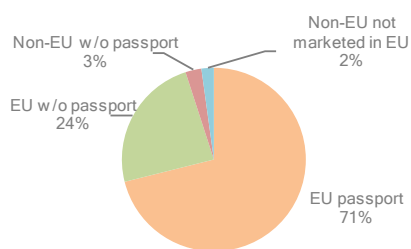


Note: Investment strategies of private equity funds, end of 2017, in % of NAV. Private equity funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.64

EU passport

High access to passport

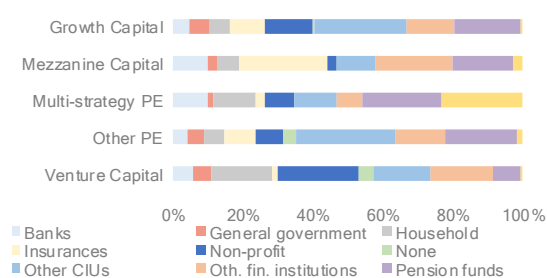


Note: NAV of private equity funds by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport, sub-threshold managers registered only in national jurisdictions w/o passport. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.65

PE fund investors

Mainly professional investors

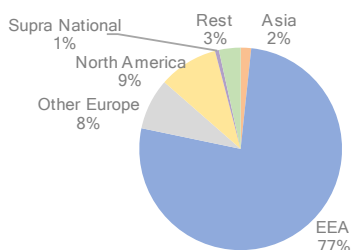


Note: Ownership of units in private equity funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. PE=Private equity fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.66

Regional investment focus

Mostly EEA

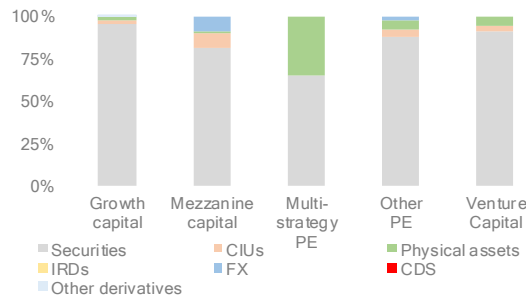


Note: Regional investment focus of private equity funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments, and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.67

Gross exposures

Mainly unlisted securities

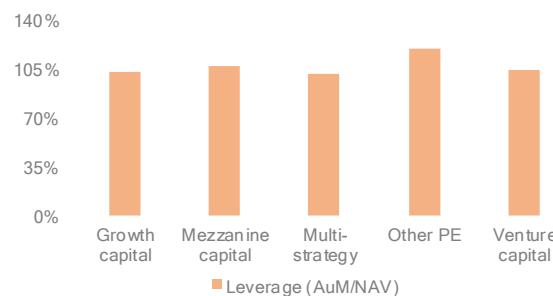


Note: Share of exposures by private equity funds' investment strategies, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. PE=Private equity fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.68

Leverage

Limited use of leverage

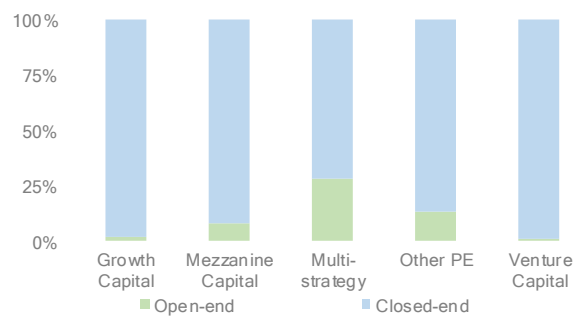


Note: Leverage of private equity funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Leverage computed as AuM/NAV ratio. PE=Private equity funds. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

ASR-AIF.69

Redemption rights

Mainly closed-ended funds



Note: Redemption rights provided in the ordinary course to investors in private equity funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. PE=Private equity fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Other AIFs

'Other AIFs' account for 63% of the NAV of EU AIFs, at around EUR 3,103bn. This residual category of the AIFMD reporting regime covers a range of strategies, with fixed income and equity strategies accounting for 70% of the NAV and an additional residual category amounting to 27%. A more detailed analysis of underlying strategies and potential classification issues in the 'Other AIF' category will be provided in future editions of this report. Other AIFs are mainly sold to professional investors, although there is a larger retail investor presence in the residual category. They make little use of financial or synthetic leverage. While most types of other AIFs have very limited liquidity risk, the residual category faces some liquidity mismatch.

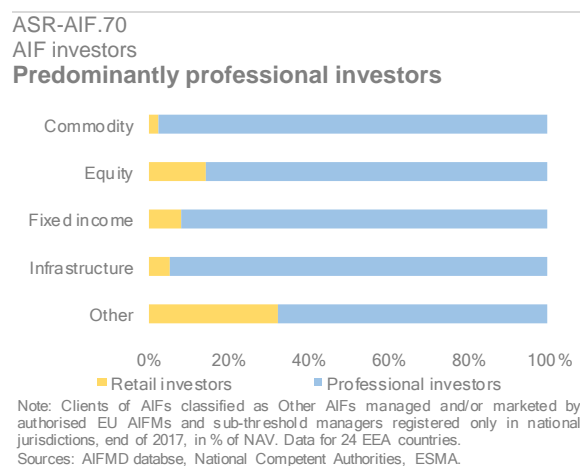
'Other AIFs': — market size and structure

Size: The 'Other AIFs' category is the largest type of AIF, with a NAV of around EUR 3,103bn, concentrated in a few countries (ASR-AIF.74). In relative terms, 'Other AIFs' constitutes the main AIF type in most EU countries, accounting for around 80% of the NAV in Germany, the Netherlands, Poland and Spain, and close to 50% or more in France, Luxembourg and the United Kingdom.

'Other AIF' types: 'Other AIFs' can use a wide range of strategies (ASR-AIF.75). The main strategies are related to fixed income (41% of the NAV) — which includes money-market AIFs — and equity (29%). A significant portion of the NAV of other AIFs (27%) is difficult to identify, as managers did not refer to a specified strategy.

Distribution: Like most types of AIF, other AIFs have access to the EU passport to a large extent, with 77% able to be sold throughout the EU (ASR-AIF.76).

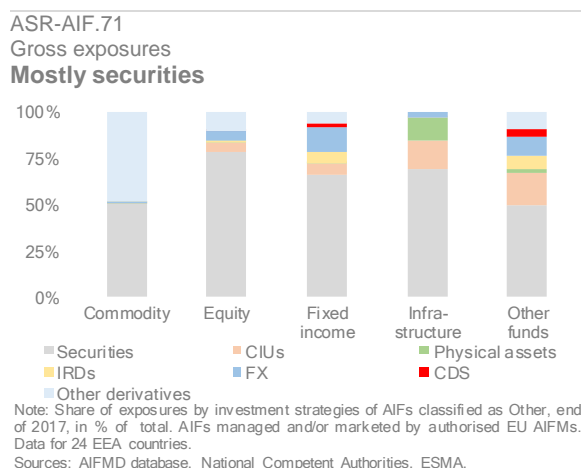
'Other AIF' investors: Other AIFs are sold mainly to professional investors (84%), although retail investor presence is higher for the residual category ('other'), accounting for 32% of the NAV (ASR-AIF.71). Among professional investors, pension funds and insurance companies are the main investors, accounting for 30% and 20% of the NAV respectively. However, there are large differences by strategies (ASR-AIF.77). Banks hold more than 10% of the NAV for fixed income and other categories.



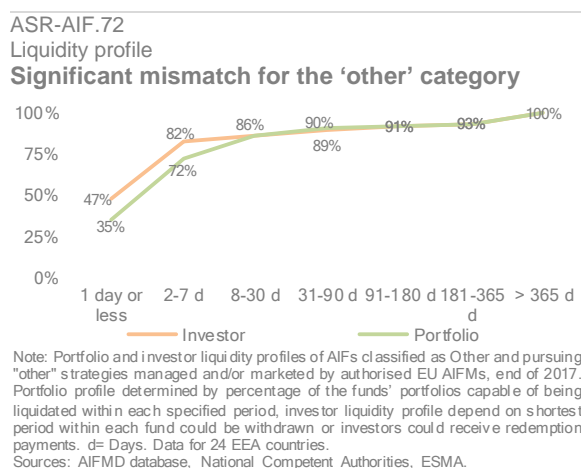
Geographical investment focus. Other AIFs invest primarily in the EEA (59%), followed by North America (18%) and Asia (8%). (ASR-AIF.78).

Leverage and liquidity risks

Gross exposures: AIF gross exposures are in line with the strategy used (ASR-AIF.71). Equity and fixed-income AIFs are mainly exposed to securities (listed equities for equity AIFs and mainly sovereign and investment grade (IG) corporate bonds for fixed income AIFs). Infrastructure AIFs have significant exposures to physical assets, and commodity AIFs to other derivatives, which include commodity derivatives. The residual category ('other') is more diversified, reflecting very different strategies pursued by the managers.



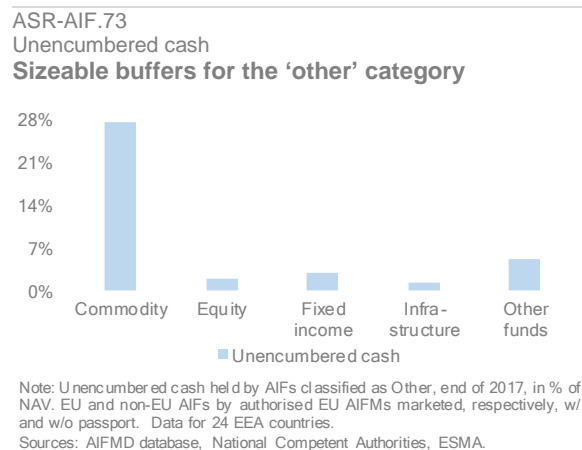
Leverage. Other AIFs have limited use of leverage: Regulatory AuM to NAV is 137% on aggregate, as they have limited exposures to derivatives and have little use of financial leverage (less than 2% of the NAV). Among other AIF strategies, leverage remains limited (ASR-AIF.79).



Liquidity risk. Regarding liquidity risk, most other AIFs are open-ended funds, with the exception of infrastructure funds, offering from daily to weekly and monthly liquidity to investors (ASR-AIF.80). At the aggregate level, other AIFs' **liquidity profile** points to very limited liquidity mismatch. Within a week, investors can redeem up to 80% of the NAV, while 77% of the assets can be liquidated within this time frame (ASR-AIF.81). However, for the liquidity mismatch to occur, investors would need to redeem more than 77% of the NAV within a week, which is extreme based on historical standards. The liquidity mismatch is mainly related to the 'other' category (ASR-AIF.72), since for the other strategies the liquidity of the assets is higher than potential redemption pressures from investors. This liquidity mismatch represents a potential risk from an investor-protection perspective, since retail

investors hold a significant share of units issued by this category of other AIFs.

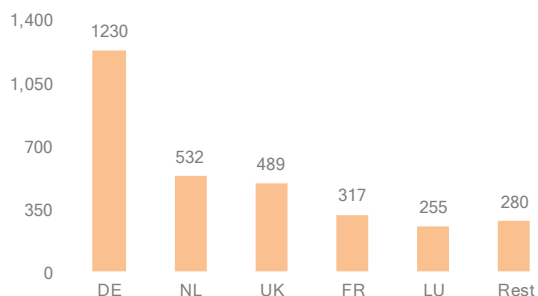
Some types of other AIFs report high levels of **unencumbered cash** (ASR-AIF.73): for commodity funds cash accounts for 27% of the NAV. Such a high level of cash is in line with the reliance on derivatives for this type of AIF.



ASR-AIF.74

Size of other AIFs

Main AIF type in most countries

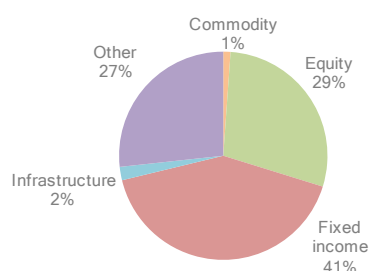


Note: Net Asset Value of AIFs classified as Other, in EUR bn, end of 2017. Sources: AIFMD database, National Competent Authorities, ESMA

ASR-AIF.75

Other AIFs strategies

Fixed income and equity dominant

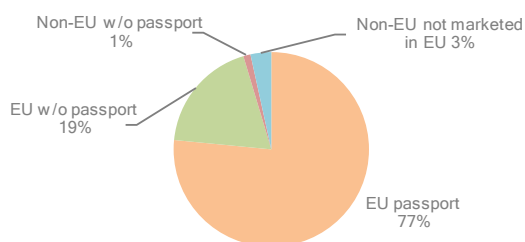


Note: Investment strategies of AIFs classified as Other, end of 2017, in % of NAV. AIFs managed and/or marketed by full scope EU AIFMs and sub-threshold managers registered only in national jurisdictions. Data for 24 EEA countries. Sources: National Competent Authorities, ESMA.

ASR-AIF.76

EU passport

Most other AIFs can be passported

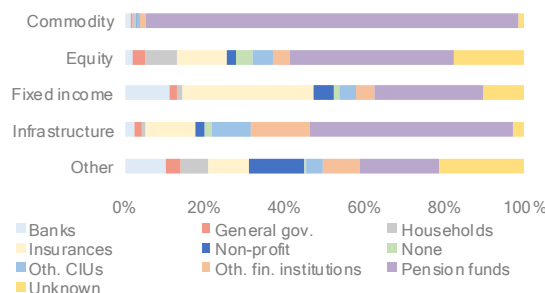


Note: NAV of AIFs classified as Other by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.77

Other AIFs investors types

Mainly pension funds

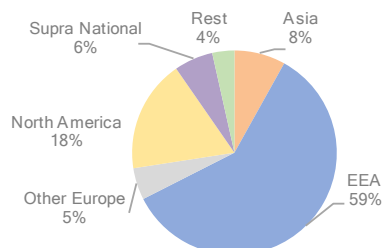


Note: Ownership of units in AIFs classified as Other AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. CIUs=Collective investment undertakings. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.78

Regional investment focus

Mostly EEA

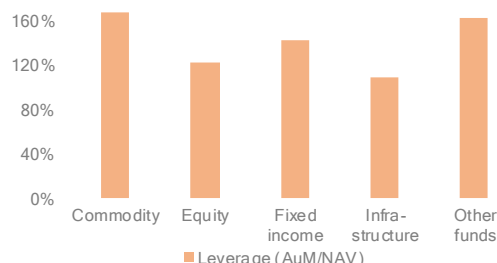


Note: Regional investment focus of EU AIFs classified as Other managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.79

Leverage

Limited use of leverage

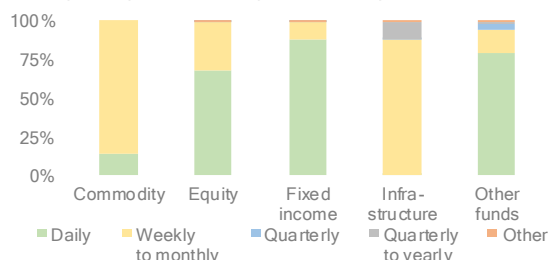


Note: Leverage of AIFs classified as Other managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Leverage computed as AuM/NAV ratio. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

ASR-AIF.80

Redemption frequency

Mainly daily to monthly frequency

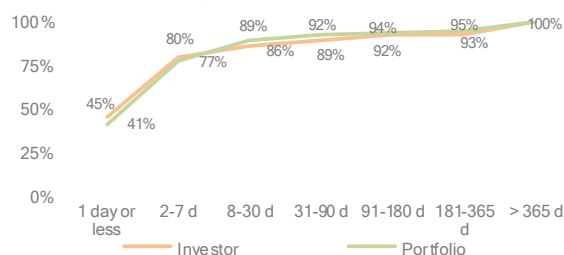


Note: Investor redemption frequencies allowed by open-end AIFs classified as Other managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.81

Liquidity profile

Moderate liquidity mismatch



Note: Portfolio and investor liquidity profiles of AIFs classified as Other managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d=Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

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Statistical methods

Fundamental issues in AIFMD data handling and statistics

The extensive reporting obligations introduced by the AIFMD for AIFs and their managers allow NCAs to oversee whether AIFMs are properly addressing risks associated with their activities. The AIFMD-based data collection provides detailed information on the European AIF market — an exhaustive list of fund managers, their access to the EU marketing passport and the size and characteristics of the marketed products, such as the use of leverage and the liquidity profiles. The current coverage of AIFMD data is around 80% of the EU AIF market, in terms of both the number of fund managers and the NAV of AIFs. This article describes the key features of AIFMD data and the specificities in their statistical evaluation. We also describe the remaining data-quality issues, with a focus on reported leverage data. In addition, we provide a first overview of the AIFMD NPPR market.

Introduction

The AIFMD has created a comprehensive regulatory and supervisory framework for AIFMs at European level. In addition, the AIFMD has created a single marketplace in the EU targeted at professional investors for alternative funds, that is HFs, PE funds, RE funds or other structures unable to fit within the UCITS regime due to liquidity or portfolio-concentration issues.

One of the major characteristics of the AIFMD is the introduction of extensive reporting obligations¹⁸, on a regular basis, to allow NCAs and ESMA to assess trends in the alternative fund industry and monitor financial stability.¹⁹

Prior to the 2007 financial crisis, the most important implication of AIFs' opaqueness for financial stability was the uncertainty that could translate into concerns about counterparty and credit risks in highly interconnected financial markets (Acharya et al., 2009).²⁰

Harmonised data collection

The AIFMD-based data collection in the AIF industry is unprecedented at the EU level²¹ and has a major impact on the quantitative supervision of AIFMs. The standardisation of the reporting obligation content implies a uniform implementation of the rules established by the AIFMD. In line with the principle of regulating the manager and not the product, an AIFM must provide the requested information on behalf of the AIFs it manages²² to its home NCA. The AIFMD also requires NCAs to cooperate and exchange information on the AIFMs under their supervision.²³ To comply with the reporting requirements set out in the AIFMD, the level II regulation²⁴ specifies the frequency of reporting, which may vary depending on several characteristics of the AIFM and the complexity of the AIF under management:

- the status of the manager, i.e. whether it is an authorised EU AIFM, registered EU

¹⁸ This reporting obligation is laid down by Article 3(3)(d) and Article 24(1), (2) and (4) of the AIFMD.

¹⁹ The US Dodd-Frank Act follows a similar approach in this respect, by mandating registration and reporting for systemic risk oversight.

²⁰ Researchers have shown that while public disclosure (to markets) can harness market discipline, private disclosure (to regulators) provides authorities with the necessary information to monitor the stability of the financial institution (Danielsson et al., 2005). Therefore, disclosure requirements are a key aspect of macro-prudential regulation in the context of the AIF industry.

²¹ In 2013 the US SEC started to periodically collect information from registered advisors who manage

private funds. This is applicable to private funds with at least USD 150mn in regulatory assets under management, which generally include borrowings, short-sales or other modes of leverage.

²² This reporting requirement also apply to non-EU AIFMs that manage AIFs marketed in the Union.

²³ See Article 53 of the AIFMD. ESMA and the ESRB should also be informed.

²⁴ Commission Delegated Regulation (EU) No 231/2013.

AIFM, or whether it is a non-EU AIFM operating under the NPPR;

- the value of regulatory AuM in portfolios of AIFs managed by a given AIFM²⁵;
- whether the AIF employs leverage;
- the type of assets in which an AIF invests.

Annex IV to the level II regulation contains details of the information to be reported.²⁶ Overall, most level II measures focus on the objectives to address micro-prudential risks and ensure investor protection. Given that the reporting frequencies differ for different funds, full-scale data covering the entire EU AIF market are available only on a yearly basis, i.e. at the end of the year. The ESMA guidelines on reporting obligations complement Annex IV to the level II regulation by providing technical definition and filling instructions.²⁷

Under Article 24(1) of the AIFMD, for each managed EU AIF or AIF marketed in the Union, managers are required to report on the breakdown of investment strategies, the concentration of investors, the main categories of assets held by the AIF — including principal exposures and concentration — and the regional investment focus. In addition, under Article 24(2) and (4) authorised AIFMs, and AIFMs employing leverage on a substantial basis, are subject to a more extensive disclosure of instruments traded, exposures, AIFs' market risks and liquidity profiles, use of leverage and the results of the stress test. Using the reported information, NCAs are in the position to oversee whether AIFMs properly address micro-prudential risks. While some reporting items are mandatory for all AIFs, the regulatory reporting template requests that specific information be disclosed only if the AIF is affected (e.g. the possibility for investors to redeem their shares in the ordinary course). A detailed inventory of the indicators built and the relative coverage, defined as the ratio of the

total number of AIFs reporting it to the number of AIFs expected to report it, is provided in the data inventory.

The AIFMD passport

The AIFMD does not address the funds themselves, but rather the fund managers and their current business activities, independently of the specific strategy or business model. Its scope is wide and applies not only to EU AIFMs managing one or more AIFs, but also to all non-EU AIFMs that manage or market one or more AIF in the Union independently of whether these are EU or non-EU AIFs.²⁸ The marketing regime provided by the directive is a complex set of rules that establish two marketing methods:

- (1) the single marketplace known as the EU marketing passport;
- (2) the NPPR established at Member State level.

Prior to the AIFMD, such marketing passport was only available to UCITS. Unlike the UCITS directive, the AIFMD passport is instead granted to managers and the possibility to access it depends strictly on their place of origin (i.e. jurisdiction of the manager) and the domicile of the managed AIFs.

Currently, the marketing passport is only and automatically available to full-scope authorised EU AIFMs managing EU-domiciled AIFs. The explicit prohibition for any AIFM to manage or promote a fund unless authorisation has been granted by the NCA of the Member State in which the manager is domiciled lies at the core of the directive itself. The definition of the common authorisation framework allows supervisors to identify managers and conduct effective oversight relying on the reporting

²⁵ The rules for the computation of the asset under management are set out in Article 2 of the level II regulation.

²⁶ Annex IV to the implementing regulation provides a whole pro forma reporting template, which consists of more than 40 detailed questions and 300 data fields.

²⁷ The purpose of the ESMA guidelines is to ensure the common, uniform and consistent application of the reporting obligations to NCAs stemming from Article 3(3)(d) and Article 24(1), (2) and (4) of the AIFMD. They provide clarification on the information that AIFMs must report to NCAs, the timing of the

reports and the procedures to be followed when AIFMs move from one reporting obligation to another. The guidelines have been in application since 8 October 2014.

²⁸ Under the AIFMD, the activity of marketing includes any direct or indirect offering or placement at the initiative of the AIFM or on behalf of the AIFM, of units or shares in a fund it manages for or with investors domiciled in the EU. See Article 4.

obligations introduced by the directive. Once an EU AIFM is authorised in one EU Member State, it is allowed to market its products to professional investors²⁹ in any other Member States without the need for any further authorisation (ASR-AIF.82).

ASR-AIF.82

Scope of the AIFMD

Main differences between the AIFMD and the UCITS directive

The AIFMD provides an EU-level legal framework for the authorisation, supervision and oversight of managers of a range of AIFs which are not subject to the tight requirements under the UCITS directive. Investment funds managed or marketed in the Union, either open or closed ended, which do not ask for authorisation under the UCITS directive to obtain the UCITS regulatory label, must be managed by an entity authorised or registered in a Member State as an AIFM.

The directive regulates only the marketing of AIFs to professional investors as defined in Directive 2004/39/EC on markets in financial instrument (MiFID). The marketing of AIFs to retail investors and the sale of units or shares on the initiative of the investor are not covered by the directive, and it is left to NCAs to decide on the regulation of the marketing of AIFs to retail investors. Typically, a conservative retail-facing fund would come under the AIFMD where the fund does not follow the UCITS asset-allocation rules. A second crucial difference between the two regulatory regimes is that the AIFMD does not regulate the products, i.e. the funds, through portfolio-shaping rules, but instead focuses on the managers by setting minimum operating requirements, mandatory registration or authorisation and conduct of business rules. In so doing, it applies horizontally to all asset managers.

In other words, the AIFMD does not specify eligible assets, limit exposure or issuer concentration, leverage or risks. The UCITS directive on the other hand contains detailed provisions with regard to what UCITS are and are not allowed to do. This covers issues such as diversification requirements, limitations on the types of assets the fund might invest in or the obligation to redeem units upon request at short notice. Such limitations do not apply under the AIFMD, as they are not deemed appropriate for professional investors.

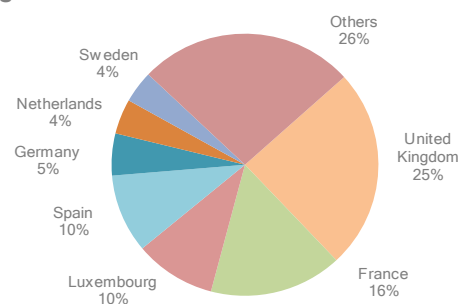
This framework provides some exemptions to increase the efficiency of the regulation and respond to the needs of smaller or specialised funds. Sub-threshold AIFMs, i.e. managers with less than EUR 100mn in AuM or EUR 500mn if investors are locked-in for 5 years and in the absence of leverage, as indicated by Article 3(2), are partially exempted from complying with some provisions of the AIFMD³⁰ since their impact on financial stability is limited (ASR-AIF.2). AIFMs invoking this *de minimis* rule must register only in their home Member State. As an immediate consequence, they are

allowed to place their products only in their jurisdiction and provide NCAs with simplified reporting. However, EU sub-threshold AIFMs can still exercise the right to 'opt in', that is they can request the relevant NCAs to obtain passporting rights in return for full compliance. The ESMA public register³¹ makes it possible to precisely assess the population of authorised AIFMs, that is managers under the full scope of the directive. According to the ESMA register, 2,402 EU AIFMs were fully authorised and expected to report information to their home NCA under Article 24 of the AIFMD at the end of 2017.³² Around 50% of the full-scope authorised EU AIFMs is domiciled in three Member States (ASR-AIF.83).

Sub-threshold managers, subject to a lighter regime, are registered and known only in their home state before filing to the ESMA central database.

ASR-AIF.83

Share of entities authorised under the AIFMD by country 50% of full-scope AIFMs based in three Member States



Note: Number of managers authorised under AIFMD by national competent authorities and notified to ESMA, end of 3Q17, in %.
Sources: ESMA Registers.

To date, the only marketing method available for any other possible full-scope manager-product combination, that is EU/non-EU full-scope AIFM and EU/non-EU AIF, is the private placement regime in each EU State where the AIFM wishes to market its AIFs. The immediate consequence is that both non-EU managers wishing to market EU/non-EU AIFs in the Union and EU managers marketing non-EU AIFs do not benefit from passporting. National private placement rules are at the discretion of each Member State and differ across EU countries, noting that some jurisdictions do not permit any

²⁹ Investors are considered to be professional clients or treated as professional clients within the meaning of Annex II to Directive 2004/39/EC on markets in financial instruments (MiFID).

³⁰ See Article 3(2) of the AIFMD.

³¹ The ESMA register is maintained by NCAs of the Member States. See:

https://registers.esma.europa.eu/publication/searchRegister?core=esma_registers_upreg

³² Entities authorised before 1 October 2017.

marketing without a passport and are then *de facto* closed to non-EU AIFs (ASR-AIF.84).

The directive has limited applicability as regards sub-threshold AIFMs, without differentiating between EU and non-EU managers and creating the apparent anomaly that sub-threshold non-EU managers operating under the NPPR are subject to higher transparency requirements than domestic registration-only AIFMs. It is actually up to each Member State how to apply the NPPR to non-EU AIFMs and EU AIFMs managing and/or marketing non-EU AIFs that would qualify as sub-threshold AIFMs.³³

The AIFMD also envisages, in principle, the possibility to confer the marketing passport to both non-EU managers, that is managers established outside the EU, and authorised EU managers of non-EU funds.³⁴ The provisions relating to the extension of the passport are not yet applicable. Once the non-EU passport becomes available, non-EU managers and EU AIFMs marketing non-EU funds will be able

provide cross-border services based on a single authorisation.

To summarise, non-EU AIFs may then be marketed without benefiting from the AIFMD passport in three different situations:

- by sub-threshold AIFMs;
- under Article 36, by an EU AIFM;
- under Article 42, by non-EU AIFMs.

AIFMD reporting obligations cover only EU AIFs or AIFs marketed in the EU. As a consequence, EU managers are not mandated by Article 24(2) of the directive to report for their non-EU AIFs which are not marketed in the EU. Nevertheless, in order to have a comprehensive set of information for a proper assessment of systemic risk, ESMA and NCAs have required AIFMs to report full information for these AIFs when they are designated masters of EU feeder AIFs or the feeders are marketed in the EU.³⁵

ASR-AIF.84

AIFMD marketing regimes and access to the EU passport

	Regime	Third-country regime	AIFM domicile	AIF domicile	Passporting rights	AIFMD provision
EU Passport	• Authorisation (full compliance with the AIFMD)		• EU	• EU	• Marketing and/or managing passport	• Articles 7, 31 and 32
	• Authorisation (when available, full compliance with the AIFMD)	• Third-country regime (not in place)	• EU	• Non-EU	• Marketing passport	• Article 35
			• Non-EU	• Non-EU		• Articles 37 and 40
				• EU	• Marketing and/or managing passport	• Articles 37 and 39
No passporting rights	• National registration (sub-threshold)		• EU/Non-EU	• EU/Non-EU	• Marketing without passport	• Article 3(2), Article 3(3) and Article 3(4)
	• Authorisation (full compliance with the AIFMD)	• Third-country	• EU	• Non-EU	• Marketing without passport	• Article 36

³³ See European Commission Q&As on the AIFMD: https://ec.europa.eu/info/sites/info/files/aifmd-commission-questions-answers_en.pdf

³⁴ ESMA has issued its advice to the Commission on whether to extend the passporting regime to the management and marketing of AIFs by non-EU AIFMs, and to the marketing of non-EU AIFs by EU AIFMs in

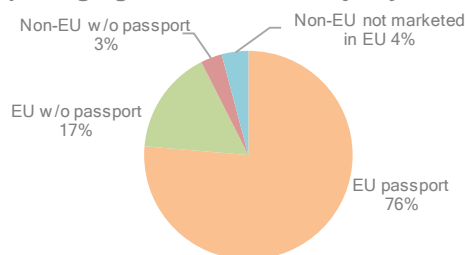
these countries.

³⁵ This information is no longer requested if a non-EU master AIF and the feeder AIFs do not have the same AIFM. See ESMA opinion 2013/1340 on 'Collection of information for the effective monitoring of systemic risk under Article 24(5), first sub-paragraph, of the AIFMD'.

• NPPR (full compliance with the AIFMD)	regime (in place)	• Non-EU	• Master AIFs not marketed in EU	• Article 34
		• Non-EU	• EU	• Article 42
		• Non-EU	• Marketing without passport	

Note: Marketing regimes and access to the EU passport established by the AIFMD. Both non-EU AIFMs and EU AIFMs marketing non-EU AIFs can currently only market their funds in the EU according to the rules established under the NPPR at the discretion of each Member State. Subject to ESMA's opinion, non-EU AIFMs (and for EU AIFMs in respect of non-EU AIFs) can either become authorised to use the passport when it becomes available or continue to use the NPPRs. Green shading highlights AIF categories analysed in the report and displayed in the statistical annex; grey shading highlights AIFs marketed by non-EU AIFMs under the NPPR; provisions not yet in place not highlighted. NPPR=National private placement regime. Source: ESMA.

ASR-AIF.85
Use of AIFMD passport by NAV of AIFs
Passporting rights available to majority of AIFs



Note: NAV of AIFs by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

According to the data reported, at the end of 2017 the majority of AIFs in terms of the NAV (76%) is from full-scope AIFMs with access to the EU marketing passport. However, that does not imply that in practice managers market their products across EU Member States, since the AIFMD does not provide data on the domicile of investors.

Data intake and perimeter of the analysis

This report presents the EU AIF market at the end of 2017 using the information set made available by NCAs of EU Member States in the ESMA central database. The analysis focuses on data provided to supervisors by authorised EU and sub-threshold AIFMs on behalf of AIFs they manage. The statistics presented here are based on the reporting requirements specified in the AIFMD, the level II regulation and the ESMA guidelines to the AIFMD reporting. The analysis

does not cover products marketed by non-EU AIFMs under Article 42 of the AIFMD in Member states where an NPPR is established.

For the end of 2017, 24 NCAs transmitted AIFMs and AIF data to the ESMA central database (ASR-AIF.86).

Both managers and funds, depending on their size, activities and characteristics, have to determine their reporting frequency³⁶, which can be yearly, semi-annually or quarterly. Thus, a complete market overview can be achieved only annually, at the end of each calendar year.

ASR-AIF.86
Coverage of authorised full-scope AIFMs
Most NCAs transmit extensive data

Coverage of full-scope AIFMs	Country
Above 80%	Austria, Belgium, Cyprus, Czech, Estonia, Finland, Germany, Italy, Latvia, Luxembourg, Norway, Poland, Slovakia, Slovenia, Spain, Sweden, United Kingdom
Between 50% and 80%	Croatia, France, Malta, Netherlands
Below 50%	Ireland ³⁷ , Hungary, Portugal
No report transmitted ³⁸	Bulgaria, Denmark, Greece, Liechtenstein

Note: Full-scope AIFMs reported to the central database, end of 2017. Coverage assessed comparing data intake with ESMA public register. Source: AIFMD database, National Competent Authorities, ESMA.

The lack of full coverage could be explained, at least partially, by:

- the frequency of reporting as the AIFMs having an annual reporting frequency and that are authorised in the last quarter of the

³⁶ In certain instances, the directive may require more frequent reporting on an AIF than its AIFM and vice versa. Therefore, it is possible to submit these returns at different frequencies.

³⁷ For the end of 2017, only a fraction of AIFs managed and/or marketed by Irish AIFMs were transmitted to the

ESMA central database.

³⁸ According the ESMA Register of authorised entities, Lithuania and Iceland, do not have any information at AIFM and/or AIF level to report according the ESMA public register.

year start to report from the beginning of the second following year;

- potential mistakes in the AIFM register (e.g. a situation in which the manager's authorisation to manage and/or market an AIF expire but the manager has not been cancelled from the ESMA Register).

Data collected and made available in the ESMA central database cover 1,873 authorised full-scope EU AIFMs, representing 78% of the known population, and 2,386 sub-threshold managers. Among the authorised EU managers, 376 have acquired the right to use the passport and access the single market by opting into full AIFMD compliance.

ASR-AIF.87

AIFMs' data available to ESMA

Comprehensive overview of the EU market

AIFM type	AIFMs filing	AIFMs without information
EU full-scope	1,873	145
Opted-in	376	
Sub-threshold	2,411	334
EU	2,106	291
Non-EU	305	43
Total	4,284	479

Note: Full-scope authorised EU AIFMs and sub-threshold managers filing under the AIFMD to NCAs and transmitted to the ESMA central database, end of 2017.

Source: AIFMD database, National Competent Authorities, ESMA.

ESMA guidelines specify that AIFMs and AIFs that have commenced have to start reporting from the first day of the calendar quarter following authorisation or registration. Notably, AIFMs and AIFs that have not started any activity must still report a nil return to the home competent authority. On a related point, AIFMs have to provide a report upon liquidation of the AIFs they manage.

Each AIF managed within the scope of the directive must only have one single AIFM, responsible for compliance with the requirements of the AIFMD. For this reason, the inclusion in the analysis of products marketed by non-EU sub-threshold managers does not introduce any bias

or create double counting of entities, as their AIFs cannot be passported.

As of 31 October 2018, NCAs had gathered and made available to ESMA 30,005 reports for the end of 2017 of AIFs managed and/or marketed by authorised EU and sub-threshold AIFMs. Of the initial data intake, around 1,650 AIFs report a nil return. The definition of the AIFs' reference sample for the analysis requires further data-cleaning operations and consistency checks.

The volume of files is not unexpectedly high as, according to ESMA guidelines, AIF-specific information should be reported at the level of the compartments or sub-funds when the AIF takes the form of an umbrella fund. Moreover, the number of AIFs reported to the central database is in line³⁹ with other market data sources.⁴⁰

ASR-AIF.88

Data cleaning

Definition of the AIF reference sample

A series of preliminary operations are performed to define the sample of analysed AIFs and their characteristics. These include the following:

- Exclusion of unworkable reports.

As for AIFMs, AIFs' reports may indicate that there is no information to be reported for the specified reporting period (nil return). Firms also have the possibility to cancel previously submitted erroneous reports or amend existing ones. For this reason, multiple amended reports by the same fund for the same reporting period have to be detected so that the data can be properly consolidated.

- Exclusion of files missing critical information.

In a few occurrences, AIF reports may not provide any indication of the investment strategy. Overall, the number of cases is negligible. In particular, at the end of 2017 only 14 FoFs and 2 RE funds reporting a NAV equal to 0, and 1 PE fund with a NAV of EUR 0.2bn did not provide an indication of their primary investment strategy.

- Identification of feeder and master AIFs.

- Identification of each AIFM jurisdiction and managed and/or marketed AIF domicile.

The final reference sample is constituted by close to 26,400 AIFs.⁴¹ More than 75% of them are managed by full-scope AIFMs benefiting from the EU passport. In terms of NAV, the proportion is comparable, i.e. 76% of the total NAV is managed by European authorised AIFMs (ASR-AIF.89).

³⁹ At the end of the year 2017 data inflows from the Central Bank of Ireland dropped drastically with respect to the volume of files previously reported.

⁴⁰ See the EFAMA Quarterly statistical report Q4 2017: <https://www.efama.org/statistics/SitePages/European%20Quarterly%20Statistical%20Release.aspx>

⁴¹ Only a negligible number of filers do not indicate the pursued investment strategy. In particular, 14 FoFs and 2 RE funds reporting a NAV equal to 0 and 1 PE fund with a NAV of EUR 0.2bn did not provide an indication of their primary investment strategy. This is the result of an incorrect data transmission.

ASR-AIF.89

AIFMs' data available to ESMA

Comprehensive overview of the EU market

Marketing regime	AIFs filing	AIFs withdrawn	NAV (EUR bn)
EU AIFs			
with passport	20,065	481	3,756.4
without passport	5,307	185	796.6
Non-EU AIFs			
without passport	549	23	163.3
not marketed in EU	457	10	203.5
Total	26,378	699	4,919.8

Note: Number and NAV of AIFs by marketing regime, end of 2017. AIFs managed and/or marketed by authorised full-scope EU AIFMs and sub-threshold managers filing under the AIFMD to NCAs and transmitted to the ESMA central database, at the end of 2017. Source: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF.91

Feeder AIFs

Prevalence of EU master-feeder AIFs

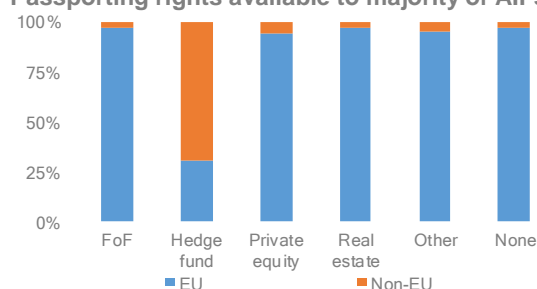
Feeder AIFs	EU	Non-EU	Total
AIFs filing			
with EU master	800	392	1,192
without EU master	425	181	606
Total	1,225	573	1,798
NAV (EUR bn)			
with EU master	118.1	119.7	237.8
without EU master	37.3	38	75.3
Total	155.4	157.7	313.1

Note: Number and NAV of feeder AIFs by domicile, end of 2017. Source: AIFMD database, National Competent Authorities, ESMA.

EU AIFs marketed by sub-threshold managers without access to the passport amount overall to around EUR 800bn in terms of NAV.

ASR-AIF.90

Use of AIFMD passport by NAV of AIFs

Passporting rights available to majority of AIFs

Note: Share of EU and non-EU AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % on NAV. Non-EU AIFs marketed w/o passport. Data for 24 EEA countries. Sources: AIFMD database, National competent Authorities, ESMA.

With the exception of HFs, the majority of AIFs marketed in the Union are not domiciled in the EU. Passporting EU HFs amount to EUR 77bn, that is 30% of the HF sector's NAV, as opposed to the 40% of non-EU HFs marketed in the Union under private placement rules. The remaining 30% (EUR 75bn) are non-EU master AIFs managed by full-scope EU AIFMs but not marketed in the EU.⁴²

Feeder funds are excluded from analysis to avoid any double counting of assets.⁴³

As expected, with an average NAV of EUR 150mn, AIFs by sub-threshold managers appear somehow structurally smaller than AIFs managed by full-scope AIFMs, which have instead an average NAV of EUR 200mn. The influence of large funds becomes evident when considering the median NAV, which equals EUR 40mn for funds by authorised full-scope EU AIFMs and EUR 10mn for AIFs managed by managers registered at national level only.

When comparing products marketed by full-scope EU AIFMs only, the average and median NAVs are even higher for non-EU AIFs subject only to the NPPR.

⁴² These non-EU master HFs are almost entirely managed by UK firms.

⁴³ The AIFMD defines a feeder AIF as a fund investing at least 85% of its assets in units or shares of one or more AIFs with identical strategies, that is a master AIF, or has

otherwise an exposure of at least 85% of its assets to such a master AIF. See Article 4 of the AIFMD.

ASR-AIF.92

AIFs by full-scope EU AIFMs

Non-EU AIFs larger on average

AIFs by full-scope EU AIFMs	NAV (EUR bn)		
	Total	Average	Median
EU passport	3,756.4	0.19	0.03
Non-EU marketed in EU without passport	134.7	0.5	0.1
Non-EU not marketed in EU	203.5	0.4	0.1
Total	4,094.6	0.2	0.4

Note: Size of AIFs managed and/or marketed by full-scope authorised EU AIFMs, end of 2017.

Source: AIFMD database, National Competent Authorities, ESMA.

Leverage measures in the AIFMD

Under the AIFMD leverage is defined as any method by which the AIFM increases the exposure of an AIF it manages, whether through borrowing of cash or securities or leverage embedded in derivative positions, or by any other means.⁴⁴ The AIFM must set a maximum level of leverage which it may employ on behalf of each AIF it manages. The level of leverage employed must then be monitored and periodically disclosed to investors.⁴⁵

Notably, the AIFMD does not include formal legal definitions of the notions 'leveraged AIFs' or 'unleveraged AIFs'.⁴⁶

The Commission delegated regulation requires AIFMs to assess leverage created through the use of derivatives according to two calculation methods, the so-called gross and commitment methods, and provide NCAs and ESMA with this information for monitoring systemic risks and to gain a complete picture of the use of leverage.⁴⁷

The combined use of these two methods is intended to grant an objective view of the risks associated with the characteristics and investment strategy of an AIF, as the use of derivatives to increase market exposures is not

fully accounted by balance-sheet-derived measures. While the gross leverage represents the market footprint of a fund, the commitment exposure displays its reliance on netting and hedging. Leverage rates as calculated under the gross and commitment methods are requested by Article 24(2) of the AIFMD.⁴⁸

The amount of leverage under the gross method has to be computed and reported by AIFMs on behalf of the managed funds as follows:

- excluding the value of any cash and cash equivalents which are highly liquid investments held in the base currency of the AIF that are readily convertible to an amount of cash, subject to an insignificant risk of change in value, and which provide a return no greater than the rate of a 3-month high-quality government bond;
- converting derivatives instruments into the equivalent position in their underlying assets⁴⁹;
- including exposure gained from the reinvestment of cash borrowings. In this specific case, it must be considered the higher between the market value of the investment realised and the total amount of the secured or unsecured cash borrowed;
- including positions within repo or reverse repo transactions and securities lending or borrowing arrangements. In case of convertible borrowings, the exposure to consider corresponds to their market value.

In the same line of reasoning, under the gross method, cash and cash equivalent borrowings should also be excluded when these borrowings remain in cash and the amount of that payable is known.

The assessment of leverage under the commitment method requires more elaborate calculations by also taking into consideration hedging and netting arrangements between derivatives in reducing the overall exposure. It is then obtained by:

respectively, in Articles 7 and 8 of the AIFMD.

⁴⁸ Gross and commitment leverage rates must be reported, respectively, in items 294 and 295 of the consolidated AIFMD reporting template.

⁴⁹ The detailed conversion methodologies set out in paragraphs 4 to 9 and 14 of Annex I and in Annex II to the Commission delegated regulation.

⁴⁴ See Article 4 of the AIFMD. For PE funds, any exposure that exists at the level of the relevant financial structure should be excluded where the AIF's exposure is limited to its investment in such a financial structure or such companies. See ESMA Q&As, Section VII.

⁴⁵ See Article 15(4) of the AIFMD.

⁴⁶ See ESMA response to EIOPA questions on the AIFMD: <https://www.esma.europa.eu/press-news/esma-news/esma-responds-eiopa-questions-aifmd>

⁴⁷ Principles and rules for calculating exposures under the gross and commitment methods are laid down,

- converting each derivative instrument position into an equivalent position in the underlying asset;
- applying netting and hedging arrangements;
- calculating exposure created through the reinvestment of borrowings where such reinvestment increases the exposure of the AIF;
- including convertible borrowings, repos, reverse repos, securities lending and securities borrowings.

The main difference between the two methodologies is that the commitment approach nets off derivative instruments, while the gross method aggregates them.⁵⁰ However, derivatives the AIF is investing in should not be subject to conversion when those instruments are used to offset market risk borne by other assets in portfolio as the exposures of the two investments balance one another. Importantly, the requirement that netting arrangements refer to the same underlying asset is not open to interpretation, so that even different share classes or bonds issued by the same issuer cannot be considered as identical for the purposes of netting.⁵¹

Usually a portfolio is leveraged by using direct borrowings (i.e. financial leverage) and through derivatives and other instruments for efficient portfolio-management purposes.

Leverage is likely to arise through the use of index futures, forward foreign exchange contracts or contracts for difference, where cash is paid to the counterparty as a margin against the current mark-to-market value of the derivative contract. Notably, for the calculation of the commitment leverage, financial derivatives instruments must be considered only when they create an incremental exposure. An illustrative example of this general concept is the total exposure resulting from investing in an index future contract, and holding a cash position equal to the total underlying market value of such a contract is deemed equivalent to the one from a direct investment in the index shares.⁵² The use of leverage therefore creates additional risks and may significantly increase the market and

counterparty risk of the AIF through non-fully funded exposure to underlying markets or securities.

Table ASR-AIF.93 summarises the difference between the gross and commitment exposures and their connection with the regulatory AuM. It is implicit in the different treatment of cash under the gross and commitment methods that there is no unique ordering of the resulting leverage measures. A portfolio for which the set of netting and hedging arrangements is not applicable might display a commitment exposure higher than the one resulting from the gross approach, as in the latter case cash held in the base currency of the AIF has to be excluded from the calculation.

ASR-AIF.93

Definitions of leverage

Differences in methodologies

Gross leverage	Commitment leverage	AuM
<p>Sum of the absolute values of all positions:</p> <ul style="list-style-type: none"> • derivatives converted into equivalent position in their underlying assets; • exposure resulting from cash borrowings' reinvestment; • any positions within repos or reverse repos, securities lending or other arrangements; • exclusion of cash in base currency. 	<p>Sum of the absolute values of all positions:</p> <ul style="list-style-type: none"> • derivatives converted into equivalent position in their underlying assets; • netting and hedging arrangements as applicable; • exposure created through the reinvestment of borrowings, only if this increases overall exposure of the fund; • other adjustments as per Annexes I and II to the implementing regulation. 	<p>Value of all assets in portfolio, including all assets acquired through use of leverage:</p> <ul style="list-style-type: none"> • borrowing of cash or securities; • leverage embedded in derivative positions or by any other means.
	→ All cash included.	→ All cash included.

The ESMA guidelines on the AIFMD reporting obligations require the overall gross and commitment leverage of an AIF to be quoted as

⁵⁰ Temporary borrowing facilities that are backed by capital commitments from investors are excluded from the leverage calculation, but this does not extend to revolving credit facilities.

⁵¹ The full set of eligible netting and hedging arrangements and different treatment of certain cash and cash equivalent items is detailed in Annexes I and II to the

implementing regulation.

⁵² This example is outlined directly in recital 16 of the implementing regulation.

a percentage of the NAV. The immediate practical consequence of this reporting requirement is that a leverage percentage of 100% corresponds to a ratio of gross and/or commitment exposure to NAV of 1:1.⁵³

An accurate analysis of the reported leverage figures suggests that the complexity of the calculation rules and the reporting requirements are not fully understood yet by a relevant portion of reporting entities. The raw distribution of leverage rates reported under the gross and commitment methods is shown in Table ASR-AIF.94.

ASR-AIF.94
Leverage bucketing
Reported leverage figures often not plausible

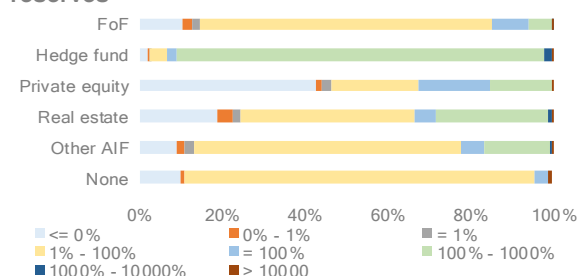
Range of leverage rate	AIFs filing (%)	
	Gross method	Commitment method
<= 0%	10.5%	10.7%
0%-1%	3.5%	1.1%
= 1%	3.5%	2.4%
1%-100%	30.5%	29.5%
= 100%	15.8%	18.8%
100%-200%	33.1%	33.7%
200%-300%	1.5%	1.8%
300%-500%	0.7%	0.8%
500%-1,000%	0.4%	0.5%
1,000%-10,000%	0.2%	0.5%
> 10,000%	0.2%	0.3%

Note: Distribution of leverage rates computed and reported under the gross and commitment methods at the end of 2017.
Source: AIFMD database, National Competent Authorities, ESMA

The entries show an abnormal dispersion, which is the result of a variety of reporting errors (e.g. wrong formatting, monetary values, erroneous calculations due to the incorrect understanding of computation rules). The distribution of gross and commitment rates appears similar and reporting errors are likely to be concentrated in the tails. Around 18% of AIFs reported at the end of 2017 and considered in the analysis display as a self-assessed gross leverage smaller than or equal to

1% of the NAV, while 5% compute a gross rate of between 1% and 50% of the NAV. When checking and comparing figures across different AIF types, it is interesting to note that 26% of PE funds and 15% of RE funds indicate extremely low gross rates, i.e. between 0% and 1% of their NAV (ASR-AIF.95). The share of PE funds reporting a 0% leverage increases to 50% when considering the commitment method.

ASR-AIF.95
Distribution of reported gross leverage rate by AIF type
Gross leverage often not compatible with cash reserves



Note: Distribution of leverage computed under the gross method, end of 2017. Leverage values must be reported as percentage of NAV. AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions. FoF=Funds of Funds, None=No Predominant Type. Sources: AIFMD, National Competent Authorities, ESMA.

The AIFMD provisions on leverage aim to increase transparency and to allow supervisors to monitor leverage in the financial system. In this respect, the reported self-assessed leverage rates are pivotal measures in the AIFMD reporting⁵⁴ and represent key information for both supervisors and investors. Indeed, AIFMs are required to set a maximum level of leverage for managed AIFs and demonstrate to the relevant NCA on the one hand the soundness of these limits and on the other their compliance with them at all times.⁵⁵ In addition, AIFMs have to disclose leverage limits to their investors, indicating the circumstances in which leverage can be employed on behalf of the managed AIF, together with its types and sources.

Notably, the gross leverage method should be comparable with the ratio between the reported regulatory AuM and NAV of a fund, as it is derived from the sum of all the exposure accounting for on- and off-balance-sheet items with the exclusion of cash. Thus, the ratio regulatory AuM/NAV may be considered as a proxy for leverage from an economic point of view and also used for plausibility checks of gross and commitment leverage and regulatory AuM

⁵³ For illustrative purposes, a portfolio with no derivatives positions included can be considered. The base value for the leverage as per AIFMD methods is 100%. This differs from the logic adopted by UCITS directive, where the corresponding base value would be 0.

⁵⁴ See Annex IV of the implementing regulation.

⁵⁵ See Article 25(3) of the AIFMD. The circumstances in which an AIFM can pose systemic risk are further defined in Article 112 of the implementing regulation.

figures. Such a comparison may be misleading for HFs, which make extensive use of derivatives, are highly exposed to IRDs and pursue elaborate trading strategies with cash reinvestment. Still, a careful analysis of outliers and a comparison between the regulatory AuM and the reported total exposure to different asset classes⁵⁶ can provide insightful information on the sources of leverage and its use.⁵⁷

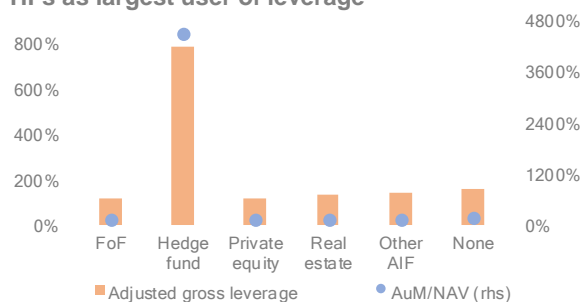
In light of the above considerations and data-quality concerns around reported gross and commitment rates, the amount of leverage in the system is assessed by comparing across both AIF types and strategies the regulatory AuM/NAV ratio and an adjusted version of the gross leverage, which is defined as follows:

$$\text{Adj. gross leverage rate (\%)} = \left(\frac{\text{Tot. gross exposure} - \text{IRDs}}{\text{NAV}} \right) * 100$$

That is, the system-adjusted gross leverage, computed at fund level and then aggregated across AIFs, is derived by leaving aside the notional value of IRDs from the reported gross total exposure.

This formulation for the adjusted gross leverage allows for better comparability of the gearing through derivatives across AIF types and strategies. Moreover, this adjustment does not essentially change the leverage ranking, as HFs remain the largest users of leverage (ASR-AIF.97).

ASR-AIF.96
Adjusted gross leverage
HFs as largest user of leverage



Note: Adjusted gross leverage of AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Adjusted gross leverage does not include IRDs. FoF= Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

The simple gross notional amount of IRDs as reported under the AIFMD does not permit a

precise reading of the exposure that is implied by derivative positions. The notional *per se*, which can even be extremely high in volume, does not represent a material risk as this would instead mostly depend on the duration of the contracts subscribed and the movements of the underlying rates.⁵⁸ As discussed above, the so-called implicit or synthetic leverage associated with IRDs would instead be partially reflected in the commitment method through netting and hedging.

Unlike IRDs, foreign exchange (FX) derivatives' gross value must be reported according to the investment purpose, that is depending on whether they are used for hedging or not, which cannot be verified *ex post*. For this reason, they are not removed from the adjusted gross leverage rate.

Under Article 24(2), AIFMs must also indicate the value of borrowings embedded in financial instruments. While this concept, from a purely economic standpoint, seems to suggest an immediate appreciation of synthetic leverage, both the ESMA guidelines and the AIFMD reporting template define it broadly as the gross exposure of exchange-traded and over-the-counter (OTC) derivatives net of margins posted.⁵⁹

This definition largely reflects the HFs' gross exposure to IRDs (ASR-AIF.98). Their borrowings embedded in financial instruments represent more than 90% of the overall exposure. The type of margin to be deducted is left unspecified.⁶⁰

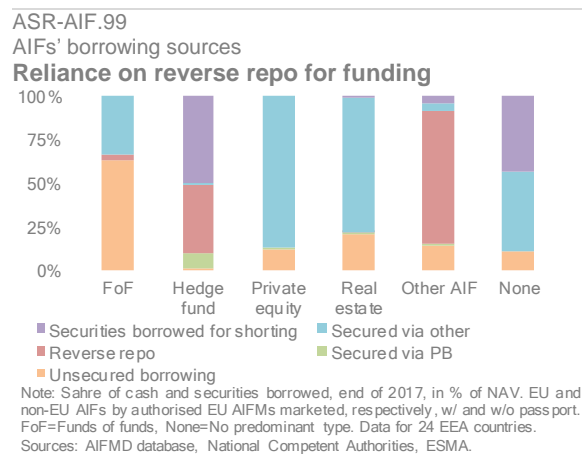
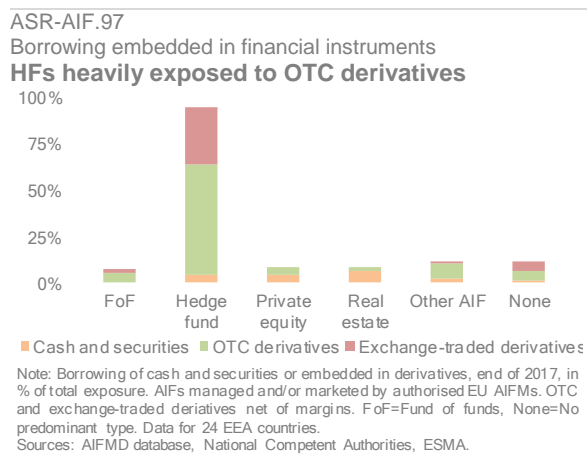
⁵⁶ Exposures are reported under Article 24(2) of the AIFMD. The corresponding items in the AIFMD reporting template are numbers 121, 122, 123, 124.

⁵⁷ Reporting requirements do not include detailed portfolio composition.

⁵⁸ Typically, the notional of the contract would be multiplied by the movement in the interest rate to determine the real pay-out.

⁵⁹ The corresponding items in the AIFMD reporting template are numbers 287 and 288.

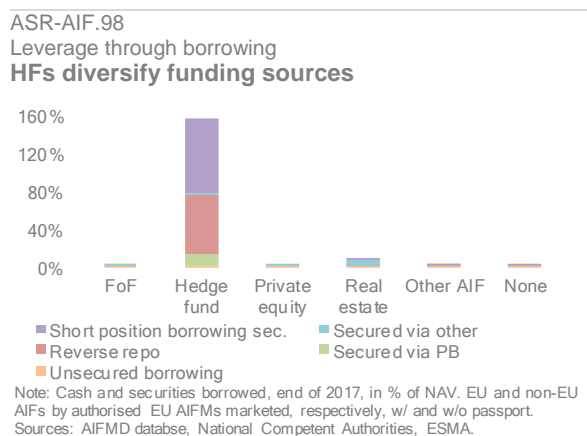
⁶⁰ A clearer definition of the margins to subtract from OTC and exchange-traded derivatives would be needed for a full appreciation of AIFs' borrowing activity.



Cash and securities borrowed (ASR-AIF.99) are a direct appreciation of the financial leverage, that is the gearing obtained by borrowing cash and/or securities directly from counterparties and then reinvesting them in other assets. This financial leverage represents the fund's balance-sheet leverage. Under the AIFMD reporting obligations, this is apparent from the aggregation of unsecured cash, collateralised cash and securities, and the borrowing of securities to cover for short positions.⁶¹

Both HF's and AIFs classified as 'Other' rely strongly for their funding on repos and reverse repurchase agreements, which account for around 40% of the overall borrowings. Unsecured borrowings play only a minor part, with 4% of the total outright borrowings. A detailed discussion on the use of the balance-sheet leverage is available in the overview of the report.

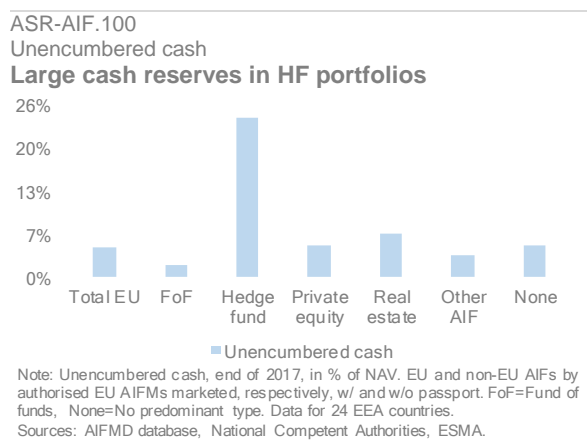
All the metrics specified above can be contrasted with the share of unencumbered cash.



The concept of unencumbered cash is also not defined in the reporting framework. In general terms, it is usually interpreted by practitioners as outright cash or cash-like securities, including G10 government bonds, which usually feature low credit risk and are highly liquid. These cash reserves are not used to enter into transactions (e.g. swaps and other derivatives) or as collateral, and their size gives an indication of a fund's ability to respond to margin calls and absorb losses on positions, especially in the case of derivatives-based strategies. Overall, 24% of HF's' total NAV is allocated to this purpose (ASR-AIF.101).

Data reported at the end of 2017 show that the outright borrowing of cash and securities amounts to 11% of the total NAV. For HF's, the level of financial gearing is around 160% of their NAV, and only a fraction seems to be obtained through prime brokerage (ASR-AIF.100).

⁶¹ The corresponding items in the AIFMD reporting template are numbers 283, 284, 285, 286, 289.



AIFMD national private placement regime market

Under Article 42 of the AIFMD, a Member State can allow non-EU AIFMs to market units or shares of AIFs they manage without benefiting from the AIFMD passport. At EUR 1tn NAV, the NPPR market is equivalent to one fifth of the overall EU AIF market and therefore warrants dedicated analysis. Since under the NPPR the same AIF can be marketed under different jurisdictions, it is important — in the process of statistical aggregation — to identify and match NPPR AIFs across Member States to avoid double counting. This section lays out our methodology and results from estimating measures of this market segment.

Reporting under the NPPR

AIFMs that are not allowed to market AIFs under the marketing or passporting regimes can, under the AIFMD's NPPR, market their funds in specific Member States. Here, only the authorisation from the jurisdiction is required. These managers have reporting obligations under the AIFMD for the funds that are marketed in the EU and these obligations can differ depending on the country. This component of the AIFMD is quite complex, indeed there is no mapping of the different country practices regarding the NPPR. These AIFs are known by ESMA only after reporting to NCA since they are not reported in the register.

The same AIF can be marketed by a non-EU AIFM in more than one jurisdiction; this has to be considered when analysing the market. Adding up the figures received would lead to overestimating market shares for funds reporting

in different countries. The full assessment of the EU AIF market in terms of size composition and risks for financial stability depends strictly on the possibility to uniquely identify AIFs.

Size of the NPPR market

In this analysis only, the funds reported under the NPPR — feeder funds excluded — are considered. We estimate this extent of the AIFMD market in identifying fund reporting to different countries, using the legal entity identifier (LEI) information provided by the Global Legal Entity Identifier Foundation (GLEIF).⁶²

After processing this input data, we assess a total regulatory AuM of EUR 5.8tn and a NAV of EUR 1trillion for the NPPR market. This regulatory AuM is unequally distributed depending on the fund type. Indeed, HFs and funds classified as 'Other', i.e. equity and fixed income, represent 96% of the final sample in terms of regulatory AuM. There are also a lot of disparities among AIF types. The median value of regulatory AuM for HFs and AIF classified as 'Other' is, respectively, EUR 1bn and EUR 0.4bn. Their average is much higher, EUR 22bn and EUR 5bn; this indicates that the sample of funds contains outliers, a small number of large entities that are pushing up the average regulatory AuM for these AIF types (ASR-AIF.102).

ASR-AIF.101
AuM by type of AIF
Uneven distribution of AuM

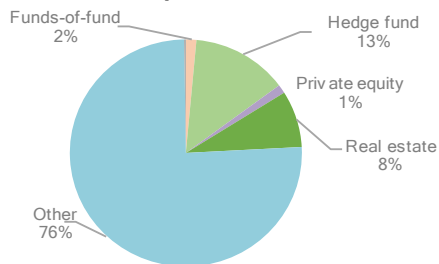
Predominant type	AuM (EUR bn)	NAV (EUR bn)
FoF	23	20
HF	4,887	196
PE	22	17
RE	112	71
Other AIF	794	721
No predominant type	5	3

First insights: NPPR market structures similar to conventional AIFs

The identified AIFs marketed under the NPPR show a NAV repartition similar to the funds marketed by authorised EU and sub-threshold managers. The NAV of the HFs is significant and represents EUR 200bn.

⁶² GLEIF concatenated files — LEI data — GLEIF
<https://www.gleif.org/en/lei-data/gleif-concatenated->

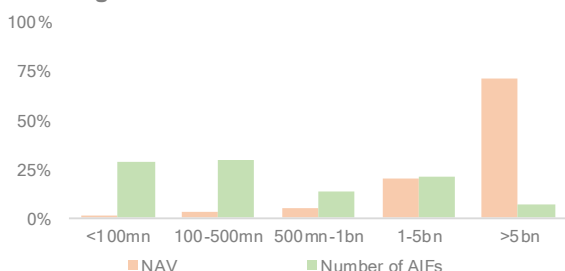
ASR-AIF.102
NAV by type of NPPR AIF
NPPRs follow AIF-wide pattern



Note: NAV by type of AIFs marketed non-EU AIFMs w/o passporting rights (art. 42 of AIFMD), end of 2017, in %. AIFs identified via international standard identifiers (LEIs, ISIN, Cusip).
Sources: AIFMD database, National Competent Authorities, ESMA.

In terms of concentration, the NPPR market is dominated by a few big entities. 7% of NPPR AIFs have a NAV higher than EUR 5bn — these funds represent 71% of the NPPR NAV. These funds are only present in a few Member States, since not all jurisdictions give permission to managers to market their funds under the NPPR. The market is almost exclusively composed of non-EU AIFs, which hold 99.6% of the market. This distribution is also quite similar among AIF types.

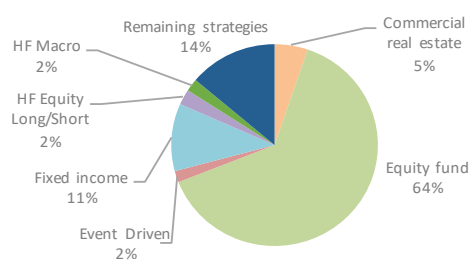
ASR-AIF.103
NPPR AIFs by size
A few large NPPRs lead the market



Note: Share of AIFs by size, end of 2017, in %. AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport.
Sources: AIFMD database, National Competent Authorities, ESMA.

Regarding AIF strategies, equity funds under the 'Other' type represent the highest share of the NAV. Most of them are US ETFs.

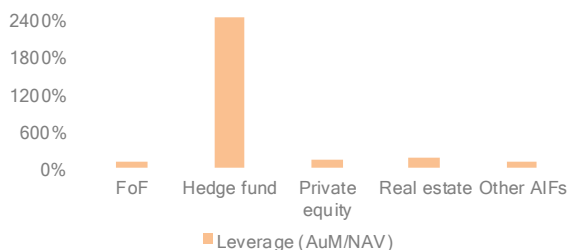
ASR-AIF.104
NPPR AIF investment strategies
EQ, FI, RE as main investment focus



Note: Investment strategies of AIFs marketed by non-EU AIFMs w/o passporting rights (art. 42 of AIFMD), end of 2017, in % of NAV. AIFs identified via international standard identifiers (LEIs, ISIN, Cusip).
Sources: AIFMD database, National Competent Authorities, ESMA.

Finally, HFs under the NPPR regime are highly leveraged (ASR-AIF.106) — at 2,400%. Thus they are on average less leveraged than in HFs under other regimes (4,500%).

ASR-AIF.105
NPPR AIF leverage
HFs with highest leverage



Note: Leverage of AIFs marketed by non-EU AIFMs w/o passporting rights (art. 42 of AIFMD), end of 2017, in % of NAV. AIFs identified via international standard identifiers (LEIs, ISIN, Cusip). Leverage computed as AuM/NAV ratio.
Sources: AIFMD database, National competent authorities, ESMA.

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The structure of the EU and US Hedge Funds industry

As — in this edition — we take a first look at the EU AIF data sourced from AIFMD reporting systems, it makes sense to compare the picture that emerges to other jurisdictions hosting substantial AIF industries. One noteworthy and relevant comparison is with the US market, where HFs emerged as early as the 1920s, and today comprise a vital part of the local investment universe. Our analysis shows that risk indicators derived from EU and US sources provide a similar message. Leverage tends to be concentrated in specific HF strategies, such as relative value or macro. HFs relying on derivatives have a larger amount of unencumbered cash than other HFs. At the aggregate level, EU HFs have lower funding leverage but their funding is more short term than that of US funds. EU and US HFs face limited liquidity mismatch overall, with higher levels of liquidity for US funds.

Introduction

AIFMD data provide insights into HFs in the EU. To put the trends into perspective, it is helpful to look at other sources covering the HF sector. Regulatory reports to non-EU NCAs, such as the US SEC and surveys done by IOSCO in particular, can be used to benchmark the analysis based on AIFMD data in this report.

US regulatory data on Hedge Funds — form PF

Since 2012, the SEC has been collecting data on private funds through form PF. SEC-registered investment advisers with at least USD 150mn in regulatory assets under management are required to report data on a regular basis by filling in form PF. In particular, advisers with at least USD 1.5bn in AuM attributable to HFs ('large HF advisers') have to report quarterly. Large HF advisers also need to provide additional information for the HFs they manage with at least USD 500mn in NAV ('qualifying HFs').

Most of the quantitative indicators reported for HFs in form PF can be mapped with AIFMD data, although in some cases the definitions used may differ. One key difference relates to the treatment of derivatives for the reporting of gross exposures, in particular IRDs. In form PF, IRDs are adjusted for duration and reported as 10-year

bond equivalents, while in AIFMD the gross notional value of IRDs is reported.⁶³ Given that most IRDs have a short duration⁶⁴, gross exposures to IRDs will be substantially larger than in SEC data.

Size of the Hedge Fund sector

The HF sector is small in the EU compared to the United States. The NAV of AIF HFs amounts to around EUR 264 billion at the end of 2017, compared to EUR 3,244bn for the SEC data (ASR-AIF.106).⁶⁵ This large difference can be partly explained by the domicile of the fund manager. In the SEC data, most of the HFs are managed by an adviser located in the United States (88.5% of the NAV for qualifying HFs), while only 6.7% of the NAV is managed by an adviser located in the EU (UK).

Using a comparable perimeter, the SEC and AIFMD data are relatively close based on the domicile of the manager: the SEC reports a NAV of EUR 171bn for HFs managed by a UK manager, against EUR 217bn in AIFMD data.

Data on domiciles of HFs point to similar patterns in the United States and in the EU: most HFs are domiciled in the Cayman Islands, and the Virgin Islands and Bermuda both account for 7% of the NAV (ASR-AIF.107).

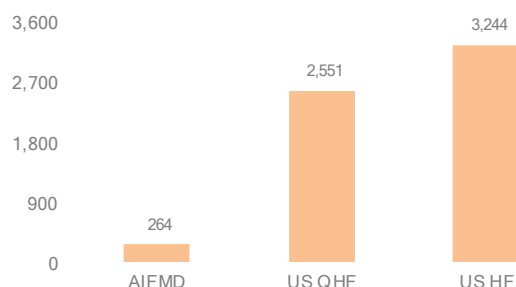
⁶³ A 10-year bond equivalent measures the marginal impact on position value of a small change in interest rates and then expresses this impact in terms of the quantity of a current 10-year bond that would have the same sensitivity

to interest rates moves.

⁶⁴ Around 80% of IRDs have a maturity below 5 years; see ESMA (2018).

⁶⁵ See SEC (2018).

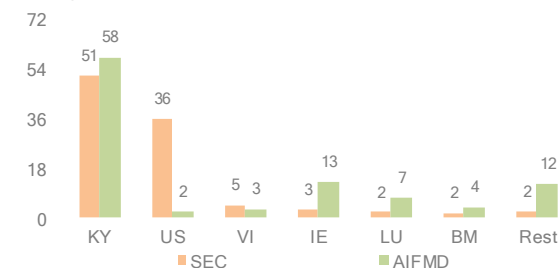
ASR-AIF.106
Size of HF sector
Small compared to US data



Note: Net Asset Value of hedge funds, in EUR bn, end of 2017. QF refers to 'qualifying hedge funds', i.e. with NAV>USD 500Mn and managed by large hedge fund advisers. USD converted into EUR using end-of-year exchange rate. Sources: AIFMD database, National Competent Authorities, SEC, ESMA

For the US and EU data, around one third of HFs are domiciled in the domestic jurisdiction: 36% in the United States for SEC data and 31% in the EU for AIFMD data.

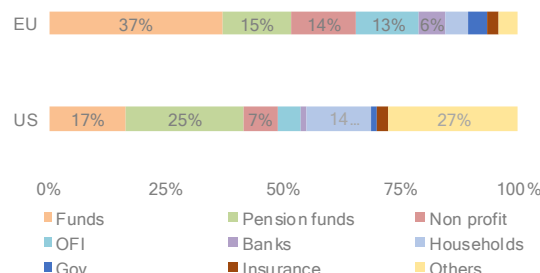
ASR-AIF.107
HF domiciles
Mainly in offshore centres



Note: Share of Net Asset Value of hedge funds by domicile, in %, end of 2017. Data for qualifying hedge funds for the US. KY=Cayman Islands, VI=Virgin Islands and BM=Bermuda. Sources: AIFMD database, National Competent Authorities, SEC, ESMA

In terms of ownership, the main investors into HFs are broadly the same in the United States and in the EU. Professional investors such as pension funds and other funds account for the larger share of the NAV (ASR-AIF.108): 42% in the United States and 52% in the EU. In the United States, households (US and non-US individuals) account for a larger share than in the EU (14% against 5%).

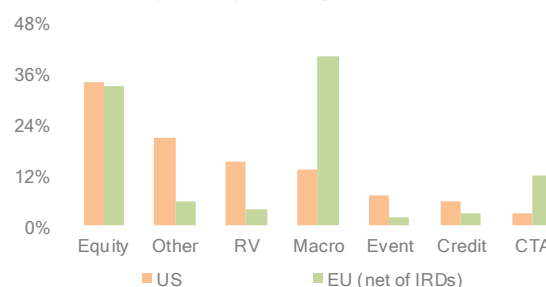
ASR-AIF.108
HF investor types
Mainly institutional investors



Note: Ownership in % of NAV by investor types. Qualifying hedge funds data for the US. Sources: AIFMD database, National Competent Authorities, SEC, ESMA.

Regarding HF strategies, the data from the SEC and the AFIMD cannot be directly compared due to different reporting of gross exposures to IRDs. However, the main types of strategies are broadly the same qualitatively speaking across the two datasets, when IRD exposures are excluded for EU AIFs (ASR-AIF.109). Equity strategies account for a large share of the exposures (34% for the United States and 33% for the EU), along with macro strategies (14% in the US and 40% in the EU). Event-driven and credit strategies are smaller, with less than 10% of exposures in both cases. Data for relative value and CTA strategies paint a different picture: they account for respectively 15% and 3% in the United States against 4% and 12% for EU AIFs.

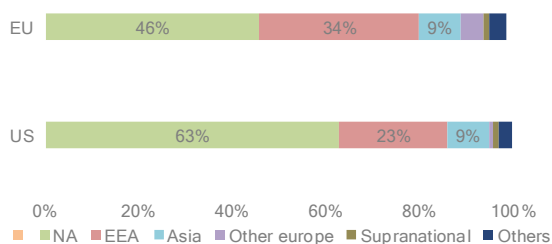
ASR-AIF.109
HF strategies
Dominated by equity strategies



Note: Gross exposures by strategy, in %, end of 2017. US data for qualifying hedge funds. For EU, gross exposures excluding interest rate derivatives. RV=Relative Value. Sources: AIFMD database, National Competent Authorities, SEC, ESMA

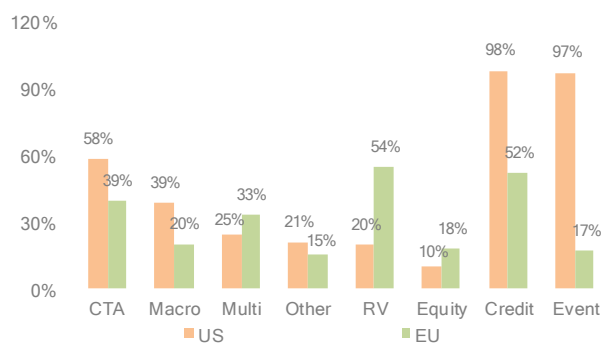
The regional investment focus of HFs is qualitatively similar in the United States and in the EU, although data are based on gross exposures in the United States and NAVs in the EU. North America is the main regional exposure, followed by the EEA, with other regions being relatively marginal.

ASR-AIF.110
Regional investment focus
Mainly North America and the EEA



Note: Regional exposures in % of NAV for EU and in % of gross exposures for the US. Data for large fund advisers for the US.
Sources: AIFMD database, National Competent Authorities, SEC, ESMA.

ASR-AIF.112
Unencumbered cash
Heterogeneity

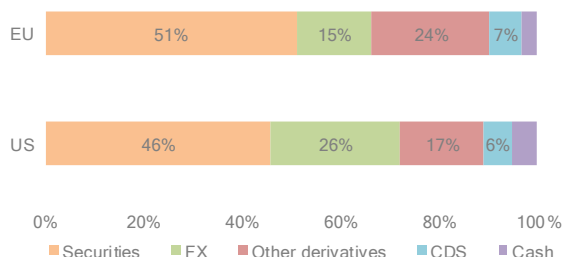


Note: Unencumbered cash in % of NAV (EU) and in % of assets (US).
Sources: AIFMD database, National Competent Authorities, SEC, ESMA.

Leverage and liquidity risks

HF's have similar types of exposures according to SEC and AIFMD data. Excluding IRDs, securities account for the largest share of exposures at around 50% of the NAV, while FX derivatives and CDS account for around 40% of NAV (ASR-AIF.111). Cash exposures are also similar: 22% of the NAV in the United States and 24 % in the EU.

ASR-AIF.111
Gross exposures
Broadly similar

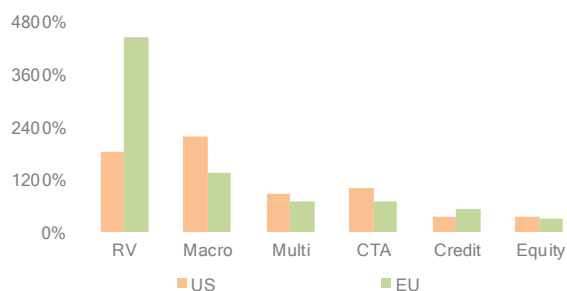


Note: Gross exposures excluding interest rate derivatives, and excluding CIU and physical assets for EU AIFs.
Sources: AIFMD Database, National Competent Authorities, SEC, ESMA.

However, data on unencumbered cash by strategy can be quite different across the two datasets (AIF-S.112). Yet, in both cases, strategies with the highest levels of leverage tend to have a higher amount of unencumbered cash, possibly to meet future margin calls.

The use of leverage by HF's is qualitatively similar in the two datasets. To proxy leverage for EU AIFs, we exclude IRDs for their gross exposures. Overall, the use of leverage by HF strategies is comparable: relative value and macro are the most leveraged funds, followed by CTA and multi strategy (ASR-AIF.113). However, levels can be quite different, with EU relative value funds reporting very high levels of leverage compared to similar strategies in the United States.

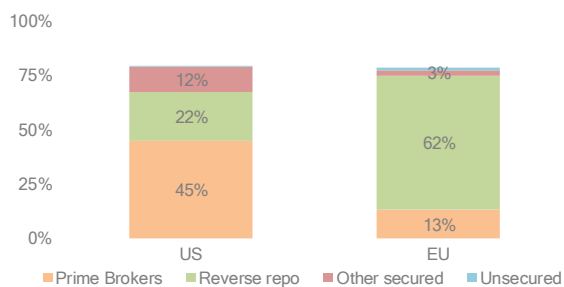
ASR-AIF.113
HF leverage
Qualitatively similar



Note: Leverage defined as gross exposures/NAV, in %, end of 2017. US data for qualifying hedge funds. For EU, gross exposures excluding interest rate derivatives. RV=Relative value, CTA=Commodity trading advisor.
Sources: AIFMD database, National Competent Authorities, SEC, ESMA.

US and EU HF's have similar levels of leverage: total borrowing amounts to 80% of the NAV in both cases, with differences in composition (ASR-AIF.114). In the United States, most of the funding comes from prime brokers, while in the EU repo markets play a larger role.

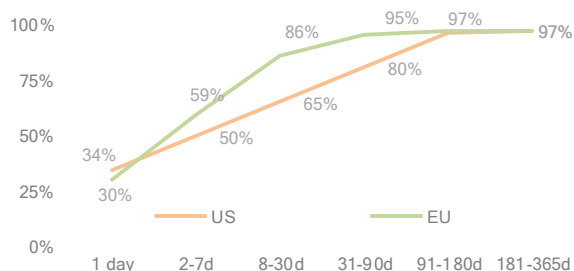
ASR-AIF.114
HF borrowings
More reliance on repo markets in the EU



Note: Borrowing by type of funding, in NAV. Qualifying hedge funds for the US.
Sources: AIFMD database, National Competent Authorities, SEC, ESMA.

In terms of financing, AIF HFs tend to rely more on short-term borrowing than in the United States: around 60% of financing is within a week against 50% for the United States and respectively 86% and 65% within a month (ASR-AIF.115).

ASR-AIF.115
Liquidity financing
High portion of short-term funding

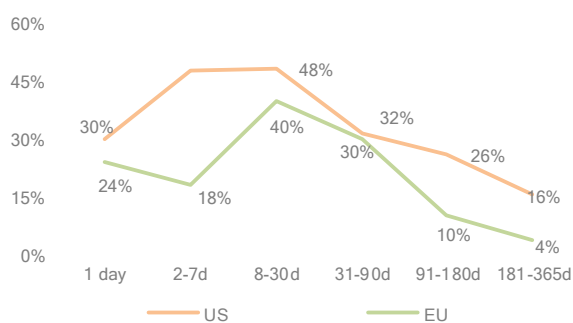


Note: Financing liquidity for AIF hedge funds and US Qualifying hedge funds, in % of available financing.
Sources: AIFMD database, National Competent Authorities, SEC, ESMA

At the aggregate level, the HF liquidity profile points to very little liquidity mismatch in the United States and the EU. In both jurisdictions, the portfolio liquidity is higher than the investor liquidity.⁶⁶ For the United States, investors can redeem up to 15% of the NAV within a week, while 63% of assets can be liquidated within that time frame, resulting in ‘excess liquidity’ of 48% (ASR-AIF.116). In the EU, investors can redeem up to 33% of the NAV within a week and 51% of assets can be sold.

Most of the information derived from the risk metrics presented is in line with other sources of information. The IOSCO 2017 Hedge Fund survey, mainly based on SEC data, provides similar findings regarding leverage and liquidity risk (IOSCO (2017)). Similarly, older Hedge Fund surveys published by the UK FCA provide similar assessments (see FCA (2015)).

ASR-AIF.116
Liquidity profile
No liquidity mismatch



Note: Difference between portfolio and investor liquidity, in % of NAV..
Sources: AIFMD database, National Competent Authorities, SEC, ESMA

Conclusion

AIFMD reporting obligations provide a large dataset that can be compared to other sources, such as SEC form PF. Our analysis shows that risk indicators derived from both sources provide the same message. Leverage tends to be concentrated in specific HF strategies, such as relative value or macro. HFs relying on derivatives have a larger amount of unencumbered cash than other HFs. At the aggregate level, EU HFs have lower funding leverage, but their funding is more short term than US funds. EU and US HFs face limited liquidity mismatch overall, with higher levels of liquidity for US funds.

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⁶⁶ For further details on US HFs see Aragon et al. (2017).

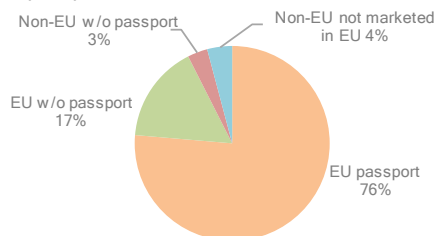
Statistical annex

Market overview

AIF characteristics

ASR-AIF-S.1

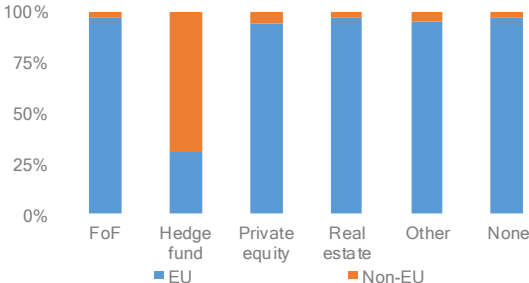
AIFMD passport



Note: NAV of AIFs by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.2

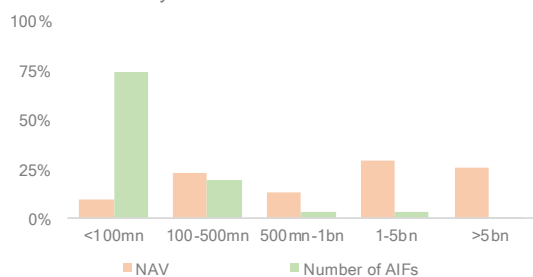
EU and non-EU AIFs



Note: Share of EU and non-EU AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % on NAV. Non-EU AIFs marketed w/o passport. Data for 24 EEA countries. Sources: AIFMD database, National competent Authorities, ESMA.

ASR-AIF-S.3

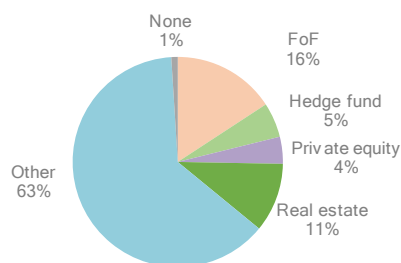
AIF distribution by size



Note: Share of AIFs by size, end of 2017, in %. AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.4

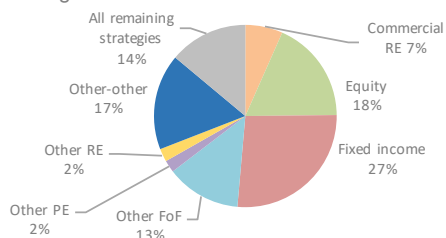
AIF types



Note: NAV by type of AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in %. FoF=Fund of Funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.5

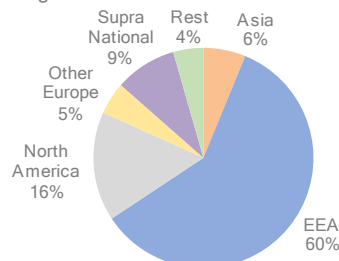
AIF strategies



Note: Investment strategy of AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. FoF=Fund of funds, PE=Private equity funds, RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.6

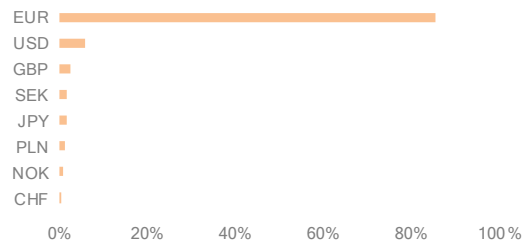
Investment regions



Note: Regional investment focus of AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments, supra national category including investments without predominant geo-focus. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.7

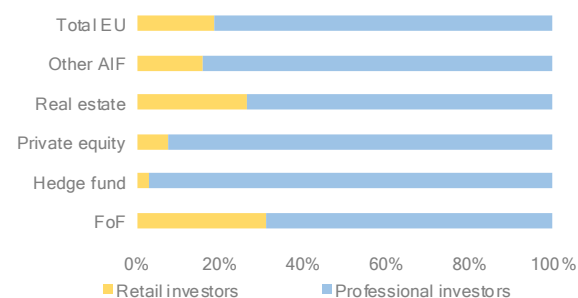
Base currencies



Note: Base currency managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Sources: AIFMD database, National Competent Authorities, ESMA. Data for 24 EEA countries.

ASR-AIF-S.8

Clients

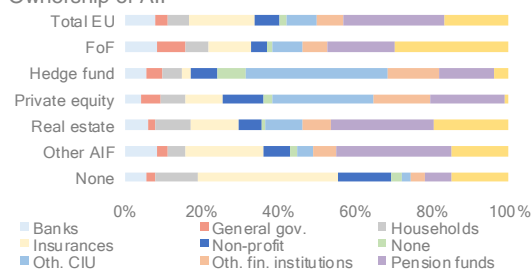


Note: Clients of AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. FoF=Fund of funds. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Liquidity and counterparty risk profile

ASR-AIF-S.9

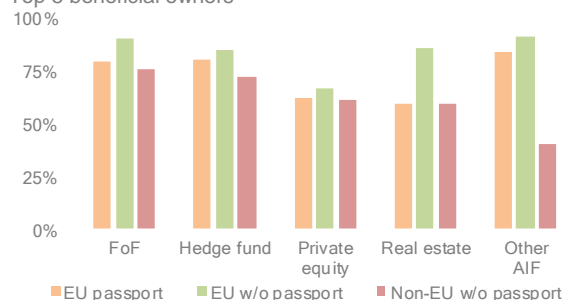
Ownership of AIF



Note: Ownership of units in AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. FoF=Fund of funds; None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.10

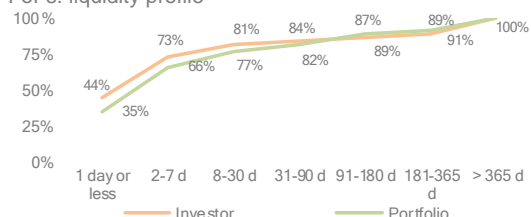
Top 5 beneficial owners



Note: Investor concentration of AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Investor concentration computed as share of AIF equity beneficially owned by the 5 largest investors. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.11

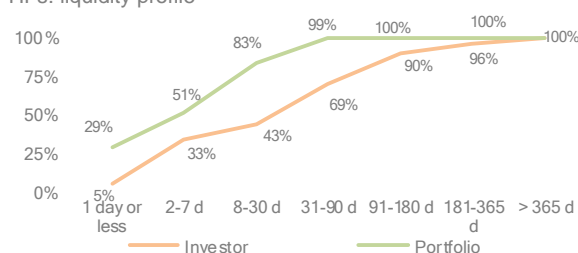
FoFs: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d=Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.12

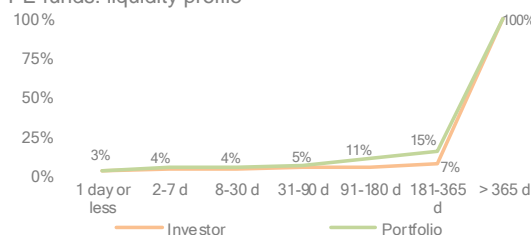
HFs: liquidity profile



Note: Portfolio and investor liquidity profiles of hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d=Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.13

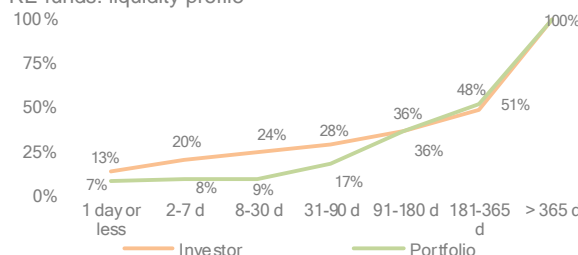
PE funds: liquidity profile



Note: Portfolio and investor liquidity profiles of private equity funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d=Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.14

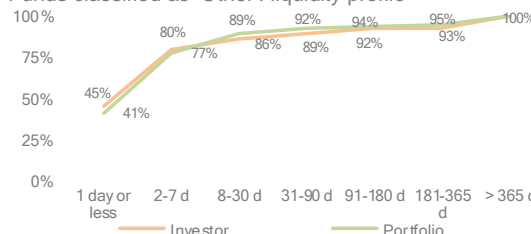
RE funds: liquidity profile



Note: Portfolio and investor liquidity profiles of real estate funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d=Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.15

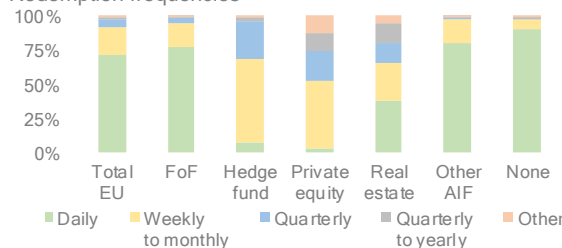
Funds classified as 'Other': liquidity profile



Note: Portfolio and investor liquidity profiles of AIFs classified as Other managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d=Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.16

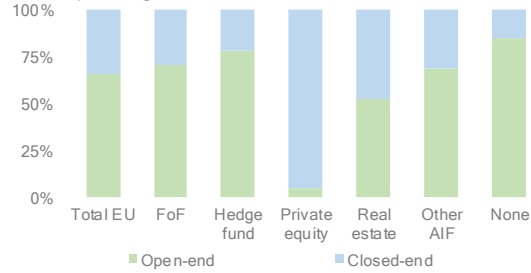
Redemption frequencies



Note: Investor redemption frequencies allowed by open-end AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Fund of Funds, None=No Predominant Type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.17

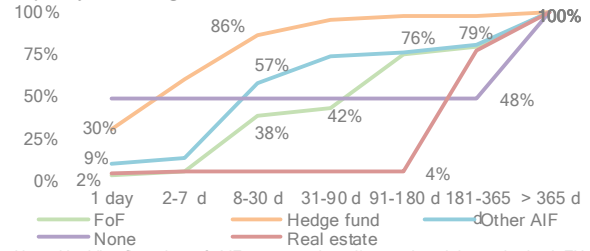
Redemption rights to investors



Note: Redemption rights provided in the ordinary course to investors in AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.18

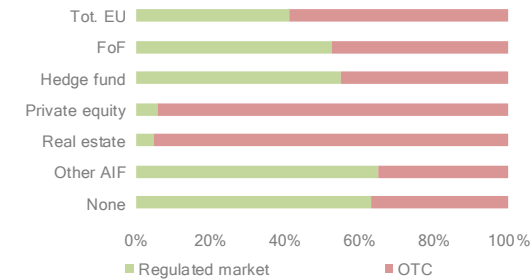
Liquidity financing



Note: Liquidity financing of AIFs managed and/or marketed by authorised EU AIFMs, end of 2017. Aggregate amount of borrowing and cash financing divided depending on longest period for which creditors are contractually committed to provide such financing. Borrowing and cash financing include drawn and undrawn, committed and uncommitted lines of credit as well as any term financing. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.19

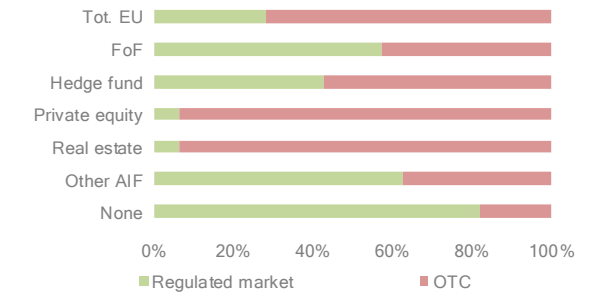
Securities trading



Note: Estimated market value of securities traded on OTC and regulated exchange markets by AIFs managed and/or marketed by authorised EU AIFMs, in %. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.20

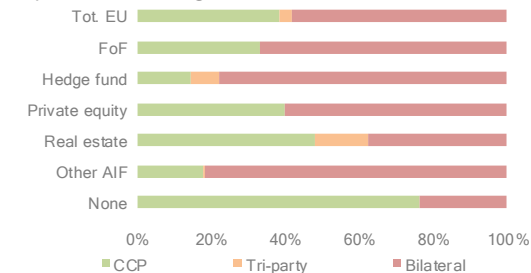
Derivatives trading



Note: Estimated volume of derivatives traded on OTC and regulated market by AIFs managed and/or marketed by authorised EU AIFMs, in %. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.21

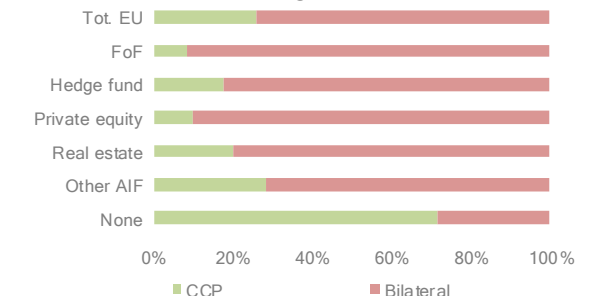
Repo trades clearing



Note: Estimated market value of repo trades cleared by AIFs managed and/or marketed by authorised EU AIFMs, in % of NAV. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.22

Derivative transactions clearing

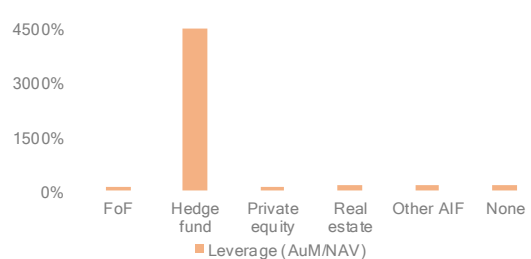


Note: Estimated volume of derivatives cleared bilaterally and via CCP by AIFs managed and/or marketed by authorised EU AIFMs, in %. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Leverage and exposure

ASR-AIF-S.23

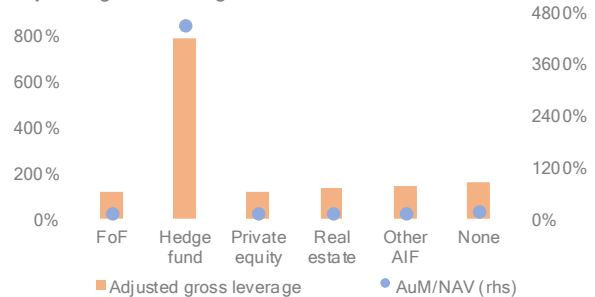
AuM/NAV



Note: Leverage of AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Leverage computed as AuM/NAV ratio. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

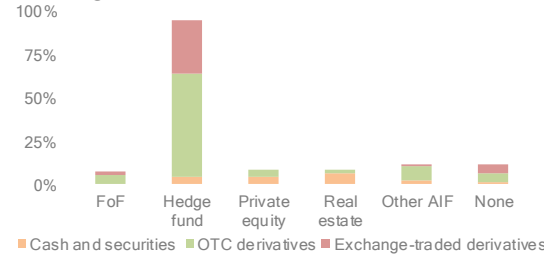
ASR-AIF-S.24

Adjusted gross leverage



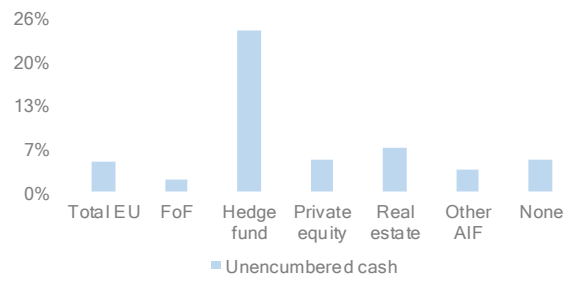
Note: Adjusted gross leverage of AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Adjusted gross leverage does not include IRDs. FoF= Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

ASR-AIF-S.25
Borrowing embedded in financial instruments



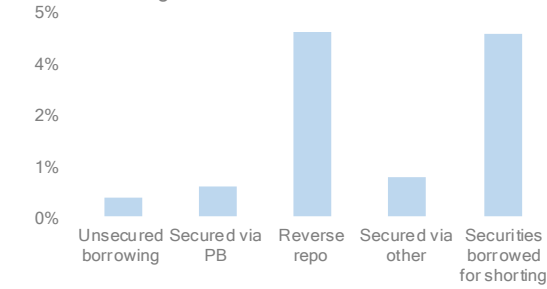
Note: Borrowing of cash and securities or embedded in derivatives, end of 2017, in % of total exposure. AIFs managed and/or marketed by authorised EU AIFMs. OTC and exchange-traded derivatives net of margins. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.26
Unencumbered cash



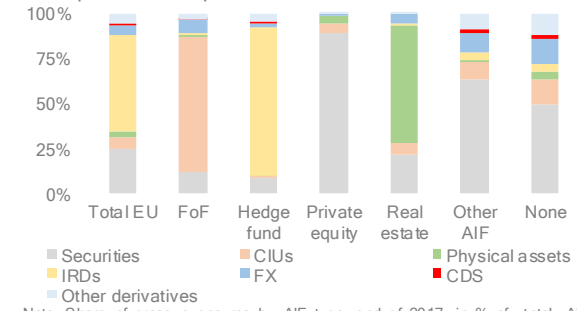
Note: Unencumbered cash, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.27
Financial leverage



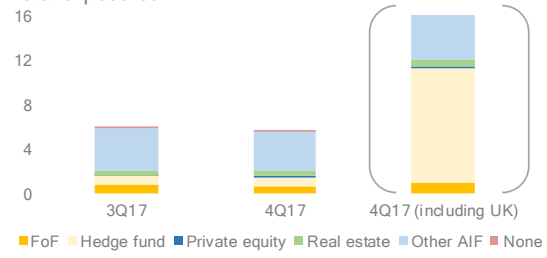
Note: Cash and securities borrowed, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Funds of Funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.28
Decomposition of exposures



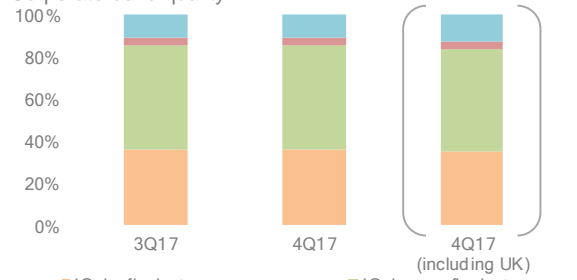
Note: Share of gross exposures by AIF type, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.29
Total exposures



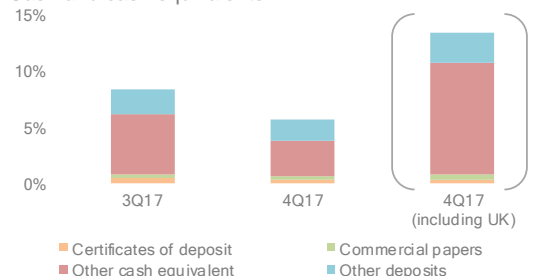
Note: Exposures of AIFs managed and/or marketed by authorised EU AIFMs, funds quarterly reported, EUR tn. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Fund of funds, None=No predominant type. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.30
Corporate bond quality



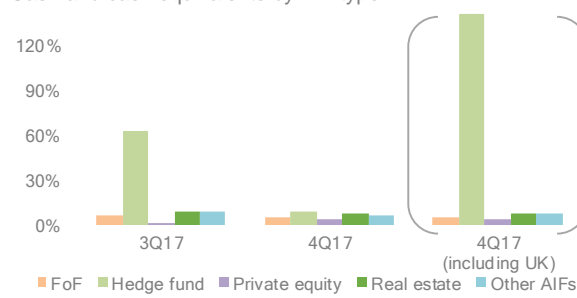
Note: Corporate bonds exposure, funds reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.31
Cash and cash equivalents



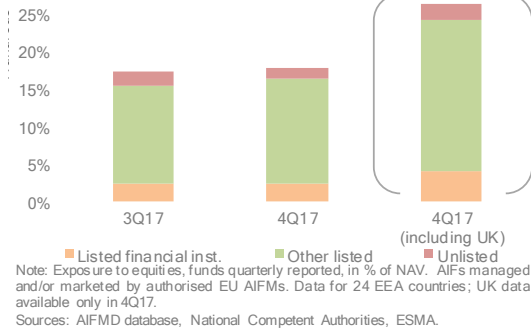
Note: Cash and cash equivalents exposure, funds reported quarterly, in % of NAV. Government bonds excluded from other cash equivalents. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.32
Cash and cash equivalents by AIF type

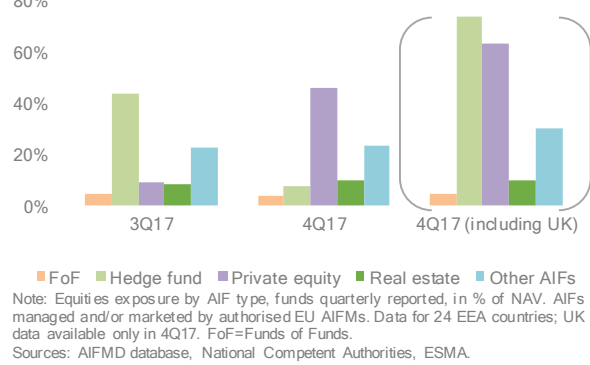


Note: Cash and cash equivalents exposure by AIF type, funds quarterly reported, in % of NAV. Data for 24 EEA countries; UK data available only in 4Q17. FoF=Funds of funds. Sources: AIFMD database, National Competent Authorities, ESMA.

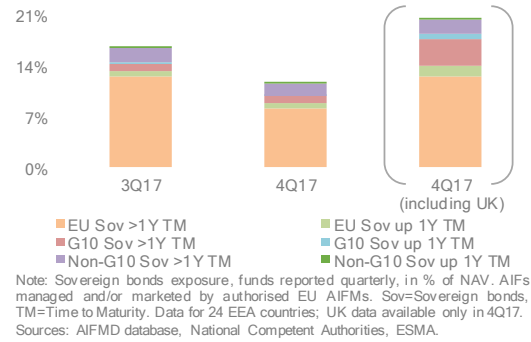
ASR-AIF-S.33
Equities



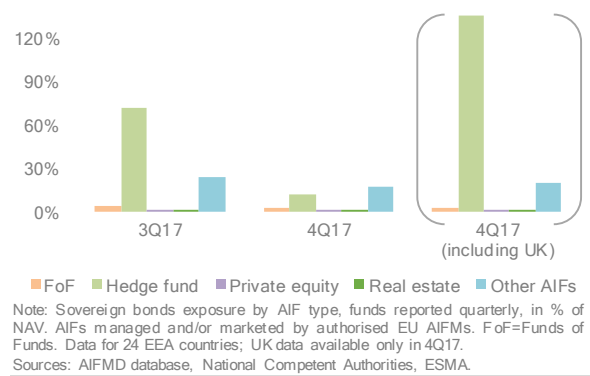
ASR-AIF-S.34
Equities by AIF type



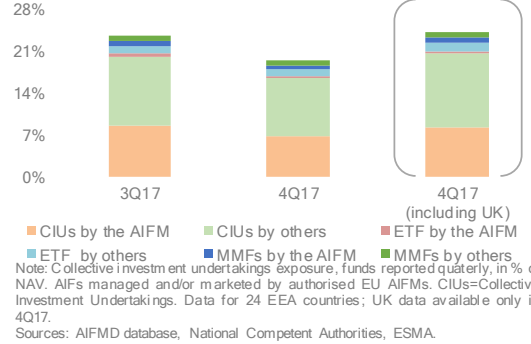
ASR-AIF-S.35
Sovereign bonds



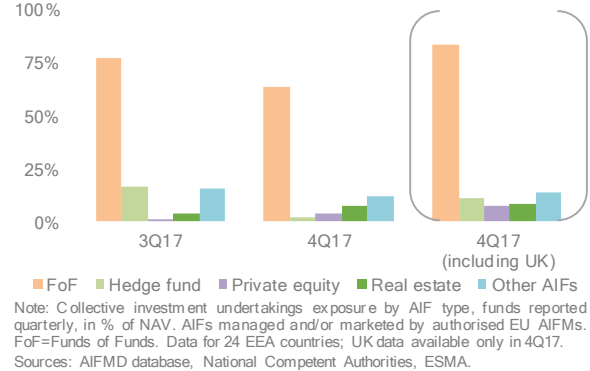
ASR-AIF-S.36
Sovereign bonds by AIF type



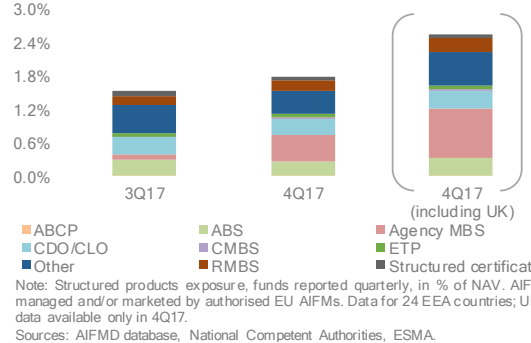
ASR-AIF-S.37
CIUs



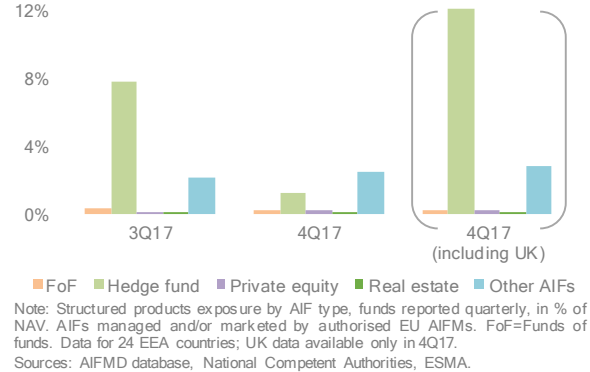
ASR-AIF-S.38
CIUs by AIF type



ASR-AIF-S.39
Structured products



ASR-AIF-S.40
Structured products by AIF type

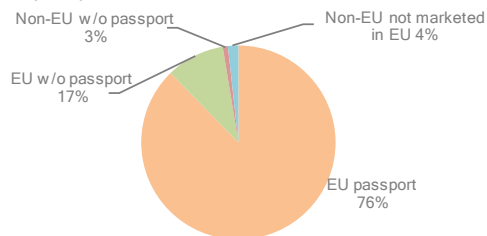


Funds of Funds

AIF characteristics

ASR-AIF-S.41

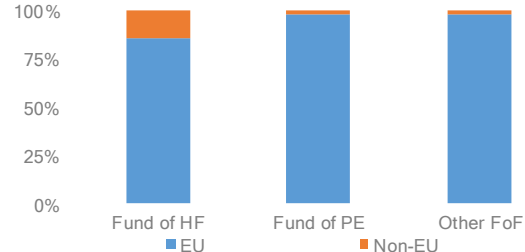
AIFMD passport



Note: NAV of funds of funds by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers are registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.42

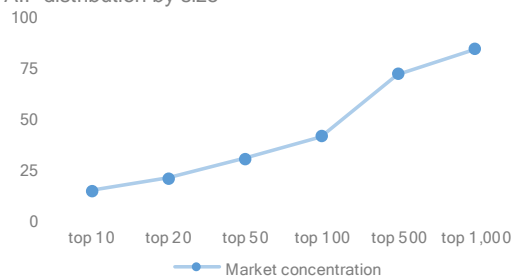
EU and non-EU AIFs



Note: Share of EU and non-EU funds of funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Non-EU AIFs marketed w/o passport. FoF=Fund of funds, PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National competent Authorities, ESMA.

ASR-AIF-S.43

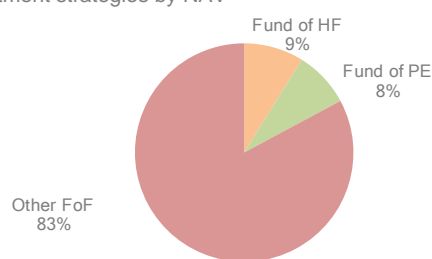
AIF distribution by size



Note: Market concentration of the largest 10-to-1,000 funds of funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.44

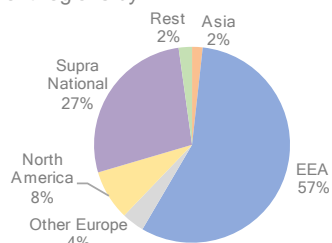
Investment strategies by NAV



Note: Investment strategies of funds of funds, end of 2017, in % of NAV. Funds of funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions. FoF=Fund of funds, PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.45

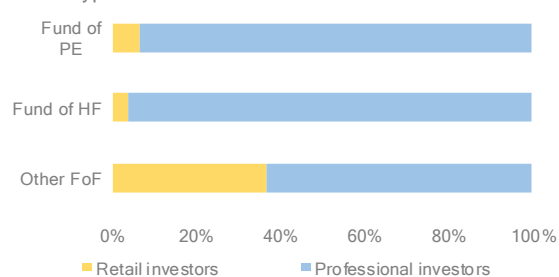
Investment regions by NAV



Note: Regional investment focus of funds of funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.46

Investor type

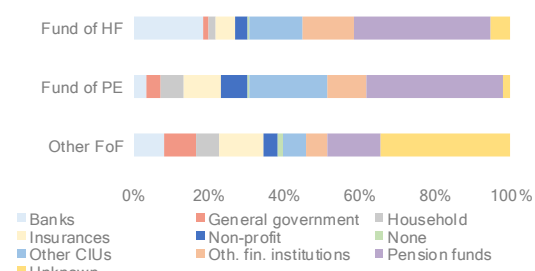


Note: Clients of funds of funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. FoF=Fund of funds, PE= Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Liquidity and counterparty risk profile

ASR-AIF-S.47

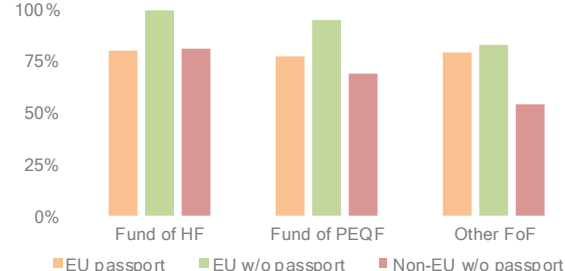
Ownership of AIFs



Note: Ownership of units in funds of funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. FoF=Fund of funds; PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.48

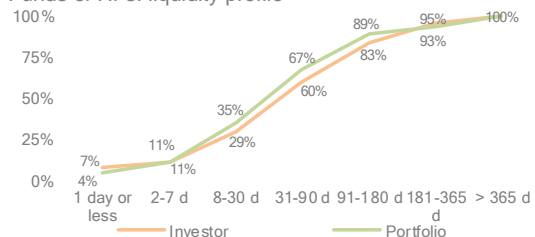
Top five beneficial owners



Note: Investor concentration of funds of funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Investor concentration computed as share of AIF equity beneficially owned by the 5 largest investors. FoF=Fund of Funds, PEQF=Private Equity Fund, HF=Hedge Fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.49

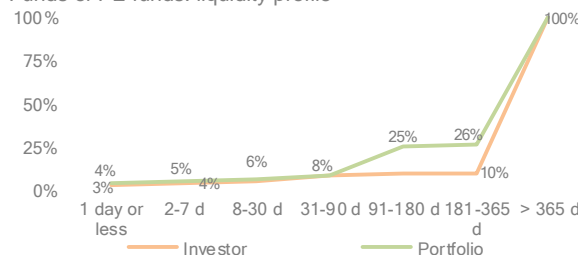
Funds of HF: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.50

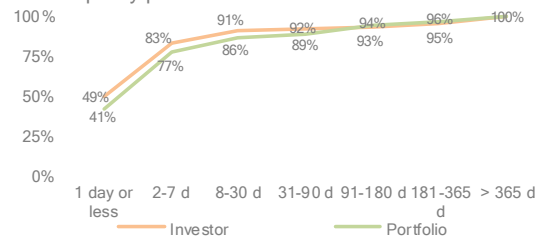
Funds of PE funds: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of private equity funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.51

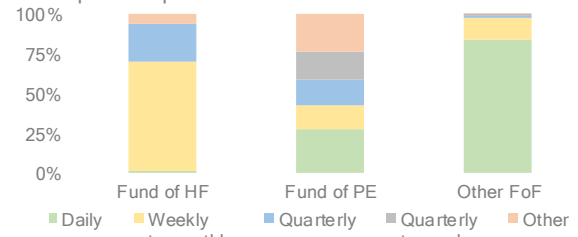
FoFs: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of funds pursuing strategies classified as "other" managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.52

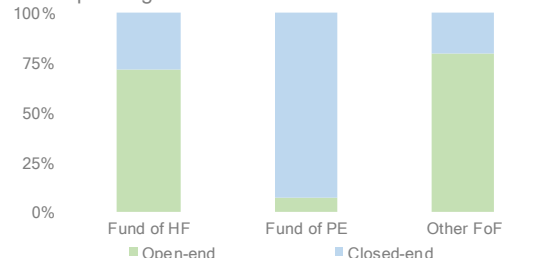
Redemption frequencies



Note: Investor redemption frequencies allowed by open-end funds of funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Fund of funds, PE=Private equity fund, HF=Hedge Fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.53

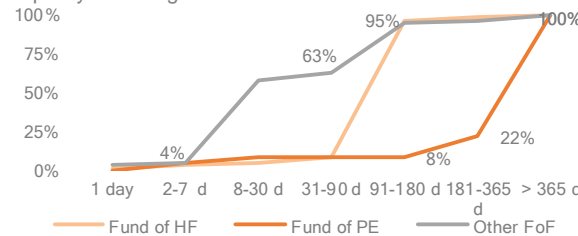
Redemption rights to investors



Note: Redemption rights provided in the ordinary course to investors in funds of funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. HF=Hedge fund; PE=Private equity; FoF=Fund of funds, PE=Private equity fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

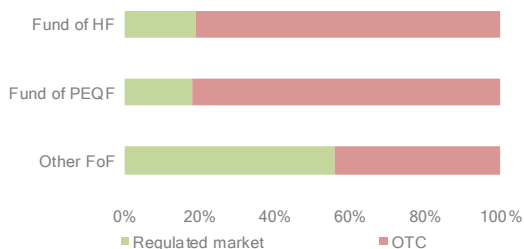
ASR-AIF-S.54

Liquidity financing



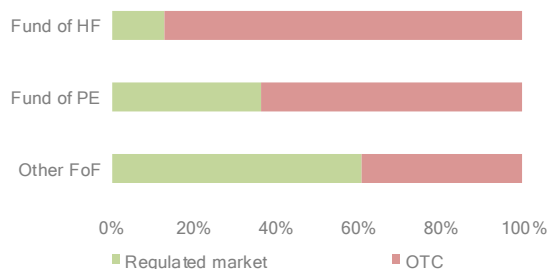
Note: Liquidity financing of funds of funds managed and/or marketed by authorised EU AIFMs, end of 2017. Aggregate amount of borrowing and cash financing divided depending on longest period for which creditors are contractually committed to provide such financing. Borrowing and cash financing include drawn and undrawn, committed and uncommitted lines of credit as well as any term financing. Data for 24 EEA countries. FoF=Fund of funds, PE=Private equity fund, HF=Hedge fund. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.55
Securities trading



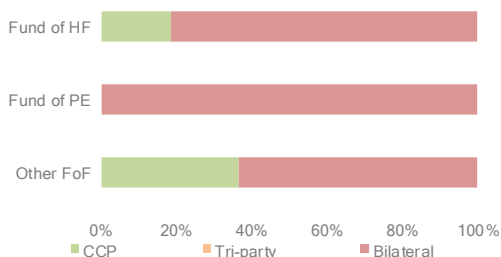
Note: Estimated market value of securities traded on OTC and regulated exchange markets by funds of funds managed and/or marketed by authorised EU AIFMs, in % of NAV. FoF=Fund of funds, PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.56
Derivatives trading



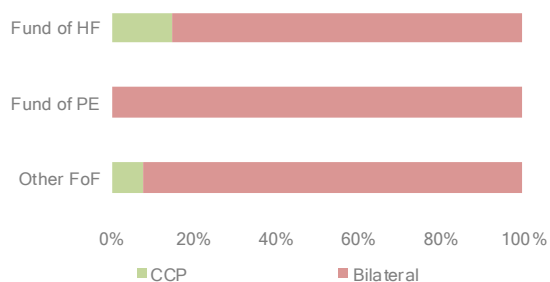
Note: Estimated volume of derivatives traded on OTC and regulated exchange markets by funds of funds managed and/or marketed by authorised EU AIFMs, in % of NAV. FoF=Fund of funds, PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.57
Repo trades clearing



Note: Estimated market value of repo trades cleared by market by funds of funds managed and/or marketed by authorised EU AIFMs, in % of NAV. FoF=Fund of funds, PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

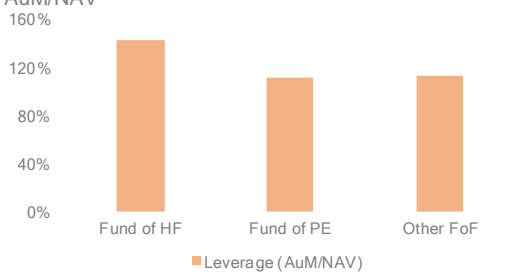
ASR-AIF-S.58
Derivatives trades clearing



Note: Estimated volume of derivatives cleared bilaterally and via CCP by funds of funds managed and/or marketed by authorised EU AIFMs, in % of NAV. FoF=Fund of funds, PEQF=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

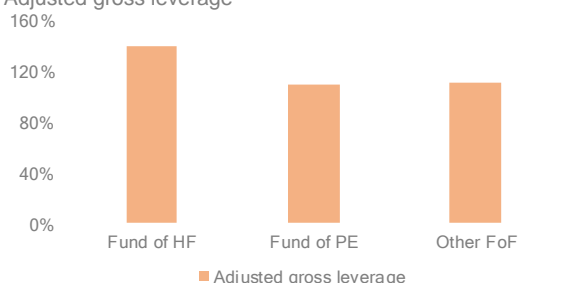
Leverage and exposure

ASR-AIF-S.59
AuM/NAV



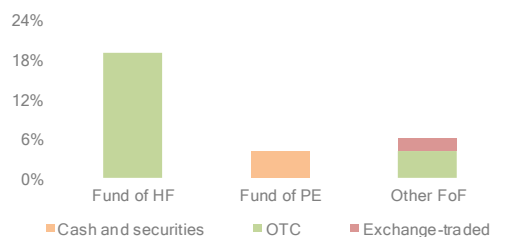
Note: Leverage of funds of funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Leverage computed as AuM/NAV ratio. FoF=Fund of funds, HF=Hedge fund, PE=Private equity fund. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

ASR-AIF-S.60
Adjusted gross leverage



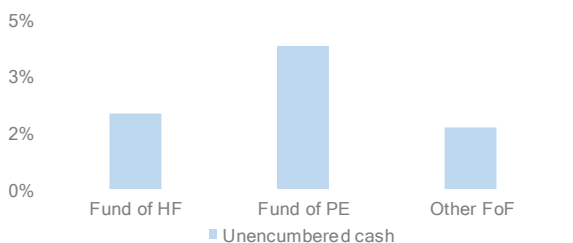
Note: Adjusted gross leverage of funds of funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Adjusted gross leverage computed as total exposure less IRDs with respect to NAV. FoF= Funds of funds, PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

ASR-AIF-S.61
Borrowing embedded in financial instruments



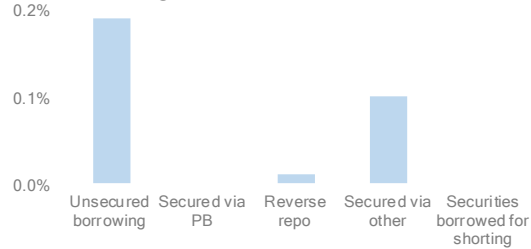
Note: Borrowing of cash and securities or embedded in derivatives by funds of funds, end of 2017, in % of total exposure. AIFs managed and/or marketed by authorised EU AIFMs. FoF=Fund of funds, HF=Hedge fund, PE=Private equity fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.62
Unencumbered cash



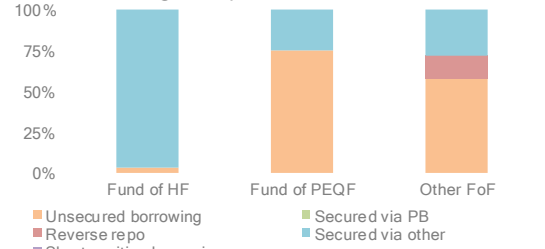
Note: Unencumbered cash held by funds of funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Funds of funds, HF=Hedge fund, PE=Private equity fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.63
Financial leverage



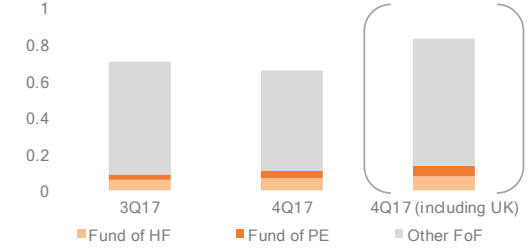
Note: Cash and securities borrowed by funds of funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Funds of funds, HF=Hedge fund, PE=Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.64
Financial leverage composition



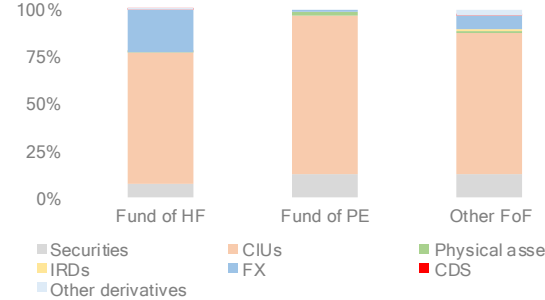
Note: Share of cash and securities borrowed by funds-of-funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Funds of Funds, HF=Hedge Fund, PEQF=Private Equity Fund.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.65
Total exposures



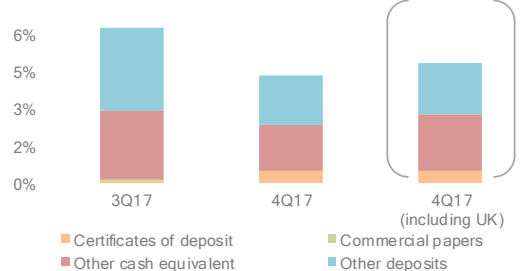
Note: Exposures of funds of funds managed and/or marketed by authorised EU AIFMs, funds quarterly reported, EUR tn. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Fund of Funds, HF=Hedge fund, PE=Private equity fund. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.66
Decomposition of exposures



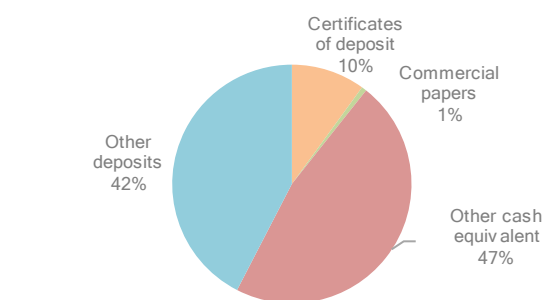
Note: Share of exposures by funds of funds' investment strategies, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. FoF=Fund of funds, PE=Private equity fund, HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.67
Cash and cash equivalents



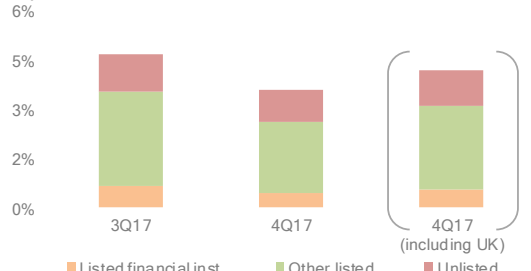
Note: Cash and cash equivalents exposure of funds of funds, AIFs reported quarterly, in % of NAV. Government bonds excluded from other cash equivalents. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.68
Cash and cash equivalents in Q4 2017



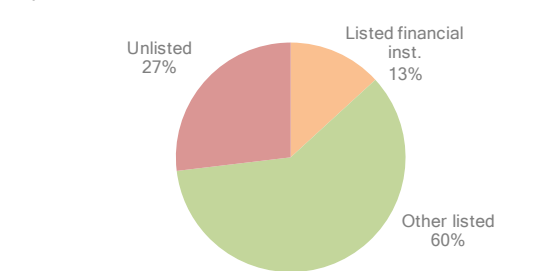
Note: Share of cash and cash equivalents held by funds of funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.69
Equities



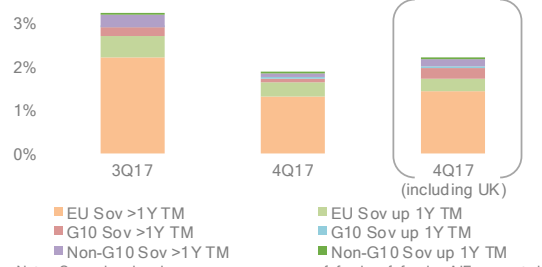
Note: Funds of funds' exposure to equity, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.70
Equities in 4Q17



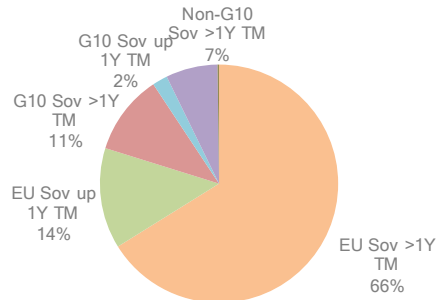
Note: Share of equities held by funds of funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.71
Sovereign bonds



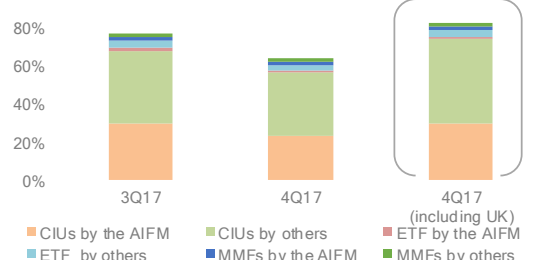
Note: Sovereign bonds exposure of funds of funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Sov=Sovereign bonds, TM=Time to Maturity. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.72
Sovereign bonds in 4Q17



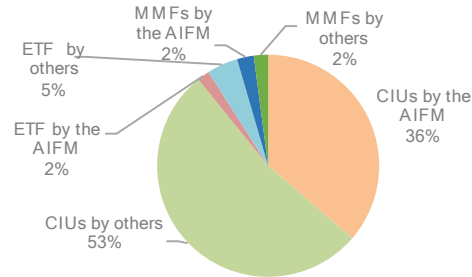
Note: Share of sovereign bonds held by funds of funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries. Sov=Sovereign bonds, TM=Time to Maturity.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.73
Collective investment undertakings



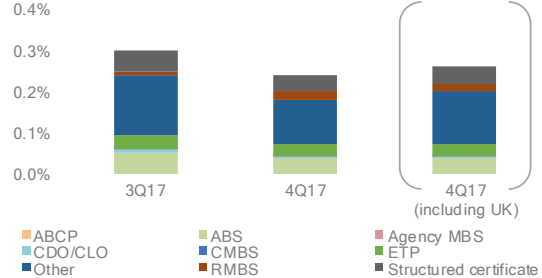
Note: Collective investment undertakings exposure of funds-of-funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. CIUs=Collective Investment Undertakings. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.74
Collective investment undertakings in 4Q17



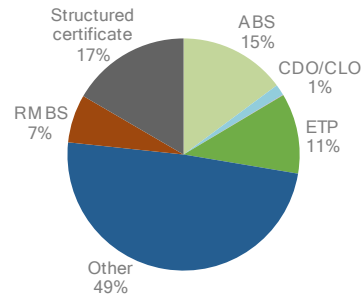
Note: Share of collective investment undertakings held by funds of funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. CIUs=Collective Investment Undertakings. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.75
Structured products



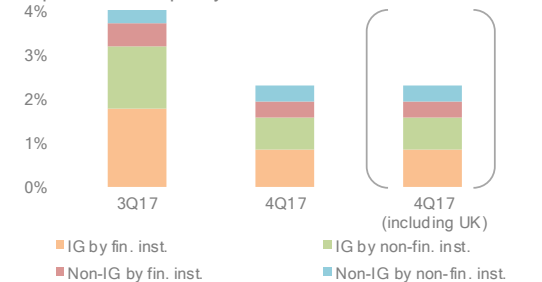
Note: Structured and securitised products exposure of funds of funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.76
Structured products in 4Q17



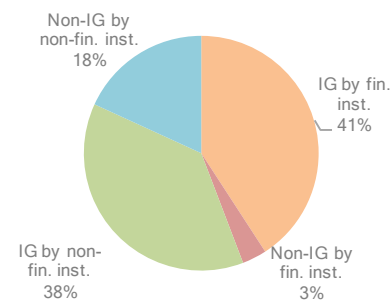
Note: Share of structured and securitised products held by funds of funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.77
Corporate bond quality



Note: Corporate bonds exposure of funds of funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASR-AIF-S.78
Corporate bonds in 4Q17

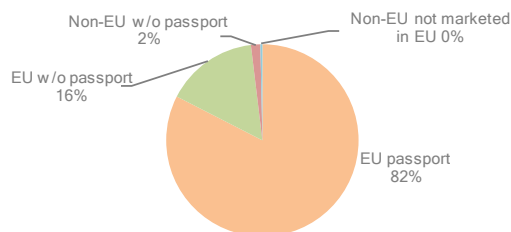


Note: Share of corporate bonds held by funds of funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

Real Estate Funds

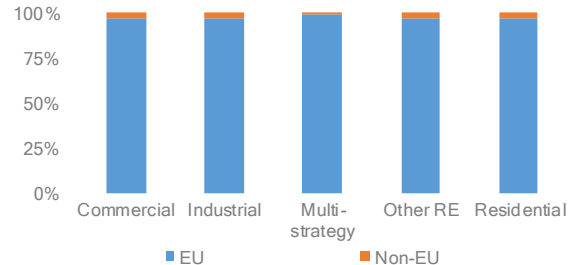
AIF characteristics

ASR-AIF-S.79
AIFMD passport



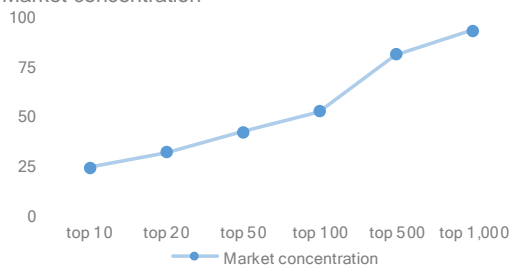
Note: NAV of real estate AIFs by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers are registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.80
EU and non-EU AIFs



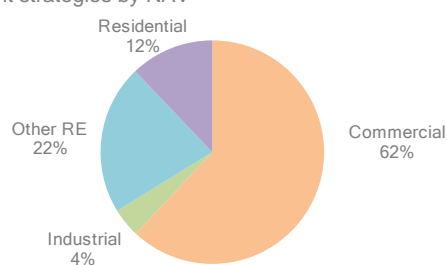
Note: Share of EU and non-EU real estate funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Non-EU AIFs marketed w/o passport. RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National competent Authorities, ESMA.

ASRD-S.81
Market concentration



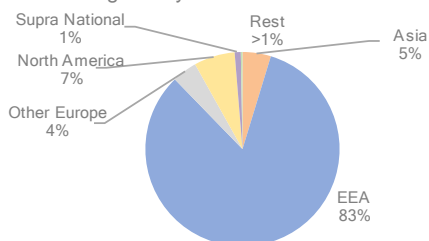
Note: Market concentration of the largest 10-to-1,000 real estate funds managed and/or marketed by authorised EU AIFMs accessing AIFMD passport and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.82
Investment strategies by NAV



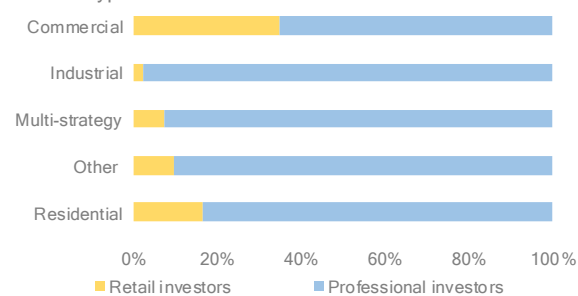
Note: Investment strategies of real estate funds, end of 2017, in % of NAV. Real estate funds managed and/or marketed by full scope EU AIFMs and sub-threshold managers registered only in national jurisdictions. RE= Real estate. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.83
Investment regions by NAV



Note: Regional investment focus of real estate funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.84
Investor type

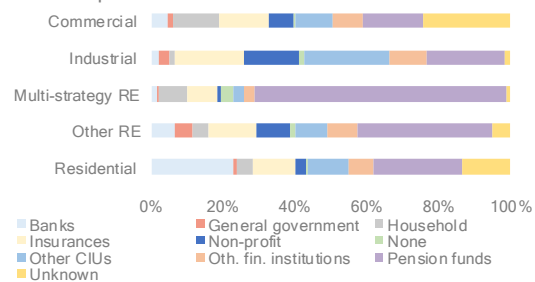


Note: Clients of real estate funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. RE = Real estate. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Liquidity and counterparty risk profile

ASRD-S.85

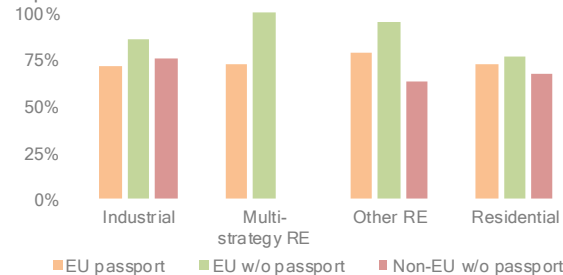
Ownership of RE funds



Note: Ownership of units in real estate funds AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. RE=Real estate. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.86

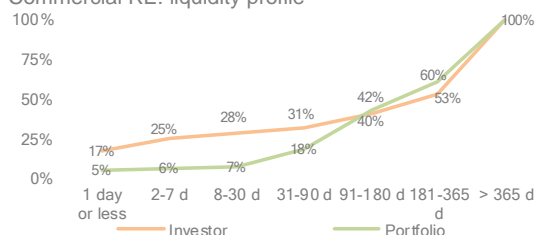
Top five beneficial owners



Note: Investor concentration of real estate managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Investor concentration computed as share of AIF equity beneficially owned by the 5 largest investors. RE=Real estate. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.87

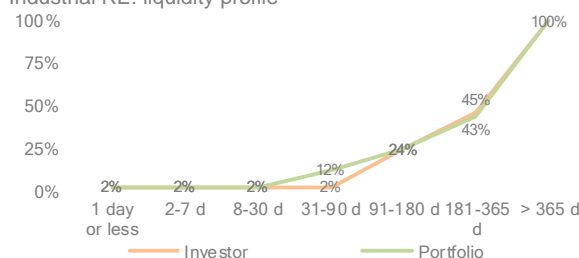
Commercial RE: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of commercial real estate funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.88

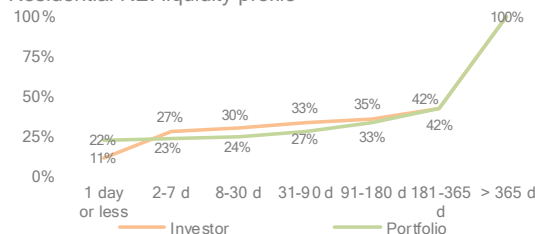
Industrial RE: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of industrial real estate funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.89

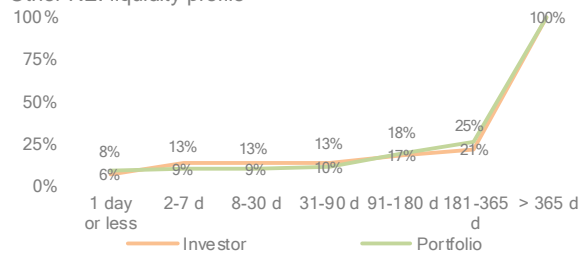
Residential RE: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of residential real estate funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.90

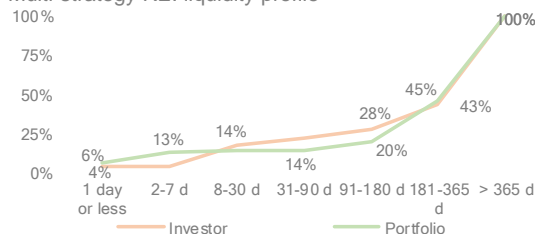
Other RE: liquidity profile



Note: Portfolio and investor liquidity profiles of real estate funds pursuing strategies classified as "other" managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.91

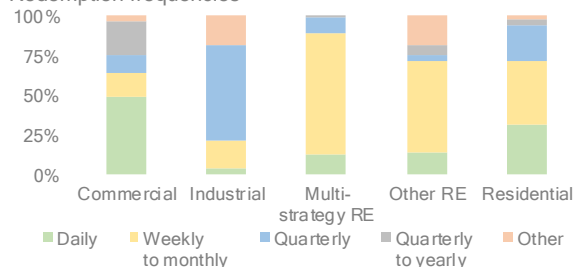
Multi-strategy RE: liquidity profile



Note: Portfolio and investor liquidity profiles of multi-strategy real estate funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.92

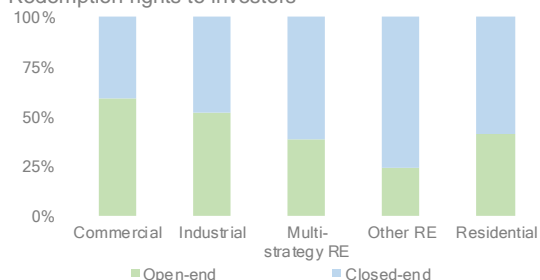
Redemption frequencies



Note: Investor redemption frequencies allowed by open-end real estate funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. RE=Real estate. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.93

Redemption rights to investors

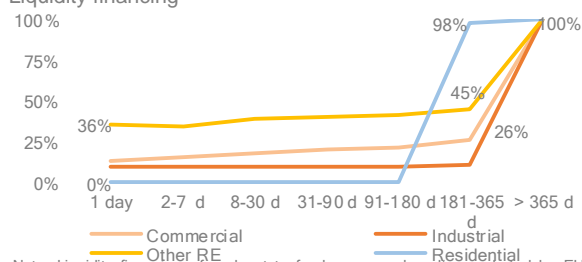


Note: Redemption rights provided in the ordinary course to investors in real estate funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. RE=Real estate. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.94

Liquidity financing

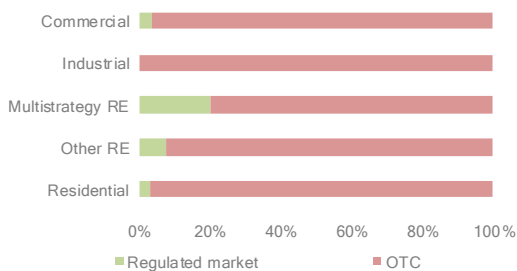


Note: Liquidity financing of real estate funds managed and/or marketed by EU authorised AIFMs, end of 2017. Aggregate amount of borrowing and cash financing divided depending on longest period for which creditors are contractually committed to provide such financing. Borrowing and cash financing include drawn and undrawn, committed and uncommitted lines of credit as well as any term financing. RE=Real estate. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.95

Securities trading

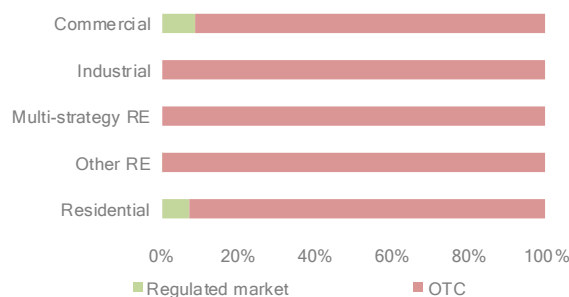


Note: Estimated market value of securities traded on OTC and regulated exchange markets by real estate funds managed and/or marketed by authorised EU AIFMs, in %. RE=Real estate. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.96

Derivatives trading

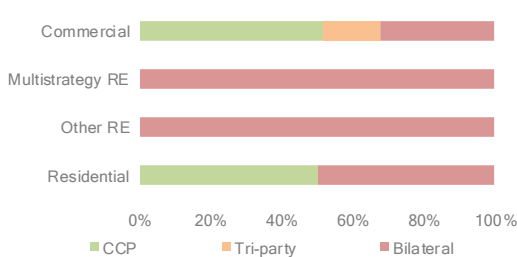


Note: Estimated volume of derivatives traded on OTC and regulated exchange markets by real estate funds managed and/or marketed by authorised EU AIFMs, in %. RE=Real estate. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.97

Repo trades clearing

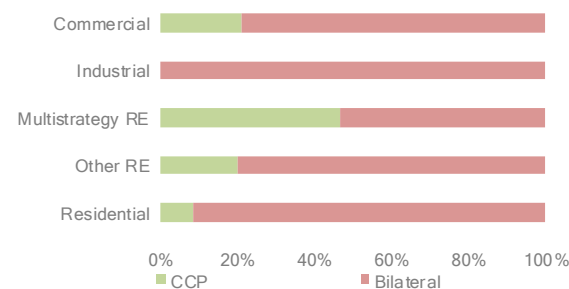


Note: Estimated market value of repo trades cleared by real estate funds managed and/or marketed by authorised EU AIFMs, in %. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. RE=Real estate. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.98

Derivatives clearing



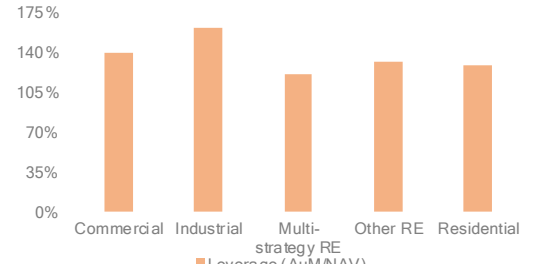
Note: Estimated volume of derivatives cleared bilaterally and via CCP by real estate funds managed and/or marketed by authorised EU AIFMs, in %. RE=Real estate. Data for 24 EEA countries.

Sources: AIFMD database, National Competent Authorities, ESMA.

Leverage and exposure

ASRD-S.99

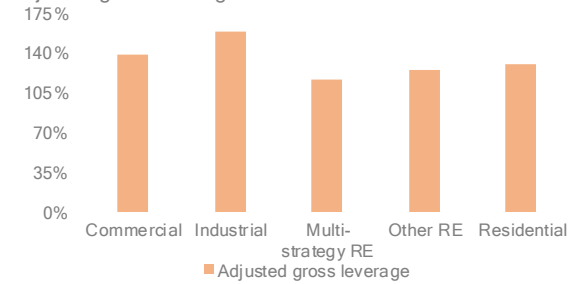
AuM/NAV



Note: Leverage of real estate funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Leverage computed as AuM/NAV ratio. RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

ASRD-S.100

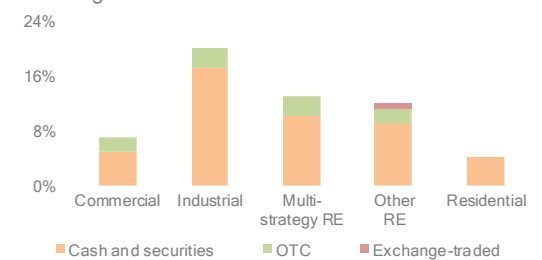
Adjusted gross leverage



Note: Adjusted gross leverage of real estate funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Adjusted gross leverage computed as total exposure less IRDs with respect to NAV. RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National competent authorities, ESMA.

ASRD-S.101

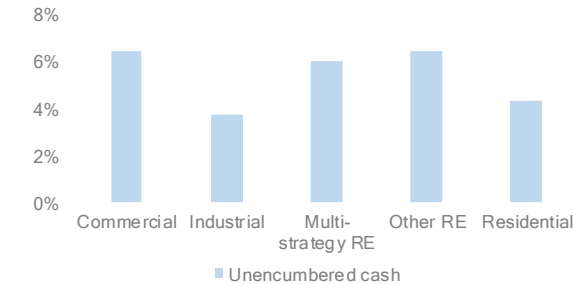
Borrowings embedded in derivatives



Note: Borrowing of cash and securities or embedded in derivatives by real estate funds, end of 2017, in % of total exposure. AIFs managed and/or marketed by authorised EU AIFMs marketed. OTC and exchange-traded derivatives net of margins. RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.102

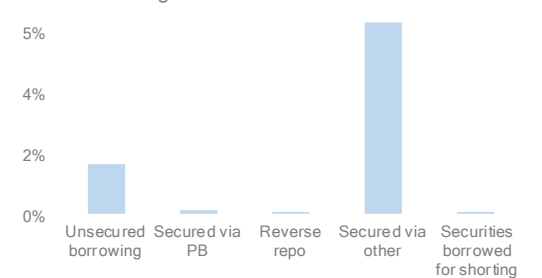
Unencumbered cash



Note: Unencumbered cash held by real estate funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.103

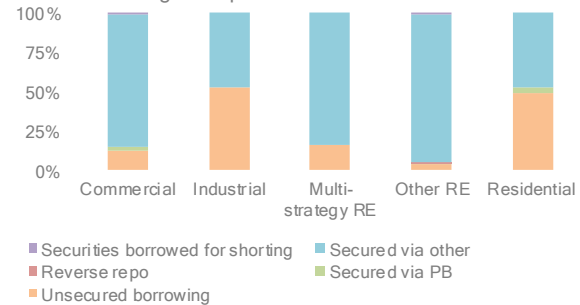
Financial leverage



Note: Cash and securities borrowed by real estate funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.104

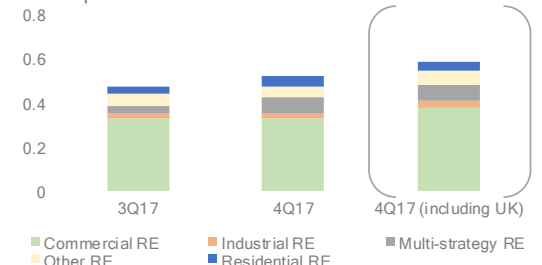
Financial leverage composition



Note: Share cash and securities borrowed by real estate funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.105

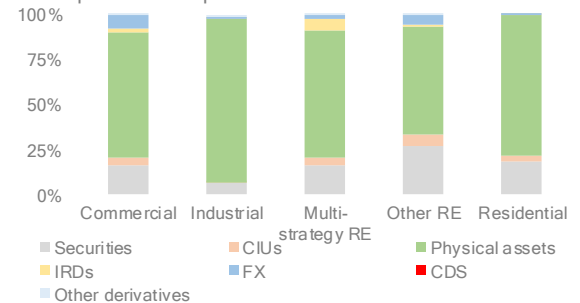
Total exposures



Note: Exposure of real estate funds managed and/or marketed by authorised EU AIFMs, funds quarterly reported, EUR tn. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. RE=Real estate. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

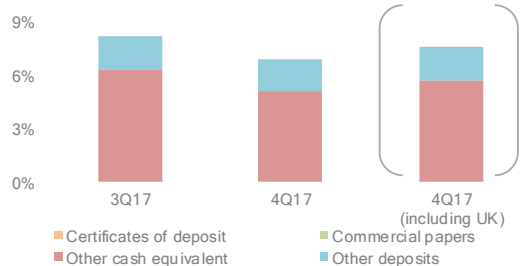
ASRD-S.106

Decomposition of exposures



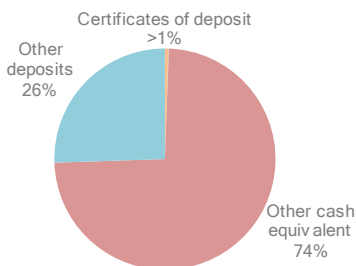
Note: Share of exposures by real estate funds' investment strategies, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. RE=Real estate. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.107
Cash and cash equivalents



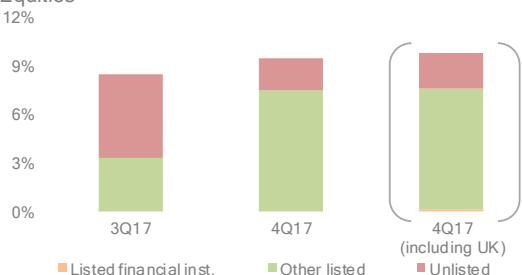
Note: Cash and cash equivalents exposure of real estate funds, AIFs reported quarterly, in % of NAV. Government bonds excluded from other cash equivalents. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.108
Cash and cash equivalents in 4Q17



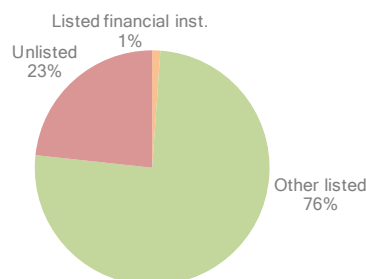
Note: Share of cash and cash equivalents held by real estate funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.109
Equities



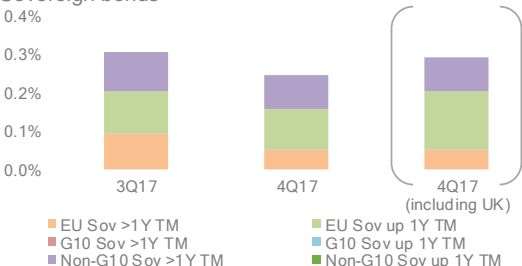
Note: Real estate funds' exposure to equity, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.110
Equities in 4Q17



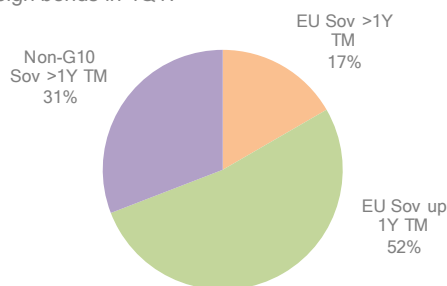
Note: Share of equities held by real estate funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.111
Sovereign bonds



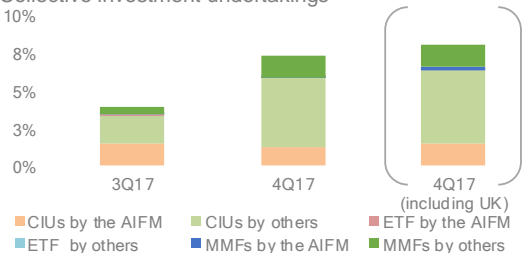
Note: Sovereign bonds exposure of real estate funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Sov=Sovereign bonds, TM=Time to Maturity. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.112
Sovereign bonds in 4Q17



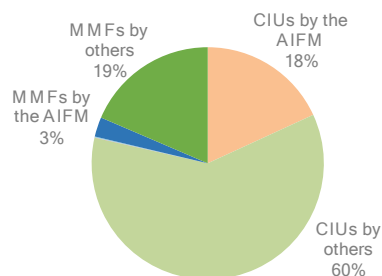
Note: Share of sovereign bonds held by real estate funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries. Sov=Sovereign bonds, TM=Time to Maturity. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.113
Collective investment undertakings



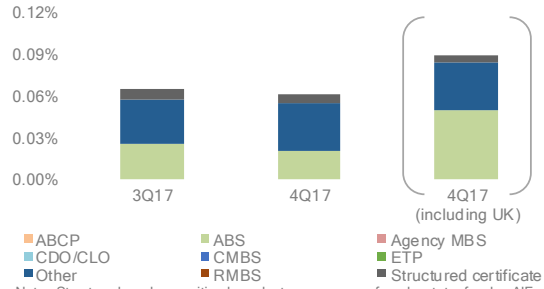
Note: Collective investment undertakings exposure of real estate funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. CIUs=Collective Investment Undertakings. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.114
Collective investment undertakings in 4Q17



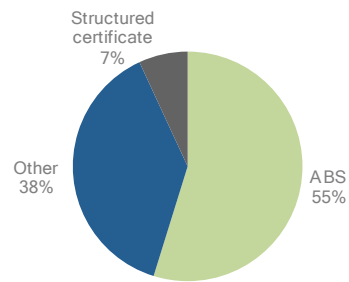
Note: Share of collective investment undertakings held by real estate funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. CIUs=Collective Investment Undertakings. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.115
Structured products



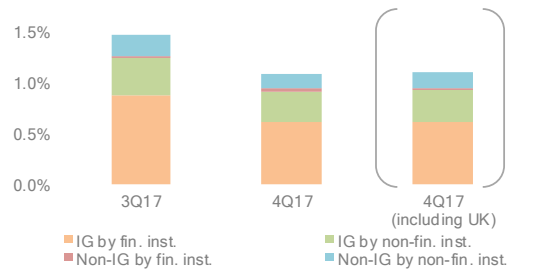
Note: Structured and securitised products exposure of real estate funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.116
Structured products in 4Q17



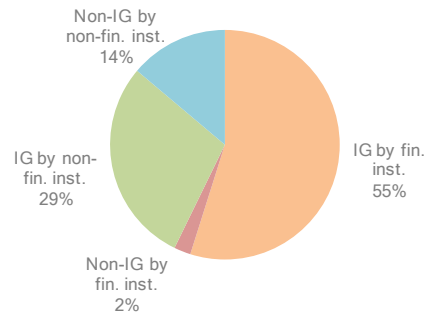
Note: Share of structured and securitised products held by real estate funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.117
Corporate bond quality



Note: Corporate bonds exposure of real estate funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.118
Corporate bonds in 4Q17

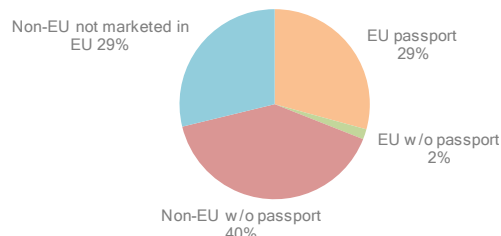


Note: Share of corporate bonds held by real estate funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

Hedge Funds

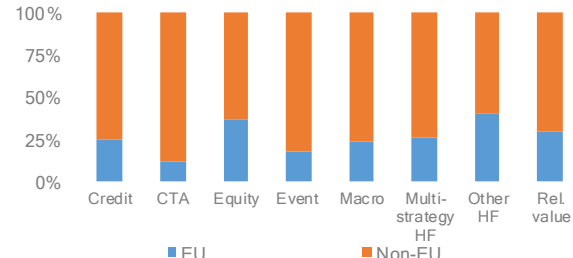
AIF characteristics

ASRD-S.119
AIFMD passport



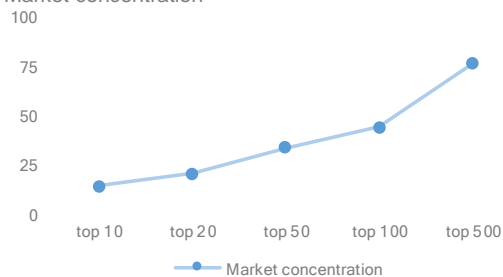
Note: NAV of hedge funds by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers are registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.120
EU and non-EU AIFs



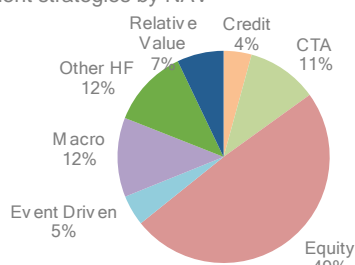
Note: Share of EU and non-EU hedge funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Non-EU AIFs marketed w/o passport. HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National competent Authorities, ESMA.

ASRD-S.121
Market concentration



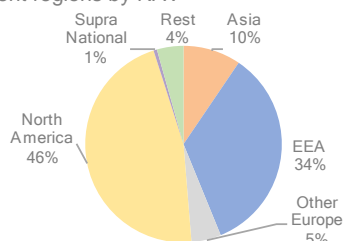
Note: Market concentration of the largest 10-to-500 hedge funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.122
Investment strategies by NAV



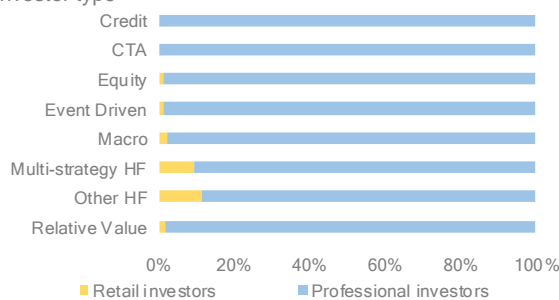
Note: Investment strategies of hedge funds, end of 2017, in % of NAV. Hedge funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions. HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.123
Investment regions by NAV



Note: Regional investment focus of hedge funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments, and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.124
Investor type

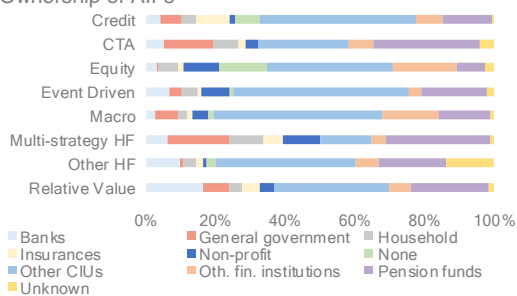


Note: Clients of hedge funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Liquidity and counterparty risk profile

ASRD-S.125

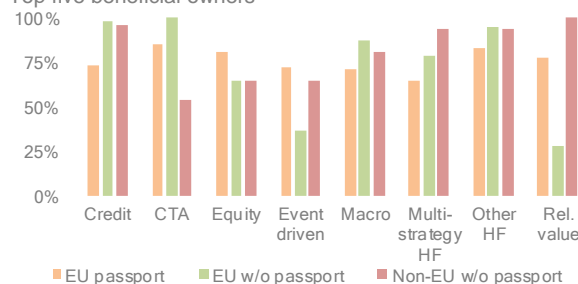
Ownership of AIFs



Note: Ownership of units in hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. HF=Hedge fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.126

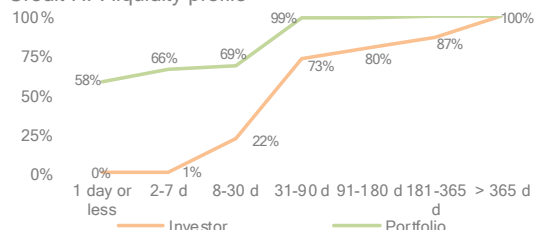
Top five beneficial owners



Note: Investor concentration of hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Investor concentration computed as share of AIF equity beneficially owned by the 5 largest investors. HF=Hedge Fund. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.127

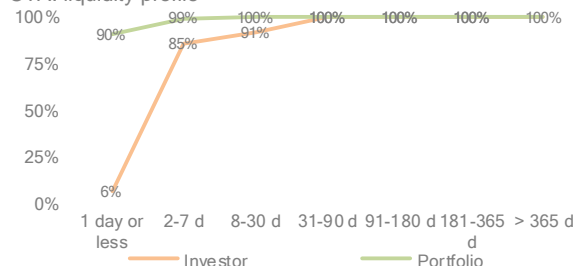
Credit HF: liquidity profile



Note: Portfolio and investors liquidity profiles of funds of credit hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.128

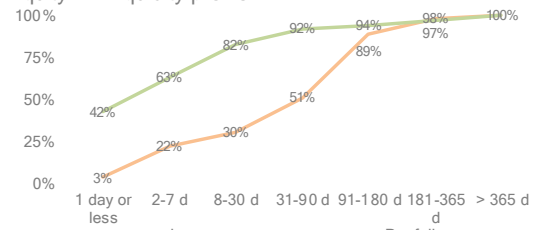
CTA: liquidity profile



Note: Portfolio and investors liquidity profiles of CTA managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.129

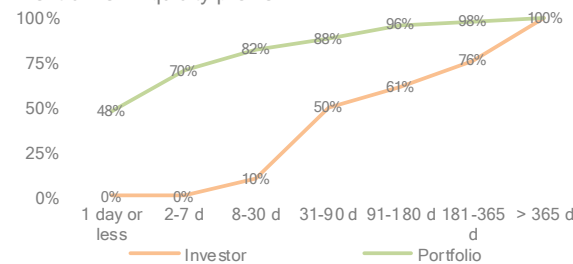
Equity HF: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of equity hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.130

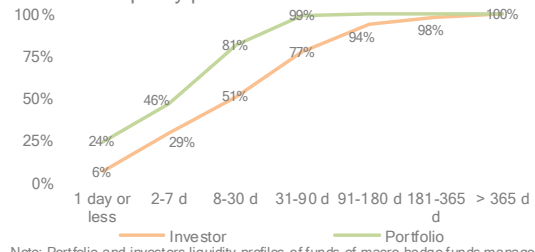
Event driven: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of event driven hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.131

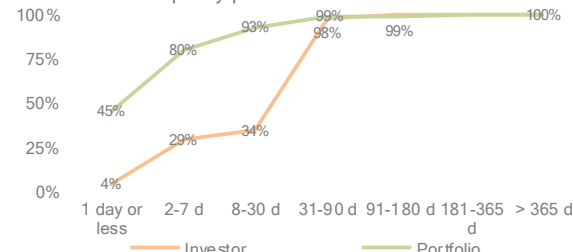
Macro HF: liquidity profile



Note: Portfolio and investors liquidity profiles of funds of macro hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.132

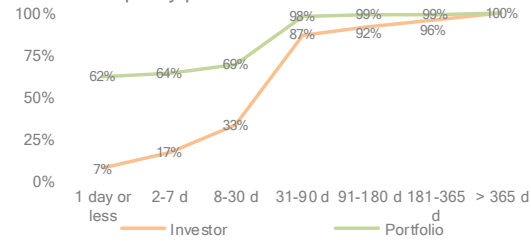
Relative value: liquidity profile



Note: Portfolio and investor liquidity profiles of relative value hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.133

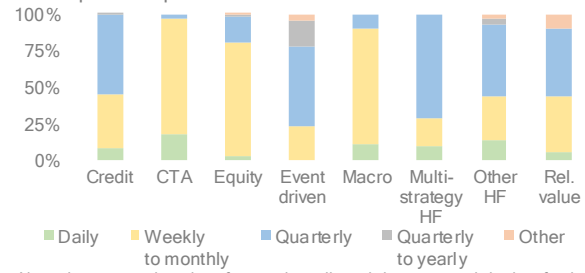
Other HF: liquidity profile



Note: Portfolio and investors liquidity profiles of hedge funds pursuing strategies classified as "other" managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.134

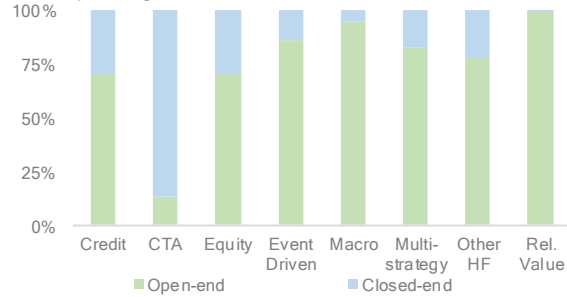
Redemption frequencies



Note: Investor redemption frequencies allowed by open-end hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.135

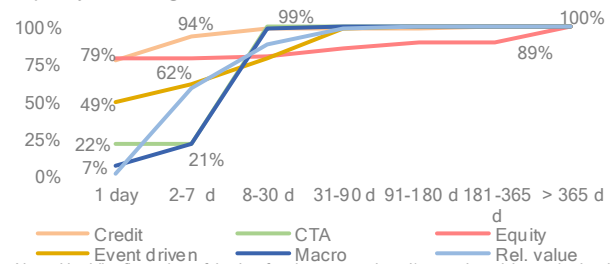
Redemption rights to investors



Note: Redemption rights provided in the ordinary course to investors in hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.136

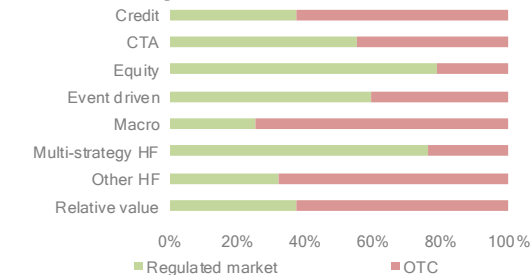
Liquidity financing



Note: Liquidity financing of hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017. Aggregate amount of borrowing and cash financing divided depending on longest period for which creditors are contractually committed to provide such financing. Borrowing and cash financing include drawn and undrawn, committed and uncommitted lines of credit as well as any term financing. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.137

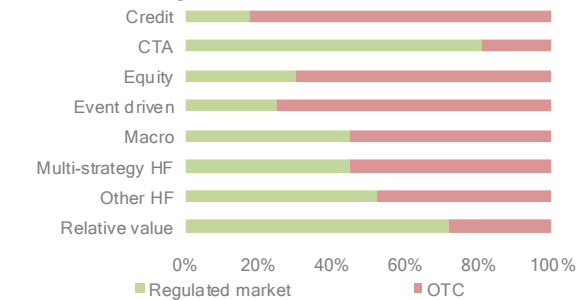
Securities trading



Note: Estimated market value of securities traded on OTC and regulated exchange markets by hedge funds managed and/or marketed by authorised EU AIFMs, in %. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.138

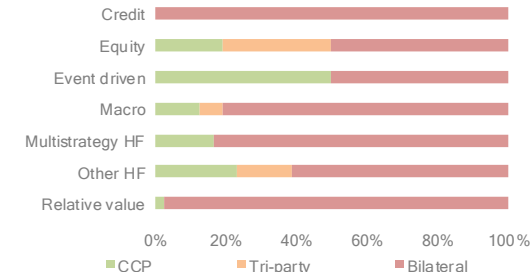
Derivatives trading



Note: Estimated volume of derivatives traded on OTC and regulated exchange markets by hedge funds managed and/or marketed by authorised EU AIFMs, in %. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.139

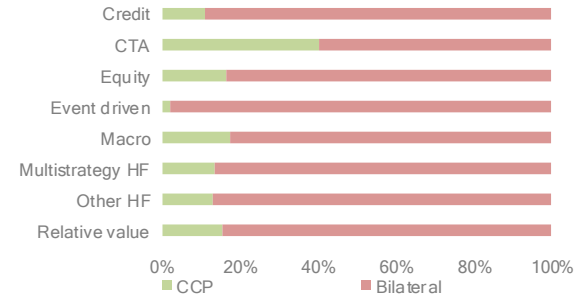
Repo trades clearing



Note: Estimated market value of repo trades cleared by hedge funds managed and/or marketed by authorised EU AIFMs, in %. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.140

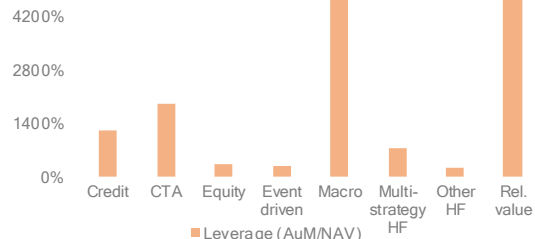
Derivative transactions clearing



Note: Estimated volume of derivatives cleared bilaterally and via CCP by AIFs managed and/or marketed by authorised EU AIFMs, in %. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

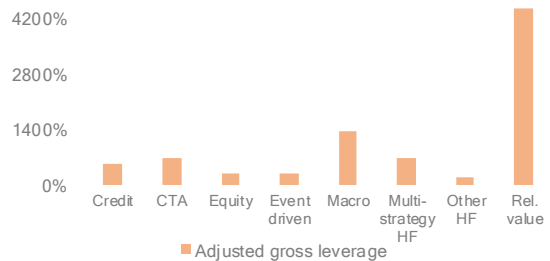
Leverage and exposure

ASRD-S.141
AuM/NAV



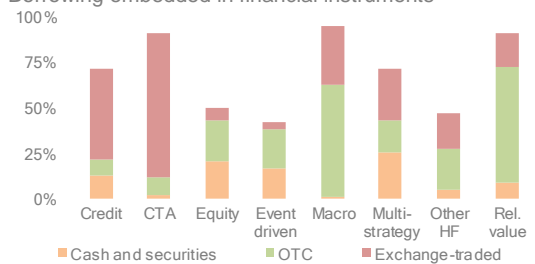
Note: Leverage of hedge funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Leverage computed as AuM/NAV ratio. HF=Hedge funds. Data for 24 EEA countries.
Sources: AIFMD database, National competent authorities, ESMA.

ASRD-S.142
Adjusted gross leverage



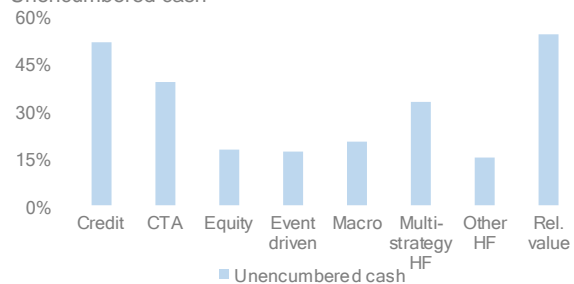
Note: Adjusted gross leverage of hedge funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Adjusted gross leverage computed as total exposure less IRDs with respect to NAV. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National competent authorities, ESMA.

ASRD-S.143
Borrowing embedded in financial instruments



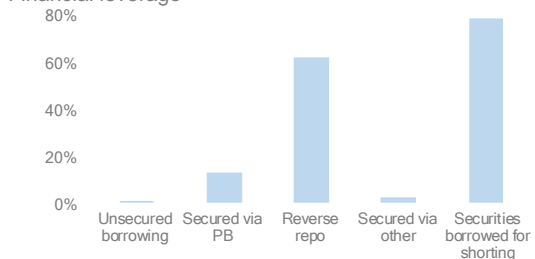
Note: Borrowing of cash and securities or embedded in derivatives by hedge funds, end of 2017, in % of total exposure. AIFs managed and/or marketed by authorised EU AIFMs. OTC and exchange-traded derivatives net of margins. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.144
Unencumbered cash



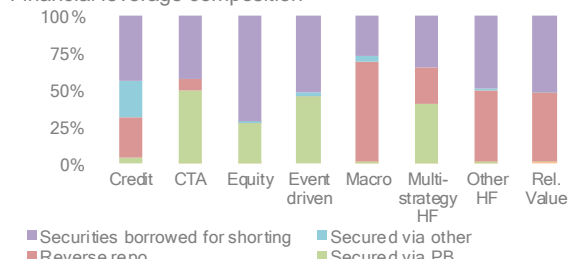
Note: Unencumbered cash held by hedge funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.145
Financial leverage



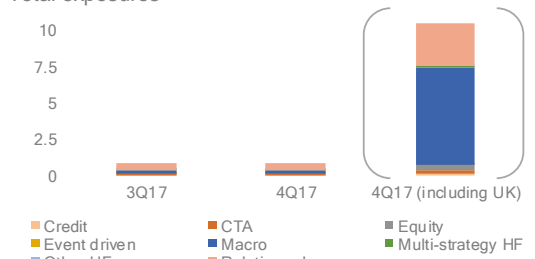
Note: Cash and securities borrowed by hedge funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. F=Funds of funds, None=No predominant type. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.146
Financial leverage composition



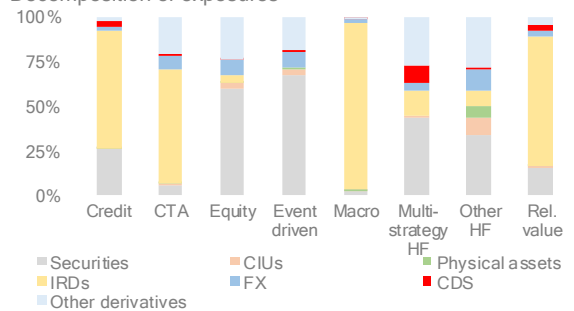
Note: Share of cash and securities borrowed by hedge funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. F=Funds of funds, None=No predominant type. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.147
Total exposures



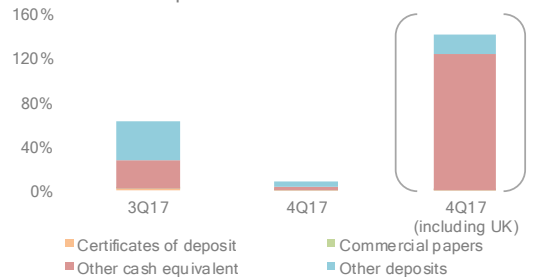
Note: Exposures of hedge funds managed and/or marketed by authorised EU AIFMs, funds quarterly reported, EUR tn. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. HF=Hedge fund. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.148
Decomposition of exposures



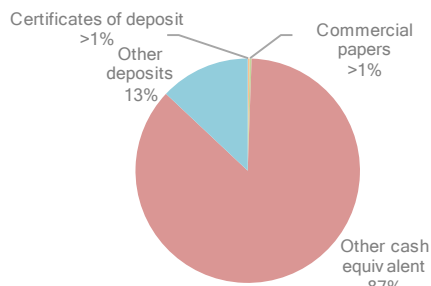
Note: Share of exposures by hedge funds' investment strategies, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. HF=Hedge fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.149
Cash and cash equivalents



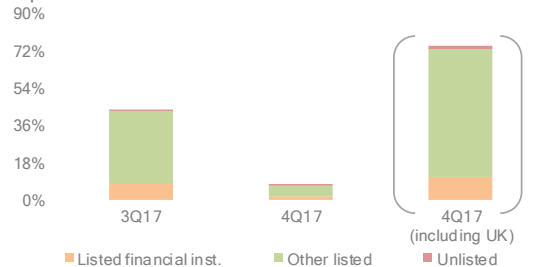
Note: Cash and cash equivalents exposure of hedge funds, AIFs reported quarterly, in % of NAV. Government bonds excluded from the other cash equivalents. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.150
Cash and cash equivalents in 4Q17



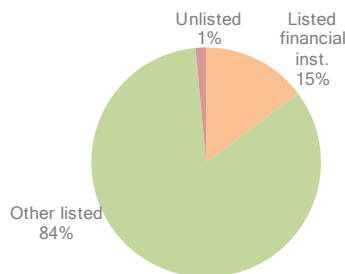
Note: Share of cash and cash equivalents held by hedge funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.151
Equities



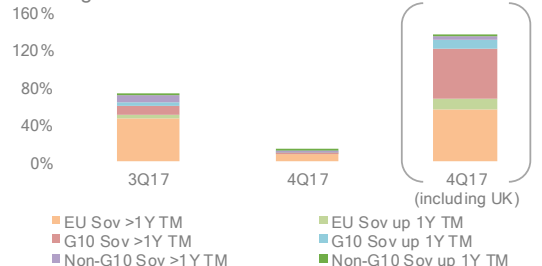
Note: Hedge funds' exposure to equity, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.152
Equities in 4Q17



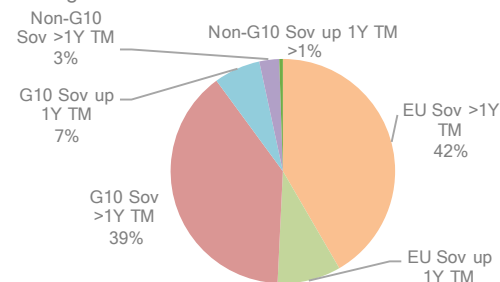
Note: Share of equities held by hedge funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.153
Sovereign bonds



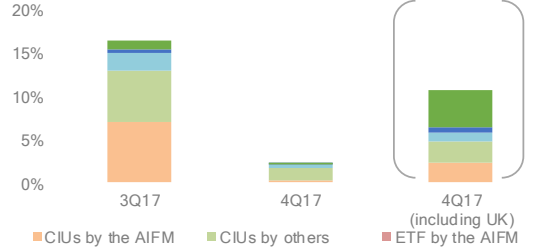
Note: Sovereign bonds exposure of hedge funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Sov=Sovereign bonds, TM=Time to Maturity. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.154
Sovereign bonds in 4Q17



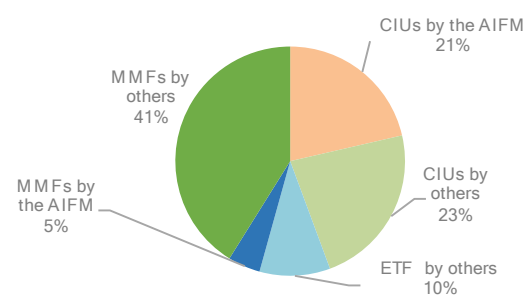
Note: Share of sovereign bonds held by hedge funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries. Sov=Sovereign bonds, TM=Time to Maturity.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.155
Collective investment undertakings



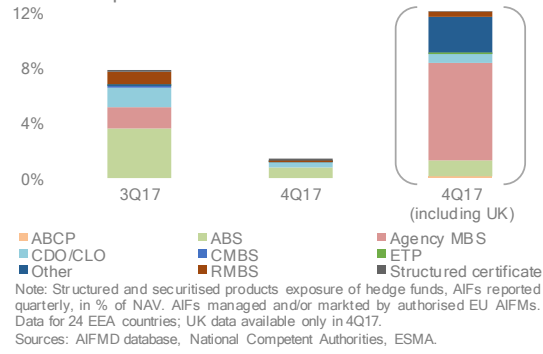
Note: Collective investment undertakings exposure of hedge funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. CIUs=Collective Investment Undertakings. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.156
Collective investment undertakings in 4Q17

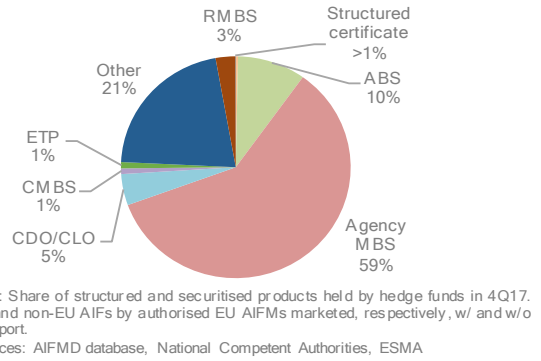


Note: Share of collective investment undertakings held by hedge funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. CIUs=Collective Investment Undertakings. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

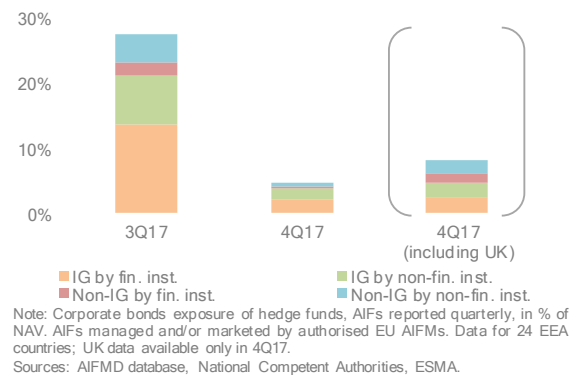
ASRD-S.157
Structured products



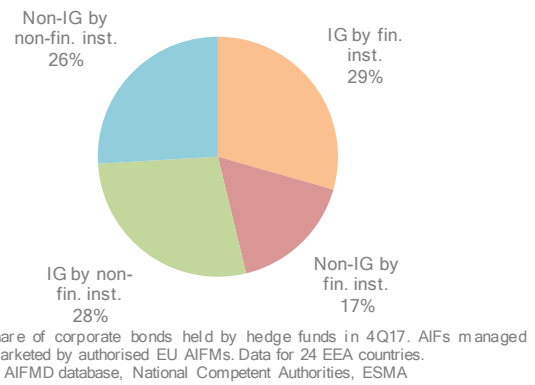
ASRD-S.158
Structured products in 4Q17



ASRD-S.159
Corporate bond quality



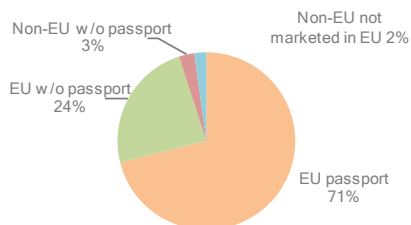
ASRD-S.160
Corporate bonds in 4Q17



Private Equity Funds

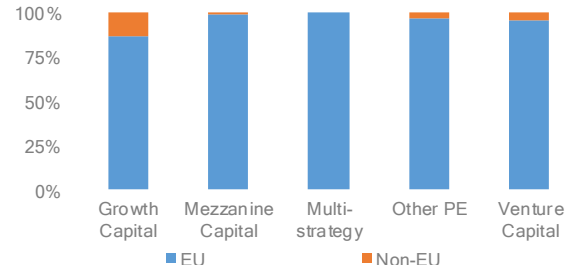
AIF characteristics

ASRD-S.161
AIFMD passport



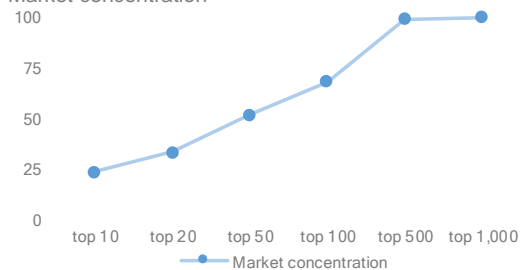
Note: NAV of private equity funds by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport, subthreshold managers registered only in national jurisdictions w/o passport. Data for 24 EEA countries
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.162
EU and non-EU AIFs



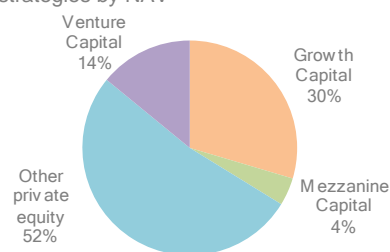
Note: Share of EU and non-EU private equity funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Non-EU AIFs marketed w/o passport. PE=Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National competent Authorities, ESMA.

ASRD-S.163
Market concentration



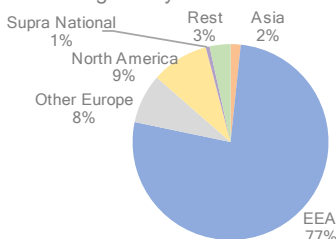
Note: Market concentration of the largest 10-to-1,000 private equity funds managed and/or marketed by authorised EU AIFMs accessing AIFMD passport and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.164
Investment strategies by NAV



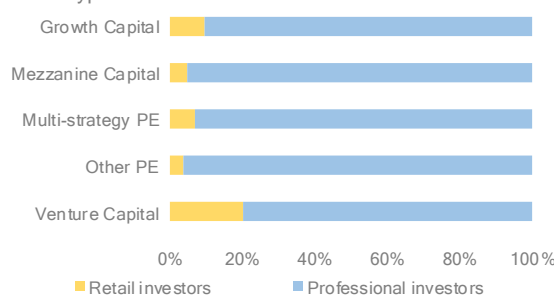
Note: Investment strategies of private equity funds, end of 2017, in % of NAV. Private equity funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.165
Investment regions by NAV



Note: Regional investment focus of private equity funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments, and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.166
Investor type

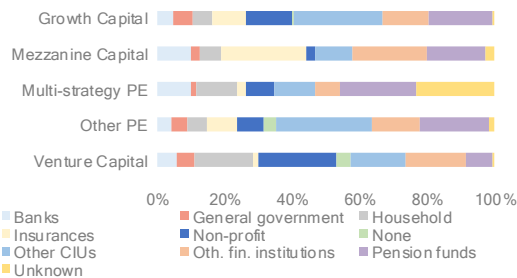


Note: Clients of private equity funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. PE = Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

Liquidity and counterparty risk profile

ASRD-S.167

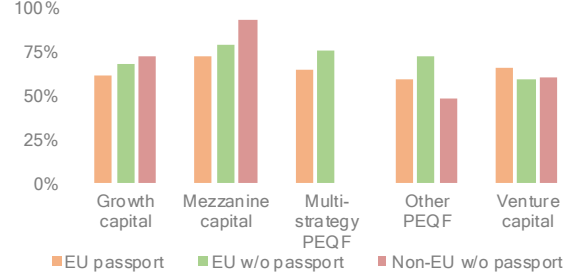
Ownership of PE funds



Note: Ownership of units in private equity funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. PE=Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.168

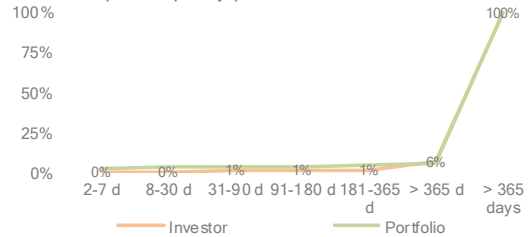
Top five beneficial owners



Note: Investor concentration of private equity funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Investor concentration computed as share of AIF equity beneficially owned by the 5 largest investors. PE=Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.169

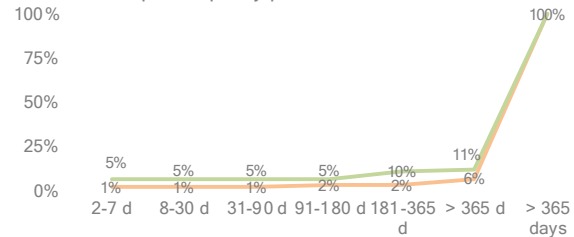
Growth capital: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of growth capital funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.170

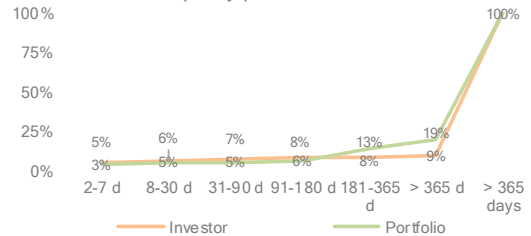
Mezzanine capital: liquidity profile



Note: Portfolio and investor liquidity profiles of mezzanine capital funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.171

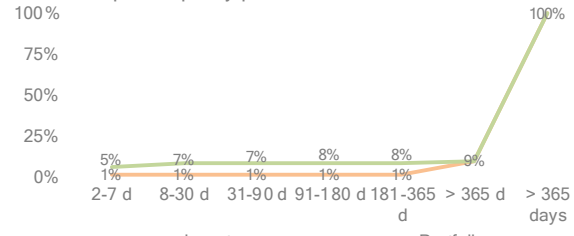
Other PE funds: liquidity profile



Note: Portfolio and investor liquidity profiles of private equity funds pursuing strategies classified as "other" managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.172

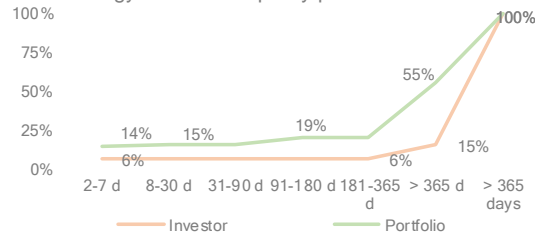
Venture capital: liquidity profile



Note: Portfolio and investor liquidity profiles of venture capital funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.173

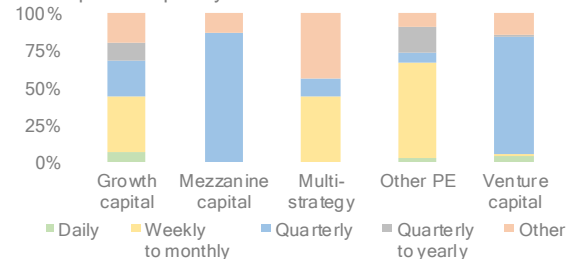
Multi-strategy PE funds: liquidity profile



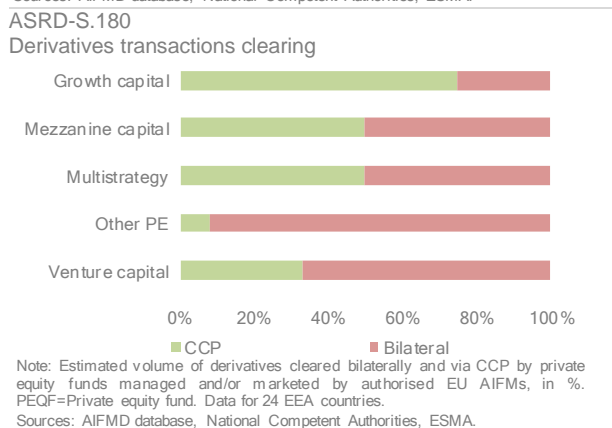
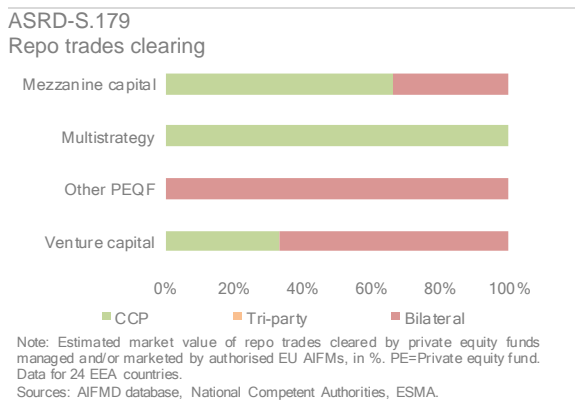
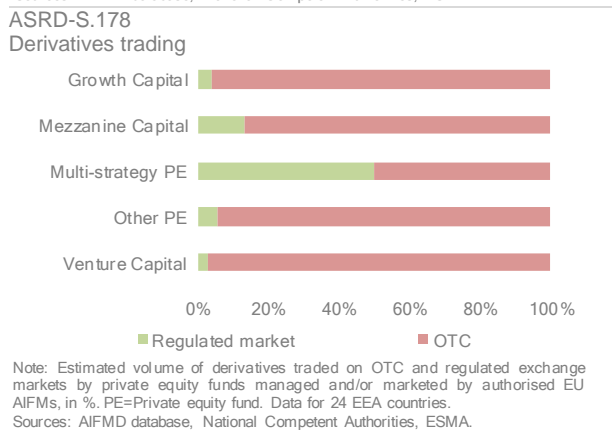
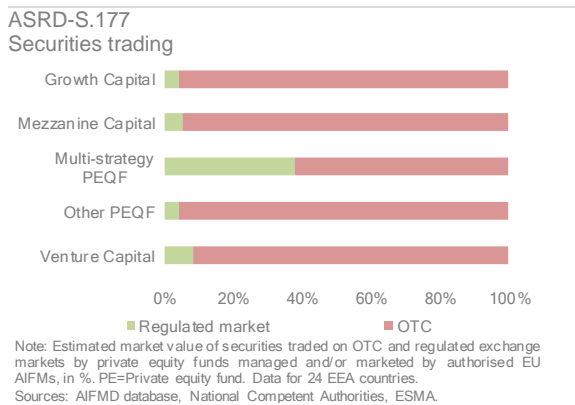
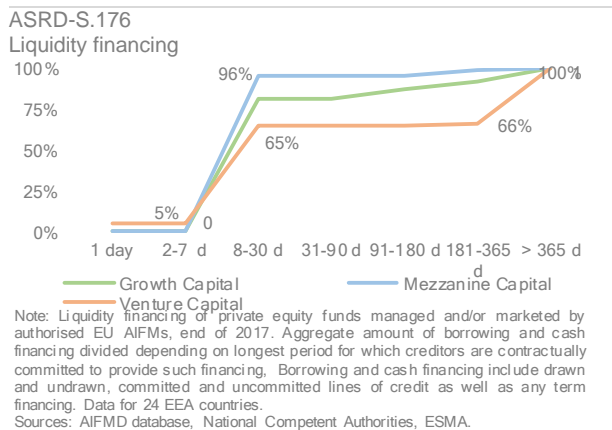
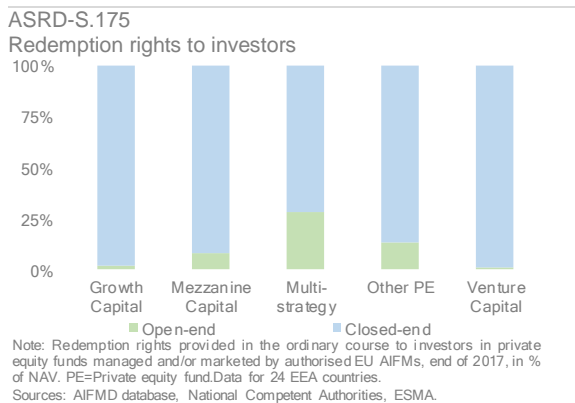
Note: Portfolio and investor liquidity profiles of multi-strategy private equity funds managed and/or marketed by authorised EU AIFMs, end of 2017. Portfolio profile determined by percentage of the funds' portfolios capable of being liquidated within each specified period, investor liquidity profile depend on shortest period within each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.174

Redemption frequency



Note: Investor redemption frequencies allowed by open-end private equity funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. PEQF=Private Equity Fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

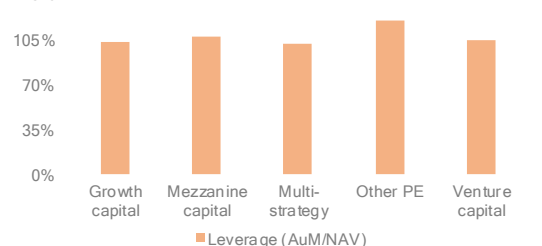


Leverage and exposure

ASRD-S.181

AuM/NAV

140%

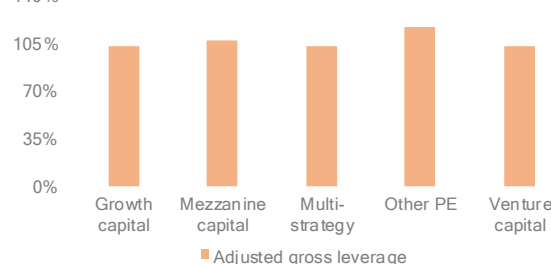


Note: Leverage of private equity funds managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Leverage computed as AuM/NAV ratio. PE=Private equity funds. Data for 24 EEA countries.
Sources: AIFMD database, National competent authorities, ESMA.

ASRD-S.182

Adjusted gross leverage

140%

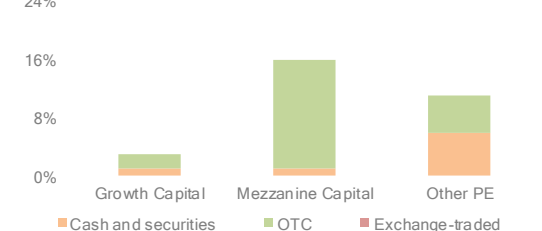


Note: Adjusted gross leverage of private equity funds managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Adjusted gross leverage computed as total exposure less IRDs with respect to NAV. PE=Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National competent authorities, ESMA.

ASRD-S.183

Borrowing embedded in financial instruments

24%

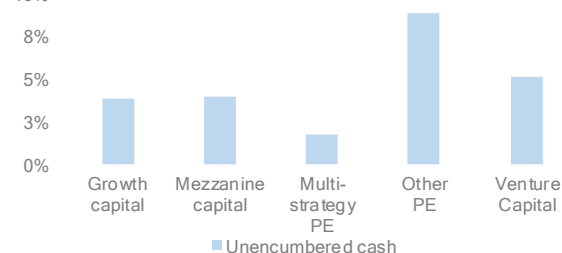


Note: Borrowing of cash and securities or embedded in derivatives by private equity funds, end of 2017, in % of total exposure. AIFs managed and/or marketed by authorised EU AIFMs marketed. OTC and exchange-traded derivatives net of margins. PE=Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.184

Unencumbered cash

10%

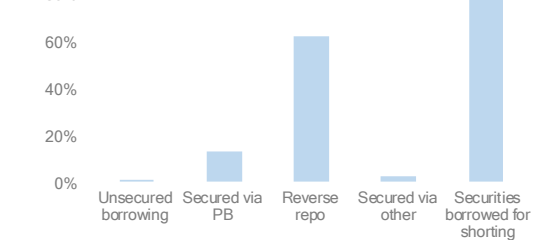


Note: Unencumbered cash held by private equity funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. PE=Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.185

Financial leverage

80%

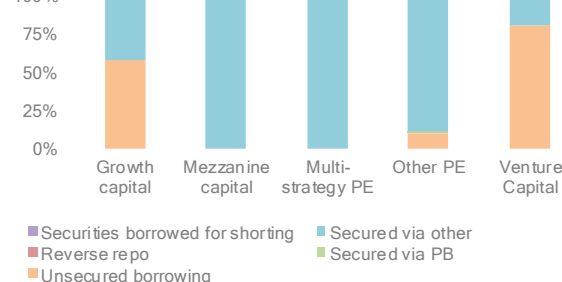


Note: Cash and securities borrowed by hedge funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. FoF=Funds of funds, None=No predominant type. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.186

Financial leverage composition

100%

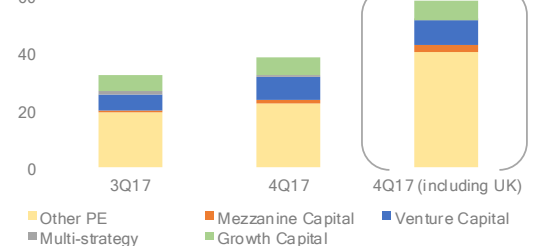


Note: Share cash and securities borrowed by private equity funds, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. PE=Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.187

Total exposures

60

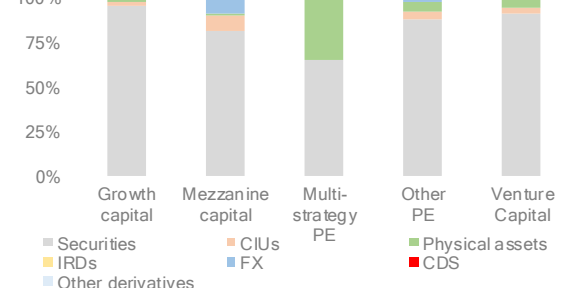


Note: Exposure of private equity funds managed and/or marketed by authorised EU AIFMs, funds quarterly reported, EUR tn. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. PE=Private equity fund. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.188

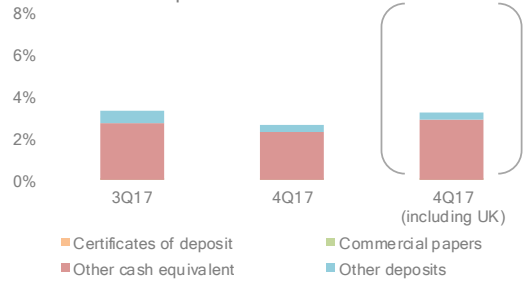
Decomposition of exposures

100%



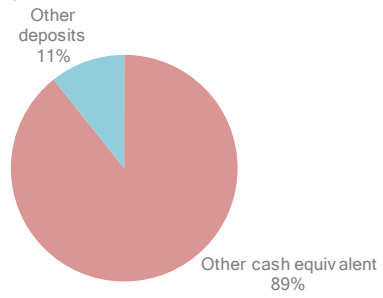
Note: Share of exposures by private equity funds' investment strategies, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. PE=Private equity fund. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.189
Cash and cash equivalents



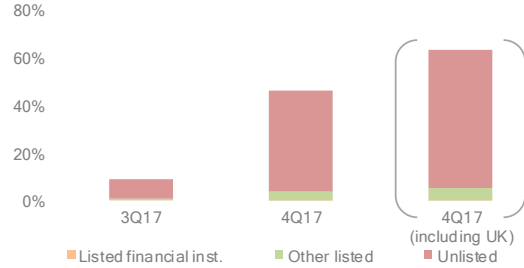
Note: Cash and cash equivalents exposure of private equity funds, AIFs reported quarterly, in % of NAV. Government bonds excluded from other cash equivalents. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.190
Cash and cash equivalents in 4Q17



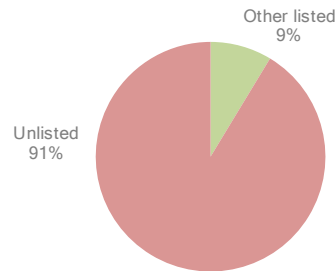
Note: Share of cash and cash equivalents held by private equity funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.191
Equities



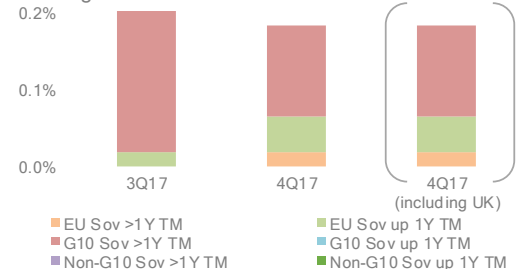
Note: Private equity funds' exposure to equity, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.192
Equities in 4Q17



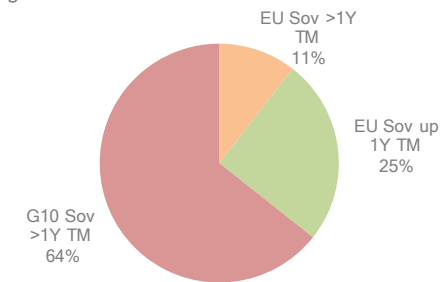
Note: Share of equities held by private equity funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.193
Sovereign bonds



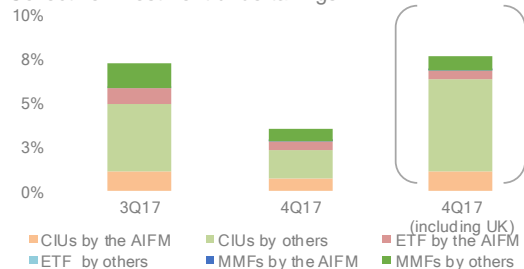
Note: Sovereign bonds exposure of private equity funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Sov=Sovereign bonds, TM=Time to Maturity. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.194
Sovereign bonds in 4Q17



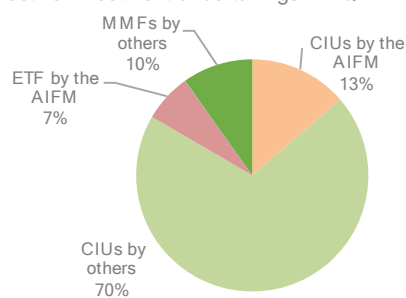
Note: Share of sovereign bonds held by private equity funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries. Sov=Sovereign bonds, TM=Time to Maturity. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.195
Collective investment undertakings



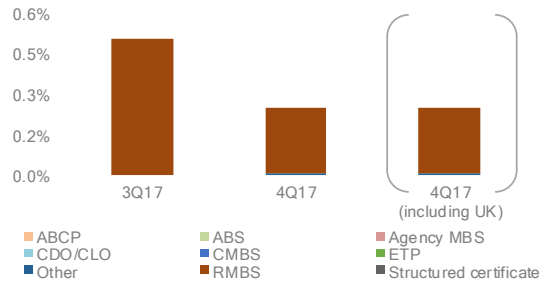
Note: Collective investment undertakings exposure of private equity funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. CIUs=Collective Investment Undertakings. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.196
Collective investment undertakings in 4Q17



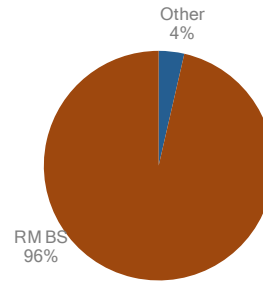
Note: Share of collective investment undertakings held by private equity funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. CIUs=Collective Investment Undertakings. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.197
Structured products in 4Q17



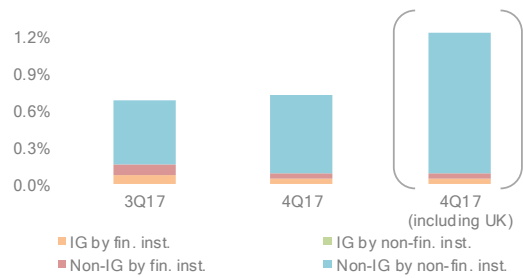
Note: Structured and securitised products exposure of private equity funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.198
Structured products in 4Q17



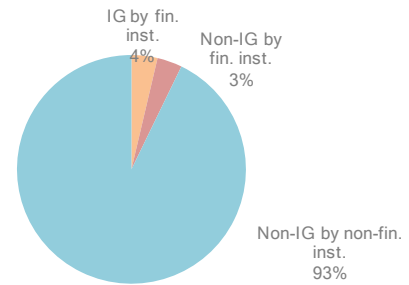
Note: Share of structured and securitised products held by private equity funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.199
Corporate bond quality



Note: Corporate bonds exposure of private equity funds, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.200
Corporate bonds in 4Q17

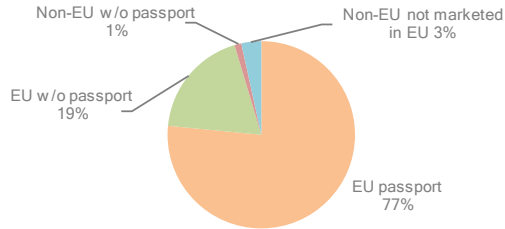


Note: Share of corporate bonds held by private equity funds in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs marketed, respectively, w/ and w/o passport. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Other AIFs

AIF characteristics

ASRD-S.201
AIFMD passport



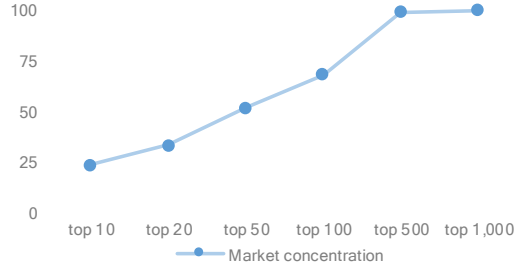
Note: NAV of AIFs classified as Other by manager's access to AIFMD passport, end of 2017, in %. Authorised EU AIFMs with access to AIFMD passport or marketing non-EU AIFs w/o passport, sub-threshold managers registered only in national jurisdictions w/o passporting rights. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.202
EU and non-EU AIFs



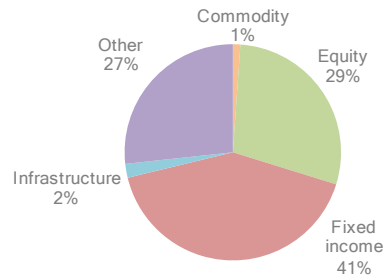
Note: Share of EU and non-EU AIFs classified as Other managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Non-EU AIFs marketed w/o passport. Data for 24 EEA countries. Sources: AIFMD database, National competent Authorities, ESMA.

ASRD-S.203
Market concentration



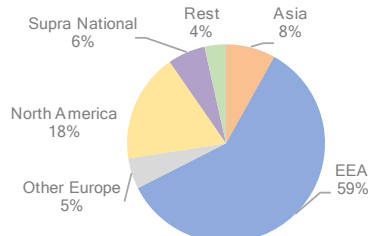
Note: Market concentration of the largest 10-to-1,000 private equity funds managed and/or marketed by authorised EU AIFMs accessing AIFMD passport and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.204
Investment strategy by NAV



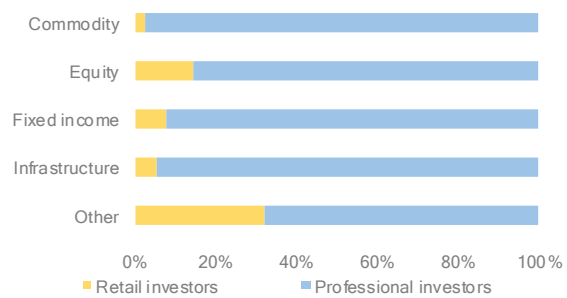
Note: Investment strategies of AIFs classified as Other, end of 2017, in % of NAV. AIFs managed and/or marketed by full scope EU AIFMs and sub-threshold managers registered only in national jurisdictions. Data for 24 EEA countries. Sources: National Competent Authorities, ESMA.

ASRD-S.205
Investment regions by NAV



Note: Regional investment focus of EU AIFs classified as Other managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Geo-focus determined according to the domicile of investments and the supranational category including investments without a predominant geo-focus. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.206
Investor type

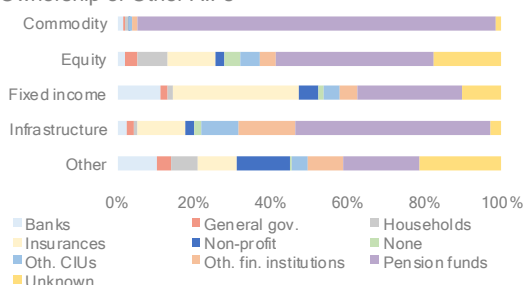


Note: Clients of AIFs classified as Other AIFs managed and/or marketed by authorised EU AIFMs and sub-threshold managers registered only in national jurisdictions, end of 2017, in % of NAV. Data for 24 EEA countries. Sources: AIFMD database, National Competent Authorities, ESMA.

Liquidity and counterparty risk profile

ASRD-S.207

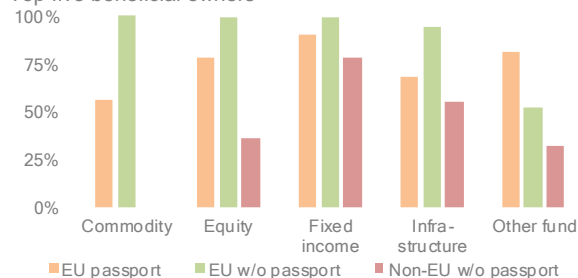
Ownership of Other AIFs



Note: Ownership of units in AIFs classified as Other AIFs managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. CIUs=Collective investment undertakings. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.208

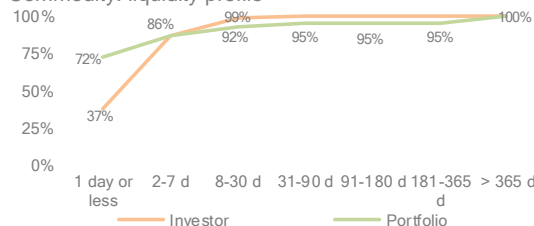
Top five beneficial owners



Note: Investor concentration of AIFs classified as Other managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. Investor concentration computed as share of AIF equity beneficially owned by the 5 largest investors. Data for 24 EEA countries..
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.209

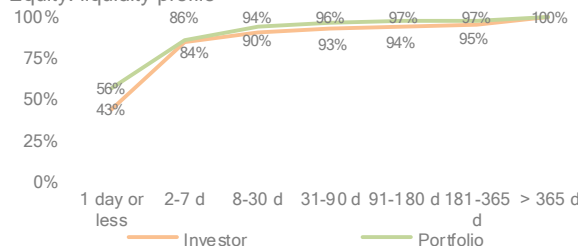
Commodity: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of commodity funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.210

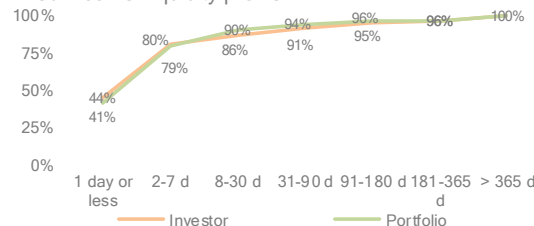
Equity: liquidity profile



Note: Portfolio and investor liquidity profiles of equity funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.211

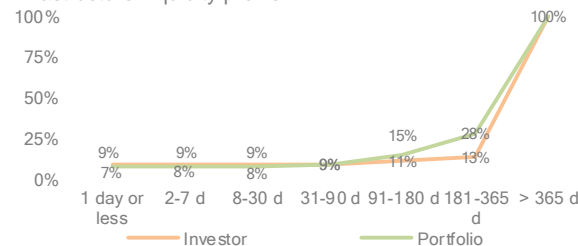
Fixed income: liquidity profile



Note: Portfolio and investor liquidity profiles of fixed income funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.212

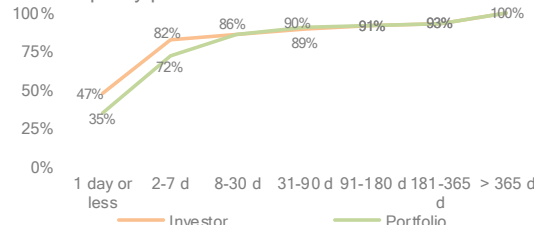
Infrastructure: liquidity profile



Note: Portfolio and investor liquidity profiles of funds of infrastructure funds managed and/or marketed by authorised EU AIFMs, end of 2017. 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 each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.213

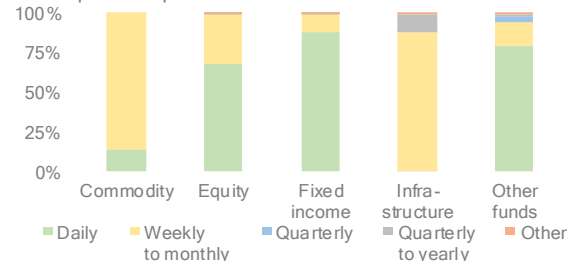
Other: liquidity profile



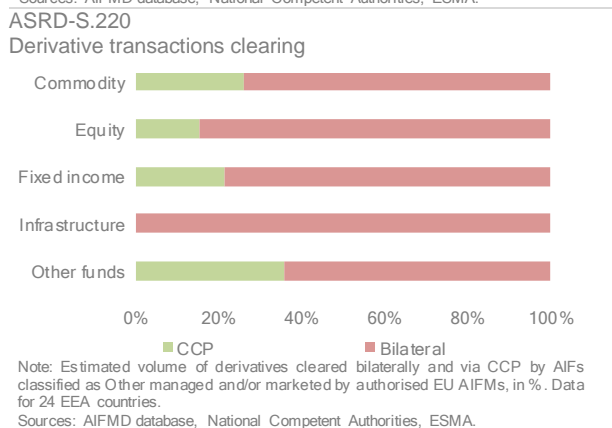
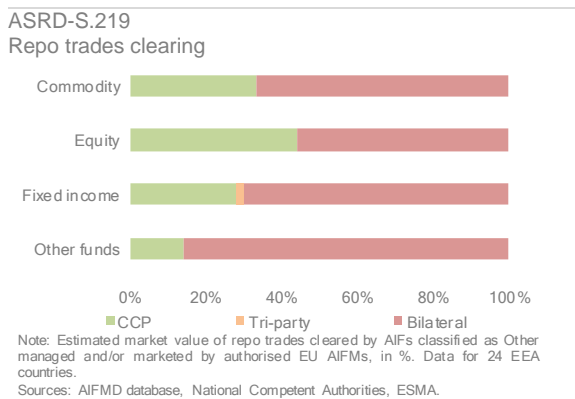
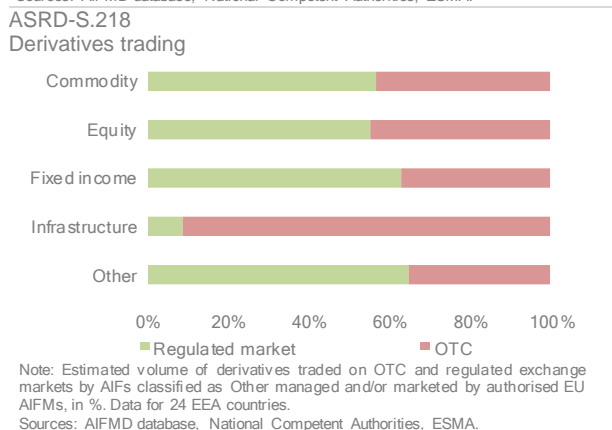
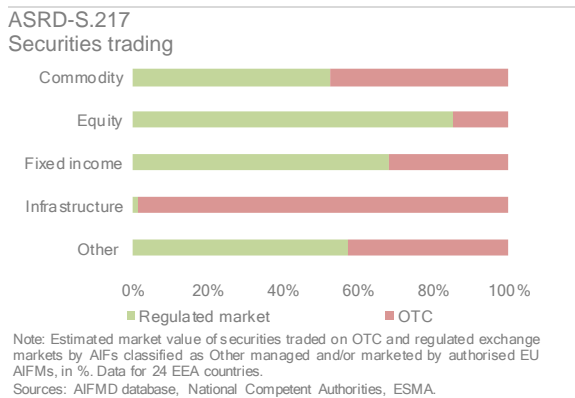
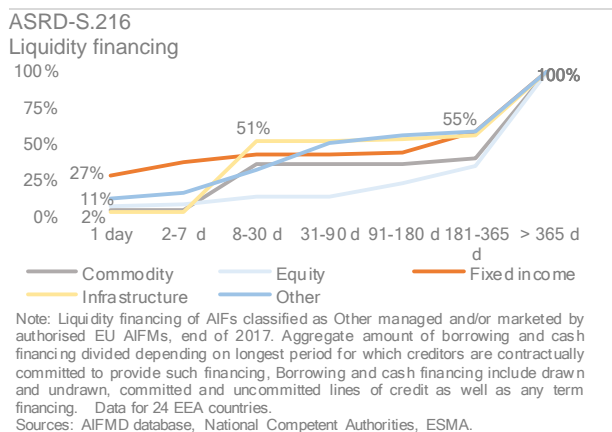
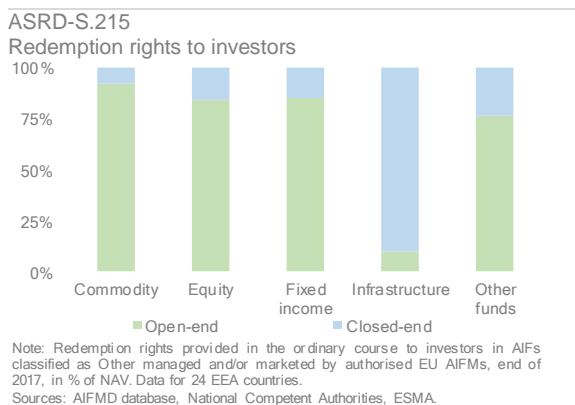
Note: Portfolio and investor liquidity profiles of AIFs classified as Other and pursuing "other" strategies managed and/or marketed by authorised EU AIFMs, end of 2017. Portfolio profile determined by percentage of the funds' portfolios capable of being liquidated within each specified period, investor liquidity profile depend on shortest period within each fund could be withdrawn or investors could receive redemption payments. d= Days. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.214

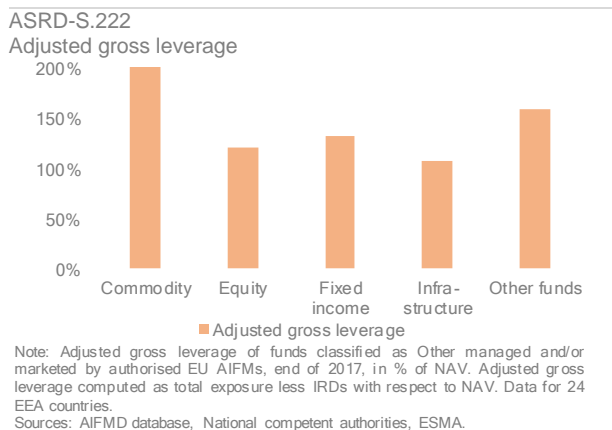
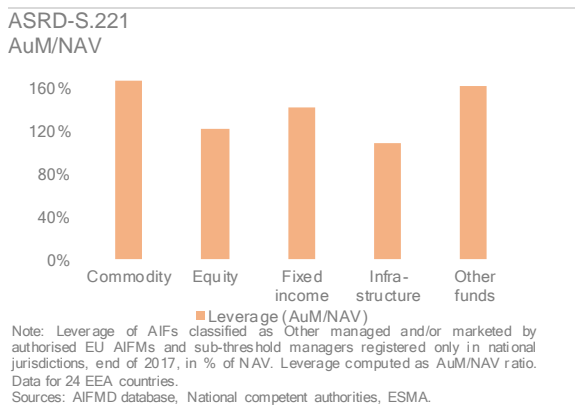
Redemption frequencies



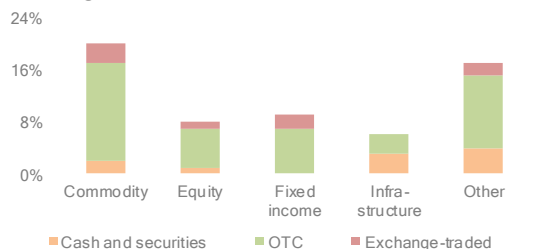
Note: Investor redemption frequencies allowed by open-end AIFs classified as Other managed and/or marketed by authorised EU AIFMs, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.



Leverage and exposure

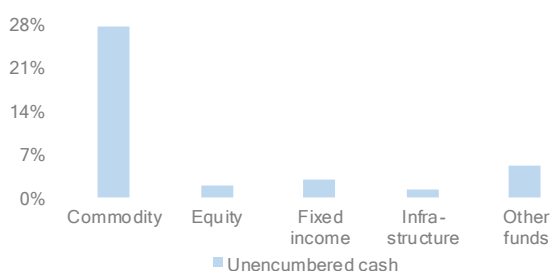


ASRD-S.223
Borrowing embedded in financial instruments



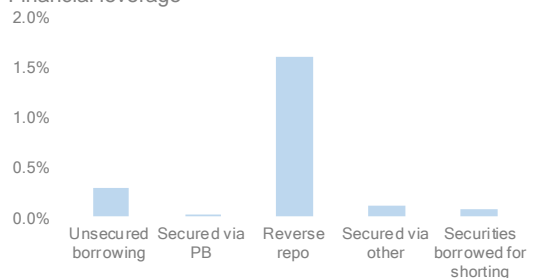
Note: Borrowing of cash and securities or embedded in derivatives by AIFs classified as Other, end of 2017, in % of total exposure. AIFs managed and/or marketed by authorised EU AIFMs. OTC and exchange-traded derivatives net of margins. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA

ASRD-S.224
Unencumbered cash



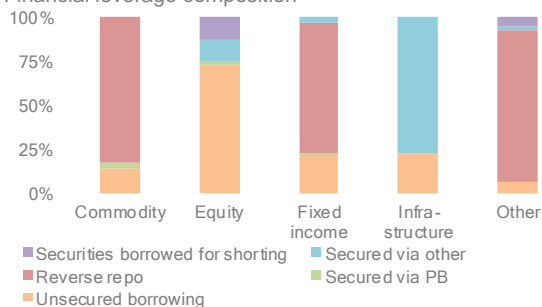
Note: Unencumbered cash held by AIFs classified as Other, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.225
Financial leverage



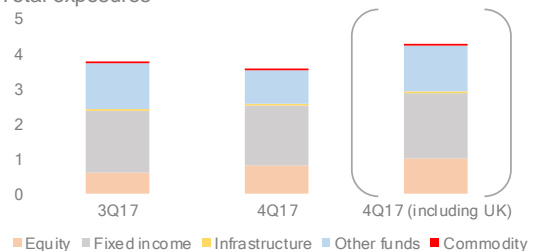
Note: Cash and securities borrowed by AIFs classified as Other, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.226
Financial leverage composition



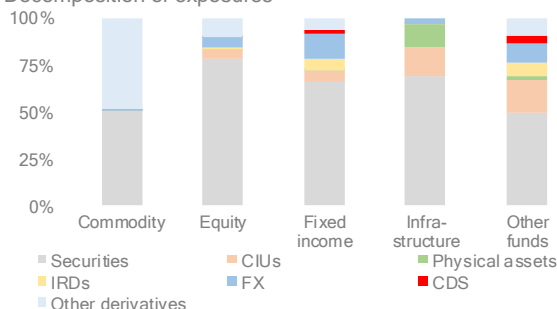
Note: Share cash and securities borrowed by AIFs classified as Other, end of 2017, in % of NAV. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.227
Total exposures



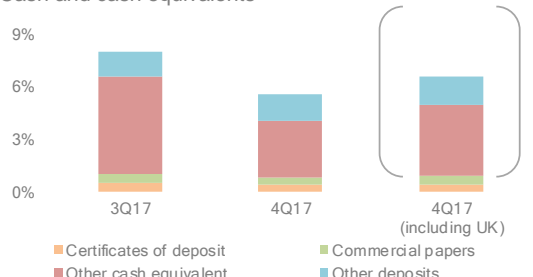
Note: Exposures of AIFs classified as Other managed and/or marketed by authorised EU AIFMs, funds quarterly reported, EUR tn. EU and non-EU AIFs by authorised EU AIFMs marketed, respectively, w/ and w/o passport. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.228
Decomposition of exposures



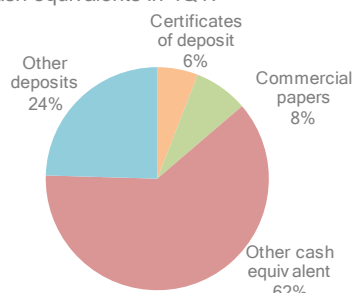
Note: Share of exposures by investment strategies of AIFs classified as Other, end of 2017, in % of total. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.229
Cash and cash equivalents

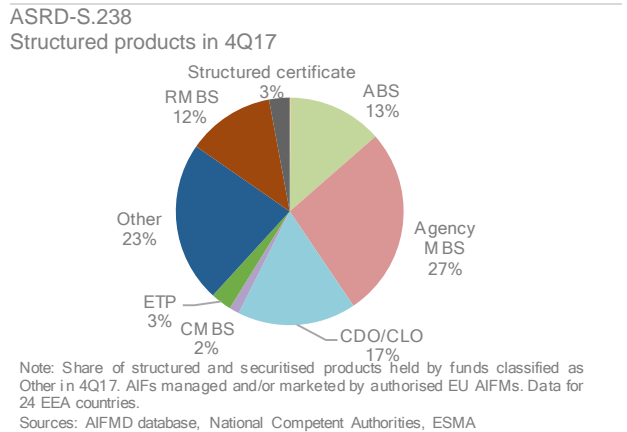
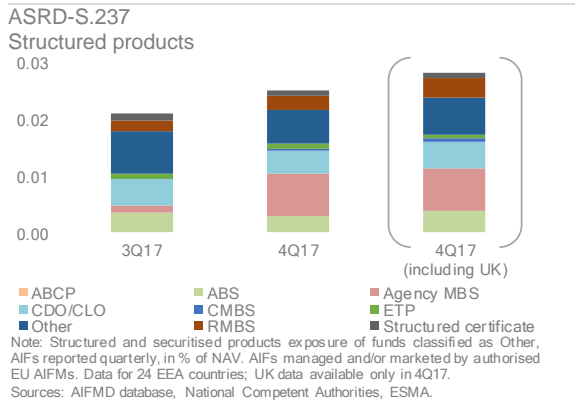
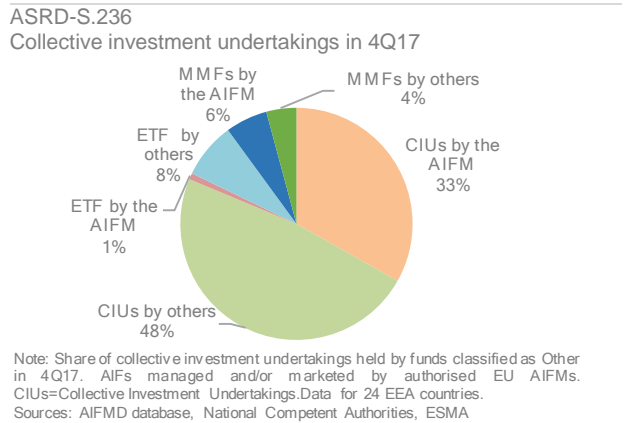
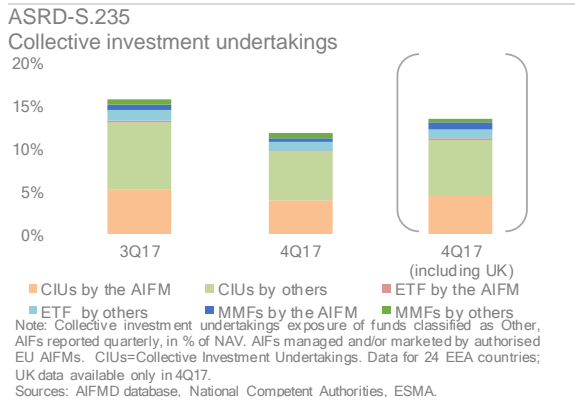
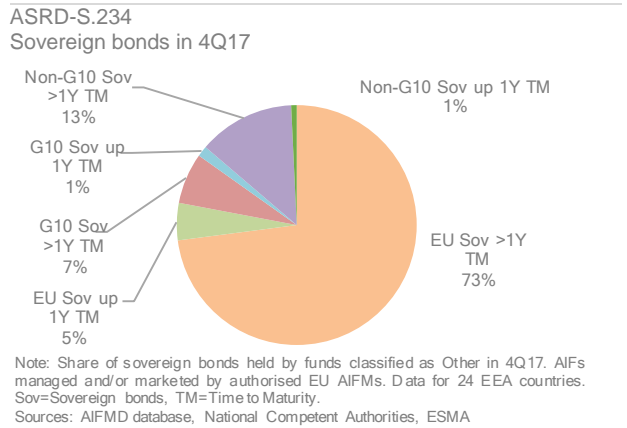
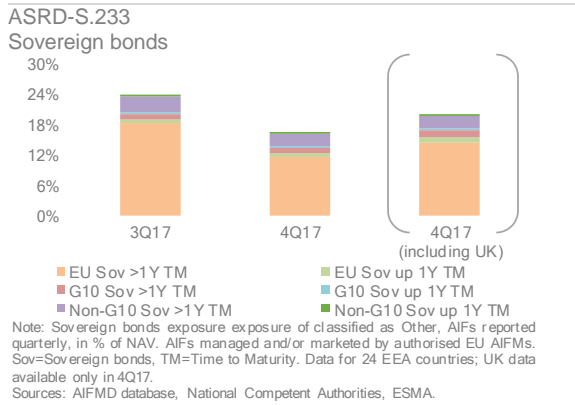
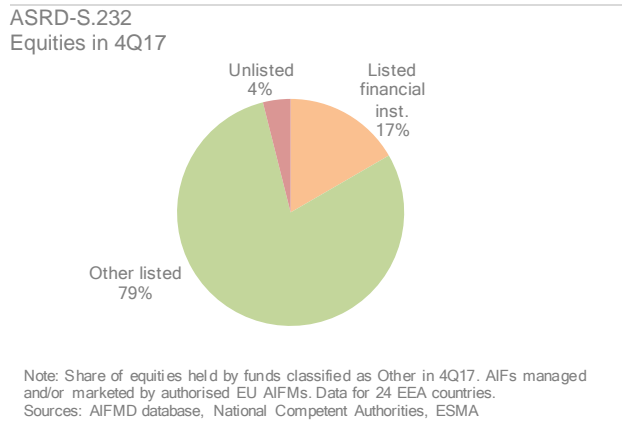
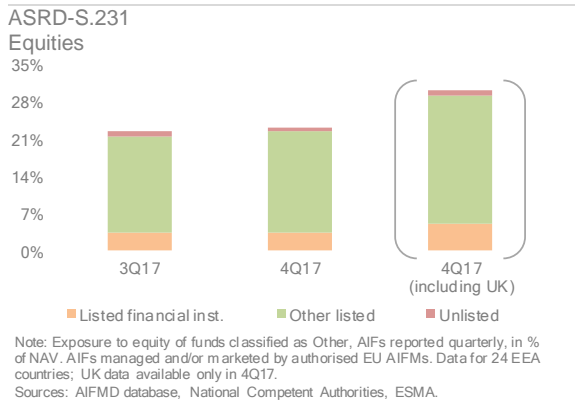


Note: Cash and cash equivalents exposures funds classified as Other, AIFs reported quarterly, in % of NAV. Government bonds excluded from other cash equivalents. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.230
Cash and cash equivalents in 4Q17

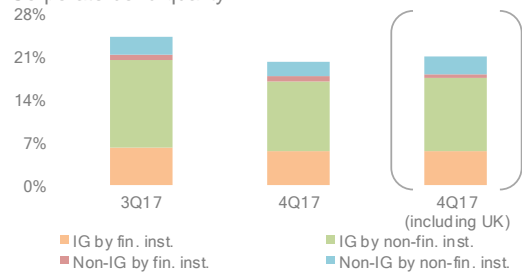


Note: Share of cash and cash equivalents held by funds classified as Other in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA.



ASRD-S.239

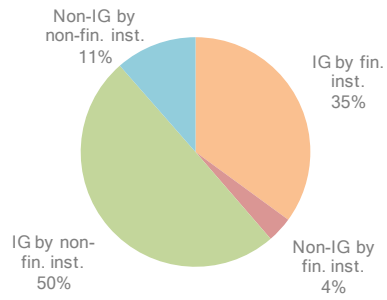
Corporate bond quality:



Note: Corporate bonds exposure of funds classified as Other, AIFs reported quarterly, in % of NAV. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries; UK data available only in 4Q17.
Sources: AIFMD database, National Competent Authorities, ESMA.

ASRD-S.240

Corporate bonds in 4Q17



Note: Share of corporate bonds held by funds classified as Other in 4Q17. AIFs managed and/or marketed by authorised EU AIFMs. Data for 24 EEA countries.
Sources: AIFMD database, National Competent Authorities, ESMA

Glossary

Alternative investment fund (AIF): An AIF is a collective investment undertaking, including investment compartments of such an undertaking, which raises capital to invest it in accordance with a defined investment policy for the benefit of investors. An AIF does not include an undertaking that requires authorisation under the UCITS directive.

Alternative investment fund manager (AIFM): An AIFM is an entity that provides portfolio-management and risk-management services to one or more AIFs as its regular business, irrespective of where the AIFs are located or what legal form the AIFM takes.

AIFMD passport: The AIFMD passport allows AIFMs to manage or market AIFs across the EU, on the basis of a single authorisation in one EU Member State. Currently, only EU-authorised AIFMs managing or marketing EU-domiciled AIFs have access to the passport.

Assets under management (AuM): Under the AIFMD, assets under management are defined as the value of all assets in portfolio, including all assets acquired through the use of leverage (borrowing of cash or securities and leverage embedded in derivative positions). This concept of AuM is different from the industry approach to AuM, which typically relates to the assets of the balance sheet of the AIF.

Authorised alternative investment fund manager: Authorised AIFMs are subject to more stringent requirements than registered AIFMs and can manage or market their AIFs across the EU.

Commitment leverage: Ratio of exposures to the NAV, where exposures are computed using the commitment approach, which takes into account netting and hedging, and adjusts IRDs by duration.

Financial leverage: The ratio of total assets to equity (NAV for funds), also called balance-sheet leverage. Financial leverage involves outright borrowing and is defined as the ratio of total assets to equity (or NAV for funds), in percentage. It can be measured by aggregating unsecured cash borrowing, the value of securities borrowed for short positions, collateralised/secured cash borrowing via prime broker, reverse repo or by other means.

Gross exposure: The absolute sum of all portfolio's positions, long and short. It includes gross notional value for derivatives. This measure provides a complete appreciation of all the leverage that is employed by a fund to gain market exposure.

Gross leverage: Leverage computed under the gross method, as indicated in Commission Delegated Regulation No 231/2013. It is expressed as the proportion of total gross exposure to NAV, in percentage. Under the gross method, exposures are calculated as the absolute value of all positions in the portfolio by including all assets and liabilities, relevant borrowings, derivatives (converted into their equivalent underlying positions) and all other positions, even those held purely for risk-reduction purposes. Cash held in the base currency of the AIF is excluded.

Interest rate derivatives (IRDs): Under the AIFMD reporting requirements, IRDs exposures are reported as the total gross notional value of the AIF's outstanding IRD contracts, including the total notional value of futures and delta-adjusted notional value of options. For the purpose of computing the commitment leverage, IRDs are adjusted for duration.

Leverage: Ratio of fund market exposures to NAV. Market exposures can be defined according to a variety of approaches, including the gross approach and the commitment approach.

Net asset value (NAV): The net value of the assets of the AIF (as opposed to the NAV per unit or share of the AIF).

Registered alternative investment fund manager: Registered AIFMs are subject to lighter requirements than authorised AIFMs but cannot have access to the AIFMD passport.

Data inventory

Indicator	Description and reporting guidelines	Reporting content	Reporting items	Technical guidance	Data availability	
Investment regions	Geographical breakdown of the investments held by the AIF by percentage of the total NAV of the AIF. See: ESMA guidelines, point 83; Q&As Section III, 4 and 73.	3(3)(d)- and 24(1)	78-85	Mandatory (all AIFs)	Total	100%
					FoF	100%
					HF	100%
					PE	100%
					RE	100%
					OTH	100%
Top 5 beneficial owners	NAV held by the five beneficial owners that have the largest equity interests in the AIF. See: ESMA guidelines, point 100. Note: 11% of AIFs, mostly sold to retail investors, report 0.	3(3)(d) and 24(1)	118	Mandatory (all AIFs)	Total	100%
					FoF	100%
					HF	100%
					PE	100%
					RE	100%
					OTH	100%
Clients	Investor concentration for retail and professional investors. See: ESMA guidelines, point 101; Q&As Section III, 80.	3(3)(d) and 24(1)	119-120	Mandatory (all AIFs)	Total	97%
					FoF	98%
					HF	98%
					PE	99%
					RE	99%
					OTH	95%
Ownership	Ownership of units in the AIF beneficially owned by investor type. See: ESMA guidelines, point 123 and Annex II.	24(2)	208-209	Mandatory (all AIFs)	Total	98%
					FoF	99%
					HF	98%
					PE	93%
					RE	99%
					OTH	99%
Redemption rights	AIF investors provided with withdrawal / redemption rights in the ordinary course	24(2)	193	Optional (AIFs must report if true)	Total	84%
					FoF	82%
					HF	90%
					PE	76%
					RE	73%
					OTH	87%
Redemption frequencies	Frequency of investor redemptions. In case of multiple classes of shares or units, the largest share class by NAV shall be considered. See: ESMA guidelines, point 121 and Annex II.	24(2)	194	Optional (AIFs must report if information is available)	Total	95%
					FoF	96%
					HF	98%
					PE	96%
					RE	97%
					OTH	95%
Liquidity profile	Portfolio and investor liquidity profiles. See: ESMA guidelines, points 118-120; Q&As Section III, 10, 11, 42 and 78.	24(2)	178-184, 186-192	Mandatory (all AIFs reporting under Article 24(2))	Total	90%
					FoF	93%
					HF	91%
					PE	72%
					RE	88%
					OTH	92%
Liquidity financing	Total financing amount by the longest period for which the creditor is contractually committed to providing such financing. See: Q&As Section III, 2, 67	24(2)	211-217	Optional (AIFs must report if information is available)	Total	23%
					FoF	22%
					HF	33%
					PE	35%
					RE	38%
					OTH	27%
Unencumbered cash	Value of unencumbered cash.	24(2)	185	Optional (AIFs must report if information is available)	Total	90%
					FoF	93%
					HF	93%
					PE	71%
					RE	88%
					OTH	92%
Securities trading	Estimated % in terms of market value of securities traded on regulated exchange and OTC markets. See: Q&As Section III, 8 and 27.	24(2)	148-149	Optional (AIFs must report if information is available)	Total EU	60%
					FoF	39%
					HF	67%
					PE	38%
					RE	17%
					OTH	63%

Derivatives trading	Estimated % in terms of trade volumes of derivatives that are traded on regulated exchange and OTC markets. See: Q&As Section III, 9.	24(2)	150-151	Optional (AIFs must report if information is available)	Total EU	63%
					FoF	76%
					HF	44%
					PE	88%
					RE	88%
					OTH	53%
Derivatives clearing	Estimated % in terms of trade volumes of derivatives transactions that are cleared by a CCP and bilaterally. See: ESMA guidelines, point 112; Q&As Section III, 22.	24(2)	152-153	Optional (AIFs must report if information is available)	Total EU	73%
					FoF	81%
					HF	54%
					PE	93%
					RE	92%
					OTH	67%
Repo clearing	Estimated % in terms of market value of repo trades that are cleared by a CCP, bilaterally and via tri-party repo. See: ESMA guidelines point 113; Q&As Section III, 23.	24(2)	154-156	Optional (AIFs must report if information is available)	Total EU	94%
					FoF	97%
					HF	91%
					PE	99%
					RE	98%
					OTH	90%
Financial leverage	Leverage created by direct borrowing of money or securities from counterparties. See: ESMA guidelines, point 124; Q&As Section III, 34, 44 and 69.	24(2) and 24(4)	283-286, 289	Optional (AIFs must report if information is available)	Total EU	56%
					FoF	53%
					HF	45%
					PE	81%
					RE	65%
					OTH	53%

Note: Main indicators and reporting template items analysed in the report. Relative coverage defined as the ratio of the total number of AIFs reporting it to the number of AIFs expected to report it. Optional items filled only when information is applicable.



European Securities and
Markets Authority

