HEDGE FUND Q&A WITH CHAT GPT

WRITTEN BY WANG CHENXI
TFIP 2022

Outline

What is a hedge fund?

A hedge fund is a type of alternative investment vehicle that pools money from a group of investors to invest in a wide range of assets, such as stocks, bonds, commodities, futures, currencies, derivatives, and real estate. The goal of a hedge fund is to generate a high return on investment, while also reducing risk by "hedging" against potential losses. The term "hedging" refers to the practice of taking a position in a security or market that is opposite to the fund's existing position, in order to offset any potential losses. Hedge funds generally have a more flexible investment strategy compared to traditional funds, such as mutual funds, which usually have a more narrow investment strategy and are more regulated by the government.

Hedge funds are typically managed by professional money managers who employ a variety of investment strategies to achieve their goals. These strategies may include buying and selling securities, short selling, leveraging, and derivatives trading. Short selling is the practice of selling a security that the fund does not own in the expectation that the price will fall, so the fund can purchase the shares at a lower price and make a profit. Leveraging refers to borrowing money to invest in order to amplify returns. Derivatives trading refers to the practice of buying and selling contracts or securities that derive their value from an underlying asset. These strategies can be highly complex and require a significant level of expertise, which is why hedge funds are often managed by experienced and highly skilled investment professionals. Because of the complexity and diversity of their investments, hedge funds are generally considered to be high-risk, high-return investments.

Hedge funds are typically open to a limited number of investors and require a high minimum investment. They also have less regulation compared to other investment vehicles, such as mutual funds. As a result, hedge funds are generally only available to accredited investors, or individuals with a high net worth. This means that hedge funds are not available to the general public and are not subject to the same regulatory requirements as traditional funds. This allows hedge funds to have more flexibility in their investment strategies, but also increases the risk for investors.

To understand hedge funds more in depth, I suggest reviewing the literature from reputable sources such as academic journals, industry publications, and consulting firms. Additionally, consulting with financial advisor or professional in the hedge fund industry would be beneficial.

What do you mean by reduc -ing risk?

When a hedge fund is said to be "reducing risk," it typically means that the fund is taking steps to offset or mitigate the potential for losses in its investments. This can be done in a number of ways, such as by using a variety of investment strategies, diversifying the portfolio, and using risk management techniques.

1. One of the most common ways hedge funds reduce risk is through the use of a

variety of investment strategies. For example, a hedge fund may use a "long-short" strategy, where it takes both long positions (betting that the value of a security will rise) and short positions (betting that the value of a security will fall) in order to offset potential losses. By taking both long and short positions, the fund is able to reduce its overall risk, as the potential losses from one position may be offset by gains in the other.

2. Another way hedge funds reduce risk is through diversification. By investing in a wide range of assets, such as stocks, bonds, commodities, and real estate, a hedge fund is able to spread out its risk across different markets and sectors. This can help to mitigate the potential for losses in one particular area of the market.

3. Risk management techniques such as stress testing, value at risk (VaR) and scenario analysis are also commonly used by hedge funds to identify and manage potential risks. Stress testing is a method of evaluating a portfolio's potential performance under different market scenarios. VaR is a statistical measure that estimates the potential loss that could occur with a given level of confidence. Scenario analysis is a method of forecasting the outcome of different events or conditions that could affect a portfolio's performance.

4. In addition to these methods, hedge funds may also use financial instruments such as options, futures and derivatives to hedge their positions. These financial instruments can be used to offset potential losses in the underlying assets held by the fund.

It's worth mentioning that reducing risk doesn't mean eliminating it, as all investments come with a certain level of risk. Hedge funds are considered high-risk, high-return investments. Hedge funds may reduce the risk in their portfolio, but that does not mean that they will not lose money. However, hedge funds generally aim to reduce risk to a level where the returns are commensurate with the level of risk taken.

What do you mean by generating high return?

When a hedge fund is said to be "generating a high return," it means that the fund is producing a significant profit for its investors. The term "high return" is relative and can vary depending on the market conditions, the specific hedge fund, and the investor's own risk tolerance. However, in general, hedge funds aim to generate returns that are higher than those of traditional investments such as bonds and savings accounts, and higher than the benchmark used to measure its performance.

Hedge funds generate high returns by using a variety of investment strategies, such as buying and selling securities, short selling, leveraging, and derivatives trading. These strategies can be complex and require a significant level of expertise, which is why hedge funds are often managed by experienced and highly skilled investment professionals.

For example, hedge funds that use short selling can generate high returns by betting on the decline of the value of a security. A hedge fund that uses leverage can amplify its returns by borrowing money to invest. And a hedge fund that uses derivatives trading can generate high returns by taking advantage of the price movements of underlying assets.

Additionally, hedge funds generate high returns by charging a performance fee, also known as "carried interest" which is a percentage of the fund's profits, usually around 20%. This fee aligns the interests of the fund manager with those of the investors, as the manager is motivated to generate high returns in order to earn a larger performance fee.

It's worth noting that high returns come with a high level of risk and it is important for investors to understand the risks associated with hedge funds and to only invest a percentage of their portfolio that they are comfortable with losing. Hedge funds are not suitable for all investors, as they come with higher risk and require a significant level of expertise to manage.

What are the common bench marks used to measure its performance?

Hedge funds use a variety of benchmarks to measure their performance. The most common benchmarks used for hedge funds include:

S&P 500: This is an index that tracks the performance of the 500 largest publicly traded companies in the United States. It is widely used as a benchmark for the overall stock market performance.

MSCI World: This index tracks the performance of companies in 23 developed markets around the world. It is commonly used as a benchmark for global stock market performance.

LIBOR: This is the London Interbank Offered Rate, which is the rate at which banks can borrow money from each other. It is commonly used as a benchmark for short-term interest rates.

Treasury Bills: These are short-term debt securities issued by the U.S. government. They are considered to be a safe investment with a low level of risk and are used as a benchmark for risk-free returns.

The HFRI Fund Weighted Composite Index: This index is specific to hedge funds and tracks the performance of more than 2,000 hedge funds across various strategies. It is considered to be a benchmark for hedge fund performance.

The Bloomberg Barclays Hedge Fund index, which is a benchmark that tracks the performance of hedge funds in the US.

It's worth noting that hedge funds can use any index or benchmark as a benchmark, depending on the strategy of the fund. Some hedge funds may also use custom benchmarks based on their specific investment strategy, such as an index that tracks the performance of a specific sector or commodity. It's also important to note that hedge funds are not required to use a benchmark, but it's a common practice as it allows investors to compare the performance of the fund to a benchmark and evaluate if the fund is performing well or not.

What are the common metrics to select a hedge fund?

There are several common metrics used to evaluate and select hedge funds:

1. Performance: One of the most important factors to consider when selecting a hedge fund is its past performance. This includes the fund's returns over different time periods, such as one year, three years, and five years. It's important to note that past performance is not an indicator of future results and that hedge funds can experience periods of underperformance.

2. Risk-adjusted returns: Hedge funds can be more volatile than traditional investments, so it's important to consider the risk-adjusted returns of a fund. Risk-adjusted return metrics, such as the Sharpe ratio, calculate the return of a fund relative to its volatility. A higher Sharpe ratio indicates that a fund is generating more return for a given level of risk.

3. Fund manager's experience and track record: The experience and track record of the fund manager can be an important factor when selecting a hedge fund. A fund manager with a long history of successful investments can be more likely to generate strong returns in the future.

4. Fund's strategy and diversification: Hedge funds use a variety of investment strategies, so it's important to understand the strategy of a fund and how it fits into your overall investment portfolio. Additionally, hedge funds can be less diversified than traditional investments, so it's important to consider how a hedge fund fits into your overall diversification strategy.

5. Fund's fees and expenses: Hedge funds typically charge higher fees than traditional investments, so it's important to understand the fees and expenses associated with a fund. Some common fees include management fees, performance fees, and administrative expenses.

6. Fund's liquidity: Hedge funds can have restrictions on investor withdrawals, so it's important to understand the liquidity of a fund before investing. Some hedge funds have lock-up periods, which restrict investors from withdrawing their money for a certain period of time.

7. Fund's regulatory compliance: It's important to check the fund's regulatory compliance and ensure that it's registered with the SEC or other regulatory body and that it adheres to the regulations.

It's important to note that hedge funds are not suitable for all investors, and they involve a high degree of risk. It's important to consult with a financial advisor before investing in a hedge fund.

Which are the most profitable strategies used by hedge funds?

It's difficult to say which investment strategies are the most profitable for hedge funds, as performance can vary greatly depending on market conditions, individual fund managers and other factors.

That being said, some hedge fund strategies have historically been more profitable than others. For example,
Long/short equity is a strategy where hedge funds take both long and short positions in stocks. A long position is when a fund buys shares of a stock with the expectation that the stock will increase in value, while a short position is when a fund sells shares of a stock it does not own, with the expectation that the stock will decrease in value. By taking both long and short positions, hedge funds can make money in both rising and falling markets, which makes this strategy particularly attractive.

Event-driven strategy is a hedge fund strategy that is focused on investing in companies that are undergoing major changes, such as mergers, acquisitions, or spin-offs. Hedge funds try to make money by identifying the potential winners and losers in these situations, and then making investments accordingly. This strategy can be profitable as it allows hedge funds to capitalize on market inefficiencies, such as when a stock is mispriced due to a merger or acquisition announcement.

Global macro strategy is a strategy where hedge funds make investments based on global macroeconomic trends, such as changes in interest rates or currency values. The goal of this strategy is to identify and profit from major global economic trends. For example, a hedge fund manager may believe that the value of the US dollar will decline against the Euro, and then make a trade accordingly. This strategy can be profitable as it allows hedge funds to make large bets on major macroeconomic events.

Distressed debt strategy is a hedge fund strategy that involves buying the debt of companies that are in financial distress, such as those that are in bankruptcy. Hedge funds using this strategy may make money by restructuring the company or buying the debt at a discount and then getting paid in full when the company emerges from bankruptcy. This strategy can be profitable as it allows hedge funds to buy debt at a discount, and then get paid in full when the company emerges from bankruptcy.

Arbitrage is a strategy where hedge funds take advantage of price discrepancies in different markets. For example, a hedge fund may buy a stock on one market and then sell it on another market for a higher price. This strategy can be profitable as it allows hedge funds to generate returns even in market conditions when the market is not moving.

It's important to note that past performance is not an indicator of future results and hedge funds may not always perform as well in the future as they have in the past. Additionally, hedge funds have a high risk-return profile, meaning that they are also able to generate large losses.

What are the functional departments within a hedge fund?

Investment Management: This department is responsible for managing the fund's portfolio and making investment decisions. The team is typically made up of portfolio managers and analysts who conduct research, identify potential investments, and make buy and sell decisions. They are also responsible for monitoring the performance of existing investments and making adjustments as needed.

Risk Management: This department is responsible for identifying, monitoring, and managing the risks associated with the fund's investments. This may include assessing the risk of individual investments, as well as the overall risk of the portfolio. The team may also develop and implement risk management strategies, such as using financial derivatives to hedge against potential losses.

Operations: This department handles the day-to-day administrative tasks that are necessary for the fund to run smoothly. This may include trade execution, accounting, and compliance. The team may also be responsible for ensuring that the fund has the necessary resources and infrastructure to support its operations.

Business Development: This department is responsible for raising capital and marketing the fund to potential investors. The team may develop and implement marketing strategies, build relationships with potential investors, and assist with the fundraising process.

Legal and Compliance: This department ensures that the fund is in compliance with all relevant laws and regulations. The team may review and interpret regulations, provide guidance on compliance issues, and work with external legal counsel as needed.

Information Technology (IT) : This department is responsible for the management and maintenance of the fund's technology infrastructure and software applications. The team may be responsible for maintaining and updating the fund's computer systems, software, and networks to ensure that they are secure and reliable.

Human Resources (HR) : This department is responsible for managing employee-related activities, such as hiring, training, and compensation. The team may develop and implement policies and procedures, handle employee relations issues, and assist with the recruitment and retention of top talent.

Note that, the size and complexity of the hedge fund will determine the number of departments and roles, also some hedge funds may not have all of the above departments and combine some of them.

How does hedge fund market itself?

Hedge funds typically market themselves to potential investors in a number of ways. Some common methods include:

Networking: Hedge fund managers often network with other professionals in the financial industry, such as investment bankers, private equity investors, and venture capitalists, in order to market their fund to potential investors.

Conferences and events: Hedge funds may participate in industry conferences and events, such as hedge fund conferences or investment expos, to market their fund to potential investors.

Roadshows: Hedge fund managers may conduct roadshows, which are presentations or meetings that are held in various cities around the world, in order to market their fund to potential investors.

Advertising: Hedge funds may also advertise in financial publications, such as trade journals or newspapers, to reach potential investors.

Online marketing: Hedge funds may also use online marketing to reach potential investors, such as through social media, email marketing, and their own website.

Referrals: Hedge fund managers may also use referrals from existing investors, as well as from other financial professionals, to market their fund to potential investors.

Consulting firms: Hedge funds may also use consulting firms to help them market their fund to potential investors.

It's worth noting that the marketing strategy of a hedge fund may vary depending on the fund's size, the type of investors it is targeting, and the specific investment strategy of the fund. Hedge funds are also subject to regulations regarding how they can market themselves, such as the SEC

How does hedge fund recruit talent?

Hedge funds typically recruit talent in a number of ways, including:

Networking: Hedge funds often network with other professionals in the financial industry, such as investment bankers, private equity investors, and venture capitalists, to identify and recruit talented individuals.

Job postings: Hedge funds may post job openings on various platforms such as online job boards, industry websites, and social media to reach potential candidates.

Recruitment firms: Hedge funds may also use recruitment firms to help them identify and recruit talented individuals. These firms specialize in matching job seekers with employers in the financial industry.

Referrals: Hedge funds may also recruit talent through referrals from existing employees, as well as from other financial professionals.

Campus recruiting: Hedge funds may also recruit talent through campus recruiting, where they visit universities and colleges to meet with students and recent graduates who are interested in working in the financial industry.

Professional organizations: Hedge funds may also recruit talent through professional organizations such as the Chartered Financial Analysts (CFA) Institute or the Financial Industry Regulatory Authority (FINRA)

It's worth noting that hedge funds may also recruit talent from other industries, such as technology or engineering. As hedge funds often employ a variety of investment strategies, they may look for employees with a diverse set of skills and experience. In general, hedge funds tend to look for employees with a strong educational background in finance or economics, as well as previous experience working in the financial industry.

What is hedge fund's criteria in selecting people?

Hedge funds have specific criteria when selecting people, which may vary depending on the fund's investment strategy and the role the person will be filling. Some common criteria that hedge funds may use when selecting people include:

Educational background: Hedge funds typically look for individuals with a strong educational background in finance or economics, such as a bachelor's or master's degree from a reputable university.

Work experience: Hedge funds may also look for individuals with previous work experience in the financial industry, particularly in roles such as investment banking, private equity, or asset management.

Investment skills and knowledge: Hedge funds may also look for individuals with a good understanding of the financial markets, investment strategies and products.

Quantitative skills: Many hedge funds employ quantitative strategies, which rely heavily on mathematical modeling, so they may look for individuals with strong quantitative skills such as programming, data analysis and statistics.

Risk management skills: Hedge funds may also look for individuals with experience in risk management, as they need to be able to identify and manage risks in the portfolio.

Communication and presentation skills: Hedge funds may also look for individuals with strong communication and presentation skills, as they need to be able to explain their investment strategy and performance to investors.

Team work: As hedge funds are typically small teams, they may also look for individuals who can work well in a team and can collaborate effectively with others.

Entrepreneurial mindset: Hedge funds may also look for individuals with an entrepreneurial mindset, as they are often looking for people who can think creatively and come up with new ideas for generating returns.

It's worth noting that hedge funds may also look for other specific qualifications or skills depending on the role that the individual will be filling. They may also look for candidates that have relevant licenses, certifications or designations such as the Chartered Financial Analyst (CFA) or the Financial Risk Manager (FRM)

What is hedge fund fee structure?

Hedge funds typically have a fee structure that includes two main types of fees: management fees and performance fees.

Management fees: These are fees that are charged by the hedge fund to cover the costs of running the fund, such as research, trading, and compliance expenses. Management fees are typically a percentage of the assets under management (AUM), and are charged regardless of the performance of the fund.

Common management fee ranges are 1-2% of the AUM per year.

Performance fees: These are fees that are charged by the hedge fund based on the performance of the fund. Performance fees are typically a percentage of the returns generated by the fund above a certain threshold, known as the "high-water mark." This means that the hedge fund only receives performance fees once it has exceeded the high-water mark, and any losses are subtracted from the high-water mark before calculating the performance fee. Common performance fee ranges are 20-25% of the returns above the high-water mark.

Some hedge funds also charge additional fees such as administrative fees or custody fees for the storage and safekeeping of the fund's assets.

Hedge funds are generally considered to be high-cost investment vehicles due to the combination of management and performance fees, which can eat into returns. This combined with the lack of liquidity, make hedge funds suitable for only sophisticated investors.

It's important to note that different hedge funds may have different fee structures, and it is important to carefully review the fee structure of a hedge fund before making an investment. It's also important to consider the overall fee structure in relation to the fund's investment strategy and track record before making a decision.

What is hedge fund employee compensation structure?

Hedge fund employee compensation structure is typically based on two main components: a base salary and a performance-based bonus.

Base salary: This is a fixed amount that is paid to an employee on a regular basis, such as a bi-weekly or monthly paycheck. Base salaries for hedge fund employees are generally higher than those in other industries, reflecting the high level of skill and expertise required for the role.

Performance-based bonus: A bonus is a form of performance-based compensation that is typically paid out to hedge fund employees on a regular basis, such as annually or quarterly. Bonuses are usually based on the performance of the hedge fund, the individual employee's performance and how well the employee met the expectations of their role. Bonuses can be in the form of cash or stock options.

Carried interest: Carried interest is a form of profit-sharing that is typically paid out to hedge fund managers and employees who have a significant ownership stake in the fund. Carried interest is a percentage of the profits generated by the fund, typically 20% - 25% of the profits above a predetermined high-water mark. This means that the hedge fund managers and employees are incentivized to grow the fund's assets and generate returns, as they will benefit directly from the fund's performance.

Additionally, hedge fund employees may also receive stock options, which give them the right to purchase shares in the fund at a fixed price in the future. Stock options can be a significant source of income for hedge fund employees, particularly if the fund is successful and the value of the shares increases.

It's worth noting that hedge fund employees may also receive other benefits such as health insurance, retirement plans, and other perks like office perks.

In summary, asset management firms generally have a broader client base and aim to generate returns over the long-term using a variety of traditional investments, while hedge funds tend to be more aggressive and use a wider range of investment strategies, including derivatives and leverage, and have a smaller client base and higher fees.

What is the difference between asset management and hedge fund?

Asset management firms are professional investment management firms that manage the assets of various clients such as pension funds, endowments, foundations, and individuals. They typically invest in a wide range of securities such as stocks, bonds, and other assets such as real estate, commodities, and alternative investments. The main goal of asset management is to generate returns for investors over the long-term.

Asset management firms use a variety of investment strategies, including passive management (indexing) and active management (stock picking, market timing). Passive management involves investing in a broad market index such as the S&P 500, while active management involves choosing individual stocks or bonds in an effort to outperform the market.

Asset management firms are also regulated, which means that they are required to disclose certain information to investors, such as performance and fee information. They also have to comply with regulations such as the Investment Company Act of 1940 and the Investment Advisers Act of 1940.

Hedge funds, on the other hand, are typically more aggressive and use a wider range of investment strategies than asset management firms. Hedge funds are usually open to a smaller group of investors such as high net worth individuals and institutional investors. They use a variety of investment strategies, such as long/short equity, event-driven, global macro, and distressed debt, which are not typically used by asset management firms. They also often use leverage, derivatives, and other complex financial instruments to generate returns.

Hedge funds are less regulated than asset management firms and have more freedom to make investments and take on risk. They also have higher fees and minimum investment requirements. For example, hedge funds typically have management fees that are higher than those of asset management firms, and they also charge performance fees, which are based on the fund's returns.

In summary, asset management firms generally have a broader client base and aim to generate returns over the long-term using a variety of traditional investments, while hedge funds tend to be more aggressive and use a wider range of investment strategies, including derivatives and leverage, and have a smaller client base and higher fees.

Report on the Fifth IOSCO Hedge Funds Survey

Final Report

OICU-IOSCO

The Board

OF THE

INTERNATIONAL ORGANIZATION OF SECURITIES COMMISSIONS

FR05/2020	**APRIL 2020**

Copies of publications are available from:
The International Organization of Securities Commissions website www.iosco.org

Contents

Chapter 1 - Introduction

This report presents the analysis of the fifth edition of the IOSCO Hedge Funds Survey, which is based on data collected as at 30th September 2018. In 2009, the G20 highlighted increased regulatory oversight of hedge funds and hedge fund managers as a priority, including the disclosure of appropriate information on an ongoing basis to supervisors and regulators. In response, IOSCO undertook the hedge funds survey to provide insight into the hedge funds industry at a global level. Conducted on a biennial basis and now in its fifth edition, this exercise has developed a repeated cross-section of data, making it an integral part of IOSCO's policy work in the investment management sector.

For this 2018 edition of the survey, nine jurisdictions took part: France, Germany, Hong Kong, Ireland, Luxembourg, Singapore, Switzerland, the United Kingdom and the United States. The inclusion of Switzerland in the exercise marks a change from the 2016 survey. When comparing the results across time, this difference in sample coverage (that is, the inclusion of Switzerland) needs to be kept in mind. Finally, Germany only reported one qualifying hedge fund in its results.[1] Hence, due to confidentiality reasons, no data points were reported. Hong Kong also excluded two funds from its reporting, which represented 8% of the reported assets under management for qualifying hedge funds in Hong Kong, again for confidentiality reasons.

The report is set out as follows: Chapter 2 provides an overview, including a discussion on the data collection methodology. Chapter 3 presents the results of the data analysis. Chapter 4 concludes.

Selected highlights of the report include:

- **the number of qualifying hedge funds captured in this exercise has increased by 8.5% to 2,139;**
- **in the two years since the last hedge funds survey, assets under management (AuM), as captured by the survey, increased 19.5% to $US3.85 trillion;**
- **hedge funds are domiciled primarily in the Cayman Islands, in line with the last survey;**
- **multi-strategy and equity long/short are the most common investment strategies of qualifying hedge funds;**
- **for both cash securities and derivatives, the largest exposures held by qualifying hedge funds (long and short), are in equities;**
- **on a gross notional basis, interest rate and foreign exchange derivatives positions are the largest in terms of fund exposures;**
- **leverage, as measured on a gross notional basis, stands at 7.8x net asset value. Net leverage stands at 1x; and**
- **qualifying hedge funds seem to have sufficient portfolio liquidity to meet investor liquidity demands in normal times.**

[1] For a definition of "qualifying hedge fund" see Appendix on page 21 of this report.

Chapter 2 – Objectives of the Fifth IOSCO Hedge Funds Survey

Objectives of the Hedge Funds Survey

The IOSCO Hedge Fund Survey is an international data exercise which gathers information from national competent authorities on hedge fund activities for the purpose of providing a global view of the hedge funds industry. Further, IOSCO's data collection exercise enables sharing of information on the scope of hedge fund activities, the markets they operate and invest in, and their leverage, liquidity and funding.

The aim of collecting such data enables IOSCO to:

- gain better insight into the global hedge fund industry;
- promote global cooperation on possible risks in this sector; and
- provide a forum for the discussion of potential regulatory options or recommendations if required.

Given the limited public and global data on hedge fund activities, IOSCO believes that the regular collection and analysis of hedge fund data by regulators remains crucial for observing trends in the sector and better understanding any potential systemic risks that hedge funds may pose to the financial system.

With this fifth iteration, IOSCO is now compiling a comprehensive database based on repeated cross-sectional data of the global hedge fund industry. As such, the exercise is proving to be an important tool for IOSCO's understanding of the global hedge funds industry.

Survey comparability and interpretation

As in previous editions, this IOSCO Hedge Funds exercise leverages the existing reporting requirements already in place in many jurisdictions to the greatest extent possible (such as the Form PF and AIFMD reporting requirements in the United States and Europe, respectively).[2] Consequently, the definitions and interpretation of data presented in this report have remained as consistent as possible with previous reports.[3]

While the definitions remain consistent, the survey samples across different time periods are not necessarily the same. Hedge funds open and close regularly. In some jurisdictions reporting is voluntarily and subject to a threshold criterion for reporting. Additionally, the participation of IOSCO member jurisdictions has also changed. However, in spite of these changes, IOSCO

[2] Since October 2015, the US Securities Exchange Commission's staff has released quarterly *Private Fund Statistics* reports which provide a summary of recent private fund industry statistics and trends by aggregating data reported to the Commission by private fund advisers on Form ADV and Form PF. Form PF information provided in this report is aggregated, rounded, and/or masked to avoid potential disclosure of proprietary information of individual Form PF filers. Under the AIFMD, EEA member states report data on AIFs to the European Markets Supervisory Authority (ESMA). Since April 2019 ESMA has published this data annually.
See: https://www.esma.europa.eu/file/50580/download?token=REKCzQAz

[3] For the *2016 IOSCO Hedge Funds Survey* report, please see: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD587.pdf

believes that such an exercise is useful since the largest jurisdictions, in terms of the global hedge funds industry's AuM, have been consistently captured.

One area that the data set has not fully captured includes those hedge fund-like activities that are channelled through European Undertakings for Collective Investment in Transferable Securities (UCITS) funds, since some European countries included data only from funds recorded under the Alternative Investment Fund Managers Directive (AIFMD). "Liquid alternatives" can be similar to hedge funds, although they are subject to certain UCITS limits such as eligible assets and diversification. Additionally, separately managed accounts, which follow the same strategy as some hedge funds, are also outside the scope of this exercise.

To help avoid double-counting, "qualifying hedge funds" that are managed outside the US but are likely to have reported to the SEC were removed from the other participating jurisdictions' data.[4]

Supporting IOSCO's work on Leverage metrics

In 2017, the Financial Stability Board (FSB) issued a report that provided policy recommendations to address risks to global financial stability associated with certain structural vulnerabilities from asset management activities, including recommendations related to fund leverage. Specifically, recommendation 10 in that report asks IOSCO to identify and/or develop consistent measures of leverage in funds to facilitate more meaningful monitoring of leverage for financial stability purposes and recommendation 12 calls on IOSCO to collect national/regional aggregated data on leverage across its member jurisdictions based on the consistent measures it develops.

The IOSCO Hedge Funds Survey is the one data collection exercise IOSCO undertakes on a regular basis. Many of the data points collected under this initiative are consistent with those outlined in the final leverage recommendations that IOSCO issued in 2019.[5] Specifically, this exercise collects data on, among other things:

- investment exposures, broken down by asset class on a long and short basis;
- numerous leverage metrics; and
- collateral received and posted.

Consequently, this exercise provides the necessary expertise and collection framework to help IOSCO's work in meeting Recommendation 12.

---

[4] One of the elements of data collection that has proved challenging in the past is the issue of double counting, where the same underlying hedge fund may have reported data in more than one jurisdiction. For example, data collected in the US as part of Form PF pertains to hedge funds managed by those firms that are registered or required to register with the SEC. The SEC reporting thresholds are such that if hedge fund firms are large (more than $1.5 billion in hedge fund assets) and have at least one qualifying hedge fund (more than $500 million NAV), then any qualifying hedge funds the firm manages will be included within the US data. As a result, this requirement may pull in some funds that are managed outside the US. For the purposes of avoiding double counting in these cases, the survey has removed from the data of all other participating countries any funds managed by firms that are likely to have reported to the SEC. Hence this methodology may skew the geographic distribution of fund manager location somewhat towards the US and under-represent other countries.

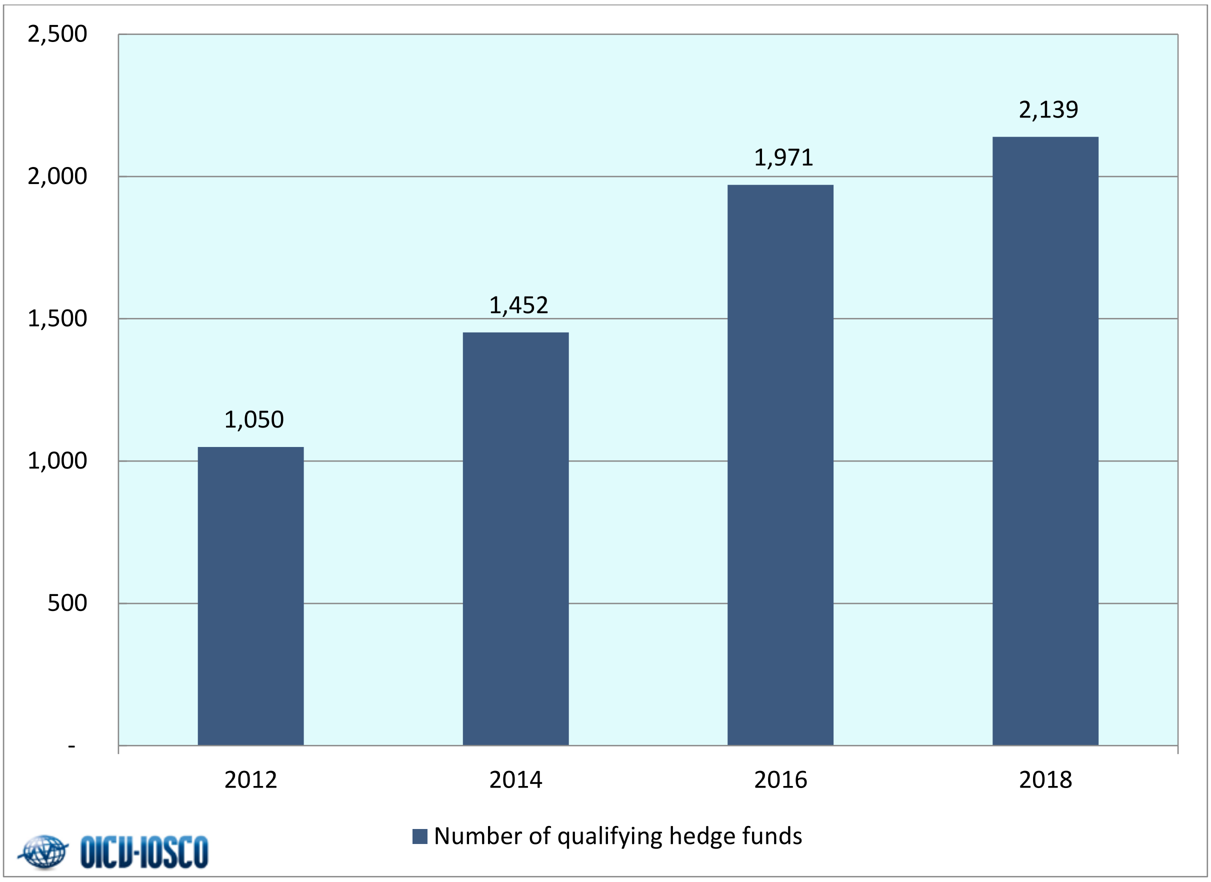
[5] *IOSCO (2019)*: Recommendations for a Framework Assessing Leverage in Investment Funds

Chapter 3 – Global Hedge Funds Industry Analysis: Results from survey

3.1 Results

This 5th edition of the IOSCO hedge funds survey captured data from 2,139 qualifying hedge funds as at 30th September 2018, an 8.5% increase from the 1,971 qualifying hedge funds surveyed in the same 2016 period. As reported in the last hedge funds survey, this growth may be due to better reporting to national regulators. Figure 1 highlights the growth in the number of qualifying hedge funds captured since 2012.

Figure 1: Number of Qualifying Hedge Funds (2012-2018)



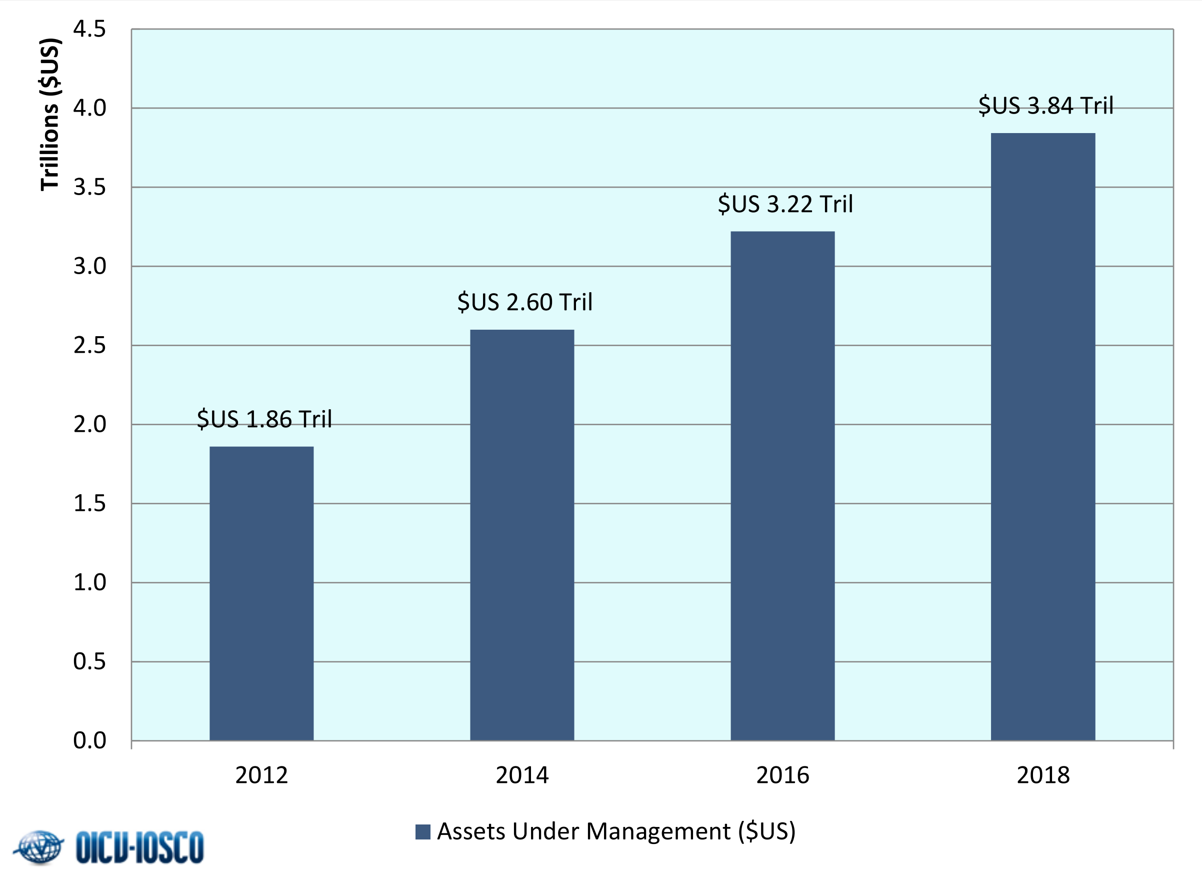
Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise

3.2 Assets Under Management

Total net AuM for the qualifying hedge funds sample rose 19.5%, to $US3.84 trillion in the 2018 survey from $US3.22 trillion in the 2016 survey, most likely boosted by an increase in the number of reporting jurisdictions, market dynamics and a surge in the number of funds that meet the minimum reporting threshold.

When interpreting these results, there are a few points to keep in mind. The AuM figure, like in previous editions of the survey, represents only those funds with a minimum of over $US500 million. As such, it represents a lower bound estimate of the global hedge fund industry's size. When comparing the total net AuM result to recent estimates of the size of the global hedge fund industry (based on third party vendor databases), the result is largely in-line with industry estimates, considering that the scope of this edition includes a larger number of participants.[6]

Figure 2: Qualifying Hedge Funds Net Assets under Management (2012-2018)



Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise

Also, to avoid double-counting of funds managed from multiple jurisdictions, survey participants have adjusted the survey results at the jurisdictional level to account for hedge funds that were likely to have reported to the SEC under its Form PF. This may give the impression of a larger than normal hedge fund industry in the US relative to other jurisdictions (for a more comprehensive explanation, please see footnote 4).

Parallel account – US Form PF data

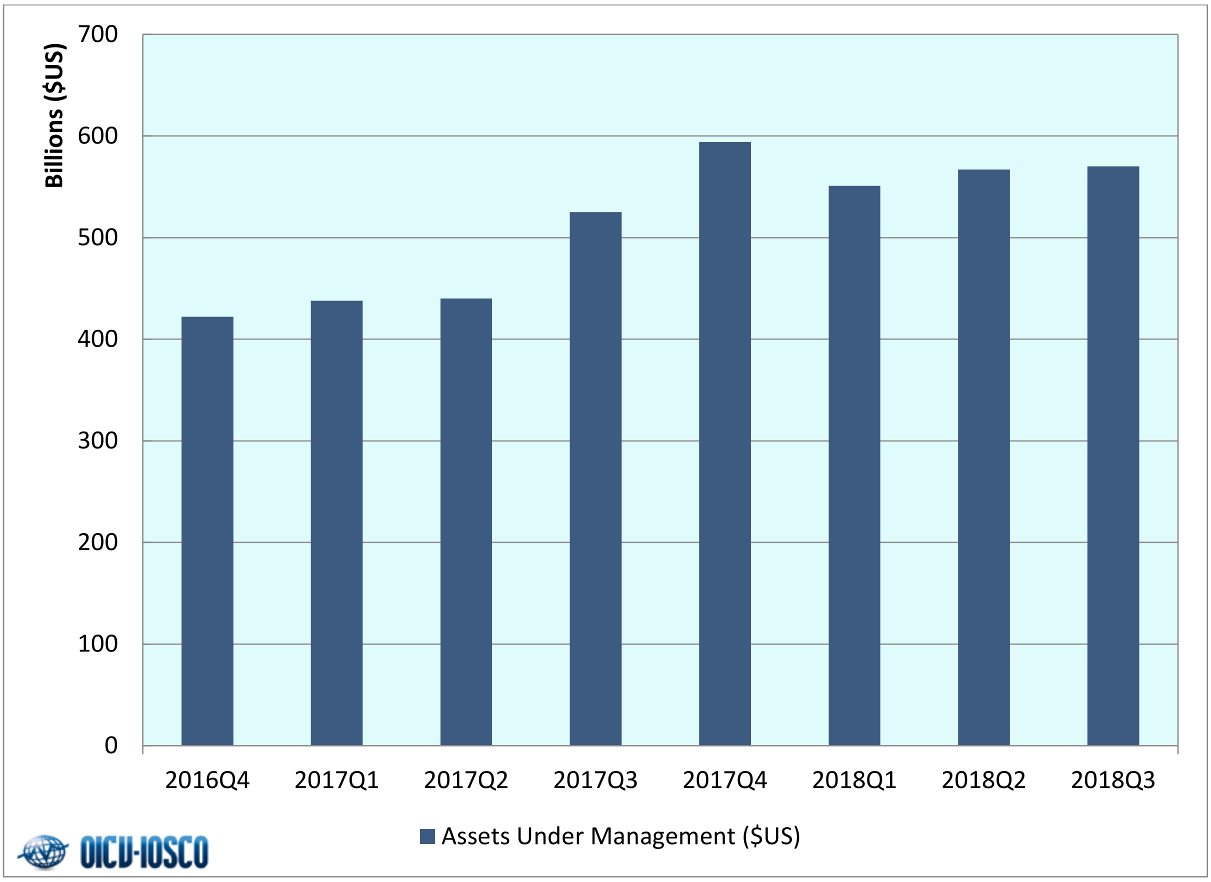
The Form PF data also includes data on parallel accounts. Parallel accounts are defined for purposes of Form PF as, "*An account advised by an adviser that pursues substantially the same investment objective and strategy and invests side by side in substantially the same positions as the reporting fund*".[7] Figure 3 below shows the evolution of AuM in parallel accounts since the 2016 IOSCO Hedge Funds Survey.

---

6 For example, see Barclays (2019): Crossing currents: 2019 Global hedge fund industry outlook, which suggests the size of the global hedge funds industry is $US3.1 trillion (based on EPFR data). Similarly, the HFR Global Hedge Funds Industry report states total hedge fund assets stood at $US3.18 trillion (as at April 2019).

7 See Appendix E in the SEC staff's Private Funds Statistics report, Third Calendar Quarter 2018, available at *https://www.sec.gov/divisions/investment/private-funds-statistics/private-funds-statistics-2018-q3.pdf*.

Figure 3: Assets under Management in parallel accounts (Q4 2016 – Q3 2018)



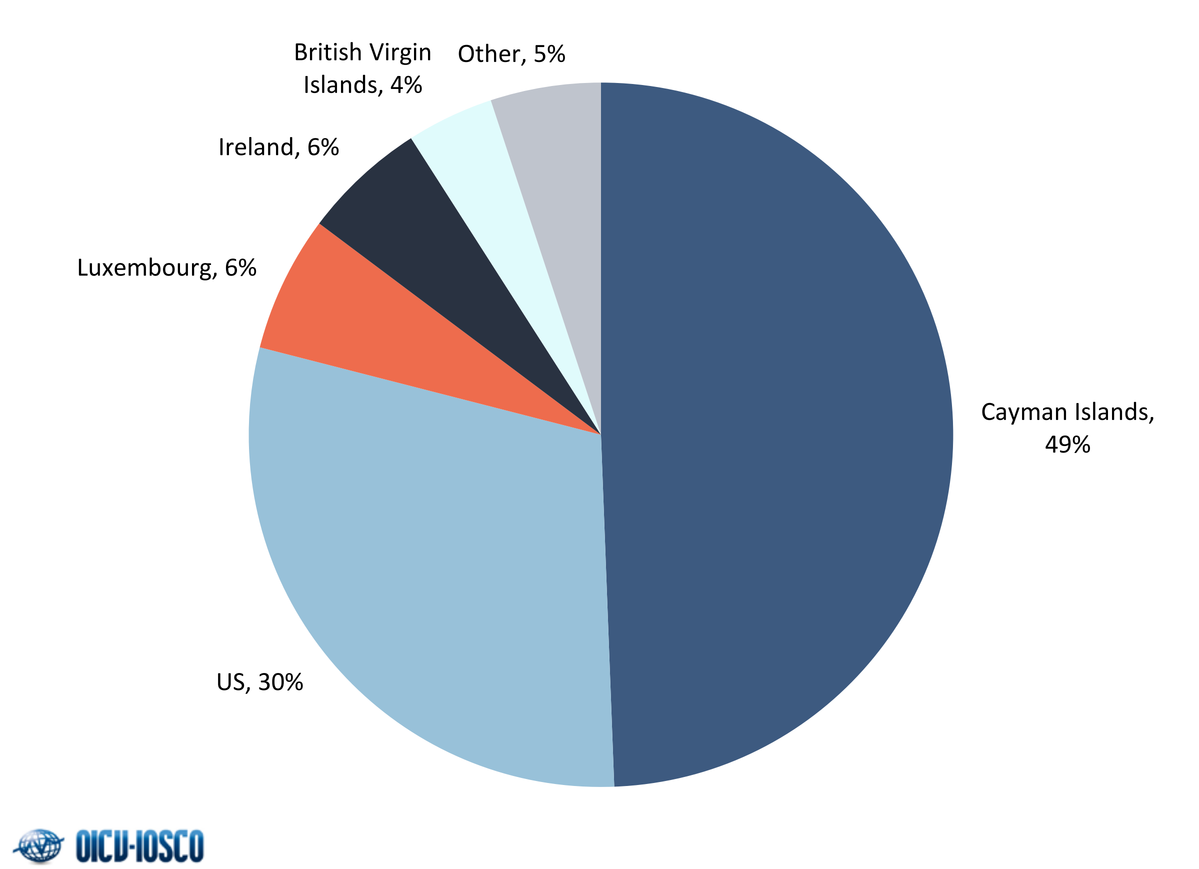
Source: SEC Private Funds Statistics May 2019

As at Q3 2018, AuM in parallel accounts stood at $US570 billion. Adding this to our initial figure provides a global estimate of the hedge funds industry of $US4.42 trillion. However, corresponding data points (for example, the European AIFMD initiative) are not systematically collected by other regulators.

3.3 Fund Domicile

Hedge funds remain domiciled primarily in the Cayman Islands and the United States, accounting for 80% of qualifying hedge funds captured by the survey. European jurisdictions represent a fraction of qualifying hedge funds. These results are largely unchanged from the previous surveys. Figure 4 graphically presents the results.

Figure 4: Top Fund Domiciles by Assets Under Management



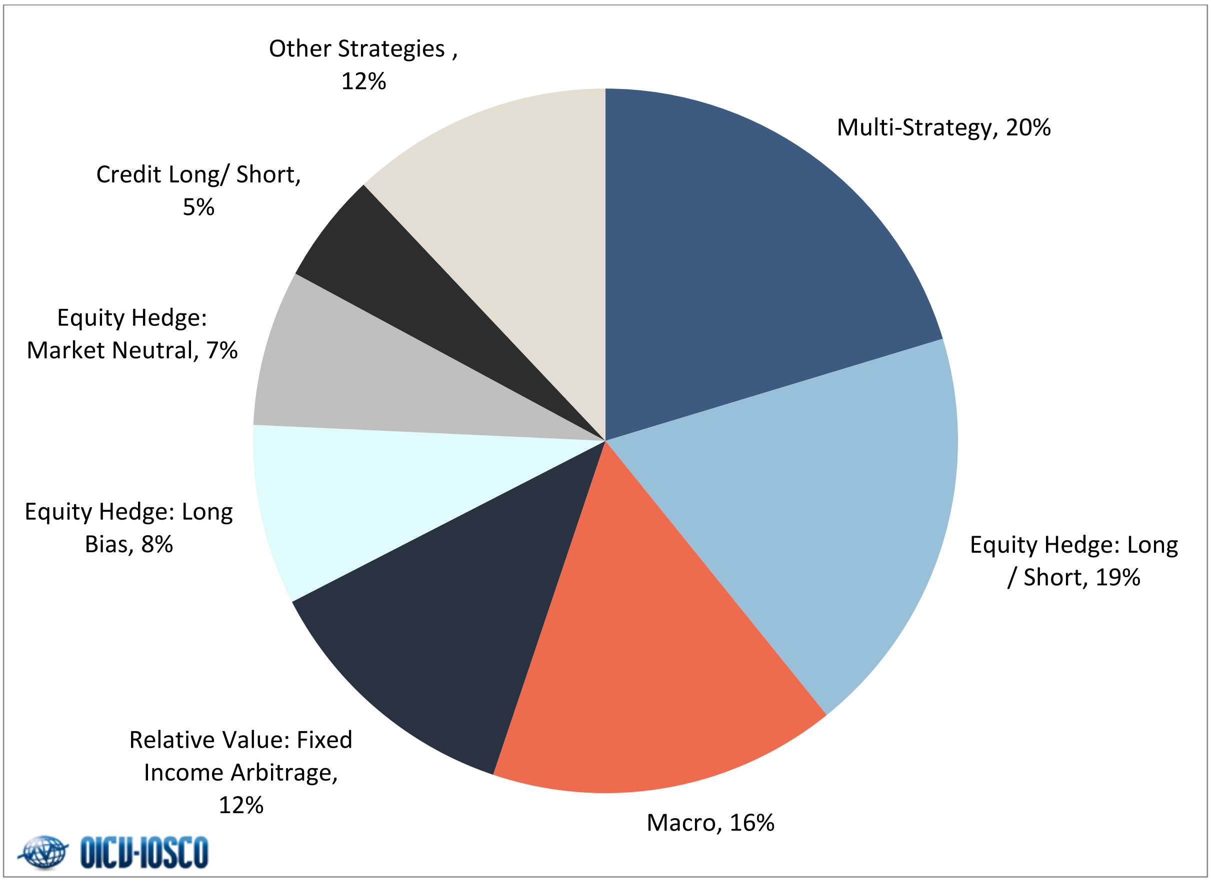
Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise

3.4 Investment Strategy

"Hedge fund" is an umbrella term, and within that broad group, funds will pursue one or more specific investment strategies. In most cases, these fit within a dozen or so major categories of strategy. Figure 5 provides a breakdown of the most common investment strategies utilised by qualifying hedge funds.

It is noteworthy that data from the US, which makes up the bulk of the survey's total dataset, shows a strategy breakdown by gross asset exposure rather than net asset value (NAV). This gives more weight to those strategies that are more highly leveraged. It also means that the total allocated across all strategies will be greater than the total global NAV. Given this, multi-strategy, equity long/short and macro-driven strategies are the most common, representing 55% of all AuM.

Figure 5: Top investment strategies by Assets under Management



Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise
Note: May not add to 100% due to rounding

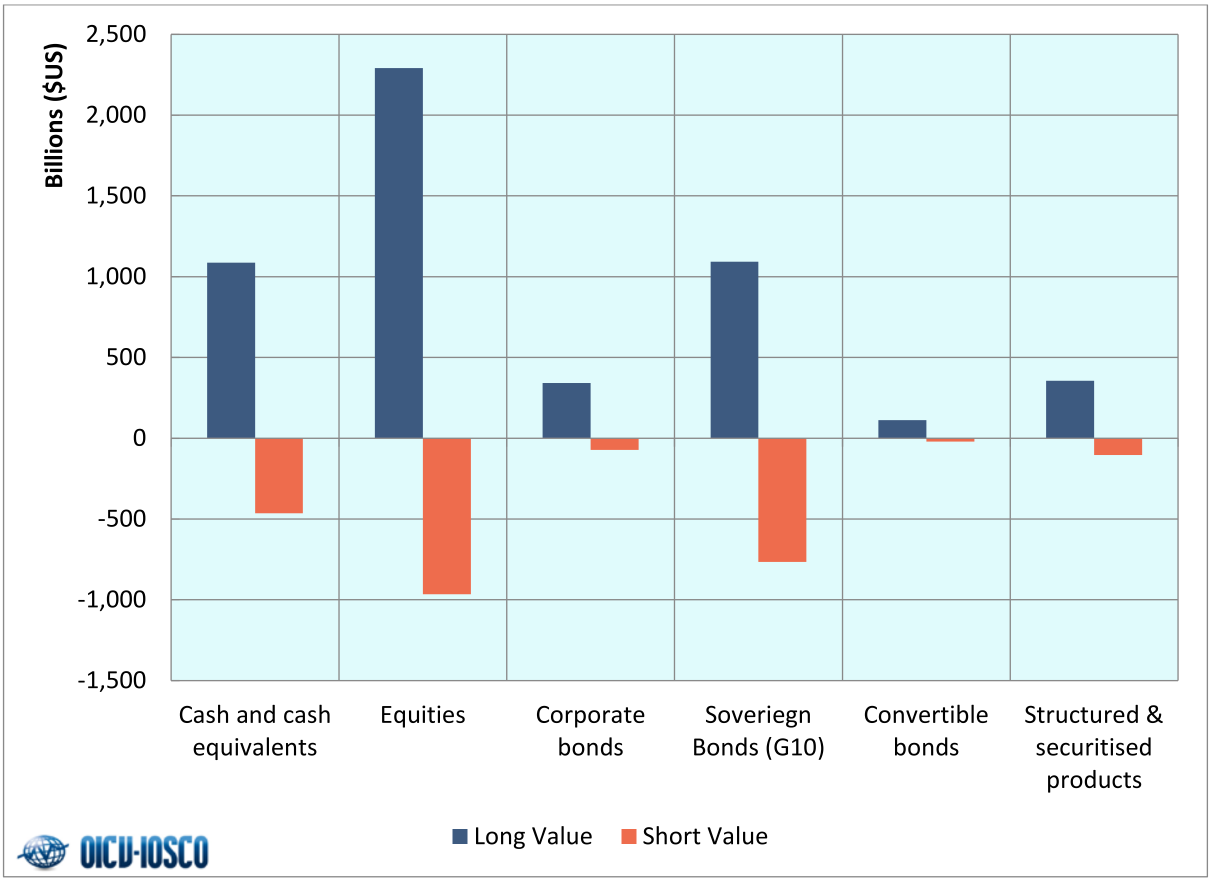
3.5 Investment Exposures

The survey also collected aggregate data on fund exposures to specific asset classes, for both long and short positions. Figures 6, 7, 9 and 10 below highlight the aggregate figures for both cash securities and derivatives positions. While the charts present most asset classes as long and short exposures, the survey only captures gross exposure for both interest rate swap and foreign exchange (FX) derivatives.

Overall, the largest long and short exposures in both cash and derivatives securities are in the equities asset class (see Figure 6 and Figure 7). While on a gross basis, Interest Rate and FX derivatives are the largest exposures held by qualifying hedge funds globally (see Figure 10).[8] This result is not surprising given that these products may be used for hedging purposes. For a further specialised breakdown on the data that looks at exposures to Collateralised Debt Obligations (CDO) / Collateralised Loan Obligations (CLO) products and financial institutions, please consult boxes 1 and 2, respectively.

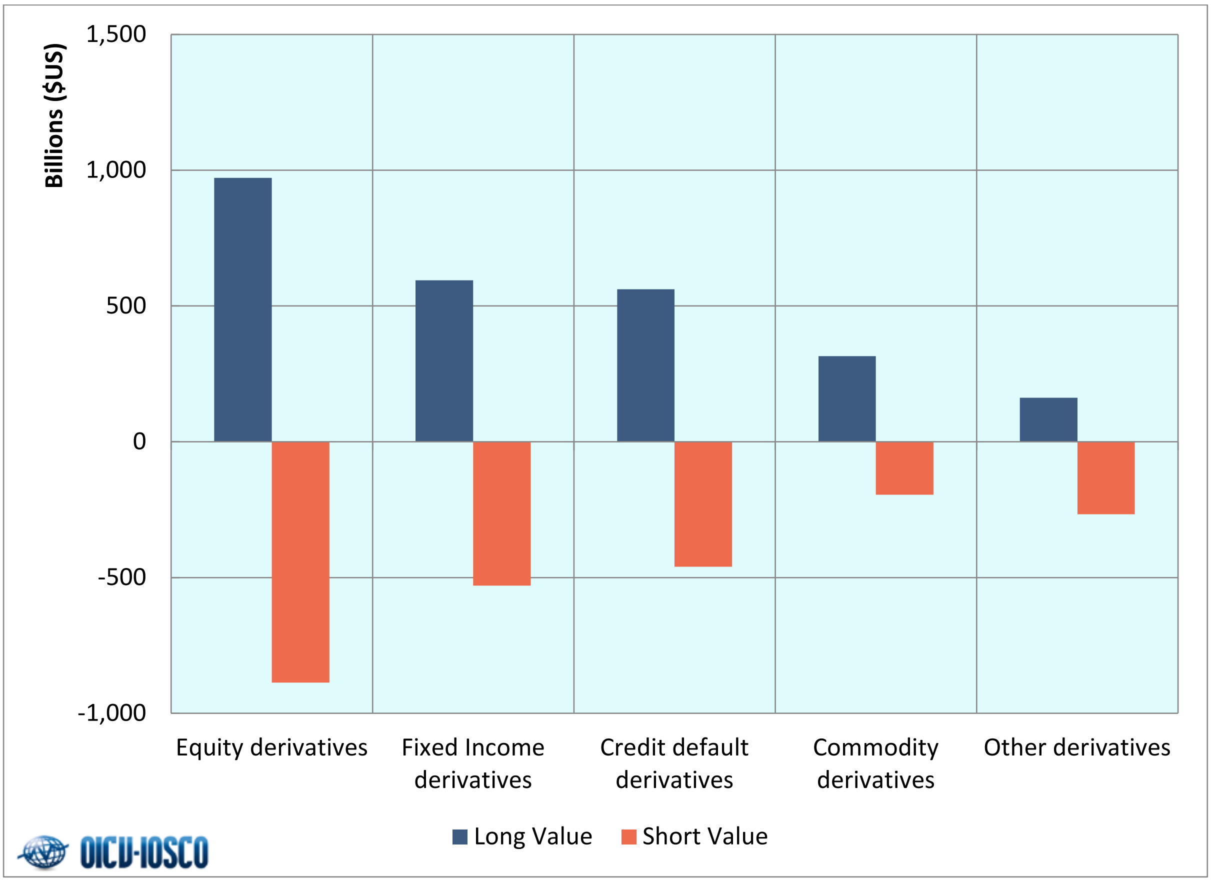
[8] While data from the US reports interest rate derivatives in terms of 10-year bond equivalents, other jurisdictions report them based on the notional values of the contracts, which may far outweigh the amount at risk in these transactions.

Figure 6: Cash Securities – Long and Short Notional



Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise

Figure 7: Derivatives – Long and Short Notional



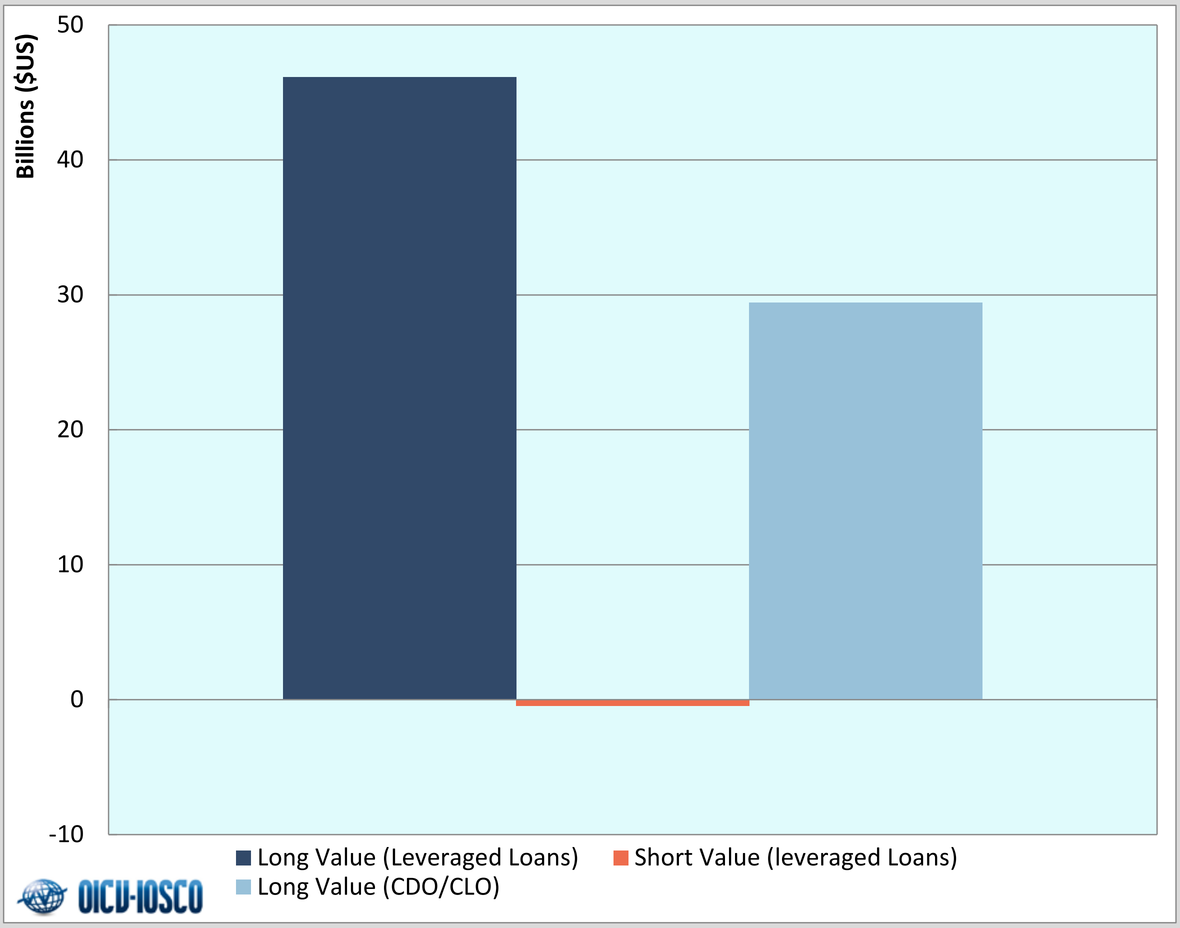
Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise

Box 1: Qualifying Hedge Fund Investment in CLOs and Leveraged Loans (excluding US)[9]

CDOs/CLOs bundle loans that are then backed by a series of bonds, similar to securitised products. The leveraged loan market, on the other hand, is where credit is usually extended to lowly rated, highly indebted companies. Of late, both markets have seen large increases in volumes and amounts outstanding.[10] Recent regulatory attention has begun to focus on the asset classes.[11]

The below figure highlights the extent to which qualifying hedge funds (excluding US funds) invest in such asset classes. The outstanding amount invested in leveraged loans and CDOs/CLOs is $US46 billion and $US29 billion, respectively.

Figure 8: Leveraged Loans and CDO/CLO (excluding US)



Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise

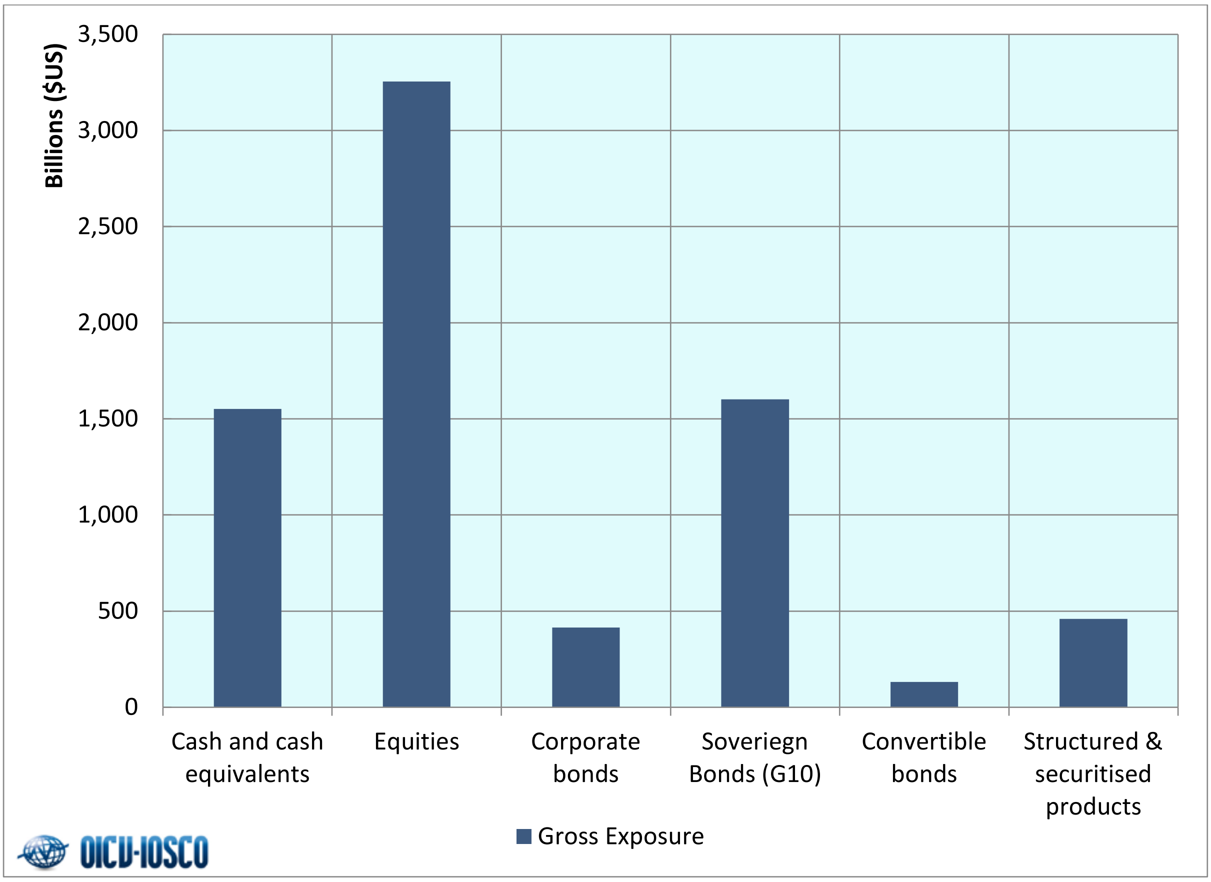
---

[9] The data for US hedge funds is not publicly available through the SEC Staff's Private Fund Statistics reports.

[10] Bank for International Settlements (2018): The rise of leveraged loans, BIS Quarterly Review September 2018.

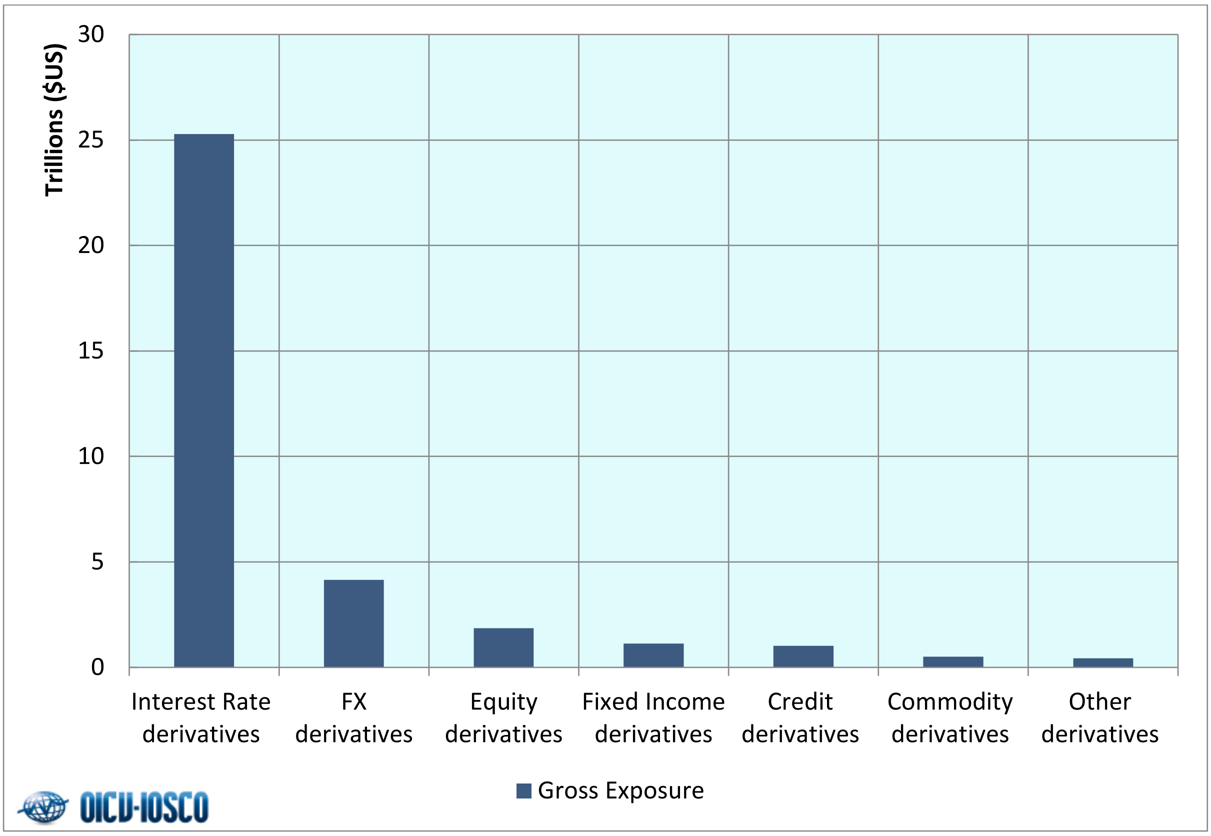
[11] Financial Stability Board (2019): Global Monitoring Report on Non-Bank Financial Intermediation 2018.

Figure 9: Cash Securities – Gross Exposure



Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise

Figure 10: Derivatives – Gross Exposures

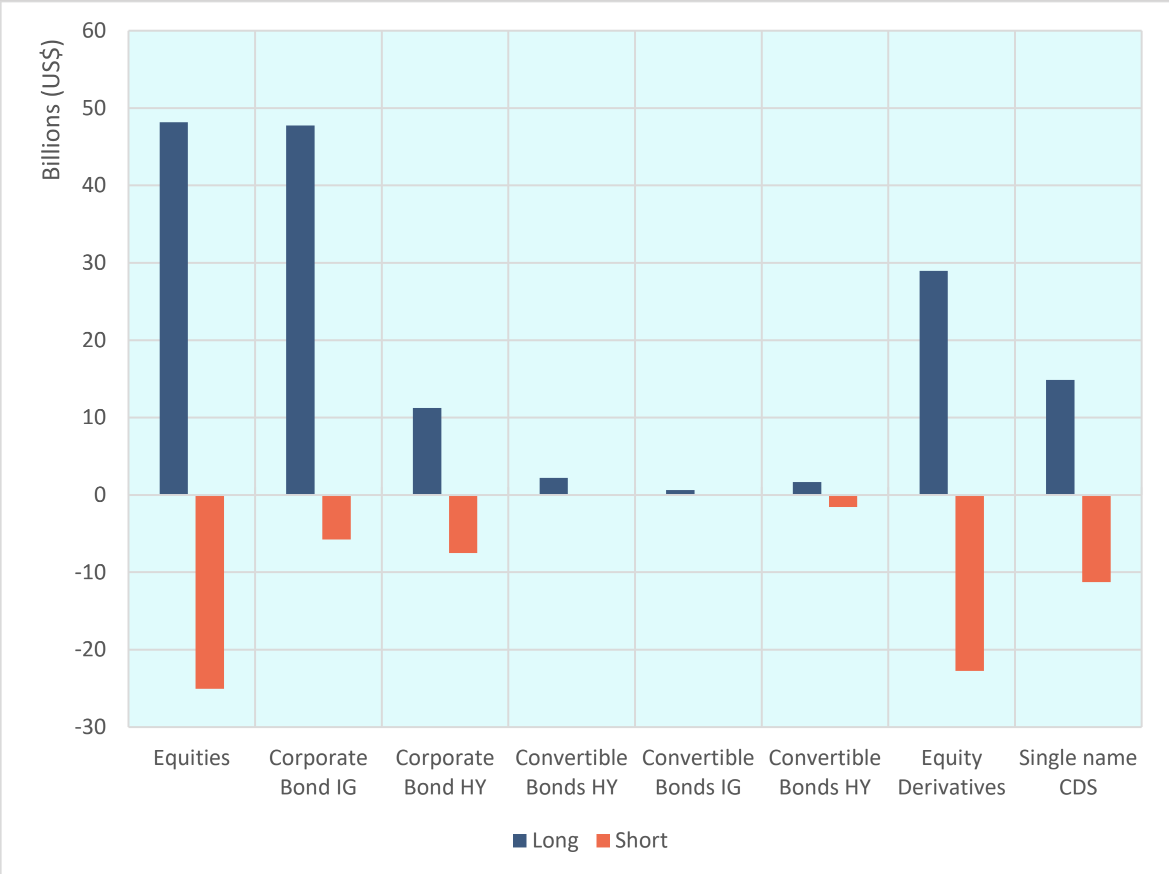


Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise

Box 2: Qualifying Hedge Fund exposure to asset classes issued by financial institutions (excluding US)[12]

The asset management industry plays a vital role in providing capital to the non-financial and financial sectors of the economy. Since 2008, this capital provision has increased. In some circles, this growth has raised concerns regarding the asset management industry's interconnection with the financial sector.[13]

Interconnectedness can take many forms. Two particular forms of interconnectedness are induced through direct ownership and via counterparty relationships and claims that such relationships could make on balance sheets.[14] The below chart highlights the exposures hedge funds (ex US) have to financial institutions through either direct, or the potential for direct, ownership (share equity, convertible bonds and derivatives exposures). Specifically, it highlights those exposures to instruments issued by financial institutions and for derivatives where financial institutions are the underlying or the counterpart.



Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise
Notes: The chart these are exposures to instruments issued by financial institutions and for derivatives where financial institutions are the underlying or the counterpart.

---

12 The data for US hedge funds is not publicly available through the SEC Staff's Private Fund Statistics reports.

13 Financial Stability Board (2019): Global Monitoring Report on non-Bank Financial Intermediation 2018

14 Portes, R (2018): "*Interconnectedness: mapping the shadow banking system*", Banque de France Financial Stability Review No.22

3.6 Leverage

Leverage is a financial technique generally used to increase investment exposure. Leverage allows a fund to increase its potential gains, as well as losses, by using financial instruments and/or borrowed money to increase the fund's market exposure beyond its net asset value. Leverage can come in a variety of different forms, for example, debt or some types of derivatives when used for this purpose. For the purposes of this report, the results on leverage are delineated by these two categories.

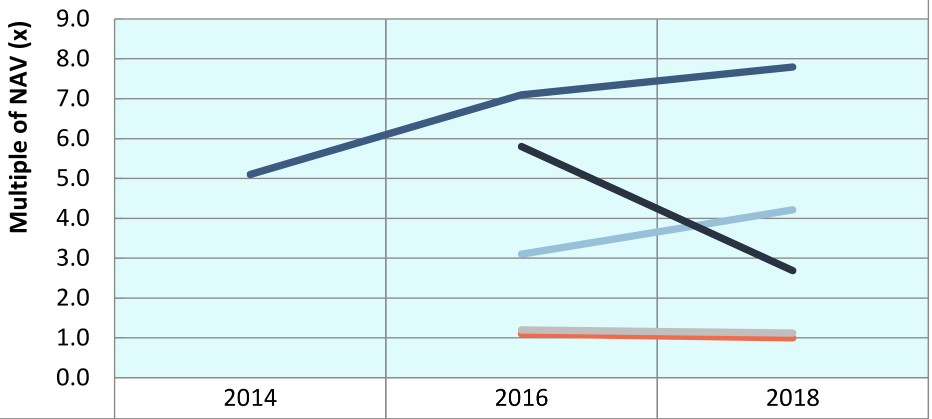
Notional Analysis

This section looks at the market value of cash securities and notional derivatives exposures of the qualifying hedge funds sampled in the survey. By aggregating the total long and short positions across the sample of funds, we can roughly estimate the total leverage employed by funds. There are several ways this can be done. First, by adding the absolute value of all positions, leverage can be estimated on a gross basis. Second, by subtracting the short positions from the long positions for the same asset class, leverage can be estimated on a net basis. Finally, by using the estimate of the gross notional outstanding of derivatives, as a proportion of the NAV, synthetic leverage can be estimated. Figure 11 below presents the results of these selected metrics.

Note that the figure of gross leverage is 7.8x for 2018. This is important because when compared to the results of the prior two surveys – taking into account the surveys' data limitations as discussed below - this figure represents a potential increase in leverage employed by funds. However, interpreting this trend in isolation can be misleading for several reasons. First, this survey exercise represents a repeated cross-section, with the sample of data collection changing for the 2018 exercise. That is, the pool of hedge funds sampled has changed, along with the number of jurisdictions taking part. Second, each data point represents a point-in-time estimate, with portfolio exposures being a function of macro-economic factors at that time - factors that do not remain constant. Third, the nature of these metrics is such that they do not provide a meaningful measure of the actual economic risk of the fund. Fourth, the gross leverage figure is significantly skewed by the inclusion of large notional amounts from interest rate and foreign exchange derivatives transactions – asset classes that are sometimes used for hedging purposes only. By excluding those asset classes from the calculation, gross leverage is 4.2x.

On this last point, the use of derivatives does not necessarily imply leverage. In fact, there are many uses for derivatives, including hedging to reduce the risk of a portfolio. Although not a perfect measure, one way to account for hedging is to calculate the net leverage measure, which offsets long and short positions in the same asset class. This metric for 2018 is calculated at 1x, which: 1) indicates qualifying hedge funds are not leveraged according to this measure; and 2) is not materially different from the 2016 result. Leverage metrics by jurisdiction can be found in Appendix B.

Figure 11: Notional leverage figures by selected metrics (2014-2018)[15]



	2014	2016	2018
Gross Leverage, including interest rate and FX derivatives	5.1	7.1	7.8
Gross Leverage, excluding interest rate and FX derivatives		3.1	4.2
Net Leverage, excluding interest rate and FX derivatives		1.1	1.0
Synthetic Leverage		5.8	2.7
Net Synthetic Leverage		1.2	1.1

Source: IOSCO Hedge Funds Survey 2014, 2016 & 2018 Data Collection Exercises
Note: blank cells indicate data was not collected for that data point

Asset Class Breakdown

However, these metrics may not, in isolation, provide a better understanding of where the exposures are being built up, a point also echoed in IOSCO's recent Leverage recommendations.[16] This same publication also suggests an approach that seeks to address these limitations, which is to express such metrics by asset class. An asset class breakdown provides the percentage of a core set of investment exposures typical of an investment fund. Table 1 presents such a breakdown using the data collected for this exercise.

[15] Definitions:

- Gross leverage is estimated as the absolute sum of all positions, divided by NAV;
- Net leverage excludes IRS and FX positions. The calculation offsets long and short in the same asset class and then sums the remaining position. The final summation is divided by NAV;
- Synthetic Leverage is the absolute sum of derivatives positions only, divided by NAV;
- Net Synthetic Leverage excludes IRS and FX positions. The calculation offsets positions in the same derivatives asset class before summing the absolute value of remaining positions. The final summation is divided by NAV.

[16] IOSCO (2019): *Recommendations for a Framework Assessing Leverage in Investment Funds*

Table 1: Qualifying Hedge Fund Market Exposure, broken down by asset class on a long/short basis

Market exposure				
Asset class	Position Base Currency		NAV (%)	
	Long	Short	Long	Short
Equity securities	3,087,397,534,030.00	1,302,404,644,018.00	80.42%	33.92%
Equity derivatives	1,600,404,184,428.93	313,961,347,709.29	41.68%	8.18%
Fixed income securities	1,334,039,248,143.00	660,700,927,210.00	34.75%	17.21%
Credit derivatives	1,516,987,913,349.00	680,310,651,152.00	39.51%	17.72%
Non-base currency holdings*	-	-		
FX derivatives **				
High-quality sovereign bonds	3,186,221,261,571.00	499,840,323,638.00	82.99%	13.02%
IRS derivatives**				
Commodities	110,496,000.00	-		
Commodity derivatives	468,341,128,432.00	114,804,410,832.00	12.20%	2.99%
Cash and cash equiv.	1,220,653,727,138.47	807,454,712,324.00	31.79%	21.03%
Other	2,079,538,168,360.00	242,824,799,402.00	54.16%	6.32%

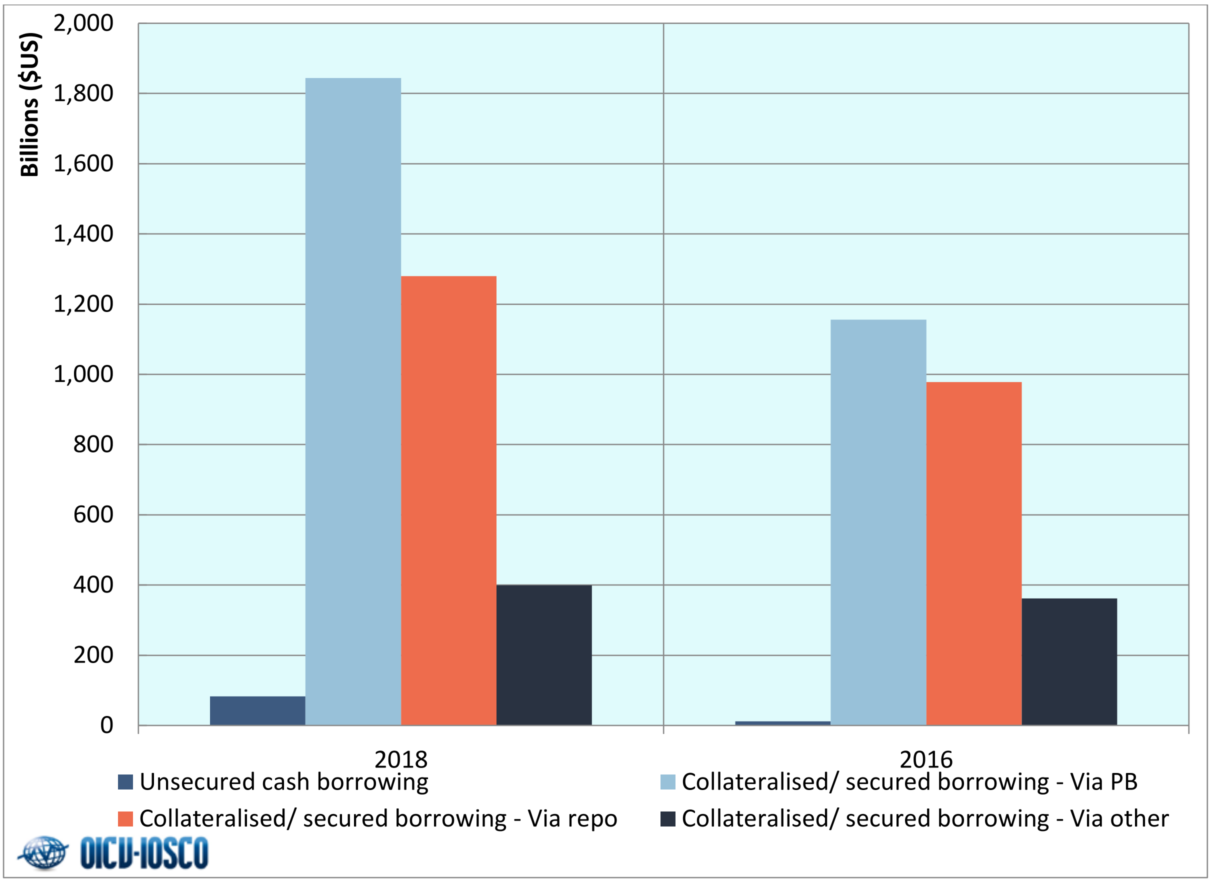
Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise

*Notes: * indicates that data was not collected on this asset class; ** indicates that data was collected on a gross notional basis only. Long short split is not available.*

Financial Leverage

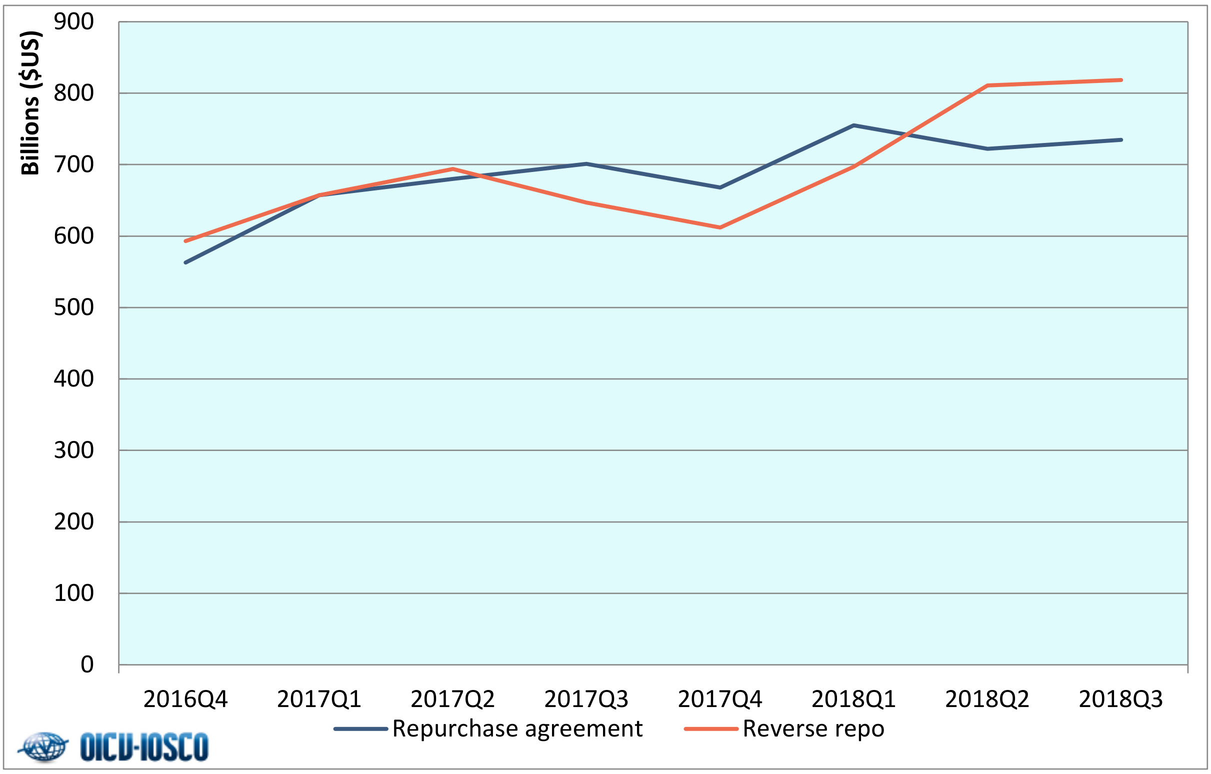
Financial leverage is described as the amount of cash borrowed (secured or unsecured) as a proportion of investors' capital. It shows the increase in exposure via cash borrowing and, as such, is analogous to the classic accounting definition of debt-to-equity. Figure 12 below graphically represents the amount of cash borrowing (secured and unsecured) by qualifying hedge funds in the sample and compares it with the 2016 result. Figure 13 shows the repo and reverse repo positions of qualifying hedge funds in the US.

Figure 12: Secured and Unsecured Borrowing (2016-2018)



Source: IOSCO Hedge Funds Survey 2016 & 2018 Data Collection Exercises

Figure 13: Qualifying hedge funds exposure through Repurchase and Reverse Repurchase Agreements (US Only)



Source: SEC Private Funds Statistics May 2019

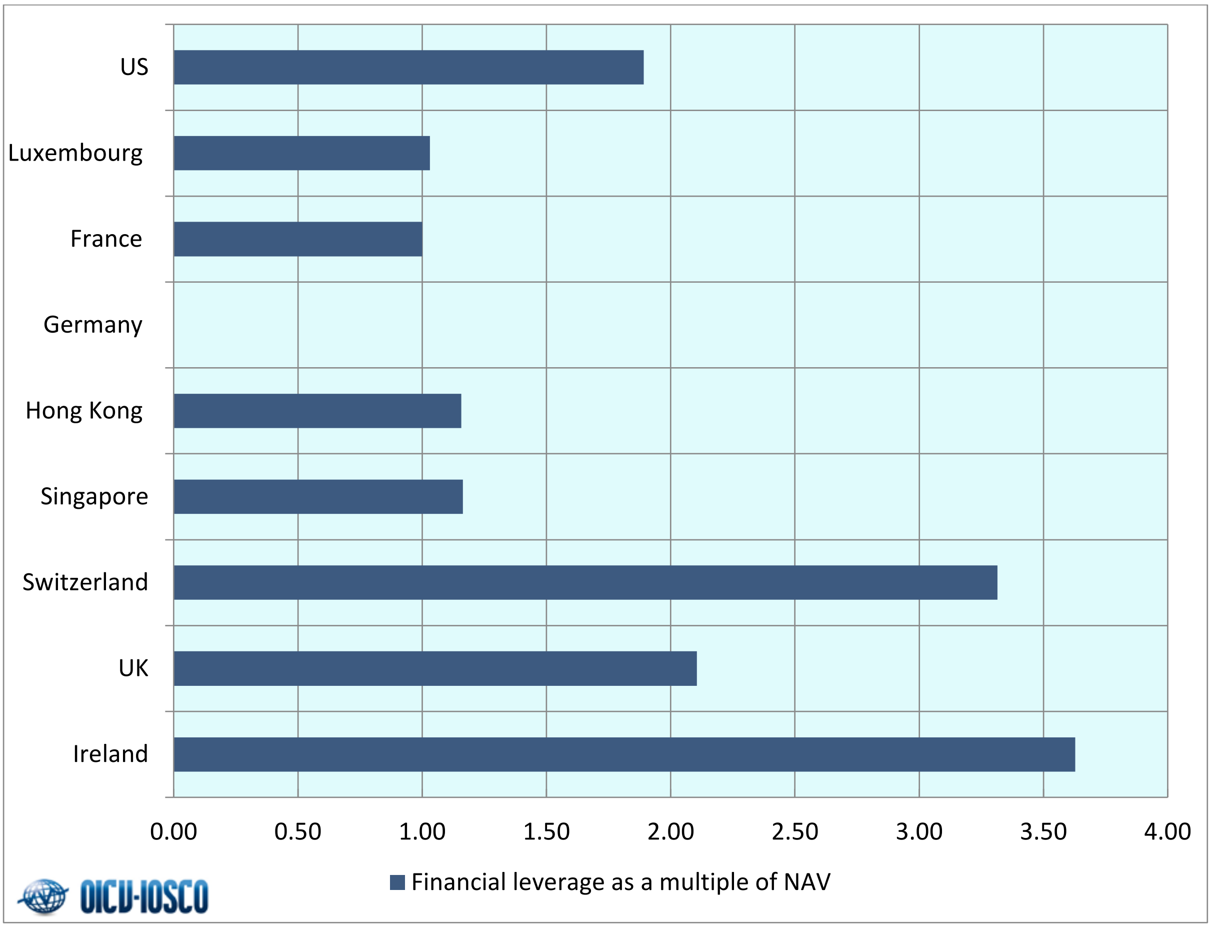
Table 2: Financial leverage (2014-2018)

	September 30, 2018	September 30, 2016	September 30, 2014
Financial Leverage	1.9x	1.8x	1.7x

Source: IOSCO Hedge Funds Survey 2014, 2016 & 2018 Data Collection Exercises

Overall, the amount of secured and unsecured borrowing by qualifying hedge funds totalled $US3.59 trillion, with $US3.5 trillion being secured borrowings through repo tractions, credit from prime brokers and other sources of lending (see *Collateral* section below for a discussion on collateral posted). This observation implies a financial leverage ratio of 1.9x NAV, which is a marginal increase on the figure reported in the last survey (See Table 2). A jurisdictional level breakdown is provided in Figure 14.

Figure 14: Financial leverage by jurisdiction



Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise
Notes: Figures for Switzerland and Hong Kong reflect the total exposures of the qualifying hedge funds, and not the mere exposure in relation to the assets managed from these respective jurisdictions and include qualifying hedge funds of several managers headquartered outside Switzerland and Hong Kong.

3.7 Collateral

The survey collected information on the aggregate amount of collateral posted by hedge funds to counterparties, which could take the form of cash (or cash equivalents) and other assets (including securities).

Overall, qualifying hedge funds across the sample indicated that they had posted a total of $US4.5 trillion as collateral. This amount is broken down into $US3.1 trillion posted as other (including securities and credit support) and $US1.4 trillion as cash (and cash equivalents).

Contrast this with the figures for secured borrowing presented in the financial leverage section. The qualifying hedge funds in the sample indicated that secured borrowings were $US3.2 trillion (in aggregate), compared to collateral posted of $US4.5 trillion. In short, secured borrowings undertaken by qualifying hedge funds seem, on aggregate, to be over collateralised. However, this interpretation needs to be qualified. Collateral, as captured, accounts for all collateral posted by qualifying hedge funds, including for initial margin. Hence, the figure presented here is an upper-bound estimate of the amount of collateral used to secure funding.

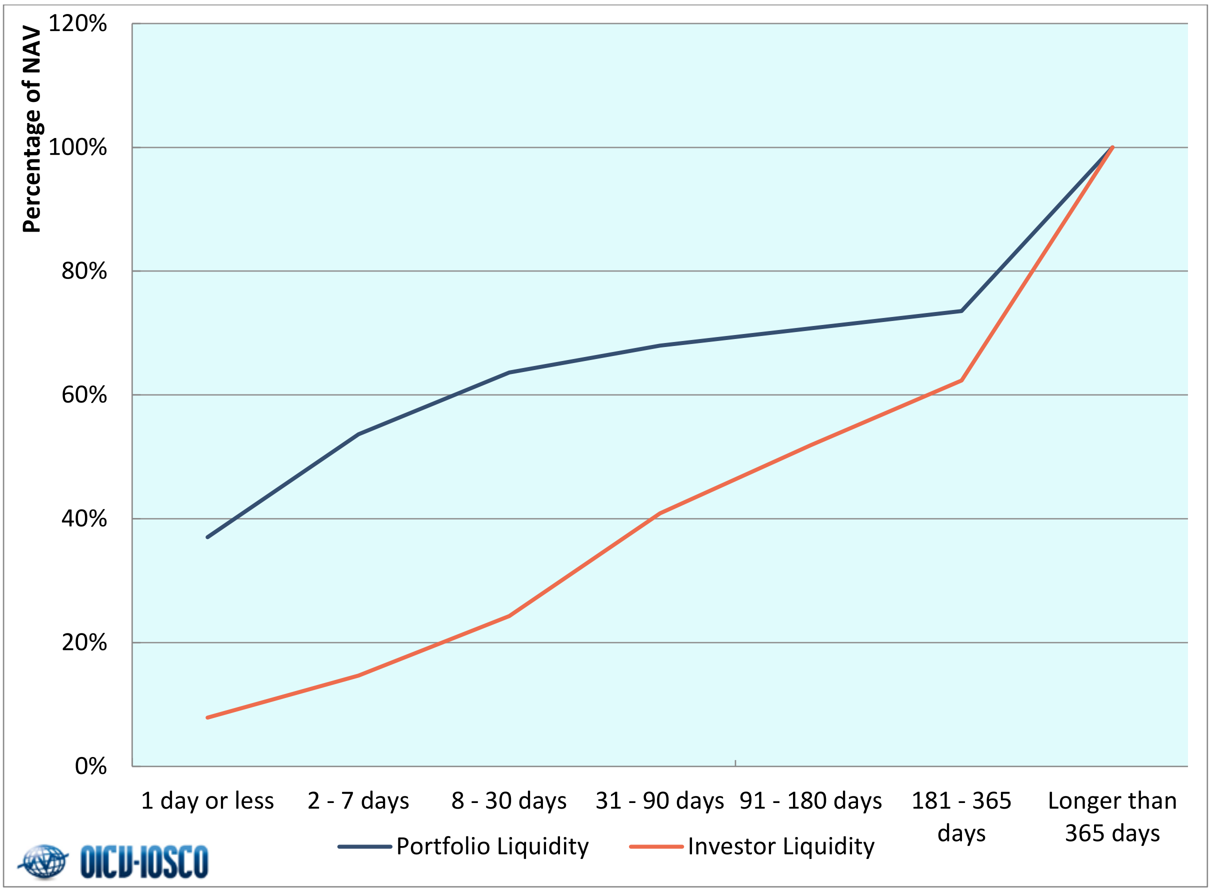
3.8 Liquidity

The liquidity profile looks at the fund's ability to meet investors' redemption demands with the underlying liquidity of the portfolio. Figure 15 below highlights this relationship between portfolio liquidity and investor demands for liquidity.

Of note is the gap between the two lines. The blue line represents the amount of the fund portfolio, on average, that could be liquidated at each time period. The red line represents investor redemption demand, on average, at each time period. Therefore, to ensure that portfolio liquidity is adequate to meet investor demand, the blue line should be above the red line. The difference between the two lines can be considered the liquidity buffer.

On aggregate, we see that for every time period, portfolio liquidity may be sufficient to meet investor redemption demand under normal market conditions. However, it is worth noting that Figure 15 only represents the liquidity demand in normal times.[17] Additionally, the calculation methodology commingles all assets and all liabilities in one global balance sheet and, therefore, allows funds with excess liquidity to compensate for funds with liquidity mismatch. Hence, more granular data would be needed to carry out a more accurate assessment.

Figure 15: Average Portfolio and Investor Liquidity Profile for Qualifying Hedge Funds



Source: IOSCO Hedge Funds Survey 2018 Data Collection Exercise

[17] While portfolio liquidity does in principle represent normal market conditions, the IOSCO guidelines (and in Europe the AIFMD) highlight that with respect to investor liquidity, funds should take into account "the shortest period within which the invested funds could be withdrawn or investors could receive redemption payments, as applicable". In other words, the investor liquidity profile represented in the chart can be largely interpreted as the extreme adverse scenario of all investors redeeming at the same time in the shortest time period possible.

Chapter 4 – Conclusion

This report presents the results of the fifth edition of the IOSCO Hedge Funds Survey. The survey is a biennial exercise that aims to provide IOSCO and interested stakeholders with a global view of the hedge fund industry. After five iterations, this exercise continues to develop as an important database of global hedge fund information.

Overall, the survey indicates that the global hedge fund industry continues to grow in terms of the number of funds and assets under management. The strategies most employed by hedge funds globally are multi-strategy funds and equity long/short funds. The exposures of hedge funds confirm this result, with equities exposures (both cash securities and derivatives) being the largest positions held. However, on a gross exposure basis, interest rate and FX derivatives continue to be the largest asset class positions held.

All of this has implications for the measure of leverage in funds. Depending on the metric, leverage (both notional and financial) may appear to have increased, but this interpretation needs to be treated with caution given the data and other limitations as described in this report. At an aggregate level, there is a considerable liquidity buffer, suggesting that in normal market conditions hedge funds should be able to meet investor redemptions.

Appendix A - Methodology and Structure

Methodology

The 2018 iteration of the IOSCO survey was conducted following the same methodology and using a similar template to the one used in 2016. The firms and funds captured in the survey met the following conditions. They must:

- Qualify as a hedge fund, either based on criteria defined in its local jurisdiction, based on its own declaration to its regulator or based on a combination of criteria, such as the use of leverage, the complexity of strategies, and the application of performance fees;

- Be at least partially managed by a regulated entity within their jurisdiction or marketed in that jurisdiction;

- Be managed by a single manager, i.e. fund of funds (or multi-manager funds) are excluded; and

- Be able to demonstrate that it manages at least $US500 million of total global net assets (net AuM or NAV). This includes the sum of all accounts managed under the same strategy (for example including pooled funds and separately managed accounts), to ensure the product is fully captured.

Structure of the survey

The fifth version of the survey was made up of 21 questions over two sections. Section 1 is based on information collected at the firm level and Section 2 comprises information at the fund level. The latter section makes up most of the questionnaire, as more granular data on hedge fund risks and activities is identified at this level. Details of what is included in each section of the questionnaire are outlined below.[18]

Section 1 - Management company information. This section includes general questions about the regulated entity and the group/parent it relates to. Additionally, it includes questions on the assets under management for the group/global entity, and assets under management for the local entity, broken down into total group net AuM and total group net hedge fund AuM. This section is used to provide a context for the fund level data.

Section 2 - Qualifying fund information. This section was completed for each qualifying hedge fund that the firm manages. It includes detailed questions about qualifying funds, limiting all data provided to the vehicle in question, whilst considering a fund in its entirety, embedding all structures (master and feeders) and share classes. The section includes fund-level information about asset class exposure, leverage details, liquidity profile, collateral details, and information about trading and clearing mechanisms.

[18] In many cases, the funds are not domiciled (and sometimes not marketed) in the reporting jurisdictions. The information is then provided by the manager of the given hedge fund.

Appendix B – Leverage Metrics and asset class breakdown by Jurisdiction[19]

	Gross Leverage, including interest rate and FX derivatives	Gross Leverage, excluding interest rate and FX derivatives	Net Leverage, excluding interest rate and FX derivatives	Synthetic Leverage	Net Synthetic Leverage
Ireland	14.34	9.05	5.18	7.48	1.40
United Kingdom	9.42	7.19	1.55	5.03	0.35
Switzerland	At the request of the NCA, jurisdictional-level data withheld– however, included in the aggregate figures.				
Singapore	16.91	2.27	1.34	14.64	0.26
Hong Kong	13.14	4.30	1.14	11.39	0.15
France	12.10	4.53	1.56	11.07	0.68
Luxembourg	6.71	3.04	1.15	5.46	0.15
United States	6.11	3.61	0.83	3.35	0.85

Note: *Participating jurisdictions apply different definitions of what constitutes a hedge fund. While some participating jurisdictions focused on "pure" hedge funds (i.e. those with no leverage restrictions), based on the declaration by the Asset Managers with no corrections. Other jurisdictions may have applied a different methodology. Hence, the figures are not necessarily comparable between jurisdictions.*

Definitions:

- Gross leverage is estimated as the absolute sum of all positions, divided by NAV;
- Net leverage excludes IRS and FX positions. The calculation offsets long and short in the same asset class and then sums the remaining position. The final summation is divided by NAV;
- Synthetic Leverage is the absolute sum of derivatives positions only, divided by NAV;
- Net Synthetic Leverage excludes IRS and FX positions. The calculation offsets positions in the same derivatives asset class before summing the absolute value of remaining positions. The final summation is divided by NAV.

19 All data presented is sourced from the *IOSCO Hedge Funds Survey 2018 Data Collection Exercise*.
Please note the corresponding legend for the following data tables:
* Represents the Interest rate derivatives unadjusted notional only

Market exposure: Ireland					
Asset class	Position Base Currency			NAV (%)	
	Long	Short	Gross	Long	Short
Equity securities	98,493,480,396.00	48,865,092,931.00		78.57%	38.98%
Equity derivatives	35,345,509,980.00	24,096,576,466.00		28.20%	19.22%
Fixed income securities	167,679,947,271.00	46,453,770,518.00		133.76%	37.06%
Credit derivatives	131,855,862,004.00	23,515,619,677.00		105.18%	18.76%
Non-base currency holdings					
FX derivatives			78,454,253,442.00		
High-quality sovereign bonds	144,588,920,215.00	6,212,186,534.00		115.34%	4.96%
IRS derivatives			584,217,625,375.00*		
Commodities	0	0		0.00%	0.00%
Commodity derivatives	46,742,133,963	4,349,110,311.00		37.29%	3.47%
Cash and cash equiv.	167,947,085,085.00	86,807,352,426.00		133.97%	69.25%
Other	89,468,844,037.00	12,414,763,131.00		71.37%	9.90%

Market exposure: United Kingdom					
Asset class	Position Base Currency			NAV (%)	
	Long	Short	Gross	Long	Short
Equity securities	102,389,730,951.00	40,989,951,170.00		53.03%	21.23%
Equity derivatives	80,106,813,518.00	61,975,815,086.00		41.49%	32.10%
Fixed income securities	42,440,891,203.00	21,819,038,293.00		21.98%	11.30%
Credit derivatives	207,109,549,118.00	161,642,149,491.00		107.26%	83.71%
Non-base currency holdings					
FX derivatives			416,203,615,098.00		
High-quality sovereign bonds	166,233,916,607.00	58,980,780,664.00		86.09%	30.55%
IRS derivatives			13,872,148,642.00*		
Commodities	0	0		0.00%	0.00%
Commodity derivatives	14,908,997,508.00	14,628,213,886.00		7.72%	7.58%
Cash and cash equiv.	185,878,541,120.00	202,437,990,909.00		96.27%	104.84%
Other	27,287,127,178.00	-		14.13%	0.00%

Market exposure: Switzerland					
Asset class	Position Base Currency			NAV (%)	
	Long	Short	Gross	Long	Short

Equity securities					
Equity derivatives					
Fixed income securities					
Credit derivatives					
Non-base currency holdings					
FX derivatives					
High-quality sovereign bonds					
IRS derivatives					
Commodities					
Commodity derivatives					
Cash and cash equiv.					
Other					

At the request of the NCA, jurisdictional-level data withheld – however, included in the aggregate figures.

Market exposure: Singapore					
Asset class	Position Base Currency			NAV (%)	
	Long	Short	Gross	Long	Short
Equity securities	22,653,195,521.00	1,794,701,044.00		70.34%	5.57%
Equity derivatives	8,389,386,420.00	4,779,796,763.00		26.05%	14.84%
Fixed income securities	3,810,864,162.00	14,783,788.00		11.83%	0.05%
Credit derivatives	8,900,144,905.00	5,672,690,066.00		27.64%	17.61%
Non-base currency holdings					
FX derivatives			76,178,764,131.00		
High-quality sovereign bonds	4,508,062,565.00	58,106,724.00		14.00%	0.18%
IRS derivatives			364,620,283,435.00*		
Commodities	0	0		0.00%	0.00%
Commodity derivatives	1,994,893,691	383,307,726.00		6.19%	1.19%
Cash and cash equiv.	6,484,894,460.00	2,306,892,157.00		20.14%	7.16%
Other	1,350,560,887.00	57,923,566.00		4.19%	0.18%

Market exposure: Hong Kong					
Asset class	Position Base Currency			NAV (%)	
	Long	Short	Gross	Long	Short
Equity securities	34,041,231,669.00	14,158,983,090.00		41.77%	17.37%
Equity derivatives	58,361,948,537.93	59,538,241,161.29		71.62%	73.06%
Fixed income securities	33,123,705,459.00	6,652,011,944.00		40.65%	8.16%
Credit derivatives	29,909,892,630.00	40,351,267,878.00		36.70%	49.52%
Non-base currency holdings					
FX derivatives			699,231,914,043.00		
High-quality sovereign bonds	6,565,250,000.00	2,484,948,500.00		8.06%	3.05%
IRS derivatives			21,217,023,210.00*		
Commodities	110,496,000.00	0		0.14%	0.00%
Commodity derivatives	1,206,719,300.00	1,339,876,000.00		1.48%	1.64%
Cash and cash equiv.	28,803,334,431.47	7,412,279,173.00		35.34%	9.10%
Other	16,675,666,690.00	9,291,512,863.00		20.46%	11.40%

Notes: Figures reflect the total exposures of the qualifying hedge funds, not the mere exposure in relation to the assets managed from Hong Kong and include qualifying hedge funds of several managers headquartered outside Hong Kong.

Market exposure: France					
Asset class	Position Base Currency			NAV (%)	
	Long	Short	Gross	Long	Short
Equity securities	3,313,666,165.00	257,433,058.00		52.87%	4.11%
Equity derivatives	3,982,982,782.00	3,235,218,713.00		63.54%	51.61%
Fixed income securities	1,281,576,338.00	287,515,169.00		20.45%	4.59%
Credit derivatives	4,513,040,490.00	7,626,086,882.00		72.00%	121.66%
Non-base currency holdings					
FX derivatives			2,877,804,001.00		
High-quality sovereign bonds	375,868,985.00	-		6.00%	0.00%
IRS derivatives			44,558,651,587.00*		
Commodities	0	0		0.00%	0.00%
Commodity derivatives	535,317,885	668,206,461.00		8.54%	10.66%
Cash and cash equiv.	402,293,404.00	127,126,425.00		6.42%	2.03%
Other	910,410,707.00	883,254,634.00		14.52%	14.09%

Market exposure: Luxembourg		
Asset class	Position Base Currency	NAV (%)

	Long	Short	Gross	Long	Short
Equity securities	19,097,784,245.00	2,837,872,684.00		14.17%	2.11%
Equity derivatives	51,167,890,178.00	53,655,984,906.00		37.98%	39.82%
Fixed income securities	32,254,500,269.00	45,764,359.00		23.94%	0.03%
Credit derivatives	48,385,698,127.00	62,090,759,007.00		35.91%	46.08%
Non-base currency holdings					
FX derivatives			154,724,015,574.00		
High-quality sovereign bonds	50,473,185,920.00	1,357,643,397.00		37.46%	1.01%
IRS derivatives			339,650,270,044.00*		
Commodities	0	0		0.00%	0.00%
Commodity derivatives	7,858,369,189	5,327,648,050.00		5.83%	3.95%
Cash and cash equiv.	38,030,439,102.00	11,239,644,768.00		28.22%	8.34%
Other	18,947,404,082.00	6,965,951,479.00		14.06%	5.17%

Market exposure: United States				
Asset class	Position Base Currency		NAV (%)	
	Long	Short	Long	Short
Equity securities	2,738,000,000,000.00	1,139,008,000,000.00	85.94%	35.75%
Equity derivatives	1,317,000,000,000.00	57,948,000,000.00	41.34%	1.82%
Fixed income securities	1,033,000,000,000.00	572,476,000,000.00	32.42%	17.97%
Credit derivatives	669,000,000,000.00	64,224,000,000.00	21.00%	2.02%
Non-base currency holdings				
FX derivatives	2,470,000,000,000.00	276,640,000,000.00	77.53%	8.68%
High-quality sovereign bonds	2,718,000,000,000.00	372,082,000,000.00	85.31%	11.68%
IRS derivatives	5,512,000,000,000.00	77,168,000,000.00	173.01%	2.42%
Commodities	0	0	0.00%	0.00%
Commodity derivatives	380,000,000,000.00	72,960,000,000.00	11.93%	2.29%
Cash and cash equiv.	747,000,000,000.00	478,080,000,000.00	23.45%	15.01%
Other	1,892,000,000,000.00	189,630,000,000.00	59.38%	5.95%