NEPC, LLC

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2016 Survey Results

Hedge Fund Operational Due Diligence

November 2016

Bill Bogle, Partner
Erin Faccone, ODD Consultant
Kevin Lau-Hansen, ODD Analyst

255 State Street, Boston, MA 02109 | TEL: 617.374.1300 | FAX: 617.374.1313 | www.nepc.com
BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | SAN FRANCISCO

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- **NEPC's hedge fund research team consists of both investment specialists and a separate team focused on Operational Due Diligence ("ODD")**
- **Ongoing oversight includes an annual ODD survey, sent to all hedge funds utilized by NEPC clients and to additional funds rated "Preferred"**
  - Identifies key operational issues
    - Changes to the firm's ownership structure
    - Senior staff departures
    - Litigation or regulatory action
    - Dramatic decline in assets
    - Service provider changes
  - Allows NEPC to aggregate service providers used across all funds
    - Verify external service providers directly
    - Helps to flag any inaccurate responses
  - Highlights funds with operational "red flags" worthy of further investigation
- **Survey is sent annually in June, and the responses are compiled through the summer and fall**
- **NEPC's clients represent approximately 728 investment programs and approximately $920 billion in plan assets ***

* as of 6/30/2016. Includes both advisory and discretionary clients.

Survey Results

Survey Results

- **Each year we survey all hedge funds in place across all clients for whom NEPC advises on hedge funds**

- **The 2016 survey went to 219 managers and 203 responded (Response rate: 93%)**

- **Information on 370 funds was provided**
  - Highlights and trends are summarized herein
  - Each Administrator and Auditor was contacted independently by NEPC to verify the relationships reported by managers
  - Audited Financial Statements are being reviewed

- **16 firms were non-responders**
  - Per NEPC policy, non-responders cannot be included in future searches for clients

- **Firm-level data**
  - 91% are fully registered with the SEC. An additional 6% are registered as "Exempt Reporting Advisors."
  - 16% have had a change in ownership in the past year.
  - 5% are involved in some form of litigation. This figure has fallen dramatically in the past two years because we changed the structure of the question in 2015 to exclude portfolio-related litigation.
    - Litigation brought against the management company or fund could indicate greater operational risk.
  - 29% have had senior personnel departures in the past year.
  - 27% have an affiliated broker/dealer.
    - Affiliated broker/dealers could present a conflict of interest. However, many broker/dealer affiliates exist primarily for marketing purposes and do not have trading capabilities.

- **Product-level data**
  - 10 different audit firms are used, with the top two being Ernst & Young (31%) and PwC (29%). We are seeing increased concentration here (see p. 13).
  - 37 different administrators are used, with the most-used being Citco (19%).
  - 3% of the funds are self-administered.
  - 12% have changed a service provider in the last year.
  - 5% put up gates or restricted liquidity in the past year. As expected, this figure is down significantly since 2010.

- **Auditors**
  - Just 10 audit firms utilized by 363* funds
  - Highly concentrated: 92% in the Big Four audit firms

	Provider	
1	Ernst & Young	31%
2	PwC	29%
3	KPMG	17%
4	Deloitte	15%
	All other providers (6)	8%

92% (Big Four, rows 1–4)

  - 99% of the funds utilize one of the Big Four or three other well-known firms (EisnerAmper, Grant Thornton, and McGladrey – now known as RSM US LLP)

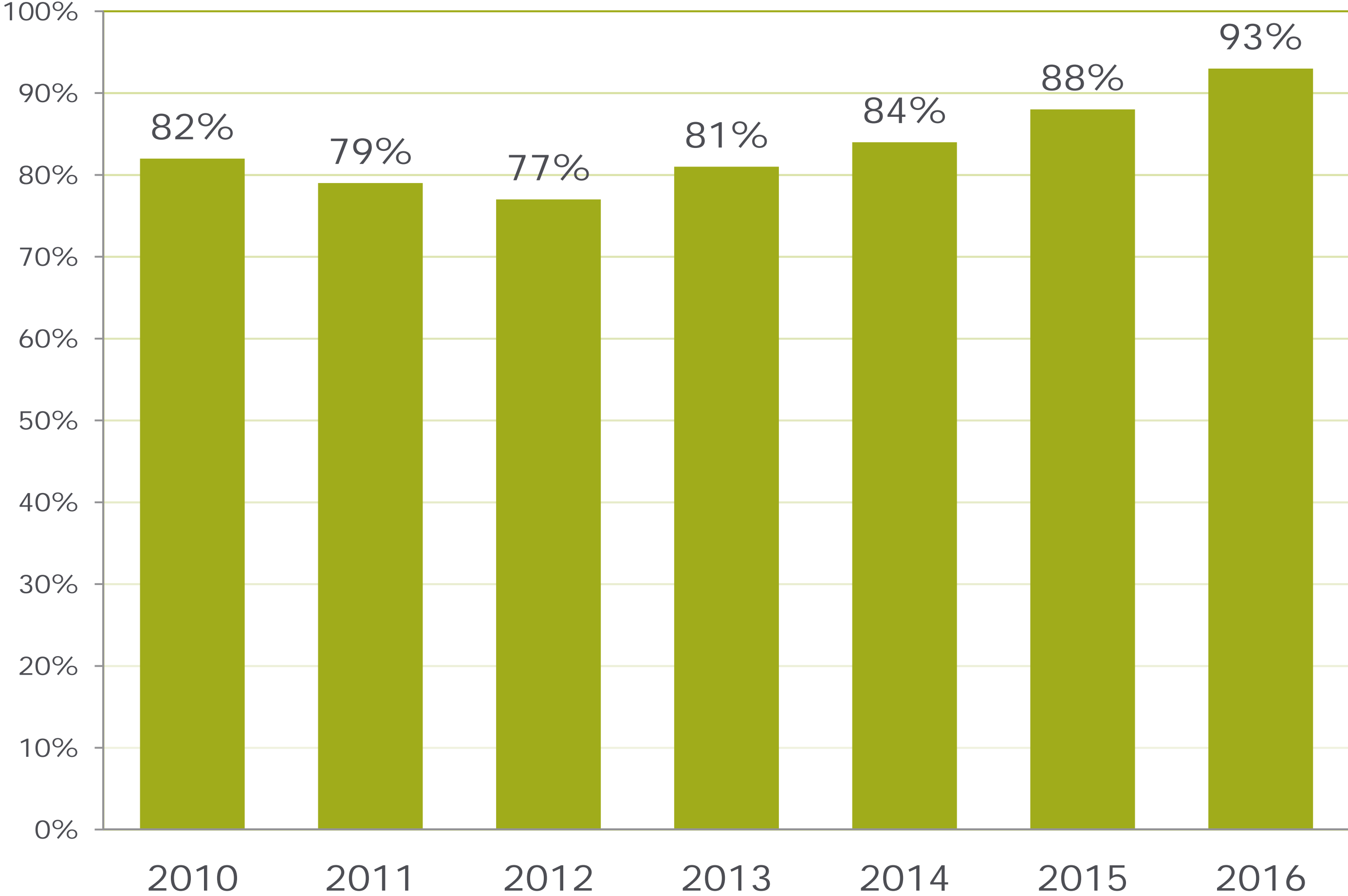
* Differs from total number of responses because the investor selects the service provider for some products

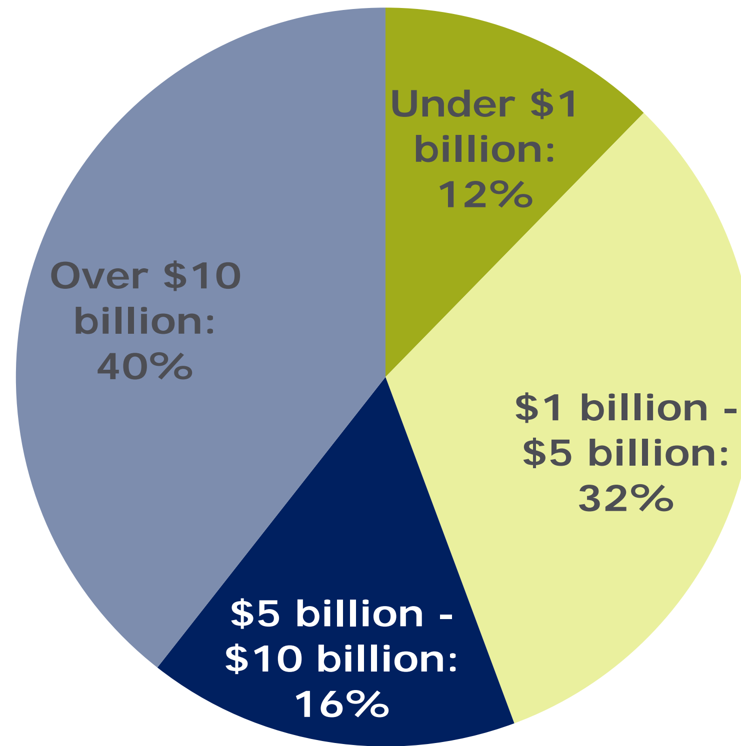
- **Administrators**
  - A diverse group of providers: 37 firms across 365* funds
  - Large concentration in the top 10 (80%)
  - 11 of the bottom 27 firms service just one fund used by NEPC clients

	Provider	
1	Citco Fund Services	19%
2	IFS (International Fund Services)	15%
3	SS&C GlobeOp	12%
4	BNY Mellon	10%
5	SEI Fund Administration	4%
6	JPMorgan Hedge Fund Services	4%
7	Morgan Stanley Fund Services	4%
8	Mitsubishi UFJ Fund Services	4%
9	HedgeServ	4%
10	State Street AIS	3%
	Self-Administered	3%
	All other providers (27)	17%

80% (ranks 1–10)

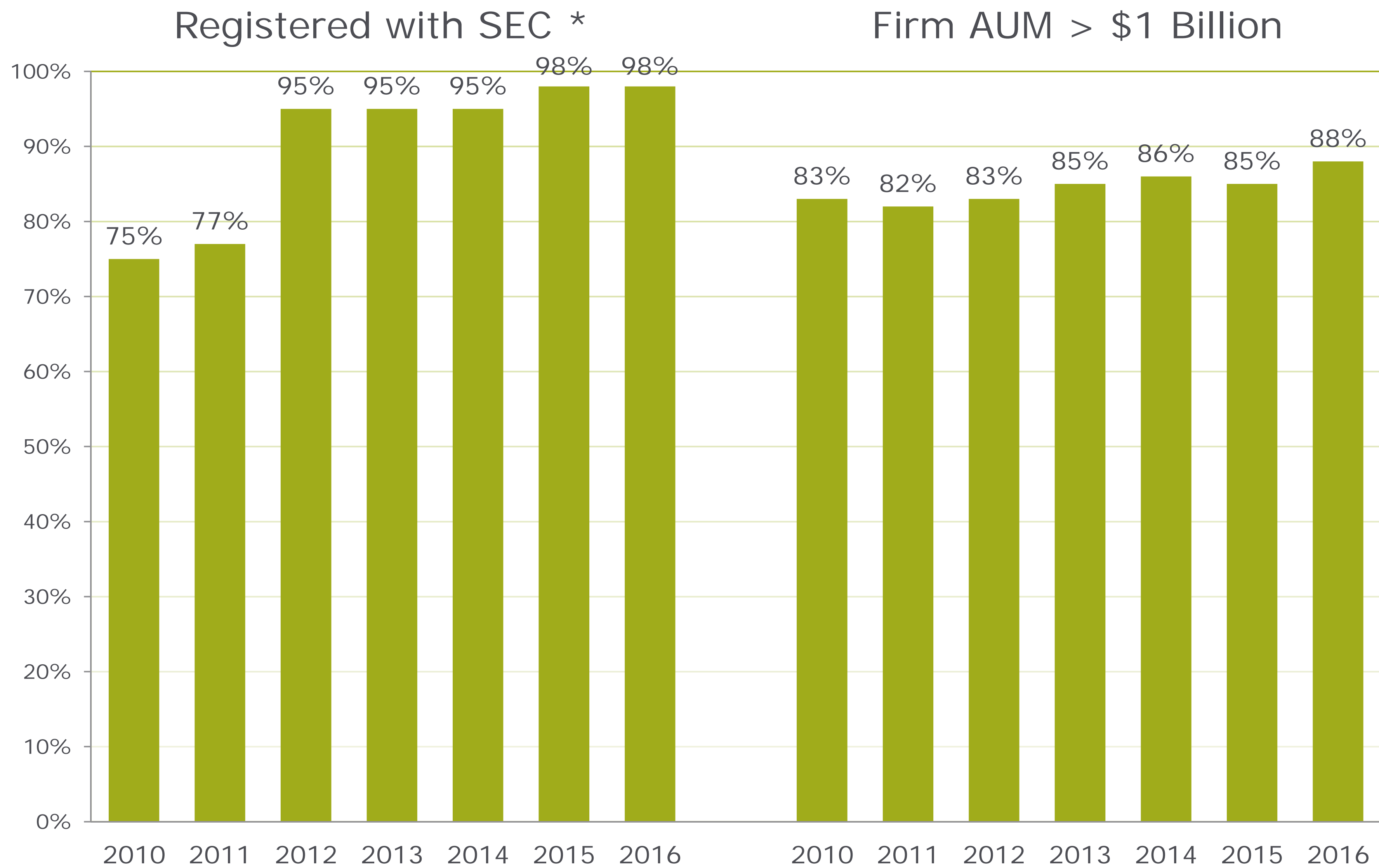
* Differs from total number of responses because the investor selects the service provider for some products


Response Rate
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
82%
79%
77%
81%
84%
88%
93%
2010
2011
2012
2013
2014
2015
2016

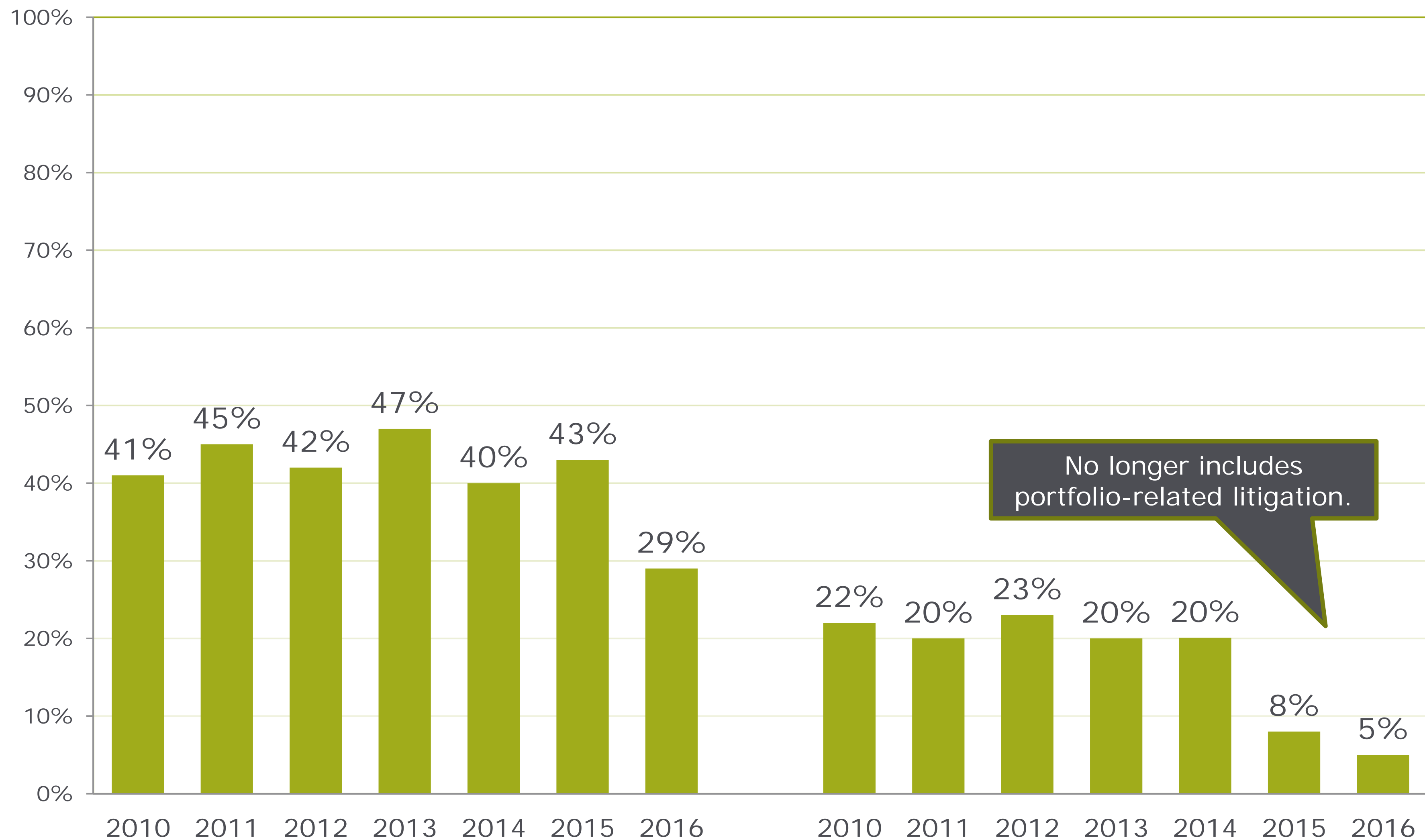


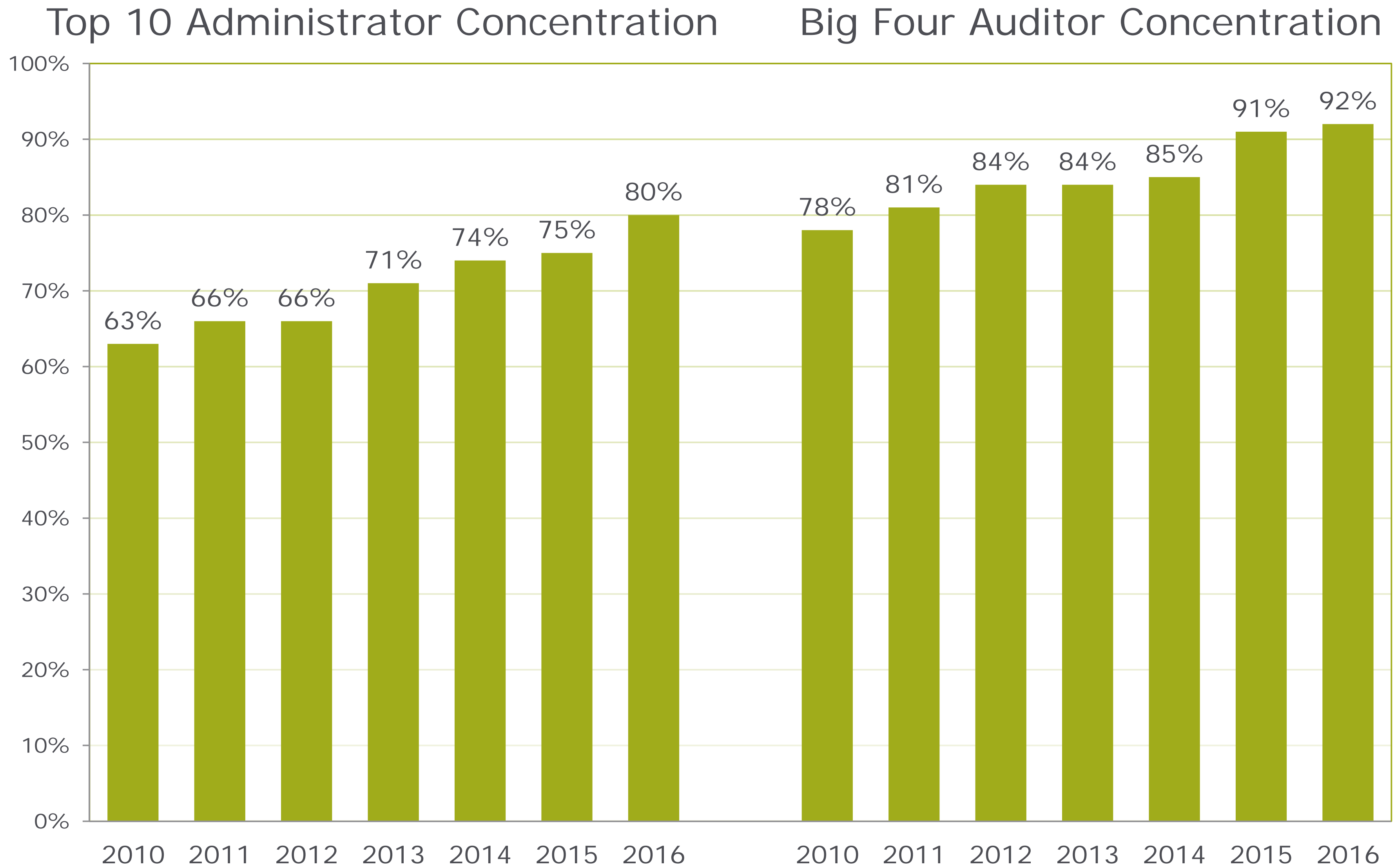
* as of 12/31/2015

Survey Results

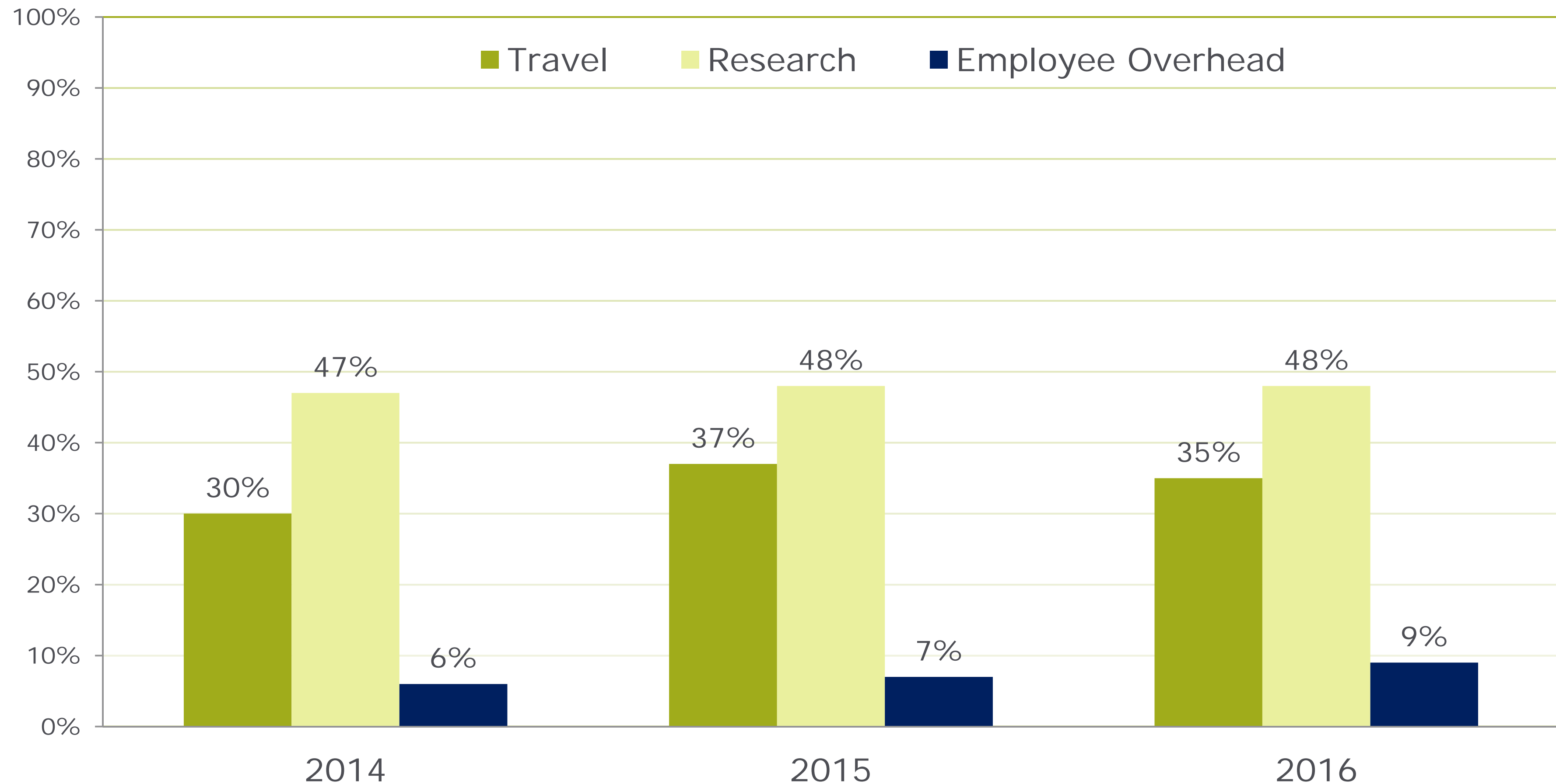


* Includes Exempt Reporting Advisors as of 2015


Senior Departures
Pending Litigation
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
41%
45%
42%
47%
40%
43%
29%
22%
20%
23%
20%
20%
8%
5%
No longer includes portfolio-related litigation.
2010
2011
2012
2013
2014
2015
2016
2010
2011
2012
2013
2014
2015
2016


Top 10 Administrator Concentration
Big Four Auditor Concentration
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
63%
66%
66%
71%
74%
75%
80%
78%
81%
84%
84%
85%
91%
92%
2010 2011 2012 2013 2014 2015 2016
2010 2011 2012 2013 2014 2015 2016

For the past three years we have been asking managers if the funds are charged certain types of expenses, specifically Travel & Entertainment, Research Costs (such as Bloomberg machines) and Employee Overhead



Appendix

- **Firm Questions**
  - Firm AUM
  - Is the firm registered with the SEC?
  - Was the firm examined by the SEC or another regulator last year?
  - Did the firm's ownership change last year?
  - Did any of the firm's key management personnel leave the firm last year?
  - Is there any pending material litigation related to the firm or current members of the firm brought by any current/former investors or employees? Do not include investment- related litigation.
  - Do you operate or are you affiliated with a broker/dealer?

- **Investment Product Questions**
  - Product Net Assets
  - Fund Auditor
  - Fund Administrator and service location(s)
  - Prime Brokers and/or Custodians
  - Were any of the fund's assets held in a side pocket last year?
  - Have you used a third party valuation provider in the past year?
  - Did the fund's liquidity terms change or were any gates put up last year?
  - Are any of these items charged to the fund?
    - Travel & Entertainment
    - Research costs such as Bloomberg
    - Employee overhead

Pension Funds globally increased hedge fund allocations in 2015 *

- Pension funds in all regions of the world increased their … allocation to hedge funds in 2015. The 14th annual Deutsche Bank alternatives survey found that on a global basis, pension funds' median allocation to (hedge funds) was 8%. By contrast, endowment and foundation chief investment officers surveyed had a median allocation of 23%. The median allocation by North American … pension funds increased by two percentage points to 10%. The median allocation for all respondents was 17%.

  * Source: Pensions & Investments, 2/23/2016

Billion-Dollar Hedge Fund Investors Staying the Course **

- Preqin issued a new report on institutional investors that have committed more than $1 billion to hedge funds. Preqin said 40 institutions had joined the $1 billion club, while 29 had fallen out of the group after reducing their exposure to the hedge fund industry.
- Although investors in this elite group account for just 5% of all active hedge fund investors, they represent 24% of the total $3.1 trillion in assets under management held by the industry.
- 49% of public pension funds cut back their allocation to hedge funds in the past 12 months, while 47% increased their exposure.

  ** Source: ThinkAdvisor, 7/11/2016

Hedge Funds May See Up to $8.7 Billion Windfall From Calstrs ***

- The California State Teachers' Retirement System plans to add to its holdings of hedge funds as it seeks to smooth volatile returns, a move that may send as much as $8.7 billion to hedge funds over the next three years. Calstrs will allocate the money to global macro strategies and trend-following commodity trading advisers as part of a new asset class called 'Risk Mitigating Strategies,' which is targeted to be 9 percent of its portfolio.

  *** Source: Topix.com, 9/15/2016

Hedge Funds Facing Margin Pressure *

- Ernst & Young's ninth annual *Global Hedge Fund & Investor Survey* reveals strong demand for alternative investment products, but a shift towards multi-product asset managers, technology investment, rising back-office expenses and increasing pressure on fees.
- 29% percent of respondents said their prime brokers increased fees in the past year, and an additional 22% expect an increase in fees within the next year.
- Fund managers using strategies such as distressed credit, fixed income and global macro, which can be balance-sheet intensive from the prime brokers' perspective, have been among those who have experienced price increases the most.
- Many prime brokers are becoming reluctant to hold cash for hedge funds because of how such balances are classified toward banks' capital reserves under new regulations. Fifty-eight percent of hedge fund managers have moved cash to custodians as a result, while 35% have purchased highly liquid securities as cash alternatives.
- Hedge fund managers are beginning to explore non-traditional financing sources outside of prime brokers. Thirteen percent of respondents are seeking or plan to seek financing from non-traditional sources in the next two years, from sources including institutional investors and sovereign wealth funds, custodians, or other hedge funds.
- Achieving asset growth to counteract margin pressure is the top strategic priority for 57% of managers surveyed.

* Source: E&Y (via FIN Alternatives), 11/10/2015

Hedge Funds make a Back-Up Plan *

- Hedge funds are bracing for another round of upheaval in the investment banking industry, judged by their closest day-to-day relationship.
- Banks are a key link in the hedge fund supply chain. Hedge funds need their prime brokerage desks for access to important corners of the markets and for leverage to juice their trades too.
- After the financial crisis, the funds learned to have relationships with more than one supplier of prime broker services rather than have all their eggs in a single basket marked, say, Lehman Brothers.
- By 2009, large hedge funds with more than $3 billion in assets had an average of about five prime brokers, up from about one before the crisis. As major banks rebuilt their balance sheets and began to look sturdier...the average number of prime brokers each of the big hedge funds worked with fell to fewer than three by 2011.
- Recently though, hedge funds have rapidly expanded their prime brokerage relationships -- a sign they're concerned again about the prospect of a disruption to the service. Data from Preqin show that the proportion of total hedge fund clients served by each of the ten largest prime brokers about doubled last year. For several years, there had been barely any change.

* Source: Bloomberg, 2/9/2016

Deutsche Bank highlights big problems for small hedge funds *

- Smaller hedge funds .... are finding it increasingly difficult to engage a prime broker at all. [U]nless funds were able to raise a significant amount of capital themselves – around $250 million – and demonstrate that they have the potential and capacity to generate significant trades, their business is increasingly unwanted by the larger service providers.
- Given a recent wave of consolidation in the prime brokerage industry on the back of a wave of new regulatory obligations and a reassessment of profitability potential, the number of top-notch prime brokerage providers for hedge funds to approach has dwindled.
- For example, RBS and Nomura shuttered some of their operations in recent years while UBS has restructured towards a more balance sheet-light model. The result is a shrinking core of leading prime brokers, which now includes Goldman Sachs, Morgan Stanley, Deutsche Bank and JPMorgan on the equities side and Citi, JPMorgan and Barclays on the FX side.
- [W]hereas smaller funds used to have the luxury of multiple prime brokers, now they generally had only one, thereby reducing their ability to extract bargaining leverage or potentially switch up service providers as seamlessly as done by several of Deutsche Bank's larger hedge fund clients last week.

* Source: CNBC.com, 10/3/2016

Hedge Funds are Shrinking, not Dying *

- News that hedge funds suffered redemptions of $25.2 billion [in July] may translate into some individual shops closing, but for the industry as a whole, it's a drop in the ocean.
- For hedge funds worldwide, July was the worst month for redemptions since February 2009, according to an eVestment report. It [brings] the total outflows to $55.9 billion so far this year. That's a lot of cash, but look at it in the context of the $2.7 trillion managed by the industry, according to BarclayHedge data. Despite recent outflows, hedge funds still manage $2.7 trillion collectively.
- A reversal was only natural after the run of strong inflows to hedge funds since 2009. Nor is the leakage across the board. Commodity funds consistently attracted new money this year, bringing inflows to $10.3 billion over the last 14 months. Meanwhile, the most popular strategy, long-short, is also one of the worst hit. Those two facts seem to support the idea that the latest move is more of an adjustment than a final breath for the industry. The majority of redemptions happened among money-losing funds, and inflows were recorded for those that gained more than 7 percent this year.
- In a low-interest-rate world, traditional assets have everything going for them. Central banks have given a boost to long-duration investments, from real estate to private equity, Ben Inker, the co-head of asset allocation at Boston-based value shop GMO, said in a recent letter. The opposite is true for assets that are less sensitive to interest rates because of their shorter-term horizon, such as hedge funds.
- It will take dozens of bad months like July before the hedge-fund industry faces an existential threat. With the current run on assets unlikely to stop, however, this is an opportunity for managers to rethink their ways.

* Source: Bloomberg, 8/25/2016

U.S. Hedge Funds manage 72% of global industry AUM *

- The U.S. hedge fund industry has $2.2 trillion in assets managed by 3,170 hedge fund managers on behalf of 3,209 investors, according to new data from alternative investment industry observer Preqin.
- The tally, calculated as of June 30, underscores the dominant position of the U.S. within the global hedge fund community, accounting for some 72% of the approximately $3.1 trillion in global AUM and 62% of the 5,092 institutional hedge fund investors.
- Despite significant questions about recent performance and fees, Preqin's data also shows that the U.S. hedge fund industry has grown strongly in recent years, increasing by $138 billion since the start of 2015.
- Over one-third of U.S.-based fund managers are based in New York, and collectively these firms hold $1.1 trillion worth of assets – 36% of global industry AUM. Furthermore, New York represents nearly half (46%) of U.S.-based funds incepted since 2009.

* Source: Preqin, via FINalternatives, 10/7/2016

Industry Assets Hit Record Despite Recent Redemptions **

- Hedge fund industry assets hit a new record in the third quarter, according to new data from Hedge Fund Research, but they did so entirely on the strength of performance gains as net redemptions totaled the largest quarterly outflow since 2009.
- Investors redeemed a net $28 billion in the quarter, while performance gains rose $73.5 billion to bring total industry assets up to $2.972 trillion globally.
- Investor outflows and liquidations were concentrated in several of the industry's largest and most well-established firms; nearly $22 billion of net capital was redeemed or returned from firms with over $5 billion AUM. Firms managing between $1 and 5 billion saw net outflows of $7.4 billion, while firms managing less than $1 billion experienced a small net inflow.

** Source: Hedge Fund Research, via FINalternatives, 10/20/2016

Funds of Funds facing Headwinds *

- Pressure on fees, consolidation and a general desire to cut out middlemen have slashed the number of funds of funds globally from 2,462 in 2007 to only 1,616 at the end of March, according to Bloomberg, while assets under management in the segment has fallen by $160 billion to $638 billion during the period.
- That said, the advantages of fund of funds managers in terms of fund due diligence and manager access remain attractive to many institutional investors, as is the ability to allocate effectively among a broad number of top-performing managers.

* Source: FIN Alternatives, 4/26/2016

Funds of Hedge Funds Shrink by 11% as losses spur redemptions **

- Funds of hedge funds lost more than $100 billion in 12 months because of outflows and poor performance, according to a recent report.
- Clients pulled $50.3 billion over the four quarters through March, while managers posted $51.5 billion in investments losses, research firm eVestment said after analysing data from more than 2,500 funds. Assets in the sector shrank 11 percent to $841.6 billion, the lowest since June 2009.
- Funds of funds were once the largest single investor in hedge funds, accounting for almost 50 per cent of assets in 2008. Now they make up 28 percent.
- Industry-wide, hedge funds lost $123.7 billion because of performance in the 12-month period, while flows were essentially flat, eVestment said.

** Source: Gulf News, 7/17/2016

Here's Why Hedge Funds Around the World Are Cutting Their Fees *

- Hedge funds across the globe are cutting their management fees as they struggle to attract investors in the face of weak returns.
- Data compiled from more than 2,600 funds in Europe, the Americas and Asia shows … the average annual management fee charged … has fallen to 1.39% of the value of a client's assets, from 1.44 in 2015 and 1.68 about a decade ago, according to the data from industry monitor Eurekahedge.
- Hedge funds were traditionally known for a '2 and 20' fee model before the financial crisis. But those days have gone for most funds which, like others across the financial industry, have seen returns hit by the impact of low interest rates.
- Funds have also cut performance fees, from an average of 18.77% across the global industry in 2007 to 16.69% today, said Eurekahedge.

* Source: Fortune, 9/15/2016

Pressure on Hidden Fees **

- Less attention gets paid to the third part of [the fee] equation: operating charges. Fees and expenses, including for travel and entertainment, are a less visible cost of being a hedge-fund investor. These can add up in a way that is neither transparent nor well understood, and therefore ripe for abuse. Some of these costs are fairly obvious: Audits, commissions, custodial and prime brokerage costs. However, lots of other fees charged to the investors are more subjective.
- Passing along the costs of nonessential expenses such as first-class travel, entertainment and consulting arrangements has caught the attention of the SEC.
- Market forces and underperformance have been driving down the most visible part of private-investment cost structure. It looks like market forces, along with the SEC, are also putting pressure on the less-visible portions.

** Source: Bloomberg, 8/19/2016

Hedge fund managers haven't dropped fees much despite investor pressure *

- Despite pressure on hedge fund fees, institutional investors report that over the past year, hedge fund managers have made few concessions. More than half — 55% — of institutional investors said hedge fund managers made only slight changes to favor investors in the previous 12 months and 35% said managers had made no changes, showed the results of a Preqin survey.
- Preqin's researchers found, however, that only 35% of the single-manager hedge fund managers they track still charge a 2% management fee and a 20% performance fee. But more detailed analysis of the mean fees charged by single-manager hedge funds in Preqin's database showed that most have not fallen very much from the 2%/20% industry standard.
- In aggregate, the mean management fee for all single-manager funds is 1.57% and the mean performance fee is 19.29%.
- Preqin's fee analysis of single-manager hedge funds by strategy showed mean fees as follows: equity, 1.53%/19.3%; macro, 1.7%/19.47%; event-driven, 1.6%/19.72%; credit, 1.54/18.3%; relative value, 1.58%/20.04%; multistrategy, 1.63%/19.21%; and niche, 1.5%/17.76%.

* Source: Preqin, via Pensions & Investments, 9/22/2016

Side-Letter Use Varies Widely By Investor Type *

- Investor use of side letter arrangements when investing in hedge funds varies widely, according to a new study by law firm Seward & Kissel.
- Funds-of-funds entered into side letters six times as often as non-profit institutions and nearly four times as often as corporate pension funds. The study analyzed side letters extended from hedge fund managers who have been in business for at least two years. Average AUM of the managers was $4.5 billion.
- Specifically, hedge funds in the study entered into side letters most frequently with funds-of-funds, making up 30.5% of all side letter investors, while government plans made up 27.1%. Conversely, investors with the fewest side letters were corporate pensions and non-profit institutions, making up only 8.5% and 5% of all side letter investors, respectively, the study showed.
- The most common side letter business term was the most favored nations (MFN) clause, which appeared in 56% of all side letters. Nearly 90% of side letters with wealthy individuals, family offices, and endowments included MFN clauses. However, they were less frequent in side letters signed with funds-of-funds and non-profit institutions, appearing only 33% of the time.
- The second most common side letter term involved fee discounts, which were present in approximately 40% of side letters included in the study, but in only 20% with managers over $1 billion in AUM. Managers with at least $1 billion in AUM were much less willing to give fee discounts.

* Source: Seward & Kissel survey, via FINAlternatives, 9/26/2016

Cayman Islands remain the favorite domicile for hedge funds*

- Cayman is a full service jurisdiction complying with all international standards, but it's also business-friendly: 184 banks, 149 trust companies, 108 mutual fund administrators, and 739 insurance companies operate from Cayman. And, of course, over 10,000 funds are registered with CIMA, the Cayman regulator.
- Looking at data from the US Securities and Exchange Commission (SEC) for both hedge funds and private equity funds, just under 50% of the funds that are registered with the SEC are domiciled in the US, and almost 38% are registered in the Cayman Islands. After that there is a huge drop-off with other jurisdictions such as Ireland, Luxembourg and Bermuda garnering between 1% and 5%.
- Cayman has also stepped [up] on the governance side. Through the new Directors Registration and Licensing Law, CIMA has now contact details ... and can monitor and know every single director serving Cayman funds. Approximately 8,000 directors were registered either as professional or registered directors right after the law came into effect, and that number keeps growing.

* Source: Opalesque Cayman Roundtable, 1/28/2016

Impact of Brexit on the Cayman Islands and the BVI **

- UK voters indicated that the country should leave the EU. Although the Cayman Islands and the BVI are overseas territories of the UK, they are not part of the EU (as is the case with Gibraltar). Accordingly, we do not foresee an immediate or significant impact on the Cayman Islands or the BVI as a result of the referendum outcome and are satisfied that the relationship between the UK and each of the Cayman Islands and the BVI will remain the same.
- As EU law does not apply to the Cayman Islands or the BVI, current Cayman Islands legislation and BVI legislation will remain unaffected. The current judicial system for both the Cayman Islands and the BVI will remain unaffected.

** Source: Maples & Calder, 6/26/2016

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Non-traditional investment strategies including hedge funds and private equity have the following characteristics:

1. Performance can be volatile and investors could lose all or a substantial portion of their investment
2. Leverage and other speculative practices may increase the risk of loss
3. Past performance may be revised due to the revaluation of investments
4. These investments can be illiquid, and investors may be subject to lock-ups or lengthy redemption terms
5. A secondary market may not be available for all funds, and any sales that occur may take place at a discount to value
6. These funds are not subject to the same regulatory requirements as registered investment vehicles
7. Managers may not be required to provide periodic pricing or valuation information to investors
8. These funds may have complex tax structures and delays in distributing important tax information
9. These funds often charge high fees
10. Investment agreements often give the manager authority to trade in securities, markets or currencies that are not within the manager's realm of expertise or contemplated investment strategy