

A Holistic Approach to Equity Investing

September 2014

Summary

- Alternative investments continue to become a mainstream part of institutional investment.
- Equity alternatives—equity hedge funds and private equity—offer benefits relative to traditional active management for the skilled manager selector, arising from their greater breadth and flexibility, aligned compensation structures, and wider return dispersion among best- and worst-performing managers, allowing for more opportunity.
- Equity alternatives belong to the same broad equity asset type as traditional long-only investments, so these equity investments should be combined into one asset category.
- Integrating equity portfolios recognizes the common risk factors, allows for side-by-side competition between the best active equity opportunities regardless of type, allows for flexibility in allocations between types, may improve efficiency of equity manager research teams, and places the focus of the decision of whether and how much to invest in equity alternatives on investor suitability.

Key Actions

- **Assess** your organization's high active risk investing suitability: need for liquidity, flexibility inherent in governance structure, access to best opportunities, right size, skill in investment selection and organizational confidence in that skill.
- **Allocate** (for well-suited investors) to equity hedge fund and private equity investments as a way to add value and flexibility.
- **Integrate** current and future equity hedge fund and private equity investments with global public equities in a single equity asset category.
- Allocations of 10%–20% of the new, combined equity allocation to equity hedge funds and 10%–30% to private equity (subject to liquidity considerations) are reasonable targets, but actual allocations will be highly dependent on individual investor circumstances.
- For investors not ready to take the full leap of combining public and private equity into a single asset class, consider at a minimum establishing a “growth” asset category (with a policy target allocation) that combines all forms of equity.

Alternatives and Equity: The New Reality

Many institutional investors are increasing their allocations to alternative investments, including hedge funds and private equity. The capital markets offer a combination of low expected returns and heightened risks in the current market environment, prompting a search for new solutions. At the same time, the long-only, benchmark-focused active management model faces headwinds in increasingly competitive markets. As an illustration of the trend toward alternatives, 65% of new hedge fund assets now come from institutional investors, a significant gain since this figure crossed 50% for the first time in 2007¹.

At the time of this writing (see sidebar), we continue to see reduced upside in global equity markets as well as significant risks to be recognized and managed. (In recent research, we discuss ways for investors to position portfolios for protection in falling or volatile markets, including explicit protection strategies and active strategies such as hedge funds that can succeed in periods of poor capital markets²). In this environment, investors are attracted to approaches with the potential to earn continued strong returns and thrive outside a bull market.

What sort of equity investments fit this profile? **Equity hedge funds** are intended to deliver long-term returns competitive with those of the public markets at reduced volatility, through the ability to use short as well as long active positions. These funds operate within a range of net (long minus short) market exposure with a typical value of about 50%, with the expected shortfall in market return intended to be made up through stock selection and varying the net exposure. In terms of growth potential, **private equity** investments, which offer significant rewards for skilled manager selectors, also fit the bill. Alternative ways to approach equity are particularly attractive in the current market environment, but equity hedge funds and private equity have structural benefits in their quest for value added, and should be part of a well-suited investor's long-term strategy.

Aon Hewitt Medium-Term Views July 2014

Global Public Equity

Global equities have looked better underpinned lately, mainly because of new monetary and policy easing support in Europe and China—but they have been outshone by bonds. Valuations remain an issue, especially in the U.S. equity market. The economic news is one of slow improvement, but this has been more than discounted in equity market valuations, leaving limited room for sustainable gains. These are good levels at which to explore diversification opportunities with other asset classes.

Bonds

The fall in bond yields this year has largely reflected a flattening of yield curves. In our view, this is temporary, and the approach of higher short-term interest rates will reverse the fall in yields. We expect a gradual upward move in yields, with the scale of the move somewhat above what forward treasury curves have priced in. Even though risk asset volatility is likely to pick up, yields are still too low to suggest they offer more than temporary shelter.

Hedge Funds

Weak upside prospects for equities alongside still fluid and volatile market conditions should allow hedge funds to add value. Selection of funds and strategies is all-important. CTAs and a multi-strategy are strategies worth considering.

¹ See Bouvatier and Rigot (2011) citing McKinsey and Company, and Agarwal, Nanda and Rey (2013) citing Preqin data.

² See Datta et al. (2014).

Profiting from Skill

Increasing evidence suggests active management that is less constrained and earns high fees for the manager when performance is strong is—all else being equal—a superior approach to generating net-of-fee excess returns³. By now it's widely accepted that the average traditional equity manager underperforms a well-constructed benchmark⁴. A growing number of new studies, however, find that in the long term, private equity outperforms risk-adjusted public market indexes and hedge funds outperform customized multi-asset style benchmarks, after accounting for fees and trading costs (which are significantly higher than for traditional active^{5, 6}).

While our research and that of others shows that only a small minority (around 2%) of traditional active equity products have track records that demonstrate skill in a statistical sense, a similar analysis applied to hedge funds finds a corresponding positive skill share of 50%⁷. A separate study, which may render traditional performance measures inappropriate⁸, finds that equity long/short hedge funds outperform the equity market after accounting for their non-normal (non-bell curve) return distributions. Korteweg et al. find significant evidence of skill, rather than luck, driving long-term performance persistence in private equity funds (though they also found that skill is challenging to identify ahead of time⁹.)

Equity Hedge Fund Benefits

Equity hedge fund investments represent a further extension of the concept of breadth and flexibility in equity investing. The additional scope and consequent value-added potential of their strategies make them a more effective vehicle for skill in manager selection. And their performance-based fees help align their incentives with those of the client better than do most traditional equity manager arrangements.

Additionally, the equity hedge fund sector exhibits a range of (net) market betas, averaging about 0.50—with the managers promising to close the resulting expected return gap with the market through skilled stock selection and other active decisions. This less-than-market beta means that an equity long-short allocation is a way to reduce overall effective equity market exposure. The beta difference also allows the investor to vary overall equity market exposure dynamically and without degradation in expected return (assuming skilled manager selection) by shifting between traditional and hedge fund equity strategies. The fund managers themselves also often incorporate tactical beta shifts into their investment processes.

³ We discuss our thinking in this area in Sebastian (2012) and Sebastian and Attaluri (2012).

⁴ See, for example, the S&P Indices Versus Active (SPIVA) scorecards published by S&P Dow Jones Indices.

⁵ On private equity performance, see for example Harris, Jenkinson and Kaplan (2013), Higson and Stucke (2013), Robinson and Sensoy (2013) and Ang et al. (2013), as surveyed in Gompers, Kaplan and Mukharlyamov (2014).

⁶ On hedge fund performance, see for example Buraschi, Kosowski and Sritrakul (2014).

⁷ On skill percentage for active traditional equity, see for example Barras, Scaillet and Wermers (2010).

⁸ See Bali et al. (2012).

⁹ See Korteweg (2014).

Private Equity Benefits

In private equity, the range between the results of the most and least successful managers is far larger than found in public equity, allowing for significantly greater opportunity for skillful manager selectors (as well as downside risk for the unsuccessful). As with hedge funds, performance-based fees help align the investment manager's interests with those of the client. Illiquidity may carry an associated return premium that long-term investors may be particularly well suited to capture. Recent analysis finds private equity is exposed to the same liquidity risk as is public equity, but to a much greater degree, resulting in a private equity return premium of about 3% per year¹⁰. Lastly, private equity investors seek to add value, in part, through active involvement with the companies in which they invest—a route not available to traditional (non-activist) investors.

Diversification and Allocation

What about the potential for diversification benefits? Equity hedge funds exhibit fairly high correlations with the broad stock market, owing to the fact that they trade in public stocks¹¹. Therefore, diversification arising from difference in asset type may be limited, though equity hedge fund active risk that is both large and not highly correlated with the equity market as a whole may provide some risk mitigation benefits. Likewise, if equity hedge funds can provide a market-like return at a lower-than-market volatility, they provide some downside protection without the return give-up of bonds.

In terms of coverage of the opportunity set, private equity allows valuable access to economic growth arising from the creation of value by private companies—a segment not accessed by traditional public equity indexes. (In our capital market return assumptions, we assume that only a portion of real economic growth flows through to stock market returns, because some growth occurs outside public markets and doesn't accrue to public shareholders in existing companies.) In terms of return diversification, the potentially misleading nature of artificially low historical correlations with public equity driven by stale pricing is well known. Welch (2014) points to a "diversification illusion" in private equity resulting from this phenomenon, though the situation is mitigated partially by recent updated accounting standards relating to fair value disclosure¹².

Investors often view alternative investments as exotic assets outside the mainstream. That sounds attractive to an investor looking for a small policy allocation to a diversifying asset class. But, as we'll argue, equity alternatives are better thought of simply as highly active approaches to equity investing that belong as part of the core portfolio for well-suited investors.

Alternative Investments: What's in a Name?

The primary tools currently used to assess the impact of hedge fund and private equity investments on the total portfolio, and to quantitatively support the appropriate allocations to these asset categories, are forward-looking risk, return and correlation assumptions, associated mean-variance and other analytics. Assumptions are useful tools for estimating the average or typical return of an asset class, and are

¹⁰ See Franzoni, Nowak and Phalippou (2012).

¹¹ The correlation of the HFR Equity Hedge Index with the MSCI World Index (USD) (0.73) from 1990 to 2014 was similar to the correlation between the World Index and the Russell 2000 small capitalization stock index (0.77).

¹² IAS (International Accounting Standards) 39: Financial Instruments: Recognition and Measurement and SFAS (Statement of Financial Accounting Standards) 157: Fair Value Measurement.

particularly suited for modeling asset categories like traditional equity and fixed income that have readily available passive vehicles and/or low dispersion of active results.

But for asset categories for which the only route is active management with large differences between successful, average and unsuccessful implementations, return and risk assumptions should not be the only tool.

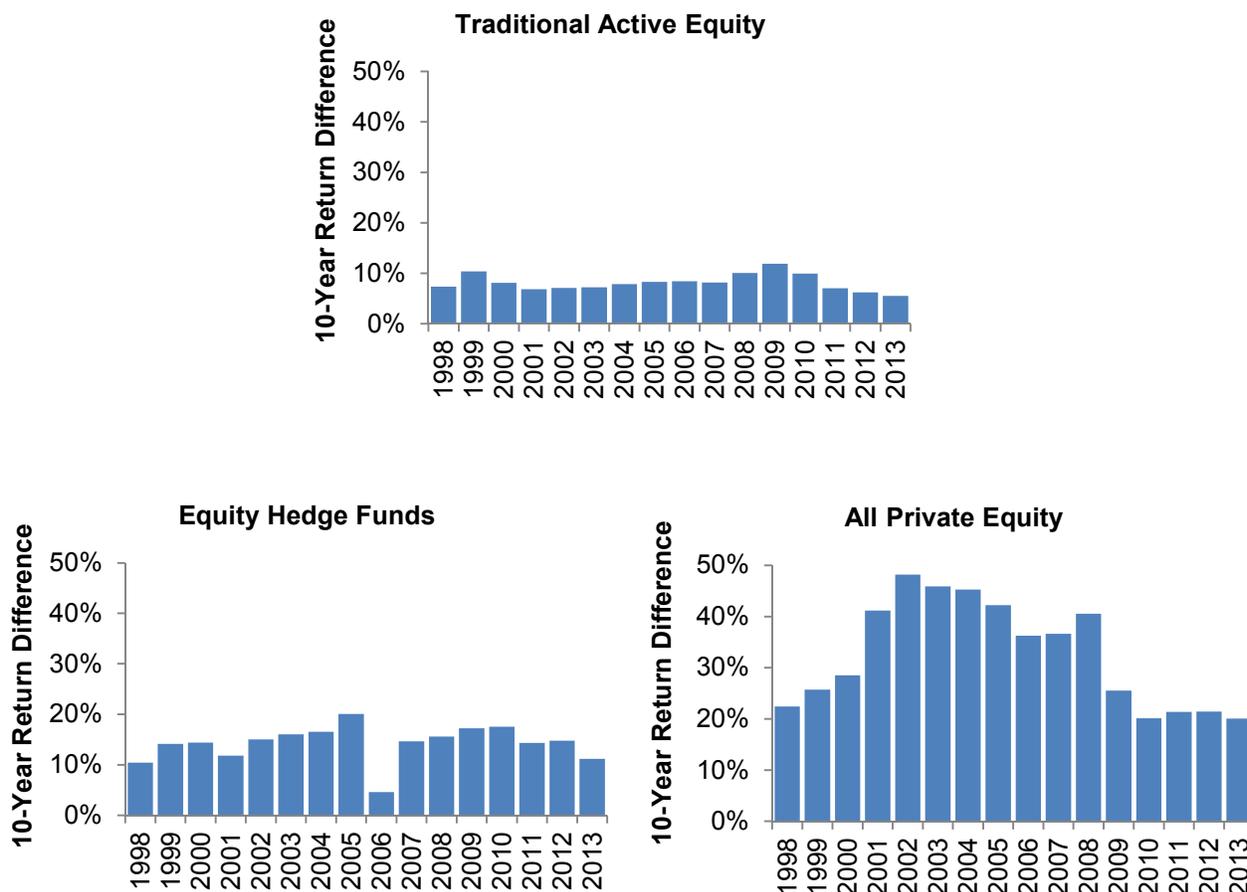
Dispersion

Figure 1 shows the spread between top and bottom quartile results in traditional long-only equity, equity hedge funds and private equity for rolling 10-year periods ending December 31, 2013 using leading databases.

The dispersion between the best and worst performers is much wider in equity hedge funds than traditional equity, and much wider still in private equity, reinforcing that the opportunity for value added from successful manager selection (and the downside risk of failure) is significantly greater in the non-traditional approaches.

Likewise, the dispersion in hedge fund and private equity results illustrates the difficulty of defining these investments as homogeneous asset classes.

Figure 1
Dispersion in Manager Results
Top minus Bottom Quartile Rolling 10-Year Returns, Ending December 2013¹³.



Source: eVestment; Hedge Fund Research, Inc.; Thomson Reuters Thomson ONE

The **holistic approach to asset allocation with alternatives** addresses this concern. In the holistic approach, investments, whether traditional or alternative, public or private, long-only or long-short, are integrated into their natural asset categories. Such an approach offers the following advantages: It accounts for commonality of some risk exposures across traditional and alternative assets; for example, equity market risk. It removes the “exotic” nature of alternatives that causes some investors to avoid or under-allocate to them. Lastly, it recognizes the role that investor characteristics—especially access to manager selection skill—rather than assumptions alone play in determining the appropriate allocation to alternative strategies, allowing for portfolios better suited to each investor.

Equity hedge funds and private equity investments belong to the same broad equity asset category as traditional long-only investments. Venture capital represents the lowest end of the spectrum of size and

¹³ Differences in top and bottom quartile internal rates of return shown for private equity.

maturity. Buyouts represent equity investments in mature companies with the use of significant leverage and the ability to drive operational and strategic change—the latter characteristic being similar to activist strategies already included in some investors' traditional public equity categories. Equity hedge fund strategies invest in the same sort of companies as long-only managers, with the additional flexibility to short and to vary the overall net market exposure as well as hedge unwanted risks. With these shared characteristics, do traditional public equity and equity alternatives behave similarly?

Common Risk Factors

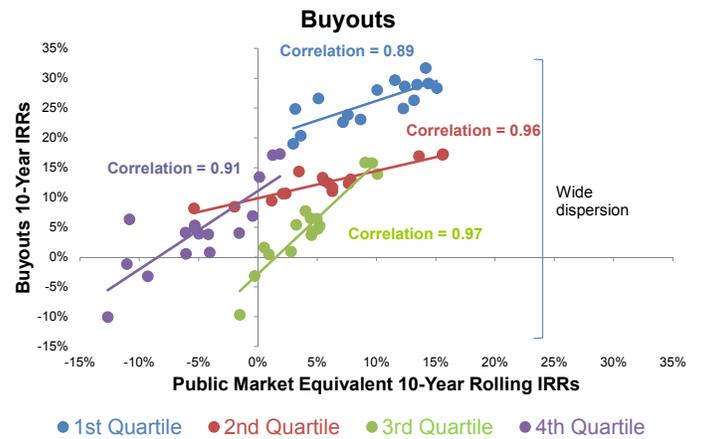
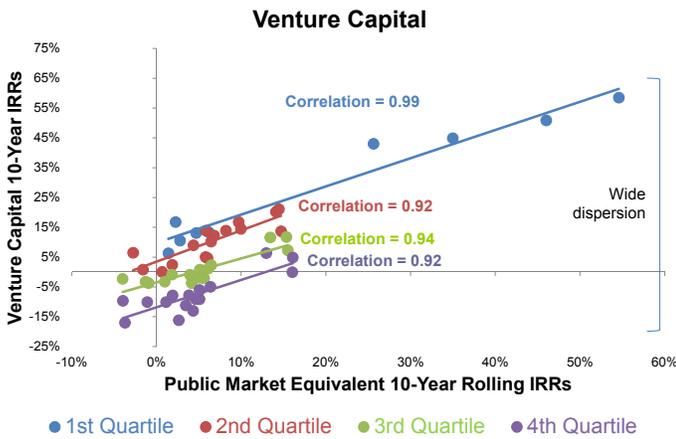
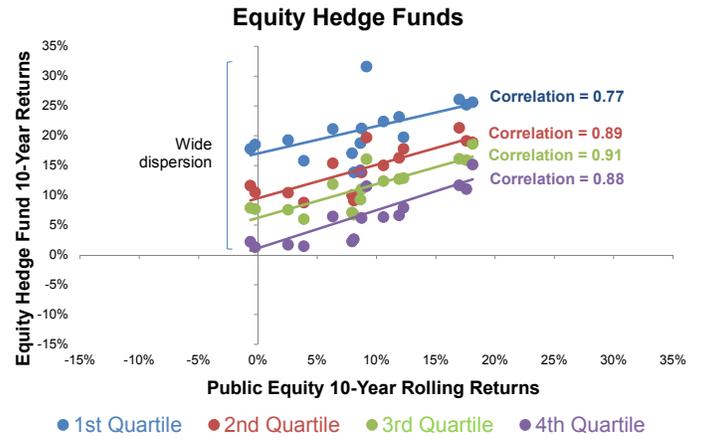
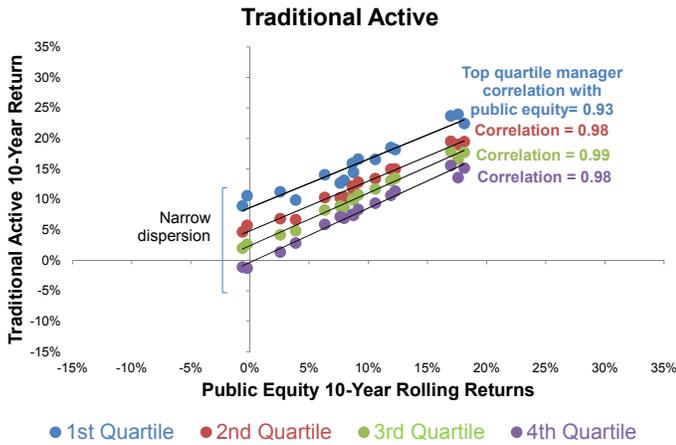
Figure 2 illustrates the relationship between the long-term returns of traditional active long-only equity and equity alternatives (equity hedge funds, venture capital and buyouts) with those of the public equity market, and also the dispersion between the results of the best- and worst-performing funds. Each dot represents a pair of 10-year rolling returns of the active investment and the public equity market. The four quartiles of active manager returns are shown separately, so each rolling time period is represented by four pairs of dots. Large vertical distances between quartiles represent wide dispersion in manager returns while small distances represent narrow dispersion.

Best fit lines are shown in each scatterplot, and correlations of rolling active equity returns with market returns are shown at the bottom of Figure 2. Closer fits around the lines, and higher correlations, represent stronger relationships between active and market returns.

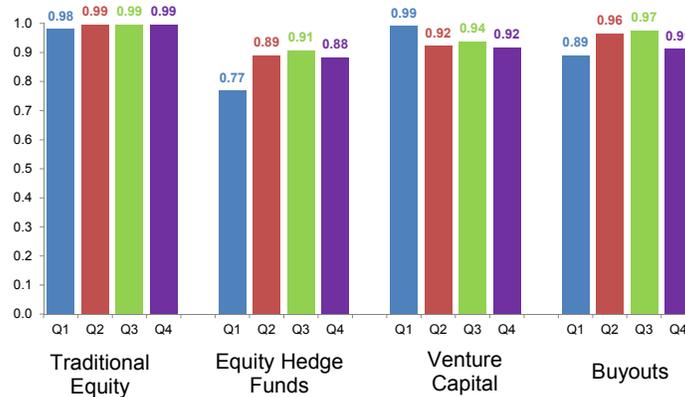
The dispersion between top and bottom quartile traditional active equity results is relatively low, and correlation with public markets is nearly 100%. Equity alternatives of each type demonstrate both wide dispersion (as shown earlier) and strong correlations of long-term results with public equity markets.

Equity alternatives are equity investments with wide variations in implementation results.

Figure 2
Dispersion and Market Correlation of Active Equity Strategies
Rolling 10-Year Returns by Quartile, Ending December 2013



Correlations with Public Market by Strategy and Quartile



Why Integrate Your Equity Portfolio?

Integrating equity alternatives into the broad equity asset category offers several benefits to institutional investors. It:

- Recognizes their true nature: equity investments with risk exposures common to traditional equity.
- De-emphasizes the use of return assumptions and the associated issues with average versus actual results, and instead focuses on investor suitability factors. Investors who are not well suited for alternative investing face reduced pressure to gain exposure to these “asset classes,” while investors who are well suited in terms of access to skill and other factors may find it easier to accommodate large allocations.
- Allows for side-by-side competition for investor dollars by the best active management opportunities regardless of long-only or long-short, public or private, and may enhance the efficiency and effectiveness of manager research teams through better information sharing across opportunity types.
- Allows for more ongoing flexibility in allocations among the traditional and alternative equity investment types—particularly important when equity long-short is used as one mechanism for expressing views on the market as a whole, and when strategies cross lines between private equity and hedge funds.
- Reduces the need for floating policy weights to accommodate the period needed to fully fund an illiquid investment.

Overall, integration recognizes the disappearing line between traditional and alternative. The additional complexity of hedge fund and private equity strategies and vehicles relative to traditional active management does call for a greater level of investor education before making the decision to invest.

Since the underlying investments, primary return drivers and portfolio roles are similar or the same, the argument is strong that alternative and traditional equities are diverse ways of achieving similar asset class exposures. As such, whether and how much to allocate to them is a structure exercise similar to the active/passive decision in traditional asset classes already made by most investors.

The Holistic Asset Class Structure

Three different ways to integrate alternatives into institutional portfolios are shown in a stylized way in Figure 3. In the “diversified alternatives” approach (shown in Figure 3A), a single “Alternatives” category holds all non-traditional investments regardless of their specific nature. It can present challenges for some investors in measuring and managing the total portfolio’s risk exposures. In the “traditional” approach (3B), alternatives are disaggregated, recognizing these assets’ disparate natures—but, we argue, not fully recognizing the common risk exposures equity hedge funds and private equity share with each other and public equity.

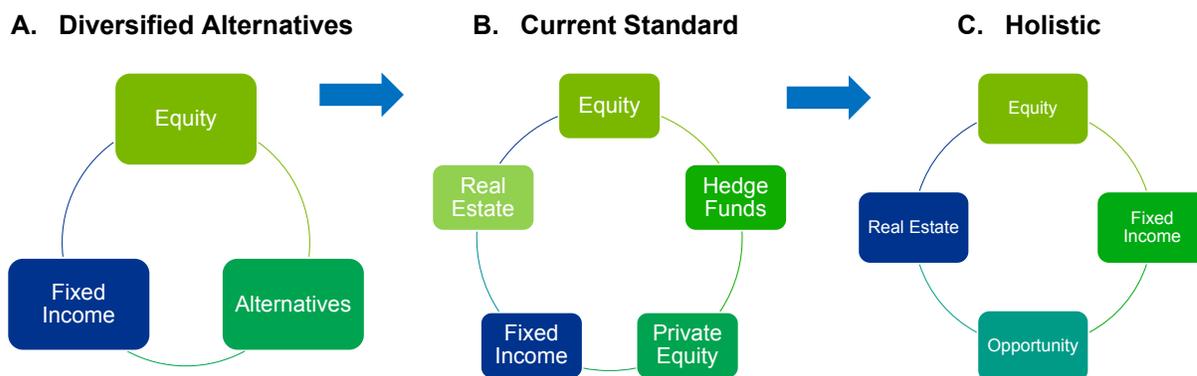
The result of “holistic” integration is a total fund structure that looks like Figure 3C. Equity includes home country and foreign, developed and emerging, active and passive, public and private, long-only and long-short.

Fixed income could be subdivided, if desired, into risk-reducing (volatility-dampening and liability-hedging bonds) and return-seeking (high yield, emerging market debt and the like). Return-seeking fixed income

should be the new asset category home for distressed debt and mezzanine portfolios currently included in the private equity asset class.

Real estate remains on its own, with risk and return drivers sufficiently different from the others. And the “Opportunity” allocation is a place for strategies and market exposures that don’t fit neatly in the other categories—including opportunistic investments, and alternative investments without significant, stable and/or persistent beta exposures like equity market neutral, CTAs and global macro hedge funds¹⁴.

Figure 3
Standard and Holistic Total Fund Structures



Whether or Not, and How Much: Suitability Factors

When the approach to integrating alternatives into asset allocation is the holistic one described above, the decision regarding how much exposure, if any, to have to each category is a structural one. Investors with enough access to skill and risk tolerance to make a high reliance on active risk desirable will likely choose to allocate significantly to less liquid and long-short equity strategies. Investors who prefer low cost or to take less active risk will still prefer index funds.

¹⁴ See Kumar and Penter (2013) for more detail on Opportunity allocations. While equity market neutral strategy alphas are driven by stock selection, their zero-beta nature means in the holistic structure they fit in an Opportunity rather than an Equity allocation.

Investors may choose to make their structure decision relating to long-short and illiquid equity investments (as well as other alternative investments with high dispersion between the best and worst performers) according to their assessment of where their organization and portfolio are in terms of six key characteristics, as shown in Figure 4.

Figure 4
Suitability Characteristics



Below, we discuss these suitability factors in greater detail.

- A portfolio's need for **liquidity** can be determined through an analysis that takes into account its current and future needs for cash. The analysis suggests the maximum allocation to less liquid investments a portfolio can comfortably have¹⁵.
- Organizational **flexibility** refers to the ability to act quickly on investments that may have limited windows of opportunity; to invest, when appropriate, in attractive but headline risk-prone assets; and to tolerate the higher costs of alternatives and the inevitable periods of bad performance that even skilled managers and skillfully built programs will endure.
- **Access** to the best funds is important in capacity-constrained investments, and is often obtained through the investor's willingness to build relationships with managers that start with small positions and grow over multiple years.

¹⁵ See Friedman (2014) for a discussion and associated illiquidity tolerance model.

- **Confidence** related to risk tolerance means being organizationally capable, through belief in one's skill, of tolerating significant investment risks that on average are likely uncompensated. Unlike equity market risk, a premium for which is earned in the long term even by a passive investor, active risk is compensated with better returns only for skilled manager selectors who earn excess returns where other, less skilled active investors underperform.
- **Right size** means being large enough to build adequately diversified alternative allocations, but not so large as to be forced to "buy the market." There are advantages to scale, particularly in private equity investing. DaRin and Phalippou (2014) find that investors with larger dollar amounts in private equity conduct more thorough due diligence and use different assessment criteria for funds, after controlling for other factors such as fund type—arguing that smaller investors should pool resources with others to achieve greater effective size¹⁶. Any pooling of assets, however, needs to be done at a reasonable fee level to maximize chances of long-term success.
- Lastly, **skill** is the hard-to-quantify, sometimes hard-to-detect, but all-important characteristic of being able to consistently identify top-quartile managers ahead of time. Successful investors in highly active strategies need to possess "skill in finding skill," or be able to access it using outside advisors.

The appropriate allocation to equity alternatives is dependent on the circumstances and objectives of the particular investor. Investors who are not well suited by their characteristics to this area, or who wish to focus their resources elsewhere, may choose not to allocate. Well-suited investors should consider significant allocations: 10%–20% of the new, holistic equity allocation in equity hedge funds and 10%–30% in private equity (subject to liquidity constraints) are reasonable targets. Each investor must determine the appropriate tradeoff between potential value added and risk reduction from equity alternatives on one hand, and risk factors, detailed in the next section, on the other.

Challenges and Risks

Larger and integrated equity alternative allocations come with risks and reasons to be cautious. Unsuccessful implementations mean, at best, index-like equity market returns minus significant fees and costs, and the downside risk of investing with bottom-quartile managers through bad luck or adverse selection is ever-present. All alternative investments involve fees that are higher than those of traditional active investments, and certainly much higher than those of index funds that reliably deliver the equity market return. The goal of an alternative investment implementation should be desirable net of fee returns; investors who are highly sensitive to the amount of fees paid regardless of net-of-fee performance, or to paying potentially significant base and performance fees when absolute returns are negative (but benchmark-relative performance is good), may not be well suited for these strategies.

Equity hedge fund portfolios tend to be larger-cap and more U.S.-focused than the typical traditional active investment, a fact that requires close attention when building an appropriately diversified total portfolio. Their lower-than-market beta means that returns will mostly likely lag the index in the short term in strong bull markets, and without unusual skill their lower risk and higher costs translate to underperformance in the long term. Private equity investments require careful analysis of the total portfolio's liquidity requirements ahead of time.

Integration of alternatives and traditional portfolios is likely the future of investing. But those applying the concept in the present will face complexities associated with combining the performance reporting of liquid and illiquid investments (although they already face such complexities in reporting total fund returns). Private equity performance will likely need to continue to be reported both separately and in the

¹⁶ See DaRin and Phalippou (2014).

aggregate with other equity, owing to the necessity of using dollar-weighted returns and peer benchmarks for at least some performance comparisons. And investors, particularly public entities, will need to be sure to adequately disclose the composition of their equity portfolios to be clear about total hedge fund and illiquid asset exposure.

Putting Ideas into Action

What should investors do now? You should begin by analyzing your suitability for active investing and consider its implications for your total portfolio. Are you an Opportunity investor, with high suitability and demand for complex and highly active investments? Or are you an Efficiency investor who seeks low-cost, reliable diversification of a carefully designed policy portfolio¹⁷?

The answer will lead you to an appropriate way to think about your equity portfolio from a structural perspective. Equity hedge funds and private equity should be prominent parts of the toolkit for Opportunity-oriented investors—and investors with the flexibility to tactically change total market exposure by allocating between long-only equity and equity hedge funds should consider using them when appropriate.

We recommend that investors integrate existing and future equity hedge fund and private equity investments with their global public equities into a single asset class and report the return of the combined portfolio as well as its components to their stakeholders. The resulting equity portfolio might have a global public equity benchmark plus a premium for illiquidity and higher market risk, as is common current practice for private equity investments (which would now be integrated into the equity whole).

We recognize that combining public and private equity into a single equity asset class may, due to the latter's illiquidity, be too great a leap for some investors now. For them, we suggest creating a "Growth" asset category, with its own policy target allocation and ranges that encompass all forms of equity, public (including equity hedge funds) and private.

Lastly, institutional investors rely on service providers for implementation and assistance with many parts of their programs. Advisors on multi-manager portfolios, in particular, should consider combining research teams across the various flavors of equity investment to gain the benefits of information sharing across professionals researching similar strategies.

Institutional investors continue to evolve in their usage of active management as their needs and market realities change. The integration of what are now called "alternative" investments into the active mainstream may be the next big step.

¹⁷ See Sebastian (2012) for more discussion of Efficiency and Opportunity approaches.

References

Agarwal, Vikas, Nanda, Vikram K. and Ray, Sugata, Institutional Investment and Intermediation in the Hedge Fund Industry (June 2013). Available at SSRN: <http://ssrn.com/abstract=2288102> or <http://dx.doi.org/10.2139/ssrn.2288102>

Ang, Andrew, Bingxu Chen, William N. Goetzmann and Ludovic Phalippou, 2013, Estimating Private Equity Returns from Limited Partner Cash Flows, Working Paper, Columbia University

Bali, Turan G., Brown, Stephen J. and Demirtas, K. Ozgur, Do Hedge Funds Outperform Stocks and Bonds? (September 20, 2012). Available at SSRN: <http://ssrn.com/abstract=2051655> or <http://dx.doi.org/10.2139/ssrn.2051655>

Barras, L., Scaillet, O. and Wermers, R. (2010), False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas. *The Journal of Finance*, 65: 179-216. DOI: 10.1111/j.1540-6261.2009.01527.x

Bouvatier, Vincent and Rigot, Sandra, Pension Funds' Allocations to Hedge Funds: An Empirical Analysis of U.S. and Canadian Defined Benefit Plans (September 25, 2012). Available at SSRN: <http://ssrn.com/abstract=1916686> or <http://dx.doi.org/10.2139/ssrn.1916686>

Buraschi, A., Kosowski, R. and Sritrakul, W. (2014). Incentives and Endogenous Risk Taking: A Structural View on Hedge Fund Alphas. *The Journal of Finance*, n/a-n/a. doi:10.1111/jofi.12167

Chen, Yong, Cliff, Michael T. and Zhao, Haipei, Hedge Funds: The Good, the (Not-So) Bad, and the Ugly (February 2, 2012). Available at SSRN: <http://ssrn.com/abstract=1915511> or <http://dx.doi.org/10.2139/ssrn.1915511>

DaRin, Marco and Phalippou, Ludovic, There is Something Special About Large Investors: Evidence from a Survey of Private Equity Limited Partners (January 2014). TILEC Discussion Paper No. 2014-010. Available at SSRN: <http://ssrn.com/abstract=2399373>

Franzoni, F., Nowak, E. and Phalippou, L. (2012), Private Equity Performance and Liquidity Risk. *The Journal of Finance*, 67: 2341-2373. DOI: 10.1111/j.1540-6261.2012.01788.x

Friedman, Eric. How Much Illiquid Assets Can Your Portfolio Handle? Aon Hewitt 2014

Gompers, Paul A., Kaplan, Steven N. and Mukharlyamov, Vladimir, What Do Private Equity Firms (Say They) Do? (February 2014). Available at SSRN: <http://ssrn.com/abstract=2447605> or <http://dx.doi.org/10.2139/ssrn.2447605>

Harris, Robert, Kaplan, Steven N. and Tim Jenkinson, forthcoming, "Private Equity Performance: What Do We Know?" *Journal of Finance*

Higson, Chris and Stucke, Rüdiger, The Performance of Private Equity (March 2, 2012). Available at SSRN: <http://ssrn.com/abstract=2009067> or <http://dx.doi.org/10.2139/ssrn.2009067>

Korteweg, Arthur G. and Sorensen, Morten, Skill and Luck in Private Equity Performance (April 2014). Rock Center for Corporate Governance at Stanford University Working Paper No. 179. Available at SSRN: <http://ssrn.com/abstract=2419299> or <http://dx.doi.org/10.2139/ssrn.2419299>

Kumar, Satya and Penter, Bob. The Opportunity Allocation: A Tool to Provide Maximum Flexibility with Implementation. Aon Hewitt. 2013. <https://ctech.rproxy.hewitt.com/hig/filehandler.ashx?fileid=9337>

Preqin http://www.preqin.com/docs/reports/Preqin_Special_Report_Hedge_Funds_October_2012.pdf

Robinson, David and Sensoy, Berk, 2011. Manager Compensation, Ownership, and the Cash Flow Performance of Private Equity Funds, Working Paper, Duke University and Ohio State University

S&P Dow Jones Indices S&P Indices Versus Active (SPIVA) U.S. Year-End 2013 Scorecard

Sebastian, Mike, Go Big or Go Home: The Case for an Evolution in Risk Taking, The Journal of Investing, Summer 2014, Vol. 23, No. 2: pp. 7-15. DOI: 10.3905/joi.2014.23.2.007.

Sebastian, Mike and Attaluri, Sudhakar, Conviction in Equity Investing, The Journal of Portfolio Management, Summer 2014, Vol. 40, No. 4: pp. 77-88. DOI: 10.3905/jpm.2014.40.4.077

Tapan Datta, Craig Gillespie, Matthew Towsey, Phil True, Arek Zawada and Chris Cooper, Fixing the Roof While the Sun Still Shines: Market protection strategies, Aon Hewitt, 2014.

Contact Information

Mike Sebastian

Aon Center for Innovation and Analytics (ACIA), Singapore

+65 6645 0122

mike.sebastian@aonhewitt.com

About Aon Hewitt

Aon Hewitt empowers organizations and individuals to secure a better future through innovative talent, retirement and health solutions. We advise, design and execute a wide range of solutions that enable clients to cultivate talent to drive organizational and personal performance and growth, navigate retirement risk while providing new levels of financial security, and redefine health solutions for greater choice, affordability and wellness. Aon Hewitt is the global leader in human resource solutions, with over 30,000 professionals in 90 countries serving more than 20,000 clients worldwide. For more information, please visit aonhewitt.com.

© Aon plc 2014. All rights reserved.