FALL 2017

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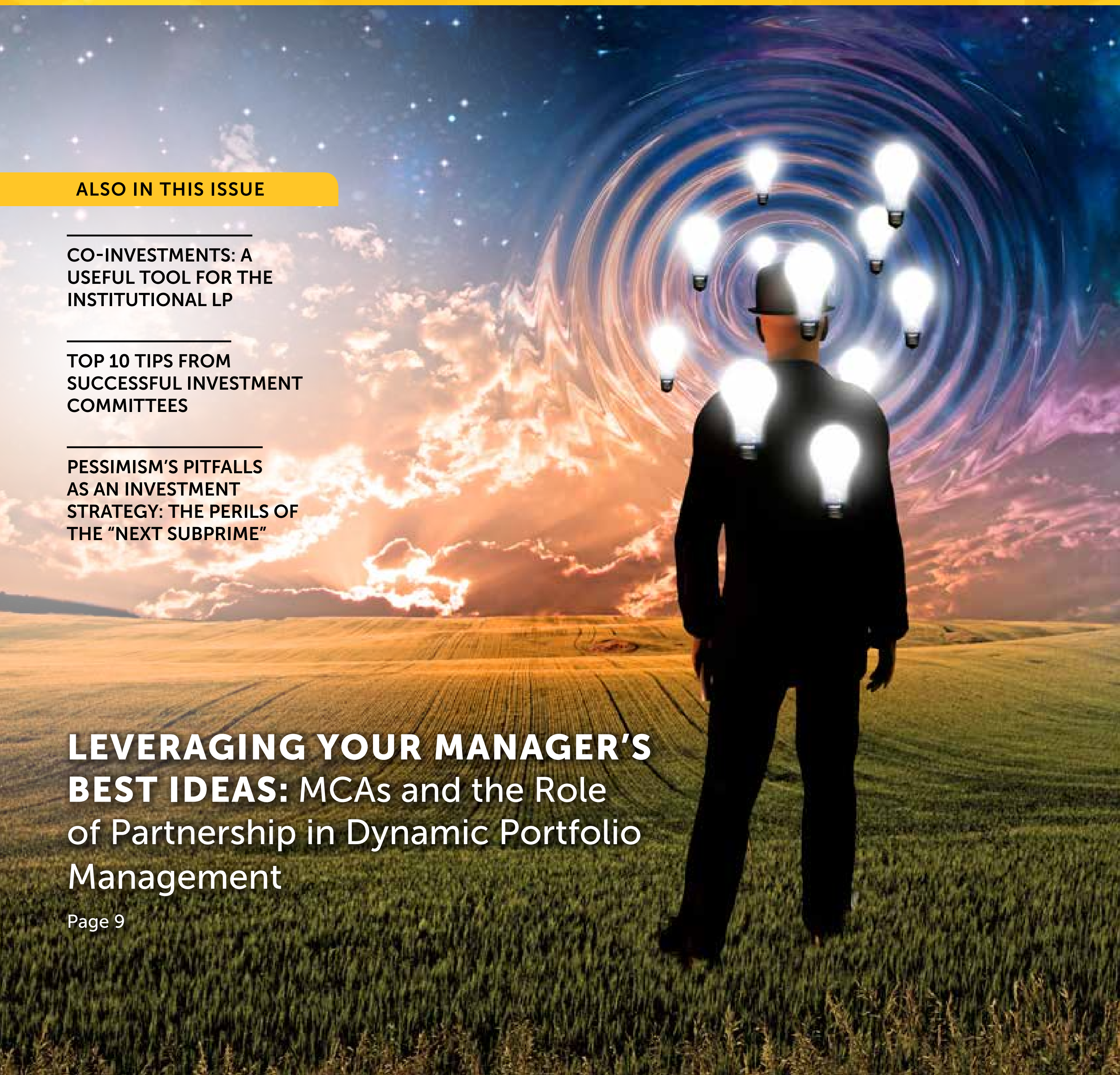

ALSO IN THIS ISSUE

LEVERAGING YOUR MANAGER'S BEST IDEAS: MCAs and the Role of Partnership in Dynamic Portfolio Management

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FROM THE EDITOR

A NEW ADVENTURE

It is my pleasure to be able to tell you about a recent change. If you haven't heard already, I have begun a new phase in my career. The best thing is, I am able to keep my relationship with SACRS, which is very important to me. As of October 2, I became an independent contractor and have started my own event management firm, Sulema Peterson & Associates.

Please be assured that I will retain my current position as SACRS Administrator. I very much appreciate the support, friendship, guidance and encouragement SACRS has offered me over the years. While I am looking forward to what lies ahead, I am grateful to be able to remain with all of you.

My phone numbers will remain the same for SACRS: (916) 441-1850 and mobile (916) 316-7632. My email will also remain the same, *Sulema@sacrs.org* . In addition, I have a new email address at *Sulema@spetersonassoc.com*.

Please feel free to reach out to me anytime.

HAPPY HOLIDAYS!

Sulema H. Peterson

Sulema H. Peterson*, SACRS Administrator, State Association of County Retirement Systems*

MEET YOUR NEWEST **BOARD MEMBERS**

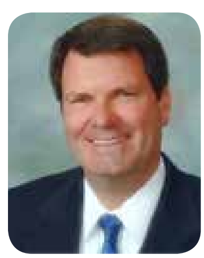
KATHRYN CAVNESS | Secretary

Kathryn Cavness is Secretary on the SACRS Board of Directors. Her objectives as Secretary encompass representing the 1937 Act retirement systems and reaching out to trustees to attain greater participation in SACRS activities. Exciting events designed for Trustees include the SACRS Spring and Fall Conferences, and the U.C. Berkeley Educational Program's Executive Education Courses. Other opportunities for Trustees include joining the SACRS' Educational, Legislative, Program, and Bylaws Committees.

Kathryn began serving as Trustee and representative of the General Members December 1, 2014. She has been a member of the Audit and Budget Committee since 2014 and was elected as Vice Chair of the Board on December 14, 2016.

Kathryn Cavness has been working for the Mendocino County District Attorney's Office since June 2008. Prior to her employment with the District Attorney's Office, she has enjoyed an extensive career in budget and finance, and holds a Master's Degree in Business Administration with an emphasis on Accounting.

HARRY HAGEN | Treasurer



As Treasurer, Harry Hagen, acts as the Chief Financial Officer of SACRS and acts as custodian of all funds and financial records of SACRS. He collects, deposit and disperses funds consistent with SACRS direction and prepares and presents a written detailed financial report at each meeting of SACRS.

Harry is the Treasurer - Tax Collector - Public Administrator and was independently elected by the voters of Santa Barbara County to receive, safeguard, and invest county, school, and special district funds. He collects taxes and revenues; administers estates for county residents when required as public administrator; administers conservatorships for county residents when required as public guardian; and assists county veterans in obtaining State and Federal Benefits. The duties and responsibilities of the office are established by law in the Government Code, Revenue and Taxation Code, Probate Code, State Constitution, and county ordinances. In Santa Barbara County, the functions of the office are organized into the divisions of the Tax Collector, Treasurer, Public Administrator, Public Guardian, Veterans Services, and Deferred Compensation.

Forward to the Future

"What is the succession plan of your ERA?"

Look around your office. In the coming years, the faces you see will change. The long trek for baby boomers toward retirement has reached the finish line. In fact, did you know the Pew Research Center estimates about 10,000 Baby Boomers will reach retirement age *every day* from now through the next decade? To ride the coming wave of retirement, you've got to be ready to "hang ten" and train a new generation to take over the '37 Act county pension systems.

So let me ask: What is the succession plan of your ERA (employee retirement association)? Do you have a designated person waiting in the wings to take over?

Like NFL running backs, who have an average career of two and a half years, so too do many other professionals. In the public pension arena, there are a number of key employees who have statistically shorter tenure than organizational staff. For instance, members of the C-suite – CIO, CEO, CFO, and chief counsel of our pension systems - at some point will have an opportunity to move somewhere else. Is your system replete with a good succession plan for the key elements of your team? Not only is retirement a threat to your operations; so is turnover.

It's important to face these factors with a robust succession strategy, and I encourage you to make SACRS part of that plan. Therefore, to make sure that SACRS continues in a stronger, better way, this is a chance for you to get involved and be part of the succession plan.

My challenge: trustees and CEOs, bring your potential successors to SACRS conferences, get them shaking hands with others in the industry, and make sure you have prepared them with the same institutional knowledge you have.

SAN FRANCISCO CONFERENCE WAS AMAZING!

Did you go? The SACRS Fall Conference took place November 14-17 in San Francisco. I hope you took advantage of the information-packed agenda and the not-to-be-missed networking. Where else can you get so many great people who oversee pension systems in one room to bounce ideas off of or learn solutions to common problems? And remember, you can use the SACRS conferences to fulfill your 24 credit hours of continuing education required by state law. Make plans to join us in 2018. The dates are on the back cover of this magazine.

GET INVOLVED

Our Program committee never fails to put on a valuable, rewarding set of sessions and panels, but we can't know what helps you the most without your participation. SACRS' goal is to educate its members and advocate for legislation important to CERAs. By coming to our events and chiming in, you can put a spotlight on the issues that are at the front of your mind.

Here's to a wonderful and prosperous New Year. As we look forward to 2018, I challenge all *220* eligible trustees to sign up for our 2018 Conferences, and bring administrative staff from your organization who can find benefit in the knowledge the conference provides. You'll be glad you did.

***Dan McAllister**, President of SACRS & SDCERA Trustee*

Let's Talk

I want to start off by thanking all our members and affiliates that helped to make our Spring Conference in Napa and our Fall Conference in Burlingame such huge successes.

Your SACRS Board of Directors has implemented an outreach program for our members to have a better way to communicate their thoughts, ideas, and concerns regarding SACRS. This includes the Berkeley Educational Program, our Spring and Fall Conferences, and any 1937 Act Counties pension related legislation.

To facilitate our outreach program, each of the five Board of Directors have been assigned as a member contact person at SACRS. Each Board member is responsible for their own system and three additional systems. This allows the Board members to focus on a group of systems and build a working relationship with the staff and trustees. Listed below is your County's SACRS contact. Each of the Board members contact information can be found on *sacrs.org*.

For your day-to-day operational needs, along with conference inquiries, you will continue to contact the SACRS team: Sulema Peterson and Maria Barajas, at SACRS Headquarters.

Please feel free to contact the Board member assigned to your system. SACRS is only as good as us members make it. I encourage all of you to become members of the various SACRS committees and the Board of Directors.

Wishing all of you and your families Happy Holidays and a Prosperous New Year! We look forward to talking with you soon.

Gabriel Rodrigues *is a Deputy Sheriff with the Contra Costa County Office of the Sheriff and SACRS Vice President and Program Committee Chairperson. Gabe chose to become a Retirement Board Trustee, allowing him the opportunity to use his business experience to protect and grow the assets of the pension plan that his fellow Contra Costa County employees depend on for their retirement.*

YOUR COUNTY'S SACRS CONTACT

ALAMEDA	Kathryn Cavness
CONTRA COSTA	Gabe Rodrigues
FRESNO	Gabe Rodrigues
IMPERIAL	Dan McAllister
KERN	Harry Hagen
LOS ANGELES	Dan McAllister
MARIN	Kathryn Cavness
MENDOCINO	Kathryn Cavness
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ORANGE	Dan McAllister
SACRAMENTO	Gabe Rodrigues
SAN BERNARDINO	Harry Hagen
SAN DIEGO	Dan McAllister
SAN JOAQUIN	Ray McCray
SAN MATEO	Gabe Rodrigues
SANTA BARBARA	Harry Hagen
SONOMA	Kathryn Cavness
STANISLAUS	Ray McCray
TULARE	Ray McCray
VENTURA	Harry Hagen

PORTFOLIO DIVERSIFICATION:
Risk Allocation Framework
A Discussion of the Crisis Risk Offset Strategic Class

Under a risk allocation/ functional allocation framework, in order for a strategic class to stand on its own, Pension Consulting Alliance believes it must have a "purpose-driven" functional role and/ or risk profile that is *distinct* from other classes. A new strategic class should exhibit a high level of uniqueness, both in terms of historical, as well as expected, outcomes.

In order for a strategic class to be valuable, it must impact the greater overall portfolio in a meaningful way. It has been established that often over 80% of most institutional portfolios' assets have significant exposures to economic growth risk. Therefore, in order to have a real impact, a new class should be diversifying to growth (generally referred to as equity) risk, meaningful (i.e., scalable at an institutional scale and with an offsetting risk contribution commensurate with that of the portfolio's growth-oriented classes), and available at reasonable cost. In fact, if the modeling process quantifies the benefits of such a class, it will likely be at an allocation that is of significant size. Therefore, implementation of this class at a material level will likely be critical to its success.

With these requirements specified, the purpose-driven Crisis Risk Offset Class (CRO) is designed specifically to offset declines in strategic classes having significant growth risk exposure (i.e., most of a typical plan sponsor's existing portfolio) in multiple economic/market scenarios where growth-exposed assets will likely decline precipitously.

Therefore, our research focused on the following questions: What is diversifying to growth risk? *What assets rise when assets with exposure to growth risk decline?* The asset with the purest exposure to growth risk is public equity. Fortunately, the return data on public equity is extremely good, so testing the diversification potential of various candidate assets and strategies was straightforward. Also, since we were careful to define the required attributes of the class, many potential strategies and assets were excluded from consideration. In fact, we further limited the universe under consideration to highly liquid strategies with daily pricing that operate in the deepest, most liquid markets in the world: namely, treasury cash and futures markets, exchange-traded markets, and currency/commodities markets. After defining our purpose and limiting the potential strategies under consideration, three potential components of a CRO class met each of our specifications:

U.S. Treasury Duration – Investments in long-duration Treasury portfolios tend to appreciate when there is a flight-to-quality during an economic/market crisis. This is due to their U.S. dollar base and their interest rate duration. Considered to be a default-risk-free asset, pricing of Treasuries is continuous and certain and backed by deep and liquid futures markets. Exposure to U.S. Treasury duration provides an immediate offset in a crisis, mitigating "gap" risk inherent in more economically dependent strategies. While the annual returns to Treasuries might not be positive over the full length of an equity bear market period (particularly in rising inflation environments), Treasuries do tend to appreciate during the first months of a growth/equity market shock.

Systematic Alternative Premia Strategies – Alternative premia are compensated risk premia that are not growth risk exposed. These are *alternative* premia (alternative to economic growth risk) because the risk exposure sought is not growth risk exposure. Strategies are constructed to be "growth neutralized" in liquid markets, isolating on a risk factor that is expected to be compensated. Examples of factors that have historically exhibited non-growth risk compensation include value, momentum, carry, and low volatility.

Systematic Trend Following Strategies – Trend following strategies involve investing in markets that have been rising and shorting markets that have been falling, expecting that those trends continue. The position taken in each type of trending market is determined by assessing the past return in that market over the relevant look-back horizon. Therefore, the strategy can benefit in rising or falling markets as long as the rise or fall in the market is not immediate (e.g., 10/19/1987 -20% in a single day, 9/11/2001-14% for the week, 10/13/2008 announcement of $700 billion bank bailout plan +11% single day). In other words, trend following strategies typically exploit the longer-run fallouts associated with market crises.

The two "systematic" strategies (Trend Following and Alt. Premia) described above might be viewed by some as active strategies since they are *not* static, buy-and-hold strategies seeking to replicate a cash market benchmark. However, these strategies are not active in the sense that their portfolio exposures are determined mathematically in a systematic fashion.

As highlighted above, all three components utilize investment markets that are highly liquid. Therefore, they should be relatively straightforward to implement in a timely manner. In fact, several large plan sponsors likely already have the infrastructure in place to manage large-scale U.S. Treasury portfolios. In addition, several plan sponsors are beginning to develop track records in implementing these other strategies. Given these factors, PCA believes a material initial weighting in this class could be established relatively quickly, with a phase-in to full-scale occurring over approximately 12-24 months.

“With these requirements specified, the purpose-driven Crisis Risk Offset Class (CRO) is designed specifically to offset declines in strategic classes having significant growth risk exposure in multiple economic/market scenarios where growth-exposed assets will likely decline precipitously.”

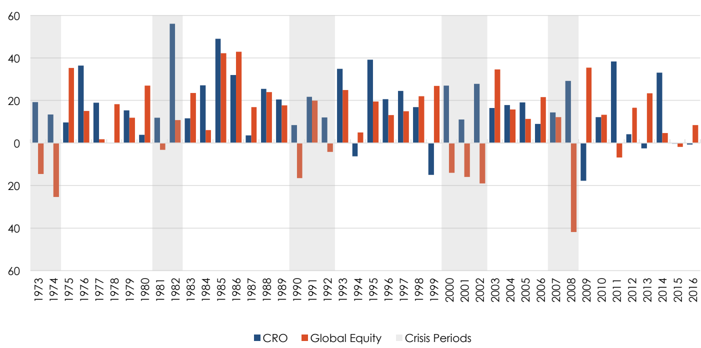
In 2015, San Joaquin County Employees’ Retirement Association’s (SJCERA) portfolio, like many of its peers, had a growth risk exposure in excess of 65%. In order to reduce their dependency on the growth risk premium, SJCERA elected to allocate 20% of the portfolio to CRO, which consisted of an equal weight to all three underlying components. Throughout 2016, SJCERA implemented their CRO program in phases. The process took 12 months; it should be noted that there were already strategies within the portfolio that fit the CRO criteria, potentially making SJCERA’s transition into CRO faster than plan portfolios that do not have any existing CRO exposure.

Combined, a portfolio of the three aforementioned strategies (weighted 33% Treasury duration, 33% trend following strategies, and 33% alternative premia strategies) is better than any single strategy in isolation, as seen in Exhibit 1. SJCERA has implemented CRO by using this weighting scheme, but many other weighting schemes are also reasonable. Four other PCA clients have allocated to CRO-like strategic classes with various weighting schemes (e.g., 50% treasury duration and 50% trend following strategies, or 30% alternative premia strategies, 25% treasury duration, and 45% trend following strategies). As it is unlikely that the future will unfold like the past, the weighting of a CRO strategic class cannot be the driver of its efficacy.

Historically, a very basic hypothetical class structure (based on actual historical data, and the weighing scheme previously disclosed) behaved as the blue bars behaved in Exhibit 2 relative to global equities (orange bars). Historically, most years in which equity markets had a negative annual return, the CRO provided positive offset, sometimes in dramatic fashion.

EXHIBIT 2

CRISIS RISK OFFSET℠ VERSUS GLOBAL EQUITY (annual historical returns)



Sources: AQR, Bloomberg

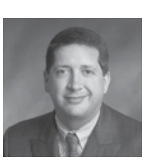
EXHIBIT 1

Summary of Diversification Potential of CRO Strategic Class

CRO Strategy	Risk Exposures	Diversifies Growth?	Liquid? Scalable?	Correlation to Global Equity	# of Calendar Years Positive When Equity < 0. 1973 - 2016
U.S. Treasury Duration	Rates	Yes	Yes	-0.09	10 of 11
Trend Following Strategies	Time vary, directional	Yes	Yes	-0.45	9 of 11
Alternative Premia	Alt Premia, market neutral	Yes	Yes	+0.26	8 of 11
Portfolio of CRO Strategies	**Weighted 33%, 33%, 33%**	**Yes**	**Yes**	**-0.08**	**10 of 11**

Each of these components has a low or negative long-term correlation to public growth assets (i.e., equities), but more importantly, the *conditional returns* of the CRO class as a *whole* to global equities is positive when global equities suffer declines. These conditional returns are extremely valuable (providing offset through rapid increases in value) during equity/growth risk crises.

During difficult times for public equity markets the CRO class, as modeled, would have provided significant, positive returns historically. Though past historical results are no guarantee of future returns, we believe that such a class is implementable and would provide similar return behavior on a forward-looking basis. We believe this class is worth considering and should be incorporated into the modeling phase of asset-liability studies.



***David Sancewich**, is Managing Director and senior consultant at Pension Consulting Alliance (PCA). He is responsible for providing consulting services to the firm’s institutional clients, including SJCERA.*

LEVERAGING YOUR MANAGER'S BEST IDEAS:

MCAs and the Role of Partnership in Dynamic Portfolio Management

> *The MCA structure creates a template for establishing strategic partnerships between asset allocators and asset managers.*

The formal study of finance teaches fundamental hypotheses and theories to explain market behavior as well as techniques for portfolio construction. Direct experience and the wisdom of those who have been there before us can teach us the limitations of those tools and how ruthless a bear market can be. Both types of study enhance our knowledge and thoughtful allocators may additionally benefit from partnering with skilled asset managers who can provide them with market insight that may assist with efficiently allocating capital and weathering inevitable market storms. A goal of this paper is to provide institutional investors with a better understanding of how these partnerships can be leveraged through the Managed Custody Account ("MCA") structure and how it may be utilized to improve governance, allocation decisions, and performance of their portfolios.

The efficient market hypothesis provides an excellent foundation for understanding the challenge of beating an index of publicly traded securities. It is less valuable in explaining both positive and negative extremes in market pricing, which seem to be better explained by behavioral finance and it is limited in addressing private markets which are increasingly making up larger proportions of institutional investor portfolios. Another pillar of institutional portfolio management is Modern Portfolio Theory, which creates an exceptional mathematical foundation for constructing mean variance optimized portfolios. However, it requires the input of future expectations for returns, volatility and correlations of any asset class included in the optimization analysis. Unfortunately, reliable and accurate insight into the data inputs required for mean variance optimization is somewhat rare, so the job of asset allocation remains challenging and allocations are sometimes more reflective of the recent past than the relative values of the present day.

"Research has shown that our ability to forecast the optimization inputs is dismal," said Dr. Arun Muralidhar, Adjunct Professor of Finance at George Washington University and Chairman and Chief Investment Officer of AlphaEngine Global Investment Solutions. "Ignoring this concern, the variables themselves are dynamic, yet MPT models use static inputs. Even if we perfectly forecast all variables, the time needed for these variables to converge to their true value is 40 years and we are thus trading on noise."

Before Dr. Eugene Fama described efficient markets and Dr. Harry Markowitz proposed portfolio optimization, Benjamin Graham was providing insight into the discipline of investing. In *The Intelligent Investor,* which has been described by Warren Buffet as the best book about investing ever written, Mr. Graham provides a framework for the emotional discipline needed to succeed as an investor, as well as analytical tools for thoughtfully making investment decisions. He acknowledged that the characteristics of an investment portfolio are usually reflective of the type of investor or investment objective established for the portfolio, but took issue with the idea that the rate of return targeted by an investor was directly related to the degree of risk that they were willing to bear.

INTELLIGENT EFFORT

Mr. Graham believed that the rate of return sought by an investor should be dependent upon the amount of "intelligent effort the investor is willing and able to bring to bear" to the task of investing. He taught that higher returns were more possible for a disciplined, thoughtful investor than by a passive investor and was a proponent of the relative value concept across asset classes, arguing that an undervalued equity may represent less real risk and greater upside than a conventional bond. The concept of relative value and informed decision-making is the foundation for dynamic portfolio management.

The leading proponents of dynamic portfolio management seek to understand the degree to which various markets are efficient, but also embrace the insight of Mr. Graham with regard to risk and relative value. Some asset classes indices, commonly used as benchmarks for the asset class, which demonstrate a high degree of efficiency. An example of this would be the S&P 500 or the Russell 1000 as a proxy for large cap U.S. stocks. Long term outperformance of these indices by managers building portfolios of their subcomponents is rare due to high levels of transparency and near instantaneous dissemination of information regarding component companies. The internal efficiency of these indices makes them excellent candidates for synthetic exposure when rebalancing. However, the efficiency of an index does not necessarily prevent an asset class from becoming significantly over or undervalued relative to historical standards. When the downside risk of owning broad exposure to an asset class or its index proxy is not adequately compensated, the informed investor should avoid or reduce exposure in favor of other assets in the portfolio offering greater relative value. Interestingly, almost every portfolio has the built-in capacity to accommodate such shifts as their investment policy usually has ranges around asset class targets within which the portfolio is permitted to reside. An award- winning paper documents how a public pension plan has been able to improve overall returns by 1% p.a. for over 10 years through dynamic rebalancing[1].

Active managers who are putting forth the "intelligent effort" described by Mr. Graham in fundamental equity and credit analysis are often a valuable source of insight into relative value at the sub-asset level. Managers focused on traditional areas of analysis, such as contractual

returns and discounted cash flows, often have more disciplined processes with regard to the prices that they are willing to pay for assets. This price sensitivity could help inform the asset allocation process for institutional investors, but they often lack a governance structure that allows them to work in a flexible manner with asset managers who could provide insight.

Typically, investors allocate capital to a single investment strategy or fund at a time. The manager usually has a fiduciary obligation to that specific investment fund but has no obligation or incentive to advise the client regarding investing or rebalancing into other strategies in which the manager may also invest. Under an ideal investment structure, a manager would utilize their insight regarding relative value to assist their investor clients in growing and protecting capital through informed rebalancing and would be compensated on the basis of the value they add across the entire relationship.

In a low-yielding environment when many funds are being forced to lower their expected returns, institutional investors are under increasing pressure to generate returns in excess of an assumed rate. Finding innovative ways of redefining the traditional relationship between allocators and managers could play a significant role in enabling outperformance or even meeting the target rate of return. This idea of a relationship-based structure and compensation agreement is the foundation of the MCA structure.

An MCA is a relationship-based agreement that seeks to:

- Create a governance structure that allows the investment team of an asset allocator to work more efficiently with an asset manager;
- Make the asset manager a fiduciary to the asset allocator at the relationship level instead of at the individual fund/asset level;
- Enhance alignment of interest between the asset allocator and the asset manager, usually through a fee netting agreement which increases compensation for the manager based on the success of the overall relationship rather than the individual sleeves or investments; and
- Reduce contracting time and costs for both the asset allocator and asset manager by capturing key terms in the MCA agreement and dramatically reducing the contracting burden for future investments under the MCA structure.

The MCA structure creates a template for establishing strategic partnerships between asset allocators and asset managers. The governance structure that is created through the MCA agreement may be tailored to the specific needs, infrastructure and staffing of the investor/allocator and should detail the recommendation, review and approval process that will be followed by the manager and allocator's staff. It may also define specific investment decisions that the manager may exercise on a discretionary basis and what actions require review and approval from the asset allocator and who has the authority to approve investment decisions. Generally, it is the introduction of this increased flexibility in the governance structure that is perhaps the most powerful and beneficial aspect of the MCA agreement for an institutional investor.

Making the manager a fiduciary at the relationship level is a key tenet of the strategic partnership and affords the asset manager and investor the freedom to work together in a more unified fashion toward the goals, objectives and best interests of the investor. A manager who serves strictly as a fiduciary at a fund level may feel obligated to seek to maximize returns at just the individual fund level. For example, the manager who experiences a modest price decline on stable assets that he or she expects to recover is unlikely to sell those assets to take advantage of a greater opportunity in another strategy whereas a manager serving as a fiduciary across multiple strategies may have far greater flexibility in seeking to maximize risk adjusted returns across the relationship.

“Fee netting across multiple teams and strategies requires buy-in for the structure at the highest levels of the firm and a sometimes slower or escrowed payout schedule.”

FEE NETTING

Agency issues and seeking to increase the alignment of interests are some of the most critical and challenging issues faced by an institutional investor. These issues drive extreme scrutiny of contracts and create numerous questions that the institutional investor must answer before moving forward in a new investment. Why is the manager creating this strategy now? Is the manager simply seeking to increase their assets under management with this strategy or is it their best idea to drive returns? Gleaning the answers to these questions requires a deep understanding of the manager, the strategies involved and the investment environment. While many investors have successfully navigated these issues, a more straightforward solution can be found in the fee netting agreements of most MCAs. With the fee netting agreement, the path to greater rewards for both the asset manager and investor is clear -- high stable compounding returns. MCA fee netting creates a split of the asset growth of the relationship between the investor and the manager.

The contracting cost and timesavings driven by utilizing the structure may also be significant for both managers and investors. Under traditional contracting, an investor with a broad relationship to a manager across multiple strategies may go through a contracting process with that manager numerous times over a ten-year period. The MCA agreement defines allowable strategies for the relationship, as well as all side letter terms for the agreement. Additional fund and direct investments that fall within the guidelines of the structure typically require no additional contracting. Changes to the structure or guidelines may often be made with only minor amendments to the agreement. The hallmarks of the MCA structure may reduce that entire process to a single contract, saving tens or hundreds of thousands of dollars per relationship for both the investor and manager.

The Texas Tech University System endowment has implemented a substantial number of MCA relationships across its portfolio and has realized the benefits these structures can provide. "We can attest that the concept is adding substantial value to the overall endowment," said Tim Barrett, Chief Investment Officer of the Texas Tech University System. "Some of the 'best ideas' of our managers held in separate accounts are outperforming the funds 4:1 over the last few years."

Despite the myriad benefits of the MCA structure, it is not without its challenges. Investors need to find managers who they believe can and are willing to communicate valuable market insight. They also need to have confidence that the manager can provide strong relative performance across multiple strategies or structures. These allocators also need strong investment teams capable of quickly reviewing and evaluating investment recommendations within the framework of their asset allocation targets and relative opportunities.

"Allocating a larger portion of a plan's assets to multi-strategy managers under an innovative fee structure requires a more in-depth diligence of a prospective manager's overall business strategy and business management capabilities than might be the case in a single-product allocation," said Allan C. Martin, Partner at NEPC, LLC, one of the industry's largest independent, full-service investment consulting firms.

The structure also increases reporting complexities and creates an additional fee calculation waterfall. While managers are often willing to provide the additional reporting and fee calculations, governance best practices would recommend the use of a third party administrator that can address the operational complexities inherent to MCAs to ensure data integrity and accuracy in the measures that matter. This may include the verification and reconciliation of assets and valuations, performance monitoring, fee calculations and consolidated reporting.

"It is critical to have a third party track the performance of the hedge funds, drawdown funds and separate account performance, in addition to the fee savings," Barrett added. "A third party administrator is imperative in order to effectively communicate performance and fee savings to one's governing board."

WORTH CHALLENGES

Managers also face a number of challenges with MCAs. Fee netting across multiple teams and strategies requires buy-in for the structure at the highest levels of the firm and a sometimes slower or escrowed payout schedule. The manager needs to contract for sufficient discretion under the structure to add value and generate strong returns or have confidence in the allocator's investment team and their ability and skill to act as a valuable partner. These challenges may drive managers to restrict the establishment of the MCA to only large institutional investors or those with the proven experience and infrastructure to support the structure.

Despite these challenges, the MCA structure remains an innovative tool for creating strategic partnerships between asset managers and investors. The MCA affords institutional investors access to investment managers' best ideas and highest performing strategies under a construct that improves the alignment of interests between both parties. By using MCAs, sophisticated investors have the ability to dynamically allocate capital and generate stronger risk adjusted returns that will benefit them, their sponsors and the ultimate beneficiaries of those institutional investment programs. With management and performance fees calculated at the aggregate level across all investments, managers are similarly incentivized to share responsibility for optimizing allocations across their own strategies and offerings. Leveraging the best ideas of managers may be a simple way to improve portfolio level returns in the current low-yielding environment.

***James Perry** is Head of Institutional Investor Solutions at Maples Fund Services where he is responsible for shaping the firm's offerings and enhancing its service delivery to institutional investors. He brings more than 20 years of investment management experience, the past 10 years serving in senior investment roles overseeing portfolios of public assets in California and Texas.*

This article is intended to provide only general information for clients and professional contacts of MaplesFS. It does not purport to be comprehensive or to render legal advice.

ENDNOTES

1 Barrett, Timothy and Pierce, Donald and Perry, James and Muralidhar, Arun, Dynamic Beta: Getting Paid to Manage Risks (December 1, 2011). Journal of Investment Consulting, Vol. 12, No. 2, pp. 67-78, 2011. Available at SSRN: https://ssrn.com/abstract=2004667

"By using MCAs, sophisticated investors have the ability to dynamically allocate capital and generate stronger risk adjusted returns that will benefit them, their sponsors and the ultimate beneficiaries of those institutional investment programs."

“The attractive economics of co-investments are the primary drivers behind limited partners’ strong and growing interest in co-investments.”

CO-INVESTMENTS:

A USEFUL TOOL FOR THE INSTITUTIONAL LP

Private equity has grown from a niche strategy scarcely targeted by investors to a staple in many institutional investors’ portfolios. According to Thomson Reuters, the asset class raised $384 billion in commitments worldwide in 2016, up from $61 billion in 1996. Within private equity, co-investments have garnered particular attention in recent years.

Historically, general partners often sought out other general partners when additional capital was needed to make an investment. General partners are now increasingly turning to their limited partners as a source of additional capital through co-investments. Co-investments are investments made by a limited partner directly in a company alongside a general partner’s fund. Offers to co-invest are usually free of the annual management fees and carried interest typically associated with a primary fund commitment, which can be as much as or more than 2% and 20%, respectively. As such, limited partners already having an indirect interest in the company through their primary commitment to the general partner’s fund have the opportunity to increase their exposure to the company on attractive economic terms. The attractive economics of co-investments are the primary drivers behind limited partners’ strong and growing interest in co-investments. The potential savings from the absence of management fees and carried interest in strong-performing co-investments can lower the overall expenses associated with investing in the private equity asset class, which in turn can generate additional gains for an institutional investor’s private equity portfolio. According to a recent Preqin survey, 50% of limited partners are actively or opportunistically completing co-investments, and an additional 22% have not co-invested previously, but plan to consider co-investing in the future.[1]

There are two main reasons why general partners offer co-investments to their limited partners instead of to other general partners. First, partnering with their limited partners allows the general partner to have increased control of the business compared with bringing in another active general partner who could have different strategic views for the business or different time horizons for its investment. Second, co-investments create greater alignment between general partners and limited partners due to the limited partner’s additional capital investment, which helps the general partner complete the transaction. General partners are often seeking ways to generate closer ties with their limited partners (many of whom are reducing their number of general partner relationships), which can be beneficial in future primary fundraising processes.

BENEFITS OF CO-INVESTING: FEES & RETURNS

As previously mentioned, the primary benefit associated with making co-investments is the potential for limited partners to reduce expenses associated with the asset class. Private equity has historically generated strong returns: over the past 20 years, private equity funds have generated a net internal rate of return of 12.9%, according to Burgiss,[2] whereas the S&P 500 generated a gross annualized return of 7.0%.[3]

Despite strong net returns, expenses for accessing the private equity asset class can be substantial: general partners typically charge an annual management fee and take a percentage of the investment profits, which is known as carried interest. Co-investments typically have no annual management fee or carried interest, which can result in significant savings over a primary partnership commitment, as presented in table 1. As shown, based on $100 in commitments and a gross return multiple of 2.0x, investing in co-investments results in $27.1 million in savings for limited partners compared with investing in a primary fund.

TABLE 1 | INCREMENTAL PORTFOLIO GAINS FROM CO-INVESTMENTS COMPARED WITH PARTNERSHIPS

Based on $100 Million in Commitments

Portfolio Gross Return	1.5x	2.0x	2.5x	3.0x
Estimated Management Fee Savings ($MM)	$8.9	$8.9	$8.9	$8.9
Estimated Carried Interest Savings ($MM)	$8.2	$18.2	$28.2	$38.2
Incremental Portfolio Gains from Co-investments ($MM)	**$17.1**	**$27.1**	**$37.1**	**$47.1**

SOURCE: Pathway Capital Management.

NOTES: Represents the estimated incremental gains generated over the life of an investment by contributing to a portfolio of direct co-investments, with no fee and no carried interest charged, as opposed to investing with a private equity limited partnership charging 1.25% annual management fee and 20% carried interest.

This table is for illustrative purposes only. No representation is being made that an investor in co-investments will achieve the incremental gains presented in this table.

FURTHER INSIGHTS INTO THE GPS

Investors who participate in co-investment processes with general partners gain more insight into the general partner's investment diligence and decision-making processes than they would when participating only in a general partner's primary fundraising diligence process. During a primary fundraising, limited partners are usually relegated to conducting diligence on a general partner during the general partner's narrow fundraising window, and diligence materials are often less detailed and can be less meaningful without context. As part of the co-investment process, however, many general partners provide a detailed analysis of the co-investment opportunity, including investment committee papers, financial models, and consultant reports, thus allowing the limited partner to have a deeper understanding of the general partner's diligence.

Additionally, co-investment processes often include multiple meetings or conversations with the general partner's deal team and with the company's management team and may include meetings or conversations with consultants. These interactions provide important context, not just for the evaluation of the co-investment, but also for gaining a deeper understanding of how the general partner conducts diligence, evaluates risks, underwrites potential returns, and completes the decision-making process. Limited partners can benefit from such insights when considering the general partner's next primary fundraising.

OTHER BENEFITS

In private equity, access to general partners can be constrained. Several firms that have top-producing funds often find their new offerings oversubscribed and thus are unable to provide access to all investors seeking to be a part of their fund. A key part of gaining access to these highly sought-after managers is the relationships these managers maintain with their limited partners. Participating in co-investments provides an opportunity for limited partners to establish and strengthen their general partner relationships and also indicates to the general partner that the limited partner can be a reliable source of capital. Such opportunities can help solidify and further enhance the relationship in the eyes of the general partner, which can be beneficial to the limited partner when the general partner begins raising a new fund.

Co-investments can also allow limited partners to better control the pace of capital deployment and to emphasize a particular segment of the market, such as a specific industry or region. Co-investments are typically funded in full at the time of closing, whereas primary fund commitments are typically drawn over an investment period of five years at the discretion of the general partner. Limited partners can benefit from the additional control over timing and over selection of market segment.

POTENTIAL RISKS

Co-investments can be a valuable addition to a private equity portfolio; however, they also carry significant risks, including the following:

ADVERSE SELECTION

Adverse selection, as it applies to co-investments, is the theory that general partners offer the least attractive deals for co-investments, preferring to keep the more-successful, carry-generating investments solely within their funds because they will generate carried interest and maximize the general partner's personal financial gain in the short term. However, doing this would only serve to alienate existing limited partners. The contrasting theory is that general partners do offer attractive deals because doing so could contribute to the general partner's long-term success. Although research on the topic has been mixed, it is clear that the more a limited partner's interests are aligned with the general partner's long-term success, the less likely it is for adverse selection to exist[4] One additional way to mitigate adverse selection is to build a diversified portfolio of co-investments.

DEAL FLOW

A limited partner's ability to gain access to co-investments is dependent on the general partner of the fund. Limited partners need to develop relationships with general partners in order to gain access to deal flow.

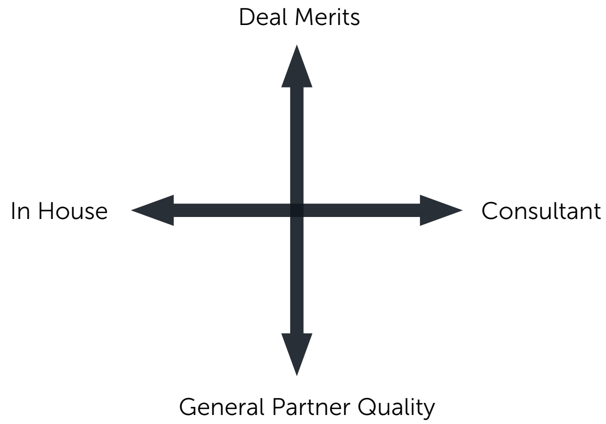
MARKET TIMING & OVERCONCENTRATION

Because of the long-term and illiquid nature of the asset class, it is important to have a long-term approach when investing in co-investments. Selectively co-investing in different time periods may result in exposure to only suboptimal periods of the market cycle. By maintaining a consistent investment pace, a portfolio of co-investments can be constructed over full market cycles and be less likely to be over- or underexposed to any one time period. Additionally, concentrating capital in any particular co-investment opportunity can expose a private equity portfolio to excessive company-specific risk. Steadily deploying capital throughout the market cycle and building a portfolio diversified by, among other things, time, general partner, industry, region, and deal size can reduce these risks.

CONSIDERATIONS FOR STARTING A CO-INVESTMENT PROGRAM

There are several factors to consider when starting a co-investment program, the most significant of which is deciding on a strategic approach. Limited partners need to determine (i) if the co-investment program will be developed and managed by their existing investment staff or by a newly hired staff, (ii) if the program will be outsourced to a specialist firm or consultant, or (iii) if there is optimal middle ground. Part of this consideration incorporates the limited partners' desired approach to the market; that is, whether limited partners select co-investment deals based solely on their merit, select opportunities solely on the quality of the general partner offering the co-investment, or some combination of the two. Limited partners must consider where on each continuum they should focus (see Figure 1).

FIGURE 1 | STRATEGIC APPROACH CONSIDERATIONS



Limited partners who choose to manage at least part of their co-investment program in-house must also develop a process to meet the strict deadlines associated with executing co-investments. Some areas that should be considered for that process include how to:

- source and manage deal flow,
- execute confidentiality agreements to access diligence,
- develop diligence and investment decision-making processes,
- negotiate the various legal structures used for co-investments, and
- monitor completed co-investments appropriately.

CONCLUSION

Similar to the trajectory of the private equity asset class as a whole, co-investments are increasingly becoming more common as part of an institutional investor's portfolio. The potential benefits of co-investments are compelling; however, the risks need to be navigated appropriately. Ultimately, limited partners who elect to complete co-investments should ensure that they have a well-thought-out strategic approach and sound processes in place. Co-investments, if managed prudently, can be a useful tool for institutional investors to reduce the overall expenses associated with the private equity asset class.

> *"Co-investments typically have no annual management fee or carried interest, which can result in significant savings over a primary partnership commitment."*

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ENDNOTES

1 Preqin Special Report: Private Equity Co-Investment Outlook, November 2015.

2 Based on Burgiss Private iQ U.S. all private equity return benchmarks, as of March 31, 2017, as produced using Burgiss data.

3 As of March 31, 2017.

4 Lily Fang, Victoria Ivashina, and Josh Lerner, "The Disintermediation of Financial Markets: Direct Investing in Private Equity," (2015); Reiner Braun, Tim Jenkinson, and Christoph Schemmerl, "Adverse Selection and the Performance of Private Equity Co-Investments," (2017).

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HOW TO MANAGE FOREIGN CURRENCY EXPOSURE GIVEN UNCERTAIN OUTLOOK FOR U.S. DOLLAR

> *“It is clear from historical evidence that these two beliefs in the “Do Nothing” school are myths, and therefore it can be extremely dangerous for a portfolio to leave currency exposure unmanaged at all times.”*

To paraphrase the father of macroeconomics, John Maynard Keynes: When the market environment changes, my portfolio currency allocation changes… what do you do?

In recent years, the U.S. dollar experienced one of its longest and largest rallies since floating exchange rates began in the early 1970s. Given the uncertainty in the outlook for U.S. interest rates and the path of the U.S. economy after the presidential election, the outlook for the U.S. dollar is far less clear than in the prior three years. In this environment, how should pension fund chief investment officers think about the issue of managing foreign currency exposure?

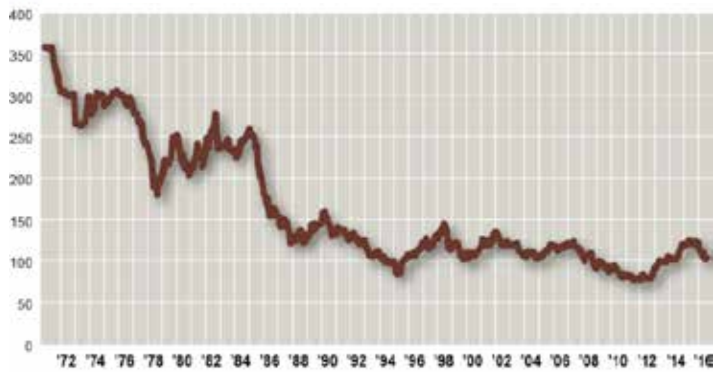
Historically, there exist two schools of thought about how to deal with currency risk in international portfolios. The first is to do nothing and leave all currency exposures unhedged. The second is to hedge it away and eliminate currency risk from the portfolio entirely. These two competing approaches are founded on several core beliefs that have questionable foundations.

SCHOOL OF THOUGHT NO. 1: DO NOTHING

This approach is based upon two beliefs: i) Currencies revert to the mean over time and hence, the impact of short to medium-term currency movements can be ignored; ii) If you like the return potential of a foreign asset, you must also like the currency, as the drivers of asset appreciation will also lead to currency appreciation. If these two assumptions are true, currency exposure can be ignored and never hedged.

i) It is dangerous to assume that currency markets mean-revert as exchange rates in both real and nominal terms can move by very large amounts over multiyear time frames and have a significant impact on portfolio risk and return. The reason this myth is commonly believed is that currency markets can exhibit cyclical behavior. However, these cyclical movements revolve around the long-term fair value of a currency, which does change materially over time such that currencies rarely return to the same value in either real or nominal terms.

U.S. dollar vs. Japanese yen

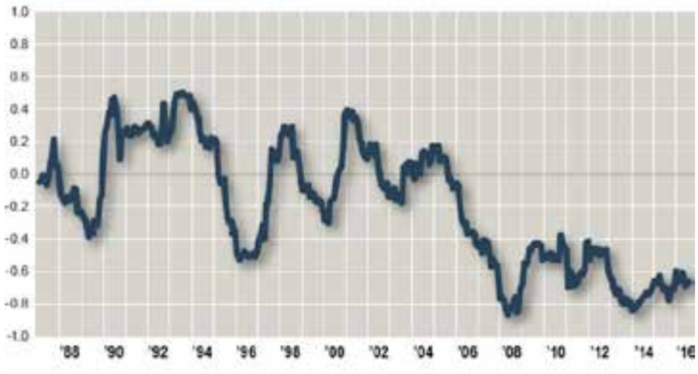


For example, since the U.S. came off the gold standard in 1971 and the U.S. dollar became a freely floating currency, the dollar has fallen in nominal terms vs. the Japanese yen — from 357 yen per U.S. dollar to 76 yen at its 2012 low, a fall of more than 78%. Intervening periods have also experienced large moves.

Indeed, the Japanese yen is by no means an isolated example, and large currency moves can have a significant impact on the U.S. dollar value of international exposure. In fact, when applied to the currencies in general as held by the U.S. pension fund industry, the most recent bout of U.S. dollar strength that ended in mid-2015 is estimated to have cost the U.S. pension fund industry $1 trillion in lost value by not being hedged. Unmanaged currency exposure can have a large impact on your portfolio in either direction.

ii) The correlations between asset markets and their underlying currencies are highly variable depending upon the prevailing economic and financial conditions. Therefore, it is a myth to claim that if you buy a foreign asset you should always have a positive view on the underlying currency. In a vivid recent example, the Japanese Nikkei 225 index rose 83.7% between June 30, 2012, and Dec. 31, 2013, in local currency terms but only rose 37.1% in U.S. dollar terms given the collapse of the Japanese yen over the same period. A currency hedge would have precisely bridged that gap.

Correlation of Nikkei vs. USDJPY



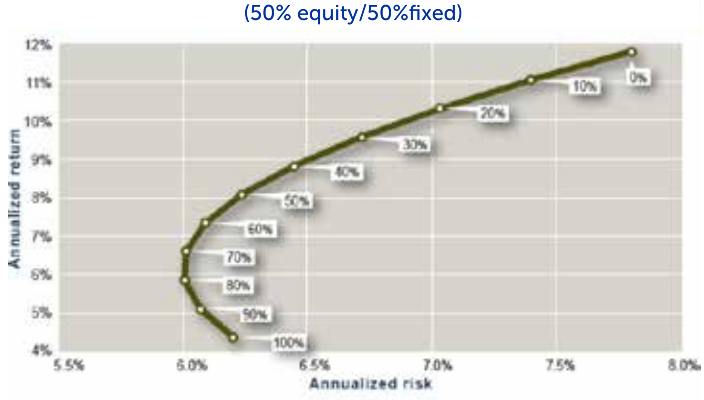
It is clear from historical evidence that these two beliefs in the "Do Nothing" school are myths, and therefore it can be extremely dangerous for a portfolio to leave currency exposure unmanaged at all times.

SCHOOL OF THOUGHT NO. 2: HEDGE ALL CURRENCY RISK BACK TO THE BASE CURRENCY

This approach also is based upon two assumptions: i) Currency exposure adds risk to a portfolio with no expected return and therefore is uncompensated risk. As a result, it should be completely hedged away; ii) It is impossible to forecast currency markets and so they should not be invested in with the objective of generating an excess return.

i) Currency markets are mostly driven by different factors than equity and fixed-income markets, and as a consequence, currency returns have a very low and sometimes a negative correlation to these asset markets. As such, retaining some currency exposure in a portfolio can improve its risk characteristics due to the diversifying nature of the exposure. In the example below, hedging the full currency exposure is riskier than hedging only 80%.

Risk vs. return by % hedged, international portfolio
(50% equity/50%fixed)



Furthermore, from a practical point of view, a fully hedged foreign currency position can lead to large losses in periods of U.S. dollar depreciation, which can interfere with the asset allocation of the portfolio as asset holdings will need to be liquidated to fund the realized currency hedge losses.

ii) Many claim that currency markets are impossible to forecast because they are the most efficient markets in the world based on their deep liquidity, transparency and low transaction costs. This is a myth because while they are transactionally efficient (low cost to execute) they are not efficient in the sense that no edge can be gained by investors analyzing the key drivers of exchange rate changes. This lack of efficiency stems from the fact that not all currency markets participants are seeking to make a profit explicitly from their participation in the currency market. Central banks, for example, have monetary policy objectives, and corporate treasurers are focused on their currency payables and receivables.

This inefficiency is backed up by empirical evidence that professional investors in currency markets have been able to extract positive excess returns over time. A recent CFA Institute paper co-authored by New York University professor Richard M. Levich, explained that "empirical evidence suggests that some managers have been able to deliver statistically and economically significant alpha."

For both of these reasons, it is not advisable or optimal to maintain a fully hedged static currency position in an international portfolio.

A MORE PRAGMATIC APPROACH

If neither school of thought can be relied upon to inform the best way to think about managing currency exposure, and there are significant problems with either static approach, what then is the preferable framework?

A more pragmatic and effective approach is to recognize that an active approach to managing currency exposure within an international portfolio is advisable in exactly the same way that an active allocation approach to the equity, fixed-income and alternative asset allocation is commonplace. The specific approach depends on the investment objective.

Should the primary investment objective be to reduce the risk inherent from having currency exposure and mitigating potential drawdowns, a dynamic hedging approach is an attractive option that seeks to adjust the hedge ratio on foreign currency exposures vs. the base currency to anticipate periods of base currency strength and/or weakness.

By contrast, should the investment objective be to add incremental and uncorrelated returns from changing the currency mix vs. the underlying asset mix, then an active currency overlay approach should be considered as it turns the problem of managing currency exposure into a virtue by improving the return per unit of risk of the entire portfolio.

Either way, the overarching conclusion is that a flexible approach is required while a straitjacketed, static approach is to be avoided.

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Seeking Growth and Capital Preservation

with Low-Volatility Equity Investing

. . .

With their obligations to meet future liabilities, pension fund investors face a conundrum. Although equities can provide the potential for capital appreciation needed to help them meet those obligations, equities can also introduce volatility and downside risks. The unease with equity risk has not been fully addressed by investing strategies that have been more focused on following market benchmarks than managing return volatility. In addition, heightened global economic uncertainty has increased investor focus on capital preservation during market events. As an alternative to increasing allocations to low-yielding bonds and/or cash equivalents, equity strategies with a downside protection element may be an attractive approach to managing equity risk.

Taken together, these factors are prompting many institutional investors to consider using low-volatility (low-vol) equity investing to maintain potential capital appreciation while reducing volatility and downside risk. In this article, we demonstrate how managing portfolios that have lower volatility may *enhance* investment return potential, not diminish it. Moreover, we describe how an emphasis on capital preservation sets low-vol investing apart from other "smart beta" or "strategic beta" strategies that do not target downside protection. We believe pension fund investors have a lot of good reasons to consider incorporating low-vol equity strategies into their portfolios.

▸ WHAT ARE LOW-VOL EQUITY STRATEGIES?

Simply stated, low-vol equity strategies are fully invested stock portfolios managed to exhibit lower risk than common capitalization-weighted equity indexes, such as the S&P 500 Index or the MSCI World Index. Typically, these portfolios are constructed in one of two ways: (1) a portfolio with stocks that individually exhibit low volatility (e.g., the S&P 500 Low Volatility Index) or (2) a portfolio that exhibits low volatility in aggregate (e.g., the MSCI World Minimum Volatility Index). The second approach takes into account correlations among stocks to build a portfolio that exhibits lower volatility, not limiting the portfolio exclusively to low-vol stocks.

Both approaches require a method to determine whether a portfolio will exhibit low volatility on a forward basis, with a typical goal being 60% to 80% of the volatility of the corresponding capitalization-weighted index. Fully quantitative approaches typically use historical market data and past performance to identify combinations of stocks that are considered likely to reduce volatility in the future. However, it is important to note that even though a quantitative low-vol strategy may be implemented passively, not all quantitative approaches are the same. In addition to the distinct construction methodologies noted above, different low-vol strategies may employ dissimilar constraints, such as how they limit turnover or set minimum or maximum sector weights relative to the overall market benchmark. These differences may affect the strategy's performance.

In contrast to fully quantitative approaches, some strategies include fundamental research inputs as part of portfolio construction. Quantitative methodologies are by definition backward-looking, and are not designed to respond flexibly to changes in risk regimes or unusual risk-return catalysts. Fundamental analyst research adds the potential for in-depth forward-looking views, particularly on the risk-return catalysts that are most fluid in times of market stress. Adding an active, fundamental element may also allow some low-vol strategies to use deep industry or company knowledge for stock-selection. Pension fund investors may benefit from considering a wide range of low-vol strategies, and from understanding how the differences between them may lead to disparate exposures and performance.

▶ DON'T CONFUSE LOW-VOL EQUITY INVESTING WITH HIGH-DIVIDEND OR VALUE INVESTING

Low-vol equity investing is sometimes confused with other strategies that have the potential to deliver lower standard deviation of returns. For example, some investors see low-vol investing as simply investing more heavily in the most defensive sectors—including utilities, telecom, or consumer staples. However, those three sectors currently make up less than 50% of the S&P 500 Low Volatility Index and the MSCI World Minimum Volatility Index, and the desired effects of low-vol stock selection can be shown even in a "sector-neutral" application.

Another common misconception is that low-vol investing equates to high-dividend investing, where the income from dividends contributes to more stable total return through time and thus reduces volatility. However, this has not historically been the case, as the table below shows. The selection criteria for a high-dividend strategy typically do not include considerations of volatility or potential downside.

Moreover, low-vol equity investing is not value investing. Value investing is predicated on buying stocks that are "cheap" versus some fundamental metric (e.g., earnings). Because these stocks are cheap, it is assumed that they have limited potential downside. However, value indexes can have similar volatility and downside capture as the market indexes that define their universe—as with high-dividend investing, reducing volatility is simply not an inherent concern. Even the general assumption that value stocks have limited downside may not always be correct—during the 2008 global financial crisis, the MSCI World Value Index lost 40% while the MSCI World Minimum Volatility Index lost 29%.

The table below shows a comparison between value, high dividend, and minimum volatility indexes with their underlying broad index, the MSCI World Index. For this table, "downside capture" is calculated as the percentage of the geometric average return of the index above the MSCI World geometric average return when the benchmark has negative returns. As the table shows, the MSCI World Min Vol Index has demonstrated favorable characteristics, particularly if reduced downside capture and volatility are an investor's priorities.

EXHIBIT 1

Comparison of a low-vol index with other indexes (Jul. 1, 1994 to Dec. 31, 2016)

	MSCI World High Dividend Yield	MSCI World Value	MSCI World Minimum Volatility	MSCI World
Return (Annualized)	9.3%	7.4%	**8.6%**	7.1%
Volatility	14.6%	15.2%	**10.8%**	14.9%
Downside Capture	84%	97%	**58%**	100%

Source: Bloomberg, Fidelity Investments. Past performance is no guarantee of future results.

▶ WHY INVEST IN LOW-VOL EQUITY STRATEGIES?

Many pension fund investors desire the capital growth potential associated with equities but are wary of the possibility of significant capital losses that can make long-term growth difficult. For example, a 50% investment loss requires a subsequent 100% gain for an investor to break even, not just a subsequent 50% gain. This highlights the key value proposition of low-vol investing: For investors with future liabilities to meet, less participation in down markets translates to more stable funding ratios.

Many investors would place a high value on investment strategies that help preserve and recover their funding status in the face of market downturns. This is because those periods tend to coincide with times of economic stress, when investors' ability to meet their obligations deteriorates. The table below compares the MSCI World Min Vol Index with the MSCI World Index, showing how each responded during the bursting of the internet bubble in the early 2000s and the recent global financial crisis, and how long each took to recover from those losses. By recovering faster, the min-vol index could help maintain funding ratios and meet obligations.

EXHIBIT 2

Periods of market stress and subsequent recoveries

INTERNET BUBBLE BURST: MAR. 31, 2000, TO SEP. 30, 2002 (Cumulative returns)		
	MSCI World Index	MSCI World Minimum Volatility Index
Total Return	-46.8%	-20.9%
# of Months to Recover Losses	40	15
GLOBAL FINANCIAL CRISIS: OCT. 31, 2007, TO FEB. 27, 2009 (Cumulative returns)		
Total Return	-54.0%	-43.5%
# of Months to Recover Losses	55	41

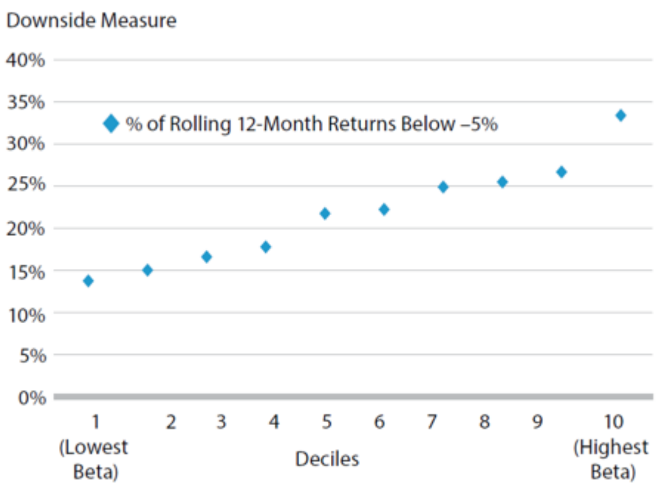
Source: Bloomberg, Fidelity Investments. Past performance is no guarantee of future results.

▸ A CAPITAL PRESERVATION FOCUS DOES NOT HAVE TO COMPROMISE RETURN POTENTIAL

It is often assumed that low downside risk equates to lower returns, but this assumption is not consistent with more than 80 years of U.S. financial history. Using "beta" as a simple measure of exposure to equity market volatility, lower-beta stocks are associated with a lower frequency of downside returns greater than –5%, using rolling 12-month returns.

EXHIBIT 3

Downside measure of model portfolios, sorted by beta exposure to U.S. equities

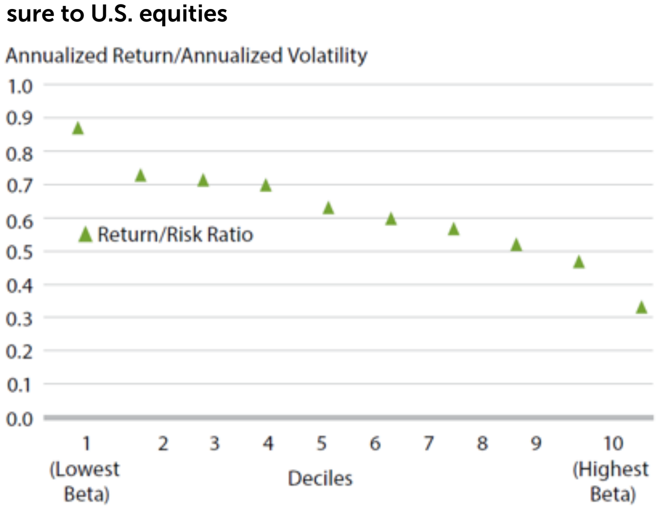


Calculated based on data from The CRSP U.S. Stock Databases © 2017, Center for Research in Security Prices (CRSP®), The University of Chicago Booth School of Business. Beta exposure for each stock is computed over a prior three-year history, on a monthly frequency and on an ex-ante basis, for 333 calendar quarters beginning in Jan. 1929. Model portfolios are created by equal-weighting the stocks belonging to each beta decile among the largest 500 U.S. stocks by market capitalization. Past performance is no guarantee of future results. Source: CRSP, Fidelity Investments.

Surprisingly, the lowest-beta decile of stocks is associated with higher returns (annualized 16.4%) than the highest- beta decile of stocks (annualized 12.6%). The same empirical history also suggests that the highest stock returns per unit of risk are associated with the lowest-beta stocks, as shown in the chart below.

EXHIBIT 4

Return/risk ratios of model portfolios, sorted by beta exposure to U.S. equities



> *"It is often assumed that low downside risk equates to lower returns, but this assumption is not consistent with more than 80 years of U.S. financial history."*

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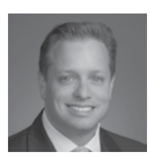
Although the economic reasons behind these empirical findings are complex and beyond the scope of this article, they mostly surround behavioral biases of investors. One such behavioral driver is "overconfidence bias," whereby investors overestimate their potential abilities in stock picking. This cognitive failing leads many investors to spend more time analyzing higher-volatility stocks, because making the right call on a risky stock can appear to generate more profits. Because many behavioral biases are cognitively ingrained and hence likely to persist, low-vol investing may continue to be attractive due to its return potential per unit of risk.

▸ CONCLUSION

To meet future liabilities and income commitments, investors must grow their assets at a rate that is high enough to meet their obligations. While equity investing can be a strong option in these instances, many investors are put off by the potential downside risk that large equity allocations can introduce. It is in these circumstances that low-vol equity investing can be a compelling alternative—reducing downside-risk potential while making little compromise on long-term returns.



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SACRS 2017 FALL LEGISLATIVE REPORT

The Legislature concluded its work in the 2017 Legislative Session on September 15. That date marks the end of the first-year of the two-year session. All introduced bills that were not acted on in 2017 are technically still alive and can be dealt with when the Legislature reconvenes after January 3, 2018.

During the fall, legislators will return to their districts to meet with constituents, travel on legislative business, and begin the process of evaluating legislation to introduce in 2018.

2017 YEAR IN REVIEW

Political pundits would agree that the 2017 legislative session was an enormously busy one in terms of significant legislative output. True to Governor Brown's history during his second life as Governor, he shaped legislative activity to match his priorities and his timeline. Helped by the fact that Democrats control more than 2/3 of the votes in each house of the Legislature, the following major policies were enacted in 2017:

Spring – Infrastructure Revenue and Spending Package

In May the Legislature adopted a ten-year, $52 billion transportation infrastructure spending plan to repair local roads and state highways, invest in public transit and rail, and reduce congestion on trade and commute corridors, while ensuring revenues are not diverted to other uses and creating accountability in the expenditures.

Revenues to pay for this would come from taxes and fees on those who use the roads and highways. Drivers will see an increase in the diesel excise tax by 20 cents, the diesel sales tax will increase by 5.75 percent, the gasoline excise tax will increase by 12 cents, and there will be a new annual vehicle fee based on the value of a vehicle, and a new fee on zero emission vehicles.

Summer – Greenhouse Gas Emissions Law, Cap and Trade Spending Authority

The Legislature adopted AB 398 by Assemblyman Eduardo Garcia to extend the cap and trade program through the year 2030. This was a major political accomplishment for the Governor that came about through intensive negotiations between businesses that emit greenhouse gas emissions, environmental advocacy groups, labor, and Republican legislators which ensured a 2/3 vote to bring certainty to the carbon auction marketplace for the upcoming compliance period and going forward through 2030.

With this market certainty, auction revenues are expected to stabilize and increase over time, which will annually raise billions of dollars in revenue. In 2017, this revenue is being used to reduce carbon emissions from mobile and other sources. However, because it passed with a 2/3 vote, in future years these revenues can be spent on anything the Legislature desires.

Fall – Housing Package

On the last day of session, the Legislature passed a package of bills designed to provide new revenue to subsidize affordable housing and to streamline local permitting for housing development.

SB 2 by Senator Atkins would impose a $75 fee on the recording of certain types of real-estate documents with the fee capped at $225 for multiple documents. The author estimates that the bill will generate roughly $250 million each year, which will be directed at reducing homelessness and increasing affordable housing.

SB 3 by Senator Beall would place a $4 billion bond before the voters on the November 2018 ballot. If passed, this bond would expend:

- $1.5 billion into the Multifamily Housing Program
- $1 billion into the Cal-Vet Farm and Home Loan Program
- $300 million into Infill Infrastructure Grant Financing
- $300 million into the Joe Serna Jr. Farmworker Housing Grant Program
- $300 million into the Local Housing Trust Match Grant Program
- $300 million CalHome
- $150 million CalHFA Home Purchase Assistance
- $150 million Transit-Oriented Development Program

Both SB 2 and SB 3 have been sent to the Governor and are expected to be signed into law.

PENSION LEGISLATION

SACRS supported three measures in the 2017 Legislative Session:

SB 671 (Moorlach) was signed into law by Governor Brown on July 17. It clarifies the law pertaining to the authority of a Board of Supervisors to make advance payments for the county contribution to its retirement system. While some systems already have this practice, SB 671 ensures all systems can do so. This option and flexibility is good for the employer and the system by improving cash flow and interest earnings.

AB 995 (Limon) was signed into law by Governor Brown on July 10. It requires any leave balance accrued by a county employee prior to employment by the Ventura County Retirement System to be transferred from the county to the retirement system and require the county to pay the system an amount equal to the value of the accrued leave.

AB 526 (Cooper) would authorize the Sacramento County Employees Retirement System (SCERS) board to modernize its operating structure to better manage its workforce and day-to-day operations to best meet its fiduciary responsibilities. At the discretion of the SCERS retirement board, it would allow SCERS to decide if it wants to shift from its current operating authority model to one of the three main operating authority options currently established in the '37 Act. This bill would give a level of autonomy to the retirement system while maintaining all transparency, budgeting accountability, and fiduciary responsibility. This bill passed the Assembly on a 76-0 vote, but it stalled in the Senate as the author was not able to get the Sacramento County Board of Supervisors to endorse the measure. It was not heard in committee, but is still eligible for consideration in 2018.

PENSION REFORM

We have previously reported on "pension reform" legislation. It remains a priority issue for a number of Republican legislators who view this as an issue with positive political ramifications. Certainly one Republican, Assemblyman Travis Allen, plans to make unfunded pension liability a pillar of his campaign for Governor in 2018. In the meantime, all legislation introduced in this area either failed passage in committee or was not brought up for a vote.

DIVESTITURE

Members of the Legislature regularly introduce legislation to accomplish social goals through pension investment policy. This year there have been three pension divestment bills introduced in the Legislature.

AB 20 (Kalra) as amended in the Senate Public Employee Retirement Committee, this bill declares the intent of the Legislature that the California Public Employees' Retirement System (PERS) and the California State Teachers' Retirement System (STRS) to consider tribal sovereignty as part of its investment policies. Prior to this amendment, the bill passed the Assembly on a 50-24 vote. As amended, it passed the Senate on a 24-14 vote. It then passed the Assembly on concurrence with a 46-28 vote. It is currently pending action by the Governor.

AB 1597 (Nazarian) would prohibit PERS and STRS from making or renewing investments in funding vehicles issued by, or controlled and managed by, the government of Turkey. This bill passed the Assembly on a 67-0 vote. Unlike the author of AB 20, Assemblyman Nazarian declined to amend his bill to recognize the fiduciary responsibility of PERS and STRS. Rather than take his bill to a vote, he declined to have his bill heard. It will be eligible for hearing in 2018.

AB 946 (Ting) would prohibit PERS and STRS from investing in companies performing construction or contracting for material or services for a border wall. This bill was not heard in the Assembly and is a two-year bill.

CERL LEGISLATION

SB 112 (Budget Committee) is a multi-subject General Government budget trailer bill that went into print on September 12 during the final days of the Legislative Session. The bill deals with a host of unrelated matters such as regulations involving card clubs, housing standards for inmates in fire camps, and visitation rights at local detention facilities. In addition, the bill amends the Public Employees' Pension Reform Act (PEPRA) to permit a retired person in a '37 Act County to serve as an elective officer of that county without reinstatement from retirement or loss or interruption of benefits, provided that his or her retirement allowance is suspended to the extent that it is based on service in that elective office.

2018 LEGISLATIVE OUTLOOK

2018 is a gubernatorial election year, meaning the Governor and the other statewide elected officials are on the ballot with legislators. Historically, the Legislature does not pursue controversial items in an election year. While it is too early to predict, we expect that generally the Democrats in the Legislature will continue to pursue legislation and make policy statements designed to differentiate California from the Trump administration in areas of health care, (particularly universal health care) and immigration.

At the same time, we expect Republicans in the Legislature to continue to pursue legislation aimed at addressing "unfunded liabilities" in defined benefit plans.

__Michael R. Robson__ has worked since 1990 in California politics and has been lobbying since 2001 when he joined Edelstein, Gilbert, Robson & Smith LLC. Prior to joining the firm, he began a successful career with Senator Dede Alpert as a legislative aide soon after she was elected to the Assembly in 1990. He became staff director/chief of staff in 1998, while the Senator served in the position of Chair of the Senate Appropriations Committee. He is experienced in all public policy areas with particular expertise in environmental safety, utilities, revenue and taxation, local government finance, education, and the budget.

__Trent E. Smith__ worked for over 12 years in the State Capitol prior to joining the Edelstein, Gilbert, Robson & Smith LLC. He started his career in 1990 working for the well-respected late Senate Republican Leader Ken Maddy. He was later awarded one of 16 positions in the prestigious Senate Fellowship Program. Upon completion, he started working in various positions in the State Assembly. He worked as a Chief of Staff to Assembly Member Tom Woods of Redding and later to Orange County Assembly Member, Patricia Bates, who served as Vice Chair of the Assembly Appropriations Committee. In this position, he gained a unique and valuable knowledge of the State budget and related fiscal policy matters. In addition, he has extensive experience in numerous policy areas.

TIPS FROM *Successful* Investment Committees

> *"Here is perhaps the most important takeaway: Long-term investment success requires a strong governance and decision-making framework. Governance, not investments, is the primary responsibility of investment committees."*

Investment committees face a complex and difficult challenge overseeing pension plans and meeting return goals. They must navigate myriad laws and regulations, select the right managers and strategies, monitor their portfolios, and ensure that their funds can deliver the returns needed for their beneficiaries.

To help guide committees through these challenges, Callan offers our insights based on what we have seen from effective investment committees. Underlying these tips is a guiding principle for institutional investors: focus on avoiding losses rather than trying to achieve extraordinary gains. Simple math illustrates that a loss of 20% requires a gain of 25% to break even, and a loss of 50% requires a 100% recovery.

01 Commit to a long-term investment strategy—then stick to it

The most successful Callan clients make a long-term strategic decision and stick with it over many decades. This is not easy given the many changes in investment committees, staff, and consultants that can happen over very long time periods. The secret is to select a strategy that satisfies the long-term return needs and can be understood and maintained by future administrations. That involves, in part, developing a consistent asset/liability study framework that educates all current and future fiduciaries on why a particular investment strategy remains relevant to the plan over long time periods. Knowledge of and commitment to a long-range investment approach will arm fiduciaries with the necessary arguments to defend the strategy to constituents during poor performing cycles and the courage to rebalance to the strategy as necessary.

Long-term investors should avoid making decisions based on strictly short-term inputs. Giving up on a good strategy just because it has not worked well recently is a recipe for disaster, as is giving up on good investment managers just because their strategy is currently out of favor.

Investors should also avoid changing a good strategy to prepare for an anticipated "next crisis" when it was the original strategy that got the investor through the last one. Alternatively, a poor strategy is disastrously revealed in situations like the Global Financial Crisis. Not knowing your true time horizon (or not being able to adhere to it), not understanding your true liquidity needs, and overreacting to short-term market developments can result in poor investment outcomes.

Pension plans must remember that investment strategies and policies are not about making as much money as possible. That thinking exposes the fund to the risks taken by speculators and day traders. Institutional investing is all about making the returns needed over a long time period with the least risk of not making these returns. Consequently the most important task is to understand what return the fund needs and how to achieve it efficiently while avoiding the potential for large losses—not what everyone else is doing.

02 Understand the investment strategy

Do not employ investment strategies the committee does not fully understand. Complexity is not a taboo, but a complex strategy should not be employed simply because it is popular. The right strategies will solve a specific problem for the fund in achieving its long-term goals.

Perhaps even more importantly, institutions need to make sure that current and future decision-makers will be able to understand complex strategies. Often in times of market stress, or in reaction to short-term underperformance, investors seek to exit complex investments. A good rule is to never employ a strategy that cannot be maintained, explained, or defended by the next CIO, investment committee, administration, or the participants at its worst possible moment. To thoroughly understand investment strategies, committees also need to devote time and effort to investment education.

03 Hire and fire managers for the right reasons

Committees should hire managers for their investment strategy and their perceived ability to achieve the strategy rather than recent performance ranking. They should be fired when the manager's investment strategy is faulty or the competence to achieve the strategy does not exist in the manager's organization.

Despite the well-known caveat about past performance not being indicative of future success, academic research shows that institutional investors often hire new active managers with strong recent performance and fire those going through a period of weak relative results. Investors need to make sure they are not hiring or firing based on recent performance alone, and even be open to hiring sound managers that have experienced a bout of recent below-benchmark results.

From time to time, institutions should formally reflect upon their decision-making process and their effectiveness in making active manager hiring and firing decisions. Those unable or unwilling to ignore shorter-term cycles of underperformance from active managers should strongly consider use of an index fund—an approach that will prevent the whipsaw of firing managers during a natural cycle of underperformance and hiring managers that may have just experienced a recent peak in their relative performance cycle. It may be intuitively easier for some investors to rebalance into an index fund rather than an active manager they may still doubt. The most successful Callan clients have hired able managers and kept them through thick and thin—even when it appeared they had suddenly lost all reason.

04 Develop proper controls and oversight

Fiduciaries need to remember that, even though certain investment functions may be delegated, they still retain the responsibility to oversee and control delegated activities. While it is nearly impossible to insulate an institution from fraud entirely, strong controls and oversight of external advisers and internal players can reduce its potential. Thorough operational due diligence can be a critical aspect of oversight that may prevent fraudulent investments.

Even several years after the high-profile fraud perpetrated by Bernie Madoff, some institutions still overlook factors like inadequate legal documentation, unknown or less-qualified service providers, the lack of separation of responsibilities within an investment management organization, and other factors that can often indicate the potential for fraud or other operational failures.

Beyond out-and-out fraud, the industry abounds with examples where poor oversight and controls resulted in losses for the fund. Custodial arrangements can be a mosaic of charges for services not completely tailored to the needs of the fund. And the lack of oversight and understanding of securities lending operations became problems within the last decade.

05 Vigorously monitor costs

Tracking and managing investment-related costs are critical, particularly in an environment of modest return expectations. Pension plan sponsors need to make sure they understand all aspects of investment costs—including those related to the administration of the investments—and manage them wherever possible. This is of particular importance in the alternative investment world, where costs come in different forms and are often indirectly assessed. Many large funds have surprised the industry by admitting they didn't really know how much they had paid their private equity or real asset advisers.

Fees and expenses have become much more transparent in recent years, but much more progress is needed. Tracking fees is a critical first step in ensuring they are reasonable with respect to the value added.

06 Create well-defined rebalancing practices

Establishing a clear asset allocation along with well-defined rebalancing ranges is a critical risk management function. Rebalancing is often counterintuitive to human nature, but it is the only proven way to buy low and sell high successfully over time.

Failure to rebalance can result in taking on too much—or too little—investment risk. While taking on too much risk is often painful over short-term periods of market volatility, taking on too little risk can also present a real possibility of failing to meet long-term investment objectives. The key to objective, successful rebalancing is to believe in the long-term strategy. (In their paper on "Efficient Portfolio Rebalancing in Normal and Stressed Markets," Lydia J. Chan and Sunder R. Ramkumar of BlackRock examine some best practices for setting rebalancing policy.)

07 Understand the strategy's investment restrictions

While it can be hard to track the indirect costs related to a limited investment opportunity set, a well-diversified portfolio can be hurt by restrictions on the type of investments allowed. Investors need to understand how any restrictions can impact the investment opportunity set and the potential effect these restrictions can have on long-term returns.

Various restrictions have been proposed for and imposed on investment plans over the years, such as divestment of shares in tobacco firms, firearms makers, and those doing business in South Africa. In addition, funds have also faced requirements regarding investment focus, such as economically targeted investments.

These are not necessarily bad ideas, but one needs to review critically all investments that purport to have secondary economic or social benefits. Matters of conscience can play a big role in these decisions, but imposing restrictions can lead to a slippery slope. Pension plans that adopt restrictions based on standalone issues should periodically review the costs of these decisions.

ENVIRONMENTAL, SOCIAL, AND GOVERNANCE (ESG): NOT JUST DIVESTMENT

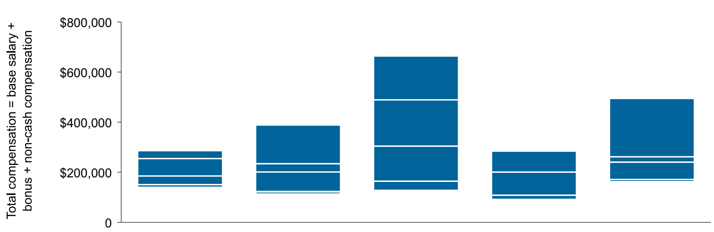
ESG investing is often mistakenly equated with socially responsible investment (SRI) and divestment. While divestment was a primary implementation method for early adopters of SRI in the 20th century and earlier, the field has evolved substantially. Today divestment is just one potential implementation option, but many investment mandates that are implemented with ESG factors rely on engagement, positive screening, ESG factor integration into a traditional investment analysis, and other approaches that put risk and return considerations first.

Fiduciaries need to make sure decisions on these investments—like any other—are based on the competitiveness of the potential return and risk to similar investments apart from the secondary benefits, and that the risk and return potential compares favorably to similar investments.

The process used for evaluating and deciding upon economically targeted investments should follow closely the standard due diligence process. The biggest challenge often is being able to compare the strategy and manager to other similar alternatives when there might not be any. Another issue is that the parties promoting such investments are often not the people who have the fiduciary responsibility of determining whether these investments are sound, nor do they suffer the consequences if the investments are not.

08 Attract and retain a qualified investment team

As institutions have increasingly embraced more complex alternative investments, the need to attract and retain talent to identify, implement, and oversee these investments has grown in importance. This is a particularly hard factor to quantify, but we have seen among our clients that institutions with stability in investment decision makers often have long-term success.



	Chief executive officer	Chief financial officer	Chief investment officer	Chief operating officer	Director
10th percentile	$286,000	$388,500	$664,000	$284,847	$494,600
25th percentile	$254,500	$233,810	$489,070	$284,303	$261,500
Median	$185,000	$201,000	$304,000	$200,450	$240,000
75th percentile	$150,500	$122,450	$163,976	$107,986	$171,120
90th percentile	$140,000	$112,388	$128,000	$91,941	$162,843
Average	$241,432	$231,520	$382,302	$191,839	$295,989
# of observations	11	7	19	4*	5

* Note the small sample size.
Source: Callan's 2016 Cost of Doing Business Survey

Attracting and retaining a qualified investment team, as well as developing new talent, is a challenge in a very competitive industry and requires a budgetary commitment and committee support. Stability in decision makers can help institutions hew to the other best practices listed.

09 Delegate strategy and policy implementation to the CIO and staff

Investment committees are primarily responsible for setting investment strategy, policy guidelines, and asset allocation; monitoring results; overseeing the plan; and representing the plan on behalf of the beneficiaries. If the investment committee has been successful in attracting and retaining a qualified investment team, it must take advantage of this expertise by delegating as much of the implementation of the investment program as possible. By carefully considering what issues must have approval and what can be delegated to staff, operational efficiencies such as rebalancing and dealing with investment manager issues in a timely fashion will likely improve long-term results.

10 Prepare for turnover

Excessive changes in decision-making bodies can destroy institutional knowledge and result in excessive changes to the investment strategy. In our experience, these changes in investment strategy are costly and often occur at the worst possible time. Committee members for institutions with higher turnover should be aware of how their decisions can impact future decision makers, and they should seek to design an investment program that can endure changes in decision makers.

While this is not a comprehensive list of tips for pension plans, we do think it covers a lot of ground. Many of these tips are more related to the governance and oversight of an institution than they are to investment-specific issues. Here is perhaps the most important takeaway: Long-term investment success requires a strong governance and decision-making framework. Governance, not investments, is the primary responsibility of investment committees.

Ronald D. Peyton *is Chairman and Chief Executive Officer for Callan Associates Inc., an employee-owned firm whose mission is: "Collaborating with each client to build tailored and lasting investment solutions." Payton provides firm-wide oversight by conferring with associates and clients to improve communications, process, and service quality, and he regularly meets with senior industry professionals and actively engages in industry and community events to advocate for the institutional investment industry.*

Brady O'Connell*, CFA, CAIA, is a Senior Vice President in Callan's Chicago Fund Sponsor Consulting office. With two decades of experience, O'Connell has consulted with a variety of fund sponsor clients including corporate and public defined benefit plans, defined contribution plans, and endowments and foundations.*

ENDNOTES

1 Amit Goyal and Sunil Wahal, "The Selection and Termination of Investment Management Firms by Plan Sponsors" (Alden, Penn.: The American Finance Association, 2008) The Journal of Finance, Vol. LXIII, No. 4, 1805-1847.

PESSIMISM'S PITFALLS AS AN INVESTMENT STRATEGY:

The Perils of the "Next Subprime"

Every few months, a risk materializes in global financial markets that some observer labels "the next subprime" crisis.[1] Allusions to the toxic mortgage loans that nearly brought down the financial system are not subtle. Comparisons to subprime mortgages resonate precisely because the psychological wounds from the Great Recession run so deep.

Not surprisingly, the most fervent believers in "next sub-prime" narratives tend to be those investment managers or strategists who perceive another "Big Short" opportunity. The Michael Lewis book (and Paramount film) romanticized the idea of the clear-eyed contrarian able to perceive the cracks in the financial system before everyone else and construct portfolios to profit from its eventual demise. In the wake of the crisis, it is easy to see the allure of these types of strategies. What institution wouldn't prefer blockbuster returns to the emotional toll of another 2008-style near-death experience?

Unfortunately for many investors, the search for the "next subprime" has not been a particularly fruitful investment strategy. Positioning portfolios to profit in a tail-risk scenario is not cost-free; the cumulative drag on returns can be quite meaningful as put options expire worthless, short-positions get stopped out in a rising market, and central bank policy adjusts to confront new risks. Since the recession ended June 2009, the cumulative return on the broadest U.S. stock market index (Russell 3000) has been 3x, an annually compounded return of 15%. Rather than metastasizing into something akin to 2008, the market dips from "next subprime" scares emanating from the U.S., Europe, and China instead offered attractive buying opportunities for astute investors.

There may be more to this than dumb luck.

THE BIG SHORT[S] AND HEDGE FUND PERFORMANCE

The failure of post-crisis "Big Shorts" may help to explain why so many hedge funds have lagged public markets. After outperforming stocks by 6.6% per year between 1997 and the end of the Great Recession, hedge funds have underperformed the market by -9.4%, in the aggregate, since then.[3] There are many explanations for this phenomenon, including increased competition, fewer market inefficiencies to exploit, and the natural difficulty achieving the same returns as assets under management (AUM) grow exponentially. Yet, a decomposition of monthly hedge fund returns suggests that the search for the "next subprime" is a big part of the story.

“Virtually no one active in markets, government, or business had any personal basis for expecting a crisis on the scale of 2008-09 because the collapse in asset prices, corporate profits, GDP, and payrolls was unlike anything observed since the 1930s.”

By their nature, hedge funds are designed to generate returns that are less volatile than and largely uncorrelated with public equities. Between 1997 and 2017, the average market beta on hedge fund returns has been 0.37, which implies that a 10% increase (decrease) on the stock market would be associated with a 3.7% increase (decrease) in hedge fund returns, on average. This market beta has been roughly the same in the period before and after the crisis. The decline in hedge fund returns, therefore, can be attributed to the decline in “alpha,” or outperformance after accounting for market covariance. Since the end of the Great Recession, average hedge fund alpha has declined from 5.2% per year to just 0.2% (Table 1).

Linear measures of market dependence, like beta, can be less informative as a measure of hedge funds’ net market exposure because of the nonlinearities introduced by active trading in derivatives markets.[4] Some of what gets classified as “alpha” likely reflects “exotic beta,” or the incremental profits derived from higher-order market dependence.[5]

TABLE 1

AVERAGE HEDGE FUND RETURNS, 1997-2017[2]

Period	CAPM Alpha	Beta * Excess Market Return	Risk-Free Return	Total Return	Fama-French Alpha
1997-2017	3.3%	2.5%	2.6%	8.4%	3.2%
1997- June 2009	5.2%	0.6%	4.0%	9.8%	4.6%
July 2009- April 2017	0.2%	5.7%	0.2%	6.1%	1.5%

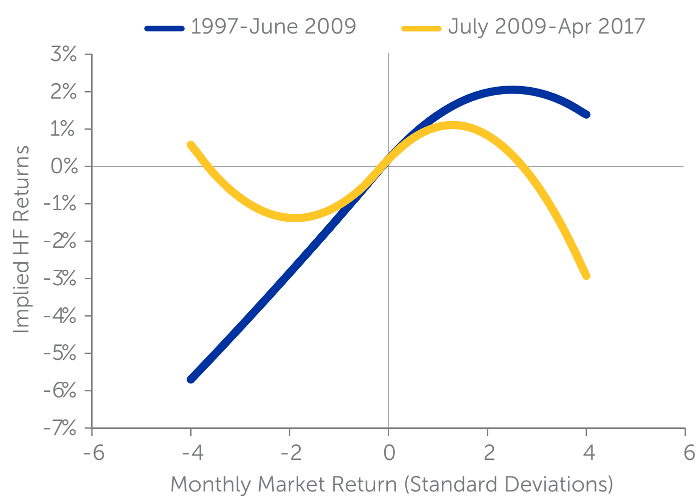
Consequently, the decline in average hedge fund alpha may partly reflect the drag from strategies designed to per-form slightly worse in rising markets but profit in extreme (negative) circumstances.

Indeed, regressions of hedge fund returns on the payoffs of synthetic put and call options suggest that a statistically significant shift in industry-wide portfolio construction has occurred since 2009, with a sizeable increase in exposure to nonlinear short positions. Average portfolios appear to have less exposure to market gains and significantly greater protection against steep market drops.

Between 1997 and 2009, a two standard deviation decline in the stock market (roughly -9.5%) was associated with a -3% decline in monthly hedge fund returns. Since then, hedge fund returns would be expected to fall by just -1% in response to the same market decline and actually rise as market losses intensified from there (see Figure 1). The improved performance in the left tail of the distribution comes at the expense of lower returns when the market rises—not a favorable trade-off in the context of the 2009-2017 bull market.[6]

FIGURE 1

CHANGING EXPOSURE TO STOCK MARKET RETURNS[7]



THE POST-CRISIS CHANGE IN PERCEPTIONS AND BEHAVIOR

Perhaps the post-crisis shift towards more aggressive down-side protection makes sense and these types of portfolios will be rewarded handsomely once one of the various market risks turns into something more malignant. Alter-natively, it could be that these strategies have not worked precisely because the same psychological factors that make “next subprime” investment strategies seem more appealing have also led to behavioral changes among business managers, regulators, central bankers, and market participants that make a crisis similar to 2008-2009 much less likely to occur.

> *The psychological scars of the Global Financial Crisis made "Big Short" investment strategies more appealing but less likely to succeed.*

Risks do not exist in a vacuum. A market dislocation or mispricing must intersect with private sector vulnerability (excessive leverage, illiquidity, short-term funding, etc.), and public sector passivity to metastasize into a full-blown crisis. Vulnerability and passivity are shaped, in part, by perceptions.

Cognitive research finds that the range of potential outcomes we can conceive generally depends on our own past experience.[8] Similar research finds that we tend to overestimate the value of knowledge gained from our experience in ways that systematically understate the likelihood of infrequent events.[9] Virtually no one active in markets, government, or business had any personal basis for expecting a crisis on the scale of 2008-09 because the collapse in asset prices, corporate profits, GDP, and payrolls was unlike anything observed since the 1930s. It seems likely that businesses were less liquid, institutional investors less hedged, and policymakers less inclined to intervene in markets than would have been the case had the possibility of a 2008-style event been fully internalized.

Now that a global financial crisis has moved from abstract theoretical construct to concrete experience, businesses hold more cash, banks are less leveraged, and policymakers have proven far more willing to intervene through new regulations as well as asset purchases and capital injections to stabilize markets. The events of 2008-09 create appreciation for the *possibility* of events like 2008-09, which prompts risk-reducing behavioral changes that make the system more stable.

Compare the apparent trade-offs facing U.S. policymakers in September 2008 to those confronting their European counterparts in 2012. When ECB President Mario Draghi pledged in July 2012 to do "whatever it takes" to preserve the euro, he possessed subjective, experiential knowledge unavailable to Treasury Secretary Hank Paulson in September 2008 when he "never once considered that it was appropriate to put taxpayer money on the line in resolving Lehman Brothers."[10] Worries about moral hazard abounded in both cases. The risk of inaction only became evident in hindsight.

FIGURE 2

CONTRACTION OF 2008-09 EXPECTED ONCE EVERY 80.7 YEARS[11]

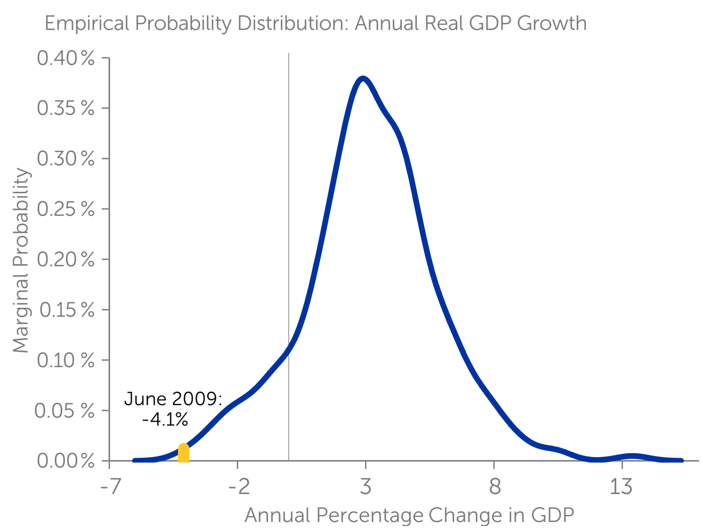
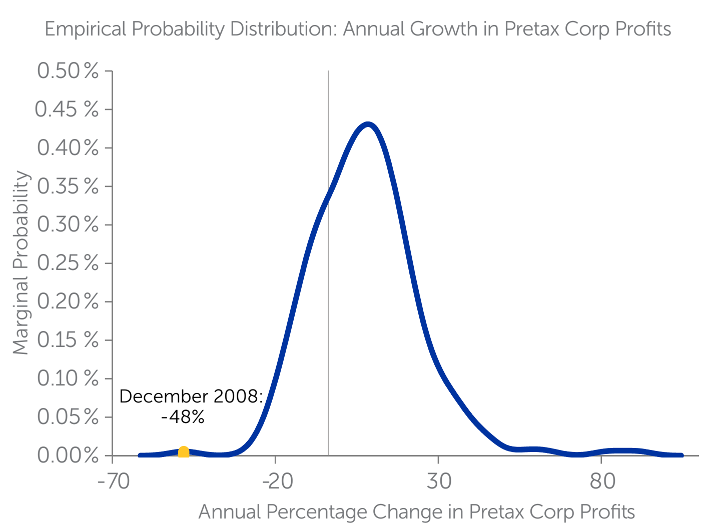


FIGURE 3

DECLINE IN CORPORATE PROFITS OF 2008-09 EXPECTED ONCE EVERY 138 YEARS[12]



CONCLUSION

The economic recovery that began July 2009 has proven more resilient than many observers would have anticipated. Market participants and regulators learned from the Great Recession in ways that make the "next subprime" crisis less likely. Rather than fall prey to elaborate narratives of ruin, or the tendency to expect the next recession will look like the last one, investors would be better served to focus on conventional risks and opportunities. The best investment strategies will continue to be those that outperform the market in most years rather than those that deliver spectacular returns in one year out of one hundred.

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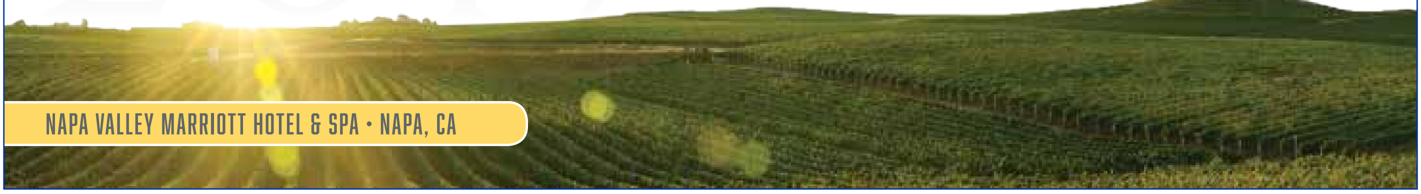
Economic and market views and forecasts reflect our judgment as of the date of this presentation and are subject to change without notice.

ENDNOTES

1. Defaulting auto loans recently earned this moniker. A Google search for "auto loans next subprime" returns 476,000 results. June 26, 2017.
2. Data from Barclay Hedge Fund Index, June 2017.
3. Data from Barclay Hedge Fund Index, June 2017. The Recession ended June 2009.
4. Agarwal, V. and Naik, N. (2004), "Risks and Portfolio Decisions Involving Hedge Funds." Review of Financial Studies.
5. Chen, Y. et al. (2014), "Sentiment Risk and Hedge Funds Returns," *American Economic Review*.
6. These stylized facts should be treated with some caution. The results have been derived from highly aggregated data and assume that all other risk factors are held constant. In practice, short positions tend to be concentrated in specific categories of assets that the investor expects to "blow up," such as China's currency, peripheral euro-denominated debt, auto loans, or long-duration bonds. As a result, actual performance would depend on the weighting of each strategy in the overall hedge fund index and these strategies' relationship to the broader market.
7. Bloomberg, June 2017.
8. Tversky, A. and Kahneman, D. (1973), "Availability: A Heuristic for Judging Frequency and Probability," *Cognitive Psychology*.
9. Tversky, A. and Kahneman, D. (1977), "Intuitive Prediction: Biases and Corrective Procedures," Decision Research, Technical Report PTR-1042-77-6. Specifically, the biases of conditionality and anchoring lead observers implicitly to base expectations on "normal operating conditions," or past experience, which makes large departures from normal conditions appear to be less probable than is actually the case.
10. Transcript, Press Briefing with Treasury Secretary Henry Paulson, September 15, 2008.
11. Bloomberg, June 2017.
12. Bloomberg, June 2017.

May 16-19, 2017

2017 SACRS SPRING CONFERENCE



The SACRS 2017 Spring Conference took place in Napa Valley, California May 16-19 and included presentations, training sessions, breakout sessions, and concurrent sessions covering a variety of topics. Here's a fond photographic look back at a few of the activities and events.
















STATE ASSOCIATION *of*
COUNTY RETIREMENT SYSTEMS

1415 L Street, Suite 1000
Sacramento, CA 95814
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SACRS™

UPCOMING CONFERENCE SCHEDULE

SPRING 2018

May 15-19, 2018
Anaheim Marriott
Anaheim, CA

FALL 2018

November 13-16, 2018
Renaissance Esmeralda
Resort & Spa
Indian Wells, CA

SPRING 2019

May 7-10, 2019
Resort at Squaw Creek
Lake Tahoe, CA

FALL 2019

November 12-15, 2019
Hyatt Regency Monterey
Hotel & Spa
Monterey, CA

SPRING 2020

Open

FALL 2020

November 10-13, 2020
Indian Wells Resort & Spa
Indian Wells, CA